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SYNDICATS, NÉGOCIATIONS, OU CAPITALISME
FAMILIAL : EFFETS SUR LES SALAIRES ET LA
PROTECTION DE L'EMPLOI

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Introduction générale

« C'est l'histoire (avec une forte tradition d'héroïsation du passé de la classe ouvrière), la sociologie (celle de la division du travail et des conflits) et le droit beaucoup plus que l'économie, qui ont modelé, en France, les connaissances et les perceptions du syndicalisme et du rôle des relations professionnelles. »

Hugues Blassel, *postface du traducteur*, dans Hans Slomp, "Les relations professionnelles en Europe", 2000.

Le syndicalisme est le principal – sinon le seul – moyen de représentation collective des salariés dans les entreprises. Ses effets sociaux et économiques sont débattus de longue date sans émergence de consensus évident.

D'un côté, des économistes néoclassiques anglo-saxons conçoivent principalement les syndicats comme des monopoles sur le marché du travail, dont le principal effet est d'augmenter les salaires de ses membres au détriment des salariés non couverts, engendrant des inégalités et un fonctionnement sous-optimal de l'économie. Les syndicats affecteraient alors négativement la productivité des entreprises et limiteraient l'emploi dans les entreprises où ils sont présents du fait de leur effet sur les salaires.

De l'autre côté, bon nombre de spécialistes des relations professionnelles, de sociologues et certains économistes insistent, à l'inverse, sur les effets positifs des syndicats sur l'économie. Ils mettent l'accent sur les meilleures pratiques de management induites par l'action syndicale et sur le développement possible de relations de plus long terme entre employeurs et salariés en présence de syndicats. Ces relations de long-terme invitent à accroître la formation professionnelle et à développer davantage

les compétences des salariés. Enfin, en fournissant un vecteur naturel de communication avec l'employeur, le syndicalisme permet un investissement en biens collectifs qui profitent à tous sur le lieu de travail mais que chaque salarié individuellement n'aurait pas demandé.

Au delà du débat théorique, force est de constater qu'il existe bien peu d'études quantitatives sur l'impact économique des syndicats dans les entreprises françaises. Sur le papier, les syndicats y jouent pourtant un rôle important : ils modifient à la fois le mode de fixation et la structure des salaires via la négociation et ils prétendent défendre également l'emploi et de meilleures conditions de travail.

Les syndicats français ne sont pas non plus « morts » ou devenus pratiquement inexistants comme peuvent parfois le penser nombre de commentateurs éloignés qui sont tentés de juger la vigueur du mouvement syndical uniquement à l'aune du taux de syndicalisation. De ce point de vue, le syndicalisme français ne fait effectivement pas bonne figure : avec moins de 8% de salariés syndiqués en 2008, la France affiche à la fois l'un des plus bas taux de syndicalisation parmi les pays développés et son plus bas taux depuis 1945. Cette première statistique fait cependant figure de trompe l'oeil en ce qui concerne la présence réelle des syndicats sur le terrain. L'histoire et la législation françaises ont favorisé ce qu'on appelle un « syndicalisme de représentativité », avec peu de syndiqués mais beaucoup de salariés couverts par les syndicats. Les salariés français n'ont en effet pas besoin d'être syndiqués pour être couverts par les accords collectifs. Autre spécificité française : les grands syndicats sont reconnus d'office par la législation pour négocier dans les entreprises¹. Pour pouvoir négocier, il leur suffit en pratique de trouver un salarié qui accepte de les représenter en devenant leur délégué syndical. En rendant presque automatique l'implantation syndicale dans les entreprises et en obligeant la négociation à couvrir autant les salariés syndiqués que les non syndiqués, la législation française a favorisé le grand écart observé entre le taux de syndicalisation et le taux de couverture syndicale : si moins de 8% des salariés sont syndiqués, plus de la moitié des salariés travaillant dans un établissement d'entreprise privée de plus de 10 salariés ont un syndicat qui négocie pour eux sur leur lieu de travail. Les syndicats ne sont donc pas simplement cantonnés à l'or-

¹Sur ce point, la loi récente du 20 Août 2008 portant sur la rénovation de la démocratie sociale a cependant légèrement durci les conditions permettant aux syndicats de négocier dans les entreprises.

ganisation des grandes manifestations nationales. Ils couvrent plus de 10 millions de salariés sur leur lieu de travail et sont présents dans plus de 50 000 entreprises dans lesquelles l'employeur a l'obligation de négocier les salaires avec eux. Ils négocient aussi systématiquement au niveau des branches d'activité.

Malgré leur forte présence dans les branches d'activité et sur le lieu de travail, on sait bien peu de choses sur ce qu'obtiennent réellement les syndicats en France. De nombreux travaux historiques (Andolfatto et Labbé, 2006), sociologiques (Andolfatto et Labbé, 2000 ou Lallement, 2008 pour une revue de littérature) ou issus des sciences politiques (Rosanvallon, 1998) ont permis une compréhension fine du développement des syndicats, de la « désyndicalisation d'après guerre » (Labbé et Croisat, 1992 ; Rosanvallon, 1998 ; Amadieu, 1999) ou encore de la « classe ouvrière » (Halbwachs, 1913 ; Perrot, 1974 ; Beaud et Pialoux, 1999). En revanche, comme l'explique justement Hugues Blassel, les analyses quantitatives du rôle économique des syndicats, de ce qu'ils parviennent à négocier, de leur effet réel sur les salaires, l'emploi, les profits, la productivité ou encore la fourniture de biens publics ou la satisfaction au travail manquent cruellement.

Cette quasi-absence de travaux d'inspiration économique² est d'autant plus surprenante qu'elle s'oppose à une forte tradition anglo-saxonne historique d'étude empirique du syndicalisme par les chercheurs en relations industrielles (industrial relations) ou en économie du travail. En témoigne par exemple l'ouvrage de référence américain de Freeman et Medoff « Que font les syndicats ? », publié en 1984. Véritable best-seller le livre a été cité plus de 2000 fois par d'autres chercheurs. Vingt ans plus tard, en 2004, les spécialistes anglais du syndicalisme David Blanchflower et Alex Bryson publiaient « Que font les syndicats maintenant et cela surprendrait-il Freeman et Medoff ? ». Autre exemple emblématique de l'attention portée sur les effets économiques des syndicats dans le monde anglo-saxon : l'histoire du chercheur américain H. Gregg Lewis, renommé pour avoir passé pratiquement toute sa vie à recenser et comparer les études sur les écarts de salaires entre entreprises avec et sans syndicats.

Si les recherches anglo-saxonnes ne sont pas parvenues à susciter davantage de

²Les quelques travaux existants sont présentés plus en détail dans le chapitre 1. Sur le lien entre présence syndicale et salaires, on peut citer Coutrot (1996), Duguet et Petit (2004) et Leclair et Petit (2009). Bryson et al (2009) et Fairris et Askenazy (2010) étudient par ailleurs l'effet de la présence de syndicats ou de comités d'entreprises sur les performances des entreprises.

curiosité ou de tentatives de reproduction en France, c'est peut-être parce que les relations professionnelles telles qu'elles existent chez nous et outre-atlantique sont fondamentalement incomparables. Il existe d'abord des différences institutionnelles importantes : en France par exemple on négocie à la fois au niveau national, dans les branches et, au niveau local, dans les entreprises et dans les établissements d'entreprise alors qu'aux Etats-Unis ou au Royaume-Uni, on négocie uniquement au niveau des entreprises (à quelques rares exceptions près). Autre exemple : les syndicats américains doivent gagner une élection à la majorité pour avoir le droit de négocier alors qu'il suffit simplement aux grands syndicats français, comme nous l'avons dit, d'être représentés par un salarié. Ces différences institutionnelles rendent effectivement les comparaisons difficiles. Mais elles n'expliquent pas pour autant l'absence d'études sur le rôle économique des syndicats en France. Plus fondamentalement, on peut invoquer une différence de conception. L'approche anglo-saxonne du syndicalisme peut être qualifiée d'utilitariste : le syndicat y est vu comme une sorte de lobby sur le marché du travail qui essaie avant tout d'obtenir des avantages matériels pour ses membres. A l'inverse, le syndicalisme à la française est souvent considéré comme étant d'abord une histoire de militants, l'histoire d'individus ou de collectifs engagés qui défendent leurs valeurs plus que leurs intérêts. Cette particularité française pourrait expliquer la réticence des chercheurs à se lancer dans des études d'inspiration économique du phénomène syndical. Comme cela sera montré en détail plus loin, l'intérêt de tels travaux reste malgré tout bien réel : si les syndicats français sont davantage des acteurs sociaux qu'économiques, leur rôle économique n'en est pas pour autant à négliger complètement.

Le caractère « militant » du syndicalisme à la française évoqué ci-dessus s'est traduit concrètement par une forte implication politique des syndicats, avec une idéologie initialement dominante de syndicalisme anarchique ou de syndicalisme de lutte. Le principe de la disparition du capitalisme par le truchement de la lutte des classes est ainsi inscrit dans le marbre de la constitution de la CGT, adoptée lors de son 9^{ème} congrès en 1906 :

« La CGT groupe, en dehors de toute école politique, tous les travailleurs conscients de la lutte à mener pour la disparition du salariat et

du patronat.

Le congrès considère que cette déclaration est une reconnaissance de la lutte des classes qui oppose, sur le terrain économique, les travailleurs en révolte contre toutes les formes d'exploitation et d'oppression, tant matérielles que morales, mises en œuvre par la classe capitaliste contre la classe ouvrière.

Le congrès précise par les points suivant cette affirmation théorique :

Dans l'œuvre revendicatrice quotidienne, le syndicalisme poursuit la coordination des efforts ouvriers, l'accroissement du mieux-être des travailleurs par la réalisation d'amélioration immédiates, telles que la diminution des heures de travail, l'augmentation des salaires, etc.

Mais cette besogne n'est qu'un côté de l'œuvre du syndicalisme ; il prépare l'émancipation intégrale, qui ne peut se réaliser que par l'expropriation capitaliste ; il préconise comme moyen d'action la grève générale et il considère que le syndicat, aujourd'hui groupe de résistance, sera, dans l'avenir, le groupe de production et de répartition, base de la réorganisation sociale. »

Victor Griffuelhes et Émile Pouget, *Premiers paragraphes de la Charte d'Amiens, Motion adoptée par la CGT, en 1906, lors de son 9ème congrès..*

Lorsque la CGT adopte en 1906 la motion fondatrice du syndicalisme révolutionnaire connue sous le nom de charte d'Amiens, elle n'imagine sans doute pas combien le texte va forger durablement les spécificités du syndicalisme français. Face au syndicalisme de lutte, les employeurs, tout particulièrement en France, développeront des stratégies d'évitement, notamment à travers l'adoption de pratiques managériales paternalistes. Le management paternaliste se développe ainsi à la fin du 19^{ème} siècle pour faire face à la très forte augmentation des conflits industriels qui apparaît à cette époque du fait notamment du développement des mouvements syndicaux. L'idée du paternalisme est d'établir une communauté de travail dans laquelle les intérêts des

travailleurs et des dirigeants seraient inextricablement liés. De cette manière, l'opposition idéologique classique entre salariat et patronat qui est à la source des combats menés par les syndicats d'obédience communiste tend à s'estomper. La transposition de l'employeur en figure paternelle a pour but de faire des conflits au travail l'équivalent du parricide. En pratique le paternalisme prend des formes diverses : dispositif de partage des profits chez Endicott aux Etats-Unis à partir de 1919, construction d'écoles et d'hôpitaux pour les salariés chez les Krupp en Allemagne ou chez les Schneider en France, mise en place d'un système de protection sociale chez Michelin.

En termes de pratiques managériales paternalistes, et donc de gestion de la conflictualité, les entreprises dites familiales, c'est à dire possédées en majorité par une famille (et le plus souvent également dirigées par un membre de la famille), ont évidemment un avantage comparatif : lorsque la propriété d'une entreprise est personifiée, il est beaucoup plus facile de développer un « esprit d'entreprise » auquel les salariés peuvent se rattacher et s'identifier. Avec environ 65% d'entreprises familiales (Faccio et Lang, 2002), la France fait partie des pays développés dans lesquels ce type d'entreprises est le plus représenté. À la forte conflictualité des relations professionnelles françaises, s'opposerait donc un capitalisme familial très répandu et peut-être mieux à même de gérer les tensions entre salariat et patronat. L'entreprise familiale a d'ailleurs très bonne presse dans le débat public français : elle serait "la championne de la croissance durable", elle entretiendrait un lien étroit avec ses salariés et serait capable de les choyer bien davantage qu'une entreprise au capital diversifié qui serait, elle, soumise à la pression constante et court-termiste des marchés, et au dogme de la rentabilité. Du fait d'horizons temporels plus longs, et d'un attachement presque sentimental à leur survie, les entreprises familiales prendraient des décisions d'investissement moins risquées et pourraient ainsi mieux protéger leurs salariés contre le risque de licenciement. C'est sans doute cette idée qui a servi de prétexte la baisse des taux d'imposition sur les donations, sur les successions et sur la fortune depuis le début des années 1980, le taux moyen d'imposition sur les successions passant ainsi d'environ 20% en 1984 à environ 4% en 2009 (Bach, 2009). Evidemment, cela n'est pas pour déplaire aux grandes entreprises dynastiques françaises. Comme le dit si bien Yvon Gattaz, l'ancien patron des patrons, et l'un des plus fervents promoteurs

des entreprises familiales, “Pour la succession des entreprises familiales, les patrons se partagent en deux catégories : ceux qui croient que est héréditaire et ceux qui n’ont pas d’enfants”.

Cependant, des travaux économiques récents ont examinés les performances productives et financières des entreprises familiales. Les résultats vont plutôt en défaveur de ces dernières : elles apparaissent moins productives que les entreprises non familiales (Bloom et Van Reenen, 2006) et elles ne sont pas nécessairement plus profitables. Des travaux de grande qualité montrent également qu’en cas de succession, les entreprises familiales dont la direction est transmise à un héritier du fondateur deviennent beaucoup moins profitables que celles transmises à un manager professionnel (Bennedsen et al, 2007). Thomas Philippon, dans *Le capitalisme d’héritiers* (2004), voit par ailleurs le capitalisme familial comme un mal français qui nuirait à long terme à l’épanouissement des salariés au travail, notamment parce qu’il empêche par essence toute possibilité de renouvellement des élites.

En parallèle des travaux sur les performances productives et financières des entreprises familiales, il existe peu d’études quantitatives venant appuyer l’apparent consensus public sur les bienfaits des entreprises familiales pour leurs salariés. Or, si les politiques publiques des 30 dernières années visant à faciliter la transmission intra-familiale des entreprises devaient pouvoir se justifier d’un point de vue économique, ce serait au regard de cet externalité positive qu’aurait l’entreprise familiale sur ses salariés. Des recherches spécifiquement axées sur le rôle que jouent les entreprises familiales pour leur main d’œuvre apparaissent donc nécessaires.

Qu’il s’agisse des syndicats ou des entreprises familiales, il semble donc qu’une approche par l’économie du travail puisse être féconde et permettre d’affiner nos connaissances actuelles. Cette thèse a donc pour premier objectif de réaliser une étude du rôle et de l’impact des structures syndicales et managériales sur les conditions d’emploi et d’activité des salariés. L’intérêt d’une telle approche est double. Il est, d’une part, de mieux comprendre ces institutions, trop peu étudiées, du point de vue de leur effet sur la main d’œuvre. Il est d’autre part, et notamment en ce qui concerne les syndicats, d’étudier des institutions ayant des spécificités bien françaises

et pour lesquelles on ne peut donc se satisfaire de travaux étrangers.

Cependant, l'étude de sujets jusque là négligés ne saurait constituer une motivation suffisante pour justifier nos travaux de recherches. L'argument peut d'ailleurs être facilement retourné : si les syndicats – en France uniquement – ou les entreprises familiales ont été relativement oubliés en économie du travail, c'est peut-être que leur étude n'apparaissait pas nécessaire. Qu'en est-il alors aujourd'hui, à l'heure où ces institutions sont déclinantes et vouées par certains à une mort probable ? La tentation peut être forte de considérer que syndicalisme ou capitalisme familial ont peu d'avenir et que leur étude appartient désormais surtout à l'Histoire. Dans ce contexte, des travaux économiques sur ces sujets apparaîtraient encore moins nécessaires aujourd'hui qu'ils semblaient l'être par le passé.

Nous pensons exactement le contraire. L'étude des syndicats ou des entreprises familiales n'a probablement *jamais* été aussi nécessaire qu'aujourd'hui. Ces institutions jouent traditionnellement un rôle de contrepoids économique face à trois grandes dérives potentielles du marché du travail, voire du capitalisme au sens large : la hausse du chômage, l'intensification du travail et la hausse des inégalités. Force est de constater qu'aucune autre institution n'est venue les remplacer pour jouer ce rôle de contrepoids. Qu'il s'agisse du chômage, des conditions de travail ou des inégalités, force est aussi de constater que ces maux nous touchent plus durement aujourd'hui que par le passé.

Kuznets (1955) prédisait qu'au cours du développement d'un pays, les inégalités commencent par s'accroître dans les premiers temps avant de décroître ensuite. L'accroissement initial des inégalités s'expliquerait par le lourd investissement en capital physique nécessaire aux premières phases du développement, et dont l'usufruit est réservé aux seuls investisseurs. A l'inverse, dans les économies plus avancées, l'investissement massif en capital humain viendrait se substituer à l'investissement en capital physique et les inégalités se réduisent. D'un point de vue théorique comme empirique, les prédictions de Kuznets sont largement réfutées (Piketty, 2006). Si nombre de pays ont effectivement connu un accroissement massif de leurs investissements en

capital humain, ceux-ci ne se sont pas accompagnés d'une baisse des inégalités. On observe à l'inverse une hausse des inégalités de revenu dans la plupart des pays développés, hausse qui est largement tirée par l'explosion des plus hauts revenus (Piketty, 2003; Atkinson *et al.*, 2011). Mais l'augmentation des inégalités ne concerne pas uniquement les hauts revenus. Sur le marché du travail, l'écart de revenu entre les salariés détenteurs d'un diplôme du supérieur et ceux qui n'en n'ont pas s'est également creusé. L'hypothèse principale avancée pour expliquer ce phénomène est celle du progrès technique biaisé (Acemoglu, 2002; Katz et Autor, 1999), avec l'idée que les nouvelles technologies profitent davantage aux cadres qu'aux non cadres.

Jean Fourastié, l'optimiste inventeur des « trente glorieuses », voyait dans le progrès technique le *Grand Espoir du XX^{ème} siècle* (Fourastié, 1949). Le progrès technique devait permettre à l'homme de s'abstraire complètement du travail manuel et de ne travailler plus que 30 heures par semaines, pendant 35 années. Pourquoi les prédictions de Fourastié, pourtant pleines de bon sens, se sont révélées à ce point erronées ? D'abord, l'homme ne s'est pas abstrait du monde des objets. Si l'on produit de façon de plus en plus efficace les biens industriels, on en produit également de plus en plus et une main d'œuvre toujours plus importante est nécessaire pour déplacer, réparer ou acheminer ces objets. Le nombre d'ouvriers en France est resté compris entre 5 et 7 millions de puis les années 30. Les ouvriers représentent encore près du quart des actifs aujourd'hui. En revanche nombre d'entre eux ne travaillent plus dans le secteur industriel mais dans les services. Ils sont davantage manutentionnaires ou réparateurs qu'ouvriers à la chaîne. Ensuite, l'organisation du travail a changé. Le Fordisme a laissé la place au Toyotisme. Les nouvelles technologies de l'information et de la communication ont offerts aux employeurs l'opportunité de mesurer et de contrôler plus finement la production. Aux systèmes d'organisation classiques peu flexibles et hiérarchiques ont succédé des structures souples et réactives, mieux adaptées dans un contexte où l'innovation joue un rôle crucial (Askenazy *et al.*, 2006). Dans la société « postindustrielle », le consommateur ne se contente plus d'accéder à la consommation de masse en profitant d'une offre relativement peu abondante, il souhaite le meilleur produit parmi un choix abondant, et une petite innovation du côté de l'offre dans ce contexte très concurrentiel peut engendrer de forts rendements. A l'heure d'inter-

net, l'organisation du travail s'assigne pour objectif "l'adaptabilité à la demande, la réactivité, la qualité et surtout l'optimisation du processus productif, notamment à travers l'utilisation de toutes les compétences humaines" (Askenazy, 2001). Les effets induits sur les salariés par ces nouvelles contraintes sont bien réels. En témoigne par exemple la hausse continue des accidents du travail, tant pour raisons psychologiques que pour des causes physiques (Askenazy, 2004) et la détérioration des conditions de travail ressentie par les salariés des entreprises ayant les modes d'organisation les plus innovants (Askenazy et Caroli, 2010). Enfin, les modes d'organisation innovants, et la subtile complémentarité qui les associe aux nouvelles technologies, contribuent également à accroître les effets du progrès technique biaisé sur les inégalités (Caroli et Van Reenen, 2001).

Si la baisse du syndicalisme ou du capitalisme familial n'ont pas été les causes principales de la hausse des inégalités ou de l'intensification du travail depuis le début des années 1980, l'un comme l'autre peuvent néanmoins être considérés comme des solutions naturelles à ces grands problèmes contemporains. C'est pour cette raison que leur étude nous apparaît essentielle aujourd'hui, quand bien même ces institutions seraient sur le déclin. Leur mauvaise adaptation aux "règles" du capitalisme moderne les a contrarié dans leur rôle économique de contrepoids naturels. Mais ce rôle pourrait être réhabilité et même intensifié dès lors que l'on comprend finement le fonctionnement et les défaillances potentielles de ces institutions. C'est résolument dans cette optique que s'inscrit cette thèse : améliorer notre compréhension d'institutions dont les effets potentiels – protection de l'emploi, amélioration des conditions de travail, réduction des inégalités sur le marché du travail – se font peu sentir alors même qu'ils apparaissent de plus en plus nécessaires. Cette thèse se construit autour de ce double questionnement : Qu'apportent effectivement les syndicats et les entreprises familiales aux salariés qu'ils couvrent ? Quelles sont les faiblesses et déficiences de ces institutions qui pourraient être comblées afin d'en renforcer le rôle positif ?

Face à la hausse du chômage, les entreprises familiales peuvent apporter des emplois plus sûrs du fait de leurs politiques d'investissement moins risquées. Les syndicats peuvent également favoriser l'emploi s'ils ne se contentent pas de négocier

uniquement les salaires (McDonald et Solow, 1981) et qu'ils ne négocient pas non plus seulement pour leurs membres³. Les modes d'organisation plus traditionnels et les politiques salariales moins individualisées et moins incitatives encore en vigueur dans les entreprises familiales (voir chapitre 3) peuvent laisser penser que l'intensité du travail y est demeurée plus faible et que les inégalités s'y sont moins accrues.

De leur côté, si leur pouvoir de négociation est suffisant, les syndicats peuvent évidemment améliorer les conditions de travail et les salaires, notamment pour les salariés les moins bien lotis. Leur effet global sur les inégalités est cependant ambigu du point de vue théorique. Les syndicats poursuivent clairement un objectif égalitaire et ils réduisent les inégalités parmi les salariés qu'ils couvrent. Ce résultat est confirmé par l'ensemble des études empiriques anglo-saxonnes, depuis Freeman (1982) jusqu'à Card *et al.* (2004). En revanche, les syndicats peuvent éventuellement augmenter les inégalités entre les salariés qu'ils couvrent et ceux qu'ils ne couvrent pas. C'est le cas par exemple s'ils couvrent des salariés plus qualifiés que la moyenne : les avantages salariaux additionnels qu'ils obtiennent pour ces salariés augmentent alors les inégalités globales. Taschereau-Dumouchel (2010) montre cependant à l'aide d'un modèle théorique qu'interdire les syndicats engendrerait une hausse des inégalités globales⁴. Les travaux empiriques confirment ce résultat et montrent que l'effet total des syndicats sur les inégalités est négatif (Freeman et Medoff, 1984 ; Lemieux, 1993 ; Machin, 1997 ; Card *et al.*, 2004). Sur les décennies 1970 et 1980, la baisse des taux de syndicalisation semble pouvoir expliquer un quart de la hausse des inégalités de revenu aux Etats-Unis (Card, 2001) et une part significative de celle-ci au Royaume-Uni (Machin, 1997). Card *et al.* (2004) confirment la relation positive entre le déclin des syndicats dans le secteur privé aux Etats-Unis, au Canada et au Royaume-Uni et la hausse concomitante des inégalités salariales. L'enjeu est donc clair : redynamiser le syndicalisme peut permettre de réduire les inégalités. La situation française a néanmoins ces spécificités : si les taux de syndicalisation ont dramatiquement baissé depuis la fin des trente glorieuses, le taux de présence syndicale dans les entreprises est resté

³Les membres du syndicat sont alors des *insiders* par opposition aux *outsiders* et se retrouvent injustement favorisés. Voir par exemple Lindbeck et Snower, 2001.

⁴Plus particulièrement, il montre que la menace d'une implantation des syndicats incite les firmes sans syndicats à compresser la distribution des salaires qu'elles offrent et que ce second effet est important, et qu'il explique la hausse des inégalités qui résulterait d'une interdiction des syndicats.

relativement élevé. L'objectif n'est pas tant de chercher à tout prix à syndiquer les salariés. Il faut plutôt essayer de comprendre quelles sont les conditions d'une négociation efficace afin de pouvoir en favoriser l'émergence. L'un des apports principaux de cette thèse est de traiter ce sujet.

La question centrale qui sous-tend nos recherches, et dont les inégalités ou le chômage peuvent être finalement vus comme des conséquences, est la question du partage de la valeur ajoutée. Partage de la valeur ajoutée entre salariés produisant différents niveaux d'effort et avec différents niveaux de qualification, partage de la valeur ajoutée entre actifs et inactifs, et bien sûr, partage de la valeur ajoutée entre travail et capital. Syndicalisme et capitalisme familial modifient le fonctionnement des entreprises et la façon dont la valeur ajoutée est partagée. Les syndicats sont synonymes de négociation. Ils induisent un changement radical de paradigme : les salariés ne sont plus rémunérés à leur salaire de marché mais à un salaire négocié. En l'absence de négociation, l'existence de chômeurs – "l'armée de réserve" dans le langage de Marx –, génère un équilibre dans lequel les salariés sont rémunérés à "leur salaire de réservation", c'est à dire que compte-tenu de ce qu'ils pourraient obtenir ailleurs, leur salaire est juste suffisant pour compenser le coût lié à leur effort au travail. Dans le cas des entreprises familiales, c'est la gestion du capital qui est modifiée. Pour citer Marx à nouveau, " Les sociétés par actions, la dispersion du capital des grandes entreprises entre des actionnaires multiples constituent déjà une destruction de la propriété privée"⁵. Lorsque le capital est dispersé, il est à la fois plus fluide et moins présent. Il est plus fluide parce qu'un investisseur qui ne possède qu'une petite fraction d'une entreprise peut très facilement revendre ses capitaux, ce qui n'est pas le cas pour le propriétaire qui doit revendre toute l'entreprise. Il est moins présent parce que ce même investisseur ne se sent ni la responsabilité, ni le besoin de surveiller le fonctionnement de l'entreprise. Il dispose en revanche d'un pouvoir de rétorsion très efficace : si le rendement de ces actifs n'est pas celui espéré, il retirera immédiatement son argent. Dans le cas de l'entreprise familiale, le capital appartient à un nombre très limité de personnes physiques et l'une d'elle dirige en général également l'entreprise. Les modalités d'une éventuelle négociation, et donc du partage de la valeur ajoutée,

⁵Cité par Raymond Aron, *Dix-huit leçons sur la société industrielle*.

en sont nécessairement modifiées. Il y a finalement un parallèle entre syndicalisme et capitalisme familial : le syndicalisme représente l'idée d'un salariat qui forme un tout afin de négocier, tandis que dans le cas de l'entreprise familiale, c'est le capital qui est unifié et insécable. Dans le cas d'un salariat et d'un actionnariat diversifiés, les acteurs sont suffisamment petits pour considérer que leurs actions n'affectent pas l'équilibre économique – comme dans la théorie de l'équilibre général. Ce n'est plus vrai pour un salariat ou un capital unifié. Le syndicat qui fait grève ou le propriétaire familial qui revend ses parts mettent tous deux en péril la vie de leur entreprise. Ils ont de ce fait à la fois un pouvoir de négociation et une responsabilité plus importants et ont alors tout intérêt à entretenir des relations *loyales* (au sens d'Hirschman, 1970). Les syndicats développent ce qu'Hirschman appelle la *voice*. On peut par ailleurs considérer que les pratiques managériales paternalistes adoptées par les entreprises familiales reflètent en partie ce besoin de mettre en place des relations de travail *loyales*.

Au delà de leur intérêt pratique évident, l'étude du syndicalisme et l'étude des entreprises familiales répondent donc à des questionnements théoriques similaires : comment s'organisent les relations professionnelles et comment se partage la valeur ajoutée lorsque le travail est agrégé en une seule entité – un ensemble de salariés agissant collectivement – ou lorsque le capital est agrégé en une seule entité – un unique détenteur du capital – ?

Du côté des syndicats, nous tentons d'apporter des éléments de réponse à ces deux questions : Que font les syndicats ? Et comment le font-ils ? Comprendre ce que font les syndicats, c'est d'abord comprendre ce qu'ils parviennent à obtenir, notamment en termes de salaire. Le chapitre 1 étudie l'effet de la négociation salariale menée par les syndicats sur la structure globale des salaires. Le chapitre 2 étudie ensuite précisément comment des éventuels gains de salaire sont obtenus. Il s'agit de comprendre le fonctionnement – ou plutôt les dysfonctionnements – de la négociation salariale en entreprise. Le chapitre s'attaque à une question totalement nouvelle en proposant une étude de la situation et du rôle spécifique des négociateurs, à savoir

les représentants syndicaux. L'objectif est d'une part de comprendre d'un point de vue théorique les différents équilibres auxquels peuvent aboutir les négociations intra-entreprises et d'autre part de proposer une première estimation empirique du salaire des délégués syndicaux. L'étude proposée met en évidence une situation qui peut sembler paradoxale : les salariés chargés de négocier les salaires dans les entreprises apparaissent nettement moins bien payés que leurs collègues pour qui ils négocient.

Du côté des entreprises familiales (chapitre 3), l'objectif est, comme nous l'avons dit, de les étudier du point de vue de leurs salariés, afin de mieux comprendre si elles sont effectivement en mesure de leur offrir une meilleure protection de l'emploi et, le cas échéant, si cette meilleure protection ne serait pas compensée par de moins bonnes performances sur d'autres aspects de la relation de travail. Là encore, l'approche est double : il s'agit à la fois de mesurer les effets du capitalisme familial tout en détectant ses limites potentielles.

La suite de cette introduction discute plus en détail l'intérêt d'une approche économique du syndicalisme et des entreprises familiales et présente l'approche méthodologique adoptée. Le plan de thèse ainsi que ses principales contributions viennent ensuite.

La méthodologie utilisée

L'intérêt d'une approche par l'économie du travail

Contrairement à d'autres objets d'études, tels que la politique monétaire ou le commerce international, l'étude du syndicalisme ne constitue pas un domaine réservé à l'économie. Une approche économique de la question se justifie cependant pour plusieurs raisons.

D'abord et très simplement, les syndicats sont des institutions qui agissent sur le marché du travail. Ils modifient l'équilibre final sur ce marché en influant à la fois le mode et le niveau de fixation du prix du travail. A ce titre, l'étude de leur impact économique ne peut être que légitime. Il faut également ajouter que l'étude de la négociation du prix du travail par les syndicats présente un fort intérêt théorique. En effet, par le truchement de la négociation, les syndicats invalident les théories micro-

économiques classiques qui considèrent le prix d'équilibre comme la résultante de l'égalisation de l'offre et de la demande. Lorsque le (ou les) prix résulte de négociations bilatérales, il est nécessaire de sortir du paradigme classique induit par la théorie de l'équilibre général pour comprendre à la fois ce que seront l'équilibre final de marché et ses propriétés. L'étude des syndicats offre ainsi un excellent moyen de comprendre le fonctionnement d'une économie d'échange fonctionnant sur le principe de prix négociés.

En second lieu, la modélisation économique permet d'identifier précisément les mécanismes via lesquelles une institution telle qu'un syndicat influe sur le marché du travail et la situation des différents agents opérants sur ce marché. Dunlop (1944) est le premier à considérer qu'un syndicat maximise une fonction objectif sous différentes contraintes. Il initie ainsi une approche économique néoclassique du syndicalisme. Dunlop considère initialement que l'objectif du syndicat est de maximiser la masse salariale. Rosen (1969), de Menil (1971) ou encore Calvo (1978) affineront cette hypothèse en considérant que le syndicat cherche plutôt à maximiser une rente, par exemple le surplus de salaire obtenu par ses membres au delà du salaire de marché. Les économistes du travail se sont ensuite appuyés dans les années 1980 sur les travaux réalisés en théorie de la négociation (Nash, 1950) et sur leur développement récent (Rubinstein, 1982) pour considérer que les salaires n'étaient pas fixés unilatéralement par le syndicat (qui agissait comme un monopole dans les premiers modèles) mais négociés avec l'employeur. Sous l'impulsion de McDonald et Solow (1981), ils ont développé des modèles de négociation portant à la fois sur les salaires et l'emploi⁶. Alors que dans les premiers modèles, la négociation syndicale était toujours source d'inefficacités, cela n'était plus nécessairement vrai dès lors que l'on considérait que le syndicat négociait également l'emploi. Sans entrer davantage dans les détails, on mesure déjà la manière dont la modélisation économique peut apporter des prédictions sur les effets potentiels des syndicats et également et permettre d'identifier les paramètres clefs sur lesquelles il est nécessaire de se concentrer. Ainsi, le fait qu'il faille encourager les négociations intra-entreprise portant à la fois sur les salaires et l'emploi au détriment de celles portant uniquement sur les salaires est une prédiction

⁶Voir Oswald, 1985, pour une revue de littérature des premiers modèles et Clark, 1990, pour une discussion de l'article de McDonald et Solow

simple de la théorie économique qui fait pratiquement consensus aujourd'hui.

En troisième lieu, seules des études quantitatives poussées peuvent permettre une compréhension fine du rôle et de la puissance réelle des acteurs concernés. Ce sont les théories ayant identifié les conséquences potentiellement délétères de la négociation salariale qui ont poussé les économètres à vouloir mesurer précisément l'effet réel des syndicats sur les salaires. La collecte de données de plus en plus riches par les instituts statistiques et le développement exponentiel des capacités de calcul informatique ont permis la réalisation de très nombreuses études dans les années 1980. Leur objectif était de mesurer précisément ce que les syndicats parvenaient à obtenir et la perte d'efficacité potentielle qu'ils pouvaient induire pour l'économie. Ensuite, et au delà du cadre purement économique, des mesures précises des changements induits par la présence syndicale renseigne sur leur pouvoir de négociation réel et sur leur état de santé. De telles mesures apparaissent également nécessaires pour éclairer la décision publique. Prenons l'exemple des heures travaillées : en France, les représentants du personnel et les délégués syndicaux disposent de plus de 20 heures de crédit d'heures travaillées par mois pour leur activité de représentant⁷. Cela représente un déficit à l'année de plus de 200 heures travaillées par représentant. Sachant qu'il y a environ un demi-million de représentants du personnel en France, on peut estimer que le déficit annuel total d'heures travaillées du fait de la représentation du personnel est proche de 100 millions. Sans vouloir pousser davantage un calcul qui a ici uniquement valeur d'illustration, on comprend que le décideur public puisse vouloir souhaiter voir si ces nombreuses heures de travail accordées aux représentants du personnel leur permettent d'améliorer la situation et l'implication de l'ensemble des salariés dans les entreprises. Seules des études quantitatives portant sur des échantillons représentatifs de salariés sont susceptible de répondre à de telles questions de politique publique.

L'étude du capitalisme familial constitue déjà pratiquement un domaine réservé à l'économie. Il est donc probablement moins nécessaire de la motiver. En revanche, comme évoqué plus haut, les entreprises familiales sont encore trop rarement étudiées

⁷Le crédit d'heures, ou heures de délégations, varie en fait énormément d'un représentant à l'autre. On peut néanmoins estimer à partir des réponses des représentants du personnel interrogés dans l'enquête REPONSE (voir plus bas) qu'il est en moyenne supérieur à 20 heures par mois.

du point de vue de leur main d'œuvre. Là encore, seule une approche par l'économie du travail, avec notamment l'utilisation de riches bases de données sur les salariés, peut permettre de bien appréhender et mesurer les potentiels bienfaits des entreprises familiales sur leur main d'œuvre. Des études quantitatives sont nécessaires pour confirmer ou infirmer l'idée selon laquelle les entreprises familiales sont mieux à même de protéger leurs salariés contre les chocs économiques. Elles sont, à ce titre, indispensables pour le décideur public : un avantage fiscal accordé aux entreprises familiales tel qu'une baisse des taux d'imposition en cas de succession ne saurait être légitimité autrement qu'à travers l'existence d'indices solides confirmant que ces entreprises jouent effectivement un rôle positif pour leurs salariés.

Des techniques économétriques variées

L'économie empirique a connu au cours des années récentes des développements importants. Nous les résumons brièvement ici avant d'expliquer l'approche plus particulièrement adoptée au cours de cette thèse. Une part grandissante des travaux réalisés en économie du développement (Duflo, 2000), en économie de l'éducation (Angrist et Lavy, 1999) ou encore en économie du travail (Bertrand, Kramarz, 2002) se concentre sur l'évaluation de dispositifs ou de politiques publiques. Ces évaluations nécessitent des méthodes empiriques qui permettent d'identifier clairement l'effet causal des dispositifs ou politiques étudiés. Dans ce but, l'économétrie contemporaine se focalise largement sur la recherche de sources d'exogénéité permettant, soit de s'assurer complètement du caractère aléatoire des variables explicatives vis-à-vis des variables expliquées, soit d'en isoler la part non prédictible et de ne considérer que celle-ci.

La stratégie la plus sûre, mais aussi la plus coûteuse, pour évaluer l'effet d'une variable ou d'un "traitement" sur d'autres variables est de mettre en place une expérimentation contrôlée en tirant soi-même au sort les personnes ou unités traitées. Il s'agit dans ce cas de se rapprocher le plus possible des conditions d'une expérience de laboratoire en s'appuyant sur la méthodologie rigoureuse développée de longue date par les sciences expérimentales (biologie, médecine). Les exemples de telles expériences contrôlées sont de plus en plus nombreux grâce notamment à la mise à dispo-

sition des moyens financiers et politiques nécessaires à ce type d'évaluations. Depuis la création du fond d'expérimentation pour la jeunesse initié par Martin Hirsch en 2008, de nombreuses "expérimentations sociales" ont ainsi pu être menées à bien en économie de l'éducation. Dans ce cadre, Avvisati et al (2010) ont évalué l'effet d'un dispositif consistant à offrir aux parents d'élèves des formations complémentaires sur le comportement et la réussite scolaire de leurs enfants. Il existe également quelques exemples d'expérimentations en économie du travail, tels que la très médiatique évaluation du Revenu de Solidarité Active présidée par François Bourguignon, mais elles y sont dans l'ensemble plus rares, notamment à l'intérieur des entreprises⁸.

Pour des raisons éthiques ou financières, il n'est parfois pas possible de mettre en place des expérimentations. Il arrive aussi que l'on puisse se passer d'elles. C'est notamment le cas lorsqu'on dispose d'une "expérience naturelle", c'est-à-dire d'un événement ou d'une réforme non anticipés ayant affecté de manière quasi-aléatoire une partie de la population étudiée. Dans ce cas il est possible de se rapprocher des conditions d'expérience en laboratoire. Les travaux d'Eric Maurin et de ses coauteurs sont souvent des exemples du genre : McNally et Maurin, 2008 utilisent ainsi le fait que le baccalauréat ait été donné plus facilement et de manière totalement imprévisible au cours des événements de Mai 68 pour identifier l'effet causal de l'accès à l'enseignement supérieur sur la réussite professionnelle tandis que Maurin et Ouss, 2008, exploitent la grâce présidentielle du 14 juillet 1996, qui a induit un nombre significatif de réductions de peine non anticipées, afin d'en mesurer les effets sur la récidive et les taux d'occupations des prisons.

Enfin, pour évaluer l'effet d'une variable potentiellement endogène sur une autre, il est parfois possible d'en extraire la part exogène à l'aide d'une troisième variable qu'on appelle alors un instrument. Grâce à l'instrument, on peut purger la variable explicative de sa composante endogène et ainsi estimer son effet causal sur la variable expliquée. Angrist et Evans, 1996, utilisent ainsi le sexe des deux premiers enfants d'une famille comme instrument de la décision d'avoir un 3^{ème} enfant. Lorsque les deux premiers enfants sont de même sexe, les parents ont en effet plus de chance d'en avoir un 3^{ème}. Avec leur instrument, les auteurs peuvent isoler la composante exogène

⁸Par manque de moyens et peut-être parce que les employeurs sont réticents à laisser les chercheurs intervenir directement dans leur champ de compétence.

de la décision d'avoir un 3^{ème} enfant et en mesurer l'impact sur l'offre de travail des parents. Autre exemple : Angrist et Lavy, 1999, exploitent le fait que la taille des classes soit soumise à des plafonds (par exemple 40 élèves par classe) pour en isoler la composante exogène et de ce fait mesurer son effet sur la réussite scolaire des élèves.

Les méthodes décrites ci-dessus rencontrent de plus en plus de succès. L'ouvrage récent et retentissant d'Angrist et Pischke, « Mostly Harmless Econometrics », contribue encore à asseoir l'idée de leur nécessité. Il est pourtant parfois difficile d'appliquer ces méthodes en économie du travail. Ainsi, il semble particulièrement ardu de trouver des sources de variations exogènes pour étudier les effets du syndicalisme ou des entreprises familiales.

Aux Etats-Unis, une centaine de travaux visant à estimer l'effet des syndicats sur les salaires ont été menés dans les années 1970, 1980 et 1990. Il a pourtant fallu attendre les travaux de DiNardo et Lee en 2004 pour qu'une méthode d'identification véritablement causale de cet effet soit trouvée. Pour estimer l'effet des syndicats sur les salaires, DiNardo et Lee utilisent les élections de certification organisées dans les entreprises américaines pour décider de la présence de syndicats. Les syndicats ne sont reconnus légalement que s'ils obtiennent la majorité des suffrages exprimés au cours de ces élections. Les auteurs comparent les entreprises avec syndicats dans lesquelles les élections ont été gagnées de justesse et celles sans syndicats dans lesquelles elles ont été perdues de justesse. A la limite, ces deux types d'entreprises sont rigoureusement identiques sauf en ce qui concerne la présence de syndicats et leur comparaison permet donc de mesurer l'effet causal des syndicats. En France, une telle stratégie est impossible puisqu'il n'y a pas besoin d'élections pour que les syndicats soient reconnus dans les entreprises. Il ne semble pas non plus possible d'exploiter des seuils légaux de taille d'entreprise au-delà desquels la présence de représentants du personnel serait autorisée. L'exploitation de tels seuils est rendue délicate parce qu'ils sont mal respectés. Ainsi, la loi autorise la présence de délégués du personnel dans tous les établissements de plus de 10 salariés mais en pratique il y a très peu des établissements ayant juste au-dessus de 10 salariés qui disposent de délégués du personnel, soit parce qu'aucun salarié ne veut devenir délégué, soit parce que les salariés ne sont pas informés de leurs droits en matière de représentation du personnel.

Pour les mêmes raisons, un certain nombre d'établissements de plus de 50 salariés n'ont pas de comité d'entreprise alors que la loi autorise leur existence dans ce cas.

Certains travaux spectaculaires sur les entreprises familiales sont parvenus à trouver de bons instruments. Bennedsen et al, 2007, utilisent ainsi le sexe de l'ainé de famille comme instrument des transmissions d'entreprises familiales. Les fondateurs d'entreprises (familiales) dont l'enfant aîné est un garçon ont davantage de chances que ce dernier reprenne l'entreprise. Le sexe des enfants étant parfaitement exogène du point de vue de l'entreprise, il peut être utilisé pour isoler la composante exogène des transmissions d'entreprises intrafamiliales et estimer l'effet de ces transmissions sur les performances des entreprises. De tels travaux restent cependant plus l'exception que la règle et la plupart des études reposent sur des stratégies d'identification moins parfaites (par Sraer et Thesmar, 2007 ou Bloom et Van Reenen, 2008).

Les recherches s'appuyant sur l'exploitation de sources de variations purement exogènes de la présence syndicale ou du fait d'être une entreprise familiale, restent donc rares. Le travail empirique proposé ici ne fait pas exception à la règle et n'utilise pas de telles variations. Il ne s'appuie pas non plus sur l'identification d'un modèle structurel. A ce titre, il peut être considéré comme étant de nature plus descriptive qu'un certain nombre de contributions récentes en économie empirique. Nous pensons malgré tout qu'il est possible de mener à bien un travail empirique intéressant et informatif malgré l'absence de bons instruments voire, dans certains cas, malgré l'absence d'interprétation causale des résultats. Dans ce contexte cette thèse utilise des techniques très variées pour contourner le problème d'absence de bons instruments :

Pour étudier la prime salariale liée à la présence syndicale, le chapitre 1 développe un modèle simple de négociation et en dérive deux prédictions cohérentes avec l'idée que cette prime salariale résulte d'un partage des rentes. Ces prédictions sont testées et validées empiriquement, ce qui renforce l'interprétation "causale" de la prime salariale estimée. Pour mesurer la prime salariale liée à la présence syndicale, la dernière partie du chapitre 1 propose également une exploitation la forme exponentielle qui caractérise la relation entre la taille des entreprises et leur probabilité d'avoir des syndicats. La méthode proposée se veut une adaptation à des fonctions continues des méthodes plus classiques d'exploitation de discontinuités pour identifier des effets

causaux (*regression discontinuity design* en anglais).

Le chapitre 2 est avant tout un exercice de mesure. Une technique d'estimation permettant de mesurer l'écart de salaire entre les délégués syndicaux et leurs collègues malgré l'absence de données directes y est développée. Au delà de son interprétation, c'est dans la mesure en elle-même que réside l'apport principal du chapitre 2.

Le chapitre 3 présente enfin une économétrie plus sophistiquée qui mobilise des données de panel de manière à pouvoir mieux contrôler pour l'hétérogénéité inobservée au niveau des salariés et des entreprises étudiées.

Cette thèse présente ainsi un riche répertoire de méthodes empiriques différentes qui permettent a priori de répondre aux objectifs poursuivis, malgré l'absence de pures sources d'exogénéité. Le chapitre 2 est à ce titre éclairant : pour parvenir à mesurer une différence de salaire suspectée d'être importante, une méthode originale a été développée.

Des sources de données riches et nombreuses sur les salariés et les entreprises en France

Cette thèse s'appuie sur l'utilisation de nombreuses sources de données sur les salariés et leurs entreprises. Sous l'impulsion des travaux de John Abowd et Francis Kramarz notamment, l'exploitation des données couplées sur les salariés et les entreprises (*Linked Employer Employee Data* en anglais) a connu un essor très important depuis la fin des années 1990 (Abowd et Kramarz, 1999 ; Abowd, Kramarz et Margolis, 1999). De telles données permettent notamment "de produire des analyses à l'équilibre du marché du travail et d'étudier conjointement le rôle de l'hétérogénéité, à la fois observée et inobservée, des salariés et des entreprises dans son fonctionnement" (Abowd, Kramarz et Woodcock, 2008) et ont été utilisées dans les trois chapitres de cette thèse. Les chapitres 1 et 2 reposent uniquement sur une utilisation en coupe de données couplées sur les salariés et leurs entreprises pour les années 2002, 2004 ou 2006. Le chapitre 2 en particulier propose une exploitation originale de ce type de données : les informations sur l'entreprise y sont utilisées pour produire des estimations relatives aux salariés. Enfin, le chapitre 3 propose une exploitation longitudinale de ces données dans l'esprit des travaux cités ci-dessus.

La source de données principale utilisée dans les trois chapitres de la thèse est l'enquête REPONSE sur les relations professionnelles et relations d'entreprises conduite par la Direction de l'Animation de la Recherche et des Etudes Statistiques (DARES) du ministère du travail. L'enquête REPONSE a eu lieu en 1993, 1999, 2005 et 2011. Chaque enquête REPONSE offre une photographie de la situation sociale des entreprises l'année de sa collecte. L'enquête REPONSE permet d'analyser les liens entre politiques de gestion des ressources humaines, modes d'organisation du travail, stratégies économiques et performances des entreprises, autour du thème des relations sociales. Elle permet de décrire le fonctionnement et l'articulation des institutions représentatives du personnel au sein des établissements et d'évaluer les rôles respectifs que les acteurs sociaux leur attribuent dans la pratique⁹. L'enquête REPONSE a la particularité de croiser les points de vue des acteurs, en interrogeant à la fois des représentants de la direction, des représentants du personnel et des salariés. Enfin, un panel d'établissements d'entreprises est présent sur plusieurs années de l'enquête, ce qui permet également d'analyser des évolutions comme cela sera le cas dans le chapitre 3.

Le travail proposé ici repose principalement sur l'exploitation de l'enquête de 2004 portant un échantillon aléatoire de 2929 établissements de plus de 20 salariés. Dans chacun de ces établissements, un représentant de la direction est longuement interrogé (les entretiens durent fréquemment plus de 2 heures) sur le fonctionnement de l'établissement et de l'entreprise et il indique en particulier quelles sont les instances représentatives du personnel présentes dans l'établissement. Les travaux d'Askenazy et Grenet, 2009, suggèrent que les informations fournies par les managers sont globalement plutôt de bonne qualité mais moins fiables concernant la représentation syndicale au niveau de l'entreprise. Le travail proposé dans cette repose cependant uniquement sur les informations sur la présence syndicale au niveau de l'établissement qui est vraisemblablement mieux connue des managers¹⁰. 1970 des établissements de

⁹Voir l'excellent ouvrage collectif rédigé sous la direction de Catherine Bloch-London, Thomas Amossé et Loup Wolff (2008) pour un ensemble de travaux donnant une bonne idée des opportunités de recherche offertes par l'enquête REPONSE.

¹⁰Dans le cas contraire, cela signifierait que notre variable d'intérêt est sujette à de l'erreur de mesure. Les effets estimés de la présence syndicale sur d'autres variables seraient alors systématiquement biaisés vers le bas

l'échantillon initial disposent d'instances représentatives du personnel et un représentant du personnel est alors également interrogé (voir chapitre 2). Enfin, environ 7000 salariés dans les 2929 établissements de l'enquête ont également répondu à un questionnaire écrit. On a ainsi accès aux informations usuelles de ces salariés (sexe, diplôme obtenu, âge, ancienneté professionnelle, catégorie socioprofessionnelle, etc.) et on sait également s'ils sont syndiqués. Des données sur les salaires des enquêtés provenant de sources administratives sont également fournies par la DARES. Une étude fine des rémunérations est ainsi rendue possible.

La deuxième source de données françaises permettant de savoir si des syndicats sont présents dans les entreprises inclut les Enquêtes sur le Coût de la Main d'Oeuvre et la Structure des Salaires (ECMOSS) ou Enquête sur la Structure des Salaires (ESS). Ces enquêtes sont nettement moins fournies en termes d'information sur la présence syndicale mais elles portent sur des échantillons plus gros : plus de 100000 salariés dans environ 15000 établissements de plus de 10 salariés. L'Enquête ESS de 2002 est utilisée dans le chapitre 1 pour produire des estimations précises de l'écart de salaire entre établissements avec et sans syndicats. L'enquête ECMOSS de 2006 est également utilisée afin d'étudier les liens entre négociation de branche et d'entreprise. Pour ce faire, elle a été appariée avec une source de donnée nouvelle sur les minima de branche mise en place récemment par le Ministère du Travail.

Afin de disposer d'informations sur les performances des entreprises, l'enquête REPONSE a été appariée dans les chapitres 1 et 3 à la base de donnée DIANE fournie par le bureau Van Dijk. DIANE contient des informations comptables (bilan et compte de résultat) publiquement disponibles pour un grand nombre d'entreprises françaises. Ces informations permettent par exemple de construire des indicateurs de productivité du travail ou de performance financière.

Les liens entre présence syndicale ou capitalisme familial et protection de l'emploi ont été étudiés à partir des Déclaration Mensuelles de Mouvement de Main d'Oeuvre (DMMO) obligatoires dans les établissements de plus de 50 salariés et des Enquêtes sur les Mouvements de Main d'Oeuvre (EMMO) portant sur le champ des établissements de 10 à 49 salariés. Les données DMMO-EMMO ont été appariées aux données de l'enquête REPONSE afin de constituer une base de données fournissant conjointement

tement des informations sur la gestion de la main d'œuvre et la présence de syndicat ou le statut familial d'une entreprise.

Enfin, le chapitre 3 repose en partie sur l'exploitation des Déclarations Annuelles de Données Sociales (DADS) sur longue période¹¹. Ces données ont permis de récupérer des informations sur l'ensemble des salariés ayant travaillé dans les établissements présents dans les enquêtes REPONSE de 1998 et 2004. Un sous-échantillon des DADS – le panel DADS – permet également d'identifier les salariés d'une année à l'autre et de retracer leurs carrières professionnelles. Le panel DADS a été utilisé dans le chapitre 3 pour comparer en niveau et en évolution la rémunération des salariés qui partent et celle de ceux qui restent dans leur entreprise à la suite d'un changement de propriété (par exemple lorsqu'une entreprise familiale devient non familiale).

Plan de thèse

Cette thèse s'articule autour de 3 chapitres. Le chapitre 1 compare les conditions d'emploi dans les entreprises avec et sans syndicats. Le chapitre 2 compare, au sein des entreprises avec syndicats, les conditions d'emploi des délégués syndicaux à celles de leurs collègues (syndiqués ou non syndiqués). Le chapitre 3 compare les conditions d'emploi dans les entreprises familiales et non familiales. Par "conditions d'emploi", nous entendons salaire et protection contre le licenciement¹². Les 3 chapitres ont une certaine unité dans leur construction : ils commencent par une étude poussée des rémunérations et se poursuivent par une étude plus succincte des licenciements.

Chapitre 1 : Que font les syndicats ?

La première partie du chapitre 1 examine les différences de salaire entre les entreprises dans lesquelles il y a des syndicats et celles dans lesquelles il n'y en a pas. Le choix du salaire comme variable principale d'intérêt se justifie aisément. D'abord les syndicats favorisent très souvent les salaires lors des négociations (Clark et Os-

¹¹Cette exploitation a été rendue possible depuis peu pour des chercheurs extérieurs à l'INSEE. L'INSEE a en effet mis en place à partir de 2010 un Centre d'Accès Sécurisé aux Données permettant à des chercheurs en ayant fait la demande et obtenu le droit de se connecter aux données de l'INSEE depuis leur propre institution via une interface dédiée

¹²Les conditions de travail ne sont en revanche pas étudiées

wald, 1993). Ensuite, la négociation sur les salaires est obligatoire en France dès lors qu'il y a des syndicats dans une entreprise. Enfin, l'objectif est de comprendre si les syndicats parviennent à modifier le partage de la valeur ajoutée en leur faveur en s'appropriant une partie des profits des entreprises dans lesquelles ils sont présents. Si tel est le cas, cela devrait apparaître dans le niveau des salaires.

Le chapitre commence par estimer des modèles de régressions standards qui contrôlent pour les caractéristiques des entreprises à partir des données l'Enquête Structure des Salaires de 2002. La richesse des données permet d'estimer avec une bonne précision que la prime salariale associée à la présence syndicale au niveau de l'établissement est de l'ordre de 2 à 3%. Cette estimation est beaucoup plus faible que celles obtenues avec des techniques équivalentes en Espagne, au Royaume-Uni ou aux Etats-Unis, ce que nous interprétons comme une conséquence de la très faible contrainte légale pesant sur la représentation syndicale dans les entreprises françaises. Cette faible contrainte permet en effet aux syndicats d'être présents dans un relativement grand nombre d'entreprises, mais ils y sont en moyenne peu puissants.

Afin de déterminer si la prime salariale liée à la présence syndicale résulte d'un phénomène non-concurrentiel, nous construisons ensuite un modèle de négociation simple aboutissant sur deux prédictions principales qui peuvent être testées empiriquement en utilisant les riches informations disponibles dans l'enquête REPONSE de 2004. Le modèle prédit que si la prime salariale liée à la présence syndicale résulte d'une négociation intra-entreprise, elle devrait augmenter à la fois avec le pouvoir de négociation des syndicats et avec les rentes disponibles dans les entreprises où ils sont présents. Ces prédictions sont validées en utilisant le pourcentage de syndiqués dans chaque entreprise comme proxy pour le pouvoir de négociation des syndicats et la part de marché des établissements comme un proxy pour les rentes dont ils peuvent potentiellement bénéficier. La prime salariale liée à la présence syndicale est ainsi nulle parmi les établissements qui ont une faible part de marché ou dans lesquels il y a peu de syndiqués. Elle est en revanche de l'ordre de 8% parmi les établissements dont la part de marché dépasse 50% et de l'ordre de 12% parmi les établissements déclarant avoir plus de 10% de salariés syndiqués. Ce dernier résultat montre que lorsque les syndicats parviennent à s'organiser, ils semblent obtenir des gains de sa-

lares correspondant à ceux trouvés par les études menées dans les pays anglo-saxons. Enfin, l'inclusion d'un contrôle additionnel pour la productivité du travail au niveau de l'entreprise dans les régressions ne modifie pas ces résultats.

La deuxième section du chapitre complète la première partie et fournit des résultats empiriques sur le lien entre la présence syndicale et (i) le rôle de la négociation de branche, (ii) la structure des salaires, (iii) la protection de l'emploi, les départs volontaires et l'ancienneté des salariés dans leur établissement. Les résultats principaux sont les suivants : (i) la négociation de branche ne semble pas corrélée avec la négociation d'entreprise (il n'y a pas plus de syndicats dans les entreprises des branches où ils sont forts) et n'affecte pas la prime salariale liée à la présence syndicale en entreprise, (ii) la compression des salaires liée à la présence syndicale est faible et ce sont les ouvriers et les salariés âgés qui paraissent bénéficier le plus des syndicats, (iii) Dans les entreprises avec syndicats par rapport à celles sans syndicats : les taux de départs volontaires sont en moyenne inférieurs d'un tiers, les taux de licenciement semblent également être inférieurs de 15%, enfin, l'ancienneté est supérieure d'environ un an et demi. De nombreuses interprétations sont proposées pour ces résultats au cours du chapitre.

Dans une troisième section, nous tentons de mettre en place une stratégie économétrique plus originale pour mesurer l'effet causal de la présence syndicale sur les salaires. L'idée proposée consiste à utiliser la relation très particulière qui lie la probabilité d'avoir un syndicat à la taille des entreprises. Cette relation, très bien prédite par un modèle simple expliquant la présence syndicale, peut permettre d'isoler des variations de la présence syndicale qui ne dépendent pas du salaire. L'objectif est ensuite d'exploiter ces variations comme un instrument pour la présence syndicale dans les équations de salaire. Une difficulté importante est que la taille des entreprises est elle-même fortement endogène dans les équations de salaire. Des propositions sont faites pour contourner ce problème et identifier malgré tout l'effet causal de la présence syndicale sur les salaires sous certaines hypothèses.

Chapitre 2 : Le rôle des représentants syndicaux

Le chapitre 2 s'attaque à une question inexplorée dans la littérature et se propose d'étudier l'interaction entre les représentants syndicaux et les employeurs, tant sur le plan théorique et un point de vue empirique. Nous commençons par présenter les différentes approches théoriques du fait syndical existant dans la littérature. A partir de cette revue de littérature, nous donnons deux raisons principales ayant motivé d'un point de vue théorique l'étude des délégués syndicaux. D'abord, la négociation entre un délégué syndical et un employeur est particulière parce que le délégué syndical est à la fois négociateur et sous l'autorité de l'employeur en tant que salarié. Il peut donc être soumis à des pressions ou des offres de la part de l'employeur qui ne sont pas prises en compte dans les modèles de négociation classiques. Ensuite, un syndicat est comme toute organisation soumis à des problèmes d'agence. Dans le contexte institutionnel français, le contrôle exercé par les salariés syndiqués ou non syndiqués sur le délégué syndical peut être très faible, laissant ainsi des marges de manœuvre pour ce dernier. La partie théorique du chapitre 2 se termine par un premier modèle de négociation intra-entreprise qui prend en compte ces deux spécificités (le modèle est à ce stade une version préliminaire)).

Un travail empirique important est proposé dans la deuxième partie du chapitre. Nous étudions l'écart salarial entre les délégués syndicaux et leurs collègues à partir de l'enquête REPONSE de 2004. Il est demandé aux salariés présents dans l'enquête s'ils sont syndiqués, mais nous ne savons en revanche pas quels salariés syndiqués sont également délégué syndical. De leur côté, les managers interrogés pour l'enquête indiquent le nombre de délégués syndicaux et de salariés syndiqués dans leur établissement. Cette information est utilisée pour construire, dans chaque établissement, un indicateur de la probabilité qu'un salarié syndiqué tiré au hasard soit également délégué syndical. Cet indicateur est ensuite utilisé pour décomposer le différentiel de salaire directement observable entre salariés syndiqués et non syndiqués en deux différentiels : un premier différentiel entre les délégués syndicaux et les salariés non syndiqués et un second différentiel entre les salariés syndiqués non délégués et les salariés non syndiqués. Les estimations produites à partir de modèles de régression qui incluent des variables de contrôle pour les caractéristiques observables des salariés

et des effets fixes par établissement montrent que les salaires des délégués syndicaux sont 10% inférieurs à ceux des autres salariés, que ces derniers soient syndiqués ou non. Des tests supplémentaires indiquent que cet écart de 10% peut être compris comme le résultat d'une interaction stratégique non-coopération entre les employeurs et les délégués syndicaux, en accord avec les prédictions du modèle.

La partie empirique du chapitre se poursuit par une étude des représentations des représentants du personnel interrogés dans le troisième volet de l'enquête REPONSE concernant leur carrière. Il est en effet demandé aux représentants du personnel s'ils considèrent que leur rôle de représentant a été un moteur ou un frein pour leur carrière ou s'il a été sans effet. Les réponses qu'ils donnent confirment directement l'étude des salaires menée précédemment et renforce l'idée selon laquelle les salaires plus faibles pour les délégués peuvent être interprétés comme le résultat d'une discrimination.

Nous tentons ensuite de montrer que la protection contre le licenciement offerte par la loi aux représentants du personnel est peu efficace, suggérant que les salaires plus faibles des délégués ne peuvent être interprétés comme une compensation directe en échange d'une meilleure protection de l'emploi. Le chapitre se termine par une présentation du fonctionnement des procédures juridiques (nombreuses) pour discrimination syndicale.

Chapitre 3 : Travailler dans une entreprise familiale, moins bien rémunéré mais mieux protégé ?

Ce chapitre étudie la gestion de la main d'œuvre, les rémunérations et la protection de l'emploi dans les entreprises familiales et non familiales¹³.

À partir de données couplées sur les employeurs et leurs salariés pour l'année 2004, nous commençons par montrer que les salaires sont en moyenne inférieurs dans les entreprises familiales. L'écart brut de salaire entre entreprises familiales et non familiales est de l'ordre de 20%. En revanche, lorsqu'on contrôle pour les différences de taille, de secteur d'activité, de région et d'âge entre les entreprises familiales et non familiales, ainsi que pour les différences de caractéristiques observables de leurs salariés

¹³Le chapitre 3 est issu d'un travail en collaboration avec Andrea Bassanini, Eve Caroli et Antoine Reberioix. Il se veut davantage construit comme un article de recherche.

(catégorie socioprofessionnelle, sexe et âge notamment), l'écart de salaire moyen entre les deux types d'entreprises n'est plus que de l'ordre de 5%. Nous trouvons par ailleurs que les syndicats sont beaucoup moins bien implantés dans les entreprises familiales (probablement du fait de leurs pratiques managériales paternalistes, comme suggéré par Philippon, 2004), que les entreprises familiales ont des modes d'organisations moins modernes et qu'elles sont moins innovantes. Leur productivité apparaît également inférieure (comme l'ont également montré Bloom et Van Reenen, 2006). Ces dernières différences pourraient expliquer l'écart résiduel de salaire entre entreprises familiales et non familiales. Cela n'est cependant pas le cas : lorsque nous contrôlons pour les différences de présence syndicale, de mode d'organisation, les différences en termes d'adoption de nouvelles technologies ou les différences de productivité, nous trouvons toujours un écart de salaire de l'ordre de 3% entre entreprises familiales et non familiales.

Comment cet écart peut-il s'expliquer ? Il pourrait d'abord être dû à des différences entre les caractéristiques non observables (par le chercheur) des entreprises familiales et non familiales. Cela ne semble pas être le cas. A partir de données de panel portant sur les années 1998 et 2004, nous montrons que les entreprises qui changent de propriété entre 1998 et 2004 connaissent des évolutions de salaires différentes de celles qui ne changent pas de propriété. Ainsi, la variation de salaires moyens entre 1998 et 2004 au sein des entreprises qui passent de familiales à non familiales est 5% supérieure à la variation de salaires équivalente pour les entreprises qui n'ont pas changé de type de propriété. Le phénomène est symétrique : les entreprises qui passent de non familiales à familiales entre 1998 et 2004 ont eu des évolutions de salaires moyens inférieures de 5% à celles qui n'ont pas changé de type de propriété.

Ce dernier écart pourrait encore s'expliquer par les différences de caractéristiques non observables entre les *salariés* des entreprises familiales et non familiales. Cela apparaît en partie vrai. Lorsqu'une entreprise passe de non familiale à familiale, les salariés situés dans le haut de la distribution des salaires tendent à quitter l'entreprise et ils sont remplacés par des salariés ayant des salaires en moyenne inférieurs. L'inverse se produit pour les entreprises passant de familiale à non familiale : les salariés situés dans le bas de la distribution des salaires quittent davantage ces entreprises et sont

remplacés par des salariés en moyenne mieux payés. Il y a donc un appariement entre salariés et entreprises : les salariés les plus compétents (ou les plus motivés) vont davantage dans les entreprises non familiales qui sont plus modernes, plus productives et leur offrent sans doute des perspectives de carrières plus prometteuses. L'inverse se produit pour les salariés les moins compétents (ou les moins motivés). Ce phénomène d'appariement n'explique cependant pas en intégralité l'écart de salaire résiduel entre entreprises familiales et non familiales : lorsqu'on se concentre uniquement sur les salariés qui sont restés dans la même entreprise entre 1998 et 2004, on obtient toujours un écart statistiquement significatif de 3% (resp. -3%) entre les évolutions de salaire dans entreprises qui sont passées de familiales à non familiales (resp. de non familiales à familiales) et les évolutions de salaire dans les entreprises n'ayant pas changé de propriété.

En parallèle des moins bons salaires qu'elles offrent, les entreprises familiales apparaissent mieux à même de protéger les salariés contre le licenciement. Les taux de licenciement y sont plus faibles, y compris lorsqu'on contrôle par les caractéristiques observables des entreprises (sur données transversales en 2004) et pour l'hétérogénéité inobservée au niveau des entreprises (en panel, entre 1998 et 2004). Ces résultats sont confirmés par les déclarations des salariés eux-mêmes qui se sentent plus en sécurité vis à vis du licenciement dans les entreprises familiales en 2004. Lorsqu'elle sont amenées à réduire leur nombre de salariés d'un trimestre au suivant, les entreprises familiales procèdent plus que les autres entreprises par réduction de leur nombre habituel d'embauches et moins par augmentation de leur nombre habituel de licenciement. Les taux de licenciements plus faibles dans les entreprises familiales ne reflètent donc pas uniquement leur moindre besoin à réduire la main d'œuvre dans les périodes difficiles. Il semble à l'inverse résulter également d'une stratégie des entreprises familiales visant à mieux stabiliser la main d'œuvre et à répondre à leurs besoins d'ajustement via le moins de licenciements possible.

Y a-t-il un lien direct entre salaires et protection de l'emploi ? En d'autres termes, les salaires plus faibles dans les entreprises familiales sont-ils des *différences compensatrices* en échange d'une meilleure protection de l'emploi ? Pour répondre à cette question, nous nous concentrons sur les entreprises ayant changé de propriété entre

1998 et 2004 et nous introduisons directement la variation de taux de licenciement entre 1998 et 2004 comme variable explicative supplémentaire dans les régressions de salaire en différence première. Si la meilleure protection de l'emploi est effectivement une différence compensatrice pour les moins bons salaires dans les entreprises familiales, les variations de salaires devraient être négativement corrélées aux variations de la protection contre le licenciement et notre estimation de la pénalité salariale dans les entreprises familiales devrait être réduite dans cette dernière spécification. C'est effectivement ce que nous observons : l'écart de salaire entre entreprises familiales et non familiales n'est plus que de 2% lorsque l'on contrôle pour les différences de protection contre le licenciement, et il n'est plus statistiquement significatif.

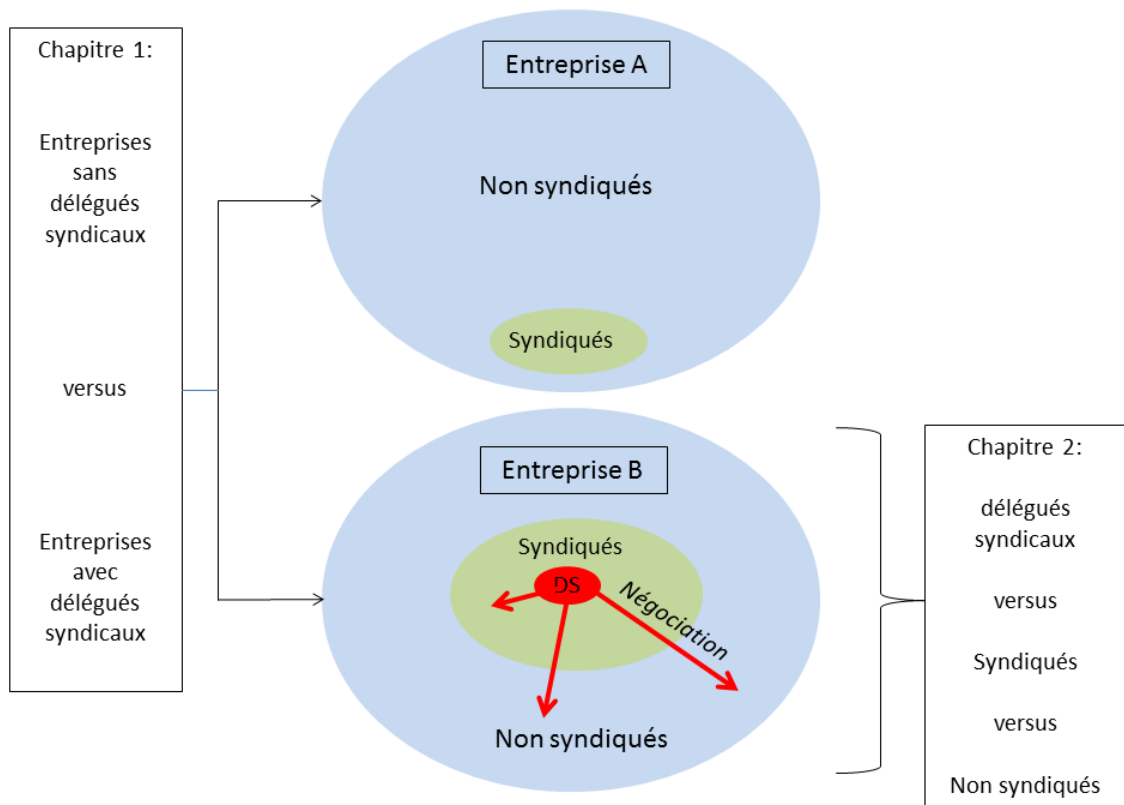
Si les entreprises familiales peuvent se permettre d'offrir de moins bons salaires, c'est donc effectivement en partie parce qu'elles sont en mesure d'offrir une meilleure protection contre le licenciement. Mais ces différences de traitement engendrent logiquement des différences de main d'œuvre : les salariés les moins compétents (ou les moins motivés) vont davantage travailler dans les entreprises familiales et vice versa.

Première partie

SYNDICATS, NÉGOCIATIONS ET SALAIRES

La première partie de cette thèse étudie l'action des syndicats en France. Le premier chapitre examine les différences entre entreprises avec et sans syndicats en termes de salaire et de conditions d'emploi tandis que le second se concentre sur le fonctionnement de la négociation et sur la situation des différents acteurs dans les entreprises avec syndicats. La démarche adoptée est résumée dans le schéma 1 ci-dessous. Notre principale contribution est d'offrir un panorama du fonctionnement et des effets de la négociation salariale en entreprise. Dans un contexte de crise du syndicalisme, le travail présenté débouche potentiellement sur plusieurs pistes pour relancer la négociation en entreprise, pour la rendre davantage démocratique, et pour en augmenter les effets positifs tout en en limitant les effets négatifs.

FIGURE 1 – *Contributions des chapitres 1 et 2*



Notes: "DS" signifie Délégués Syndicaux

Il est difficile d'étudier les syndicats d'un point de vue économique sans apporter auparavant quelques éléments de contexte. On ne peut en effet nier les très fortes spécificités nationales liées au syndicalisme. Dans la plupart des pays occidentaux,

les syndicats se sont développés progressivement au cours du XX^{ème} siècle. Leur fonctionnement actuel ne peut se comprendre sans une étude approfondie du contexte historique (national) dans lequel ils se sont construits.

Un certain nombre de nos résultats, comme par exemple les comparaisons que nous faisons entre les différents syndicats (dans le chapitre 2 notamment), ne peuvent ainsi être interprétés sans une connaissance minimale du contexte syndical français. Lorsqu'ils sont nécessaires, les éléments de contextes essentiels sont donnés au fil du texte. La suite de cette introduction propose cependant un aperçu général de l'histoire des syndicats français et du fonctionnement des instances représentatives du personnel.

Brève Histoire des syndicats français :

L'histoire du syndicalisme en France commence en 1864 avec l'abrogation de la loi Le Chapelier de 1791 interdisant toute association entre personnes d'un même métier. Vingt ans plus tard, en 1884, la loi Waldeck-Rousseau légalise les syndicats et définit leur mode de constitution : "Les syndicats ou associations professionnelles, même de plus de vingt personnes exerçant la même profession, des métiers similaires ou des professions connexes, concourant à l'établissement de produits déterminés, pourront se constituer librement sans l'autorisation du gouvernement". Il faut encore attendre dix ans pour voir naître la première grande centrale syndicale française lors du congrès fondateur de la Confédération Générale des Travailleurs (CGT) à Limoges en 1895.

Au cours du XX^{ème} siècle, les syndicats vont se multiplier, donnant ainsi naissance à l'une des grandes spécificités du syndicalisme français : le pluralisme syndical. La diversité et la complexité du paysage syndical français sont exceptionnelles, tant à l'échelle européenne qu'à l'échelle mondiale. On dénombre en France cinq grandes centrales syndicales rendues représentatives de "plein droit" par l'arrêté du 31 mars 1966 : la Confédération Générale des Travailleurs (CGT), la Confédération Française Démocratique du Travail (CFDT), la CGT-Force Ouvrière (CGT-FO), la Confédération Française des Travailleurs Chrétiens (CFTC) et la Confédération Générale des

Cadres (CFE-CGC). Viennent ensuite deux autres organisations syndicales plus récentes : l'Union Nationale des Syndicats Autonomes (UNSA) et l'union du Groupe des dix (G10) et de Solidaires, Unitaires, Démocratiques (SUD) qui forment l'organisation SUD-G10. Ces sept organisations sont toutes "généralistes", c'est-à-dire qu'elles recouvrent l'ensemble des secteurs d'activités de l'économie française. L'UNSA et SUD-G10 ne pèsent véritablement dans le monde syndical que depuis le milieu des années 90, et jusqu'à ce qu'il soit abrogé en 2008, ils ne disposaient pas du droit *irréfragable* de représentation des salariés qui rendait les cinq premières centrales représentatives *de jure* et leur donnait le monopole des candidatures au premier tour des élections professionnelles.

A ces sept organisations d'envergure nationale s'oppose enfin une myriade de syndicats professionnels qui sont implantés au niveau d'un secteur ou d'une branche d'activité ou même au niveau des entreprises et que l'on appelle syndicats indépendants ou autonomes.

Les caractéristiques des grandes centrales syndicales :

Afin de décrire de façon synthétique le paysage syndical français, nous distinguons les sept centrales syndicales précédemment citées en quatre groupes : la CGT et la CGT-FO toutes deux issues du mouvement ouvrier, marquées par les idées socialistes et anarchiques du XIX^{ème} siècle et imprégnées d'une idéologie de lutte des classes, la CFDT et la CFTC qui émanent du catholicisme social, la CGC qui représente les cadres, et enfin l'UNSA et SUD-G10 dont la naissance récente témoigne probablement de l'incapacité des autres syndicats à satisfaire les attentes des salariés.

La CGT et la CGT-FO :

C'est l'adoption de la célèbre charte d'Amiens en 1906 (voir citation en introduction) qui, plus que le congrès fondateur de Limoges de 1895, marque l'avènement de la CGT. La charte d'Amiens illustre le contexte idéologique et les objectifs du syndicalisme. Elle prône clairement l'indépendance du syndicat vis-à-vis de tout pouvoir politique et la mise en place d'un syndicalisme d'opposition, de lutte et de revendica-

tion. Ces deux grands principes du syndicalisme français (autonomie par rapport aux partis politiques et vocation pour la lutte systématique contre la classe dominante) furent le sujet d'âpres débats et de violentes disputes tout au long du XX^{ème} siècle. Ils structurent, pour ainsi dire, l'histoire des syndicats en France.

En contradiction avec ses principes, la CGT entretient ainsi des liens étroits avec les partis ouvriers et communistes (SFIO, Parti Communiste Français) dans l'entre-deux-guerres et après 1945. C'est ce qui pousse un certain nombre de dissidents résolument pour l'indépendance du syndicat, à faire scission et à créer la CGT-FO en 1948 (voir figure 2). Ce nouveau syndicat, bien que ses membres soient toujours pour la plupart de fervents communistes, rompt tout contact avec le monde politique et entend mener la cause syndicale de manière indépendante. Si l'on en croit Dominique Andolfatto et Jean-Yves Sabot¹⁴ "cela explique bien des traits de son identité future : le choix de l'isolement, le repli sur soi, parfois un complexe d'infériorité, une forte autonomie des composantes...". Idéologiquement, la CGT-FO se construit par opposition à la CGT, elle est d'abord anticomuniste et adopte une politique plus contractuelle que la CGT. Assez vite et encore aujourd'hui, elle est envahie par le trotskisme. Lors de la scission, la CGT-FO récupère environ 15% des cgtistes, les autres adhérents préférant rester fidèle à l'organisation historique. L'indépendance vis-à-vis du PCF continue de faire débat à la CGT au fil des événements qui émaillent la fin du XX^{ème} siècle. Après des moments difficiles pour la centrale dans les années cinquante dans un climat d'anticommunisme prononcé, la CGT et le syndicalisme en général connaissent une relative embellie de 1960 à 1977 dans un contexte idéologique plutôt favorable au progrès social. L'échec de l'union de la gauche aux législatives de 1978 est vécu comme un bouleversement à la CGT qui était partie prenante dans le programme commun. Ressurgit à nouveau la question de l'indépendance de la centrale qui n'aurait peut-être pas dû être tant ébranlée par la défaite de l'union de la gauche. La CGT s'isole alors en refusant de condamner l'invasion de l'Afghanistan par les troupes soviétiques en décembre 1979 puis l'arrestation par les militaires des syndicalistes polonais de Solidarnosc deux ans plus tard. Cette dernière affaire ne va pas sans faire de remous au sein de la CGT qui connaît à nouveau de fortes tensions

¹⁴voir Les syndicats en France, sous la direction de Dominique Andolfatto, 2004

internes. L'organisation reculera finalement neuf mois plus tard et exigera la libération des syndicalistes de Solidarnosc mais elle poursuit malgré tout dans la "voie communiste". Bien après l'effondrement du communisme, il faut attendre 1995 pour voir la CGT commencer à renoncer à ses attaches politiques (à une époque où le PCF n'a de toute façon plus guère de poids sur le plan politique), et 2001 pour voir Bernard Thibault quitter le conseil national du PCF et ainsi renoncer à un cumul des mandats à la CGT et au PCF qui était jusqu'alors le lot commun des dirigeants de la CGT. La CGT adhère enfin en 1999 à la CES (Confédération Européenne des Syndicats) et tente ainsi d'adopter la voie de la négociation plutôt que celle de la contestation. Après un siècle de débats idéologiques internes, la CGT tente, non sans difficultés, de prendre une orientation plus pragmatique à l'heure où ses vieux débats internes sont de toute façon très éloignés de la majorité des salariés français qu'elle est censée représenter. Elle reste cependant le premier syndicat français juste devant la CFDT.

La CFDT et la CFTC :

La CFTC voit le jour au lendemain de la première guerre mondiale en 1919 dans le but de développer une alternative d'obédience chrétienne au syndicalisme de classe qu'incarne la CGT. D'après Antoine Bevort (in Andolfatto, 2004), "A la Libération, la CFTC est largement dominée par une CGT au faite de sa puissance. Elle compte quinze fois moins d'adhérents, surtout des employés, son influence dans le monde ouvrier est marginale et l'organisation reste profondément marquée par le conservatisme du monde catholique". L'obédience chrétienne de la CFTC est alors remise en question et il se crée au sortir de la guerre le groupe de réflexion "reconstruction" conduit par une minorité d'adhérents désirant définir une nouvelle orientation syndicale pour la centrale. Les minoritaires deviennent très vite majoritaire et, dès lors, ce n'est plus qu'une question de temps pour que la déconfessionnalisation de la CFTC devienne réalité. Celle-ci s'opère finalement en 1964 et la CFTC devient la CFDT. Une poignée d'adhérent (environ 10%) choisissent cependant de poursuivre la CFTC. Cette dernière, quoique discrète et n'ayant jamais eu de véritable poids dans les négociations

collectives de grande ampleur, est parvenue à conserver environ 10% de l'audience¹⁵ syndicale totale, notamment grâce à certaines entreprises françaises traditionnelles et familiales dans lesquelles elle est bien implantée, et jusqu'à la loi du 20 Août 2008, sa subsistance n'était pas menacée. Ses objectifs restent assez traditionnels et sont essentiellement centrés autour de l'importance de la famille et notamment de l'équilibre entre travail et famille. De son côté, affirme Antoine Bevort, "le courant de pensée qui a transformé la CFTC en CFDT est devenu un acteur de premier plan dans le débat social, un laboratoire qui n'a de cesse d'inventer une nouvelle façon de faire du syndicalisme". Dès sa création en 1964, la CFDT se veut en effet porteuse "d'un syndicalisme idéologique", selon le préambule de ses statuts de 1964. Celui-ci va s'incarner progressivement sous la forme du socialisme autogestionnaire.

Dans le sillage des événements de mai 1968¹⁶, l'idéologie du socialisme autogestionnaire cdtiste séduit. La CFDT connaît alors une sorte "d'âge d'or" et voit son nombre d'adhérents grimper en flèche (figure 2), ce qui lui permet de devenir véritablement l'un des deux grands syndicats français avec la CGT. Cependant, le syndicalisme autogestionnaire n'est pas envisagé de façon unanime au sein même de la CFDT, et des courants plus radicaux imprégnés de l'idéologie marxiste de lutte des classes font leur apparition ; tant est si bien qu'Eugène Descamps, alors secrétaire général, se demande "s'il n'est pas devenu le capitaine impuissant d'un bateau fou"¹⁷. "Le bateau fou" va résister aux vagues et même être l'un des acteurs du dialogue social des années soixante-dix jusqu'au début de la grande crise du syndicalisme en France initiée en 1978 avec la défaite de la gauche aux législatives. La CFDT abandonne alors une stratégie qu'elle considère trop subordonnée au relais politique et prend une certaine indépendance. Elle va alors petit à petit opposer au syndicalisme idéologique débridé de son passé un pragmatisme rigoureux et totalement dénué d'ambitions politiques. En se recentrant désormais sur les préoccupations concrètes de ses

¹⁵L'audience électorale d'un syndicat correspond au pourcentage des suffrages exprimés qu'elle recueille lors des élections Prud'homales et des élections aux commissions administratives paritaires.

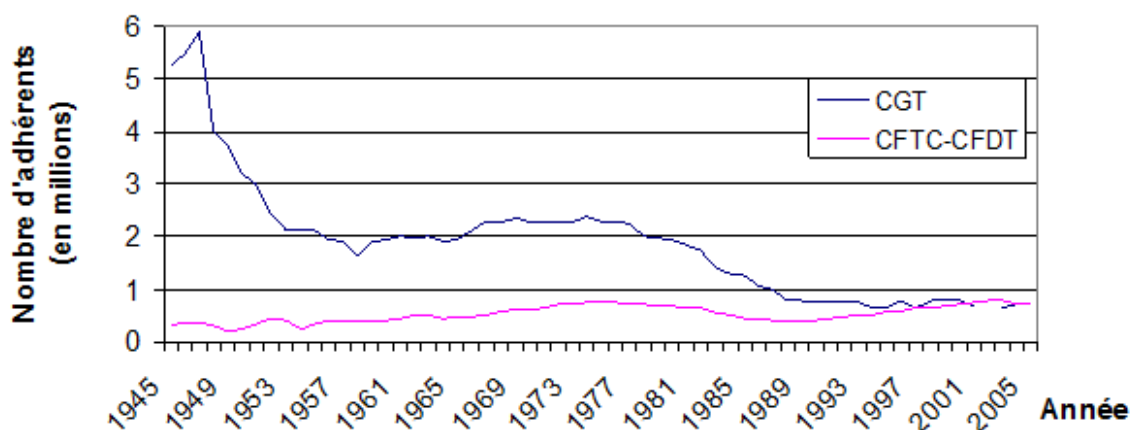
¹⁶La CFDT se met beaucoup plus vite "dans le coup" des événements de mai 1968 que la CGT qui déclare le 7 Mai 1968, par l'intermédiaire de son secrétaire général G. Ségué, que la confédération n'a "aucune complaisance envers les éléments troubles et provocateurs qui dénigrent la classe ouvrière, l'accusant d'être "embourgeoisée" et ont l'outrancière prétention de venir lui inculquer la "théorie révolutionnaire" et diriger son combat. (Citation donnée par Harmel, 1982, p. 59).

¹⁷Frank Georgi, Eugène Descamps, chrétien et syndicaliste, Paris, L'Atelier, 1997, p.214.

membres, la CFDT devient alors un syndicat dit “d’adhérent”. Elle devient une organisation sans pré-requis idéologique, fait de la syndicalisation une de ses priorités et, par l’intermédiaire de politiques d’adhésion adaptées, elle parvient à limiter un peu les dégâts de la grande vague de désyndicalisation des années quatre-vingt et semble pouvoir se prévaloir aujourd’hui d’être la première centrale syndicale devant la CGT en terme de nombre d’adhérents. Enfin, à partir de la fin des années quatre-vingt, la CFDT devient résolument réformiste. Elle abandonne ainsi définitivement “l’esprit de la lutte” et va préférer la négociation à la confrontation. La CFDT se démarque par exemple singulièrement lors du mouvement social de novembre et décembre 1995 en soutenant la majeure partie du plan Juppé sur la refonte de la Sécurité Sociale. Par la suite, elle se montre prête à faire “des compromis” concernant la réforme des retraites et parvient par le biais de la négociation à un accord le 15 Mai 2003. Deux mois plus tard elle accepte une réforme du régime des intermittents du spectacle, alors que ses syndicats professionnels sont très minoritaires dans la branche. Nicole Notat puis François Chérèque au secrétariat général de la CFDT appliquent avec beaucoup de rigueur la ligne de conduite que s’est donnée la centrale. Si la stratégie de la négociation s’avère souvent payante, en faisant parfois cavaliers seuls et en acceptant de faire certains compromis qui ne font pas l’unanimité¹⁸, les cdtistes soulèvent aussi des mécontentements tant chez les autres syndicats que dans leurs propres rangs. Ainsi, suite aux “coups d’éclats” de 2003, les effectifs de la CFDT ont baissé en 2004 et en 2005, ce qui ne s’était pas produit depuis 1989. Par ailleurs en adoptant pour la première fois une démarche syndicale plus consensuelle, la CFDT amorce une rupture avec l’une des grandes caractéristiques du syndicalisme français qui est d’être un syndicalisme de lutte. Pour preuve de cette particularité, l’incompréhension de nos voisins Européens à notre égard. “Jamais, depuis le front populaire, la France n’a réussi ses réformes sans une crise sociale majeure” déclarait le quotidien Genevois *Le Temps* en 2003 tandis que le journal *De Volkskant* ironisait : “tandis qu’un Néerlandais considère un compromis comme un signe d’ouverture et de souplesse, un Français l’associe au renoncement à ses principes”.

¹⁸Le droit irréfutable de représentativité dont bénéficiaient la CGT, la CFDT, la CGT-FO, la CFTC et la CGC jusqu’en 2008 leur permettait de signer des accords nationaux ou de branches qui sont alors applicables sans plus de pré-requis.

FIGURE 2 – Évolution du nombre d'adhérents à la CGT et à la CFDT (CFTC avant 1964) de 1945 à 2005



Lecture: En 1948, la CGT-FO fait scission avec la CGT et la CGT perd une partie de ces adhérents.

Sources : Andolfatto (2004), p. 65 ; Andolfatto et Labbé (1997), p. 224 et p. 233.

La CGC :

La CGC est fondée en 1944 dans le but de défendre les intérêts des cadres, des ingénieurs, des techniciens et plus généralement de toutes les catégories intermédiaires. Elle abandonne très vite la théorie de la lutte des classes, lui préférant l'idée de "l'économie concertée" présentée comme "une voie médiane entre l'économie libérale et l'économie étatique"¹⁹. Prise entre les organisations patronales et les autres syndicats de salariés, la CGC occupe une place à part dans le paysage syndical français. Elle est attachée à la hiérarchie des salaires et critique la fiscalité censée peser sur les classes moyennes. Tantôt réformiste au côté de la CFDT, tantôt revendicative lorsque ses intérêts propres sont menacés ; la CGC représente aujourd'hui un peu plus de 5% de l'audience syndicale globale.

SUD-G10 et l'UNSA :

Véritable creuset de la construction sociale en France au XX^{ème} siècle, le monde syndical a été le lieu de luttes idéologiques et de confrontations d'opinions perma-

¹⁹ Positions et propositions de la CGC, Paris, CGC, 1971, pp. 78-84.

nentes qui se sont traduites par de nombreux chamboulements du paysage syndical. L'UNSA et SUD-G10 sont issus des scissions et recombinaisons des vingt-cinq dernières années. Le G10 se structure en 1981 en regroupant dix syndicats autonomes. En 1988, des cdtistes en désaccord avec la position plus centrale adoptée par leur organisation sont poussés à la démission et créent alors les syndicats SUD²⁰ qui se déclinent en de nombreuses organisations : SUD-PTT, SUD-Rail, SUD-Education... Dans les années 1990, les syndicats SUD et G10 s'associent. Entre temps, plusieurs membres du G10, qui n'apprécient pas les positions plus radicales que le syndicat commence à adopter, décident de se retirer, la plupart allant rejoindre l'UNSA. SUD-G10 ne compte finalement plus que quatre de ses membres fondateurs en 1993. Il se développe malgré tout rapidement notamment grâce au fleurissement des syndicats SUD. En 2003, il comprend 37 fédérations (dont 27 syndicats SUD) et recueille un peu moins de 5% de l'audience électorale totale, notamment dans le secteur public où il est bien implanté. SUD-G10 est politiquement impliqué, il est solidaire envers les exclus, défend de façon unanime toutes les grandes causes sociales (tant sur le plan national qu'international), il est encore écologiste et altermondialiste. SUD-G10 reflète en quelque sorte sur le plan syndical les mutations idéologiques de l'extrême gauche actuelle. Au regard de la lente évolution des syndicats français "historiques" et de leur progressif "recentrage", le succès que connaît SUD-G10, notamment auprès des jeunes, n'a rien d'étonnant. L'organisation incarne enfin la forme moderne du syndicalisme radical "à la française". L'UNSA se constitue en 1993 à la suite de l'éclatement des syndicats enseignants. L'organisation se compose initialement des membres restés fidèles à la Fédération de l'Éducation Nationale²¹ (FEN) et de quatre anciens membres du G10. Comme elle l'affirme à son troisième congrès réuni à Lille en 2002 : "La richesse et la nouveauté de l'UNSA sont de rester fidèle aux grandes idées du mouvement ouvrier et syndical français, tout en adoptant une organisation nouvelle". L'UNSA tente en effet de fédérer des syndicats d'origines très différentes (certains du secteur privé, d'autres du secteur public) au sein d'une organisation

²⁰Le premier syndicat SUD est en fait SUD-PTT, le sigle SUD étant aussi un clin d'œil à l'origine géographique de nombreux postiers.

²¹En 1993, la FEN, syndicat historique dans l'éducation nationale, éclate pour former notamment la FSU (Fédération Syndicale Unitaire de l'enseignement, de l'éducation, de la recherche, de la culture, de la formation et de l'insertion). Quelques adhérents resteront fidèles à la FEN.

très souple qui laisse une grande autonomie à ses différentes composantes. En 2003, l'UNSA recueille environ 7,5% de l'audience syndicale totale. Elle est donc devant la CGC en terme de représentativité des salariés.

La crise du syndicalisme et le syndicalisme au début des années 2000

La crise du syndicalisme depuis la fin des années soixante-dix est une réalité sur laquelle s'accordent tous les observateurs du monde syndical. Aujourd'hui le taux de syndicalisation en France est inférieur à 10% (et il est de l'ordre de 5% dans le secteur privé). En 1946, plus d'un salarié sur deux est syndiqué (la CGT à elle seule, leader incontesté à l'époque, attire 53% des salariés) tandis qu'à la fin des années soixante-dix un salarié sur quatre est encore syndiqué. La chute du taux de syndicalisation entre 1946 et 1978 est imputable à la CGT seule qui, dans un contexte de guerre froide, perd les deux tiers de ses adhérents entre 1946 et 1959 (figure 2). En revanche, après une période plutôt faste pendant la fin des Trente Glorieuses, c'est le syndicalisme dans son ensemble qui décline fortement à partir de 1978 et jusqu'au début des années quatre-vingt dix. Depuis, l'hémorragie s'est arrêtée mais le taux de syndicalisation et la représentativité des syndicats qui en découle se maintiennent à un niveau très bas. Outre la désyndicalisation, Andolfatto (2004) parle, pour qualifier la crise du syndicalisme, de "faiblesse ou échec de l'action revendicative qui, de plus en plus, s'apparente à des flambées de colère échappant aux syndicalistes, anémie du dialogue social, déclin de la participation lors des élections professionnelles, perte de confiance dans le syndicalisme, professionnalisation – voire fonctionnarisation – de l'activité syndicale".

Pour expliquer cette crise du syndicalisme, on peut invoquer plusieurs types de facteurs. D'abord, des facteurs exogènes au monde syndical, d'origine économique ou sociale, tels que chômage, baisse du pouvoir d'achat, montée de l'individualisme et tertiarisation et féminisation du salariat. Ensuite des causes proprement endogènes : institutionnalisation du syndicalisme ou encore crise du militantisme. Selon Dominique Andolfatto, "le syndicalisme à la française" s'attachait à entretenir un contact suivi et multiforme avec les salariés : collecte des cotisations, tournées des bureaux

et des ateliers en vue de la tenue d’une sorte de “chronique des malheurs de la classe ouvrière”, interventions à la cantine, rédaction collective des tracts et des pétitions, alimentation des panneaux d’affichage... C’est cette forme de syndicalisme informelle et centrée sur le lieu de travail qui a disparu au profit “d’un édifice sans base” centralisé et bureaucratisé. La dichotomie entre facteurs exogènes et endogènes est cependant sans doute un peu simpliste. En effet, les difficultés d’organisation rencontrées par les syndicats et la classe ouvrière dans son ensemble font largement suite à la mise en place des nouveaux modes d’organisation productivistes des années 1970 et 1980 (Beaud et Pialoux, 1999).

Dans ces conditions, les responsables syndicaux se retrouvent souvent à signer des accords pour des salariés dont ils connaissent mal les problèmes, et, en dehors des traditionnelles revendications salariales, ils éprouvent des difficultés certaines à représenter les salariés.

Depuis le début des années quatre-vingt dix, la désyndicalisation s’est arrêtée et on observe même une légère hausse de l’activité syndicale. D’après Amossé (2004), “dans un contexte international de fort recul syndical, seuls l’Espagne et, dans une moindre mesure, les Pays-Bas connaissent une évolution comparable”.

Les instances représentatives du personnel et leur fonctionnement

L’action des syndicats au sein des entreprises se fait soit directement par l’intermédiaire d’un délégué syndical (DS), soit au travers des instances représentatives du personnel, à savoir les comités d’entreprise ou d’établissement (CE), les délégués du personnel (DP) et les délégations uniques (DU) ²². La législation française étant parfois complexe, nous tentons d’en résumer l’esprit plutôt que d’en faire une description exhaustive. “Les deux visages du syndicat”, comme le disent Freeman et Medoff, sont d’une part son rôle purement revendicatif de monopole, et d’autre part son rôle de

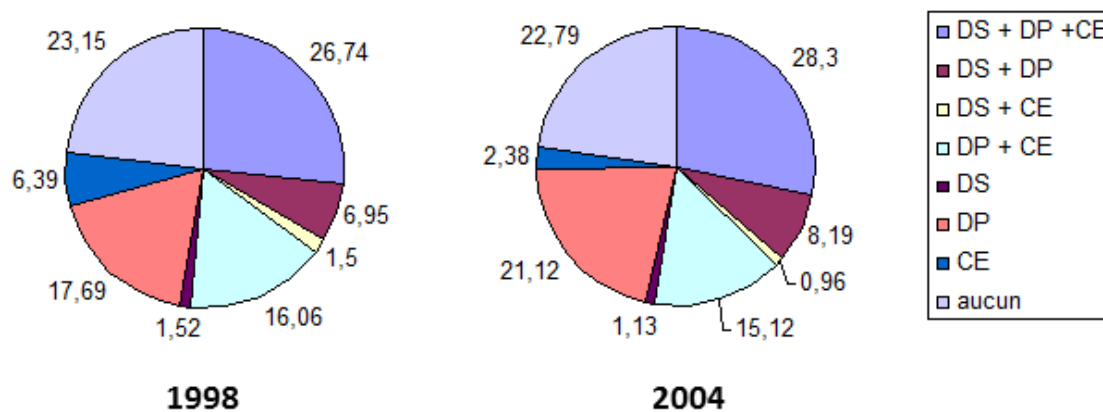
²²Existent également les Comités d’Hygiène, de Sécurité et des Conditions de Travail (CHSCT) dans les entreprises de plus de cinquante salariés. Les CHSCT ont pour mission de contribuer à la protection de la santé et de la sécurité des travailleurs ainsi qu’à l’amélioration des conditions de travail. Leurs membres sont choisis parmi les délégués du personnel.

porte parole et d'intermédiaire entre direction et employés. La législation française tend en partie à séparer ces deux aspects au sein d'instances différentes. Ainsi les délégués syndicaux représentent les salariés lors des négociations qui ont lieu obligatoirement une fois par an dans les entreprises françaises sur les questions salariales, de l'emploi et des conditions de travail (d'autres thèmes peuvent être abordés mais seuls les trois précédents sont obligatoires). Le comité d'entreprise a pour vocation d'être informé et consulté sur les questions intéressant l'organisation, la gestion et la marche générale de l'entreprise et, notamment, sur les mesures de nature à affecter le volume ou la structure des effectifs, la durée du travail, les conditions d'emploi, de travail et de formation professionnelle des salariés. La fonction première des délégués du personnel est de "présenter aux employeurs les réclamations individuelles et collectives des salariés"²³. "Elle consiste également à s'assurer de l'application des textes et conventions spécifiques à l'entreprise". Ainsi la loi a tendance à cantonner le délégué syndical à son rôle "basique" et à le dissocier de l'aspect "voice" plus progressiste et dévolu au comité d'entreprise. Ceci explique peut-être la tendance revendicative que l'on prête aux syndicats français : dans les statuts, on les exclut a priori d'une partie du dialogue entre employés et dirigeants, celle qui se passe au CE. Le délégué du personnel joue les deux rôles. Il est essentiel dans les petites entreprises dans lesquelles il n'y a pas toujours de DS et CE. Dans les faits, la distinction précédente s'atténue, car les délégués du personnel et les membres du CE sont généralement aussi délégués syndicaux. La figure 3 réalisée à partir des enquêtes REPONSE 1998 et 2004 permet d'avoir une bonne vision de la façon dont se répartissent présence syndicale et instances représentatives du personnel au sein des établissements de plus de vingt salariés. On observe qu'une faible proportion des établissements dispose d'un CE sans avoir de DP (2,38+0,96% en 2004). De la même manière, il est aussi très rare qu'il y ait des DS sans avoir de DP (1,13+0,96% en 2004). Ceci témoigne du fait que le délégué du personnel joue le rôle d'intermédiaire entre salariat et patronat essentiellement dans les petites entreprises dans lesquelles il n'y a ni CE, ni DS. Dans les entreprises qui disposent d'un CE et/ou de DS, les DP sont en général toujours présents mais leur rôle intrinsèque est sans doute atténué, les DS et le CE prenant à

²³art. L.422-1 de l'ancien code du travail

leur charge la part des échanges avec la direction qui leur revient.

FIGURE 3 — Répartition des établissements d'entreprises de plus de vingt salariés en termes de présence syndicale et d'instances représentatives du personnel en 1998 et 2004



Notes: "DS" signifie Délégué syndical. "DP" signifie Délégué du Personnel. "CE" signifie Comité d'Établissement. Les chiffres sont donnés en pourcentage. Sources : Enquêtes REPONSE 1998 et 2004 (résultats pondérés afin d'être représentatifs de l'ensemble des établissements français de plus de vingt salariés).

La description précédente des rôles respectifs demeure très générale et n'est pas applicable à toutes les situations. Il faut bien garder à l'esprit qu'il est parfois difficile de savoir vraiment qui fait quoi, tant les rôles des uns et des autres sont imbriqués. Cela dépend aussi bien sûr des personnalités des divers représentants du personnel (DS, DP et membres du CE) et des responsabilités qu'ils veulent bien prendre. Il ne faut pas oublier non plus qu'à ces fonctions différentes correspondent en fait en général des mêmes individus qui cumulent les responsabilités.

Comment devient-on DS, DP ou membre du CE ?

La loi portant rénovation de la démocratie sociale et réforme du temps de travail (Loi n° 2008-789 du 20 août 2008) a modifié en profondeur le mode de désignation des délégués syndicaux. Nous présentons conjointement la situation telle qu'elle était en 2004, l'année sur laquelle porte nos investigations empiriques, et les modifications apportées par la loi du 20 Août 2008.

Les obligations et les droits légaux sur ces sujets diffèrent suivant la taille de l'en-

entreprise. La plupart des différences s'opèrent lorsqu'une entreprise passe au-delà du seuil de 50 salariés. Les DP peuvent être présents dans les entreprises de plus de 10 salariés et les CE dans celles de plus de 50 salariés. Ces dispositifs légaux ne sont pas toujours respectés, le plus souvent parce qu'il n'y a pas de candidat dans l'entreprise pour endosser ces fonctions. Les DP et les membres du CE sont élus lors des élections qui ont lieu tous les deux ou quatre ans. Ces élections se déroulent en deux tours et, jusqu'à la loi du 20 Août 2008, seuls les syndicats représentatifs dans l'entreprise (i.e. ceux disposant de la présomption irréfragable de représentativité ou ceux ayant prouvé leur représentativité) pouvaient présenter des candidatures au premier tour. Au second tour, les syndicats non représentatifs, les listes non syndiquées et les candidats indépendants pouvaient se présenter pour occuper les postes qui n'avaient pas été pourvus à l'issue du premier tour. Cette disposition légale offrait un avantage de taille aux syndicats représentatifs dans l'entreprise et leur permettait en général d'occuper bon nombre des postes au sein des instances représentatives du personnel. Si dans certaines entreprises les DP ou les membres du CE étaient indépendants, c'est souvent parce que les syndicats ne s'étaient pas implantés dans ces entreprises et non à cause d'un refus du syndicalisme. En ouvrant plus largement le premier tour des élections professionnelles à tous les syndicats légalement constitués, la loi du 20 Août 2008 met un terme à ces avantages conséquents apportés par la présomption irréfragable de représentativité.

Jusqu'à la loi du 20 Août 2008, les syndicats pouvaient désigner, dans les entreprises de plus de 50 salariés, tout salarié comme délégué syndical si celui-ci acceptait cette fonction. Si le syndicat était l'un des cinq syndicats disposant de la présomption irréfragable de représentativité (CGT, CFDT, FO, CFTC, CGC), la personne ainsi nommée délégué syndical était représentative de droit et l'employeur était tenu de l'inviter à la table des négociations chaque année. En revanche si le syndicat ne disposait pas de la présomption irréfragable de représentativité, il devait être capable de prouver devant la loi sa représentativité au sein de l'entreprise pour disposer des mêmes droits. Dans les entreprises de moins de 50 salariés, les syndicats pouvaient désigner un délégué du personnel, pour la durée de son mandat, comme délégué syndical. De la même manière, si le syndicat n'était pas représentatif de droit, il devait

prouver sa représentativité. La loi du 20 Août 2008 a mis fin à ce système de désignation des délégués syndicaux. Ces derniers doivent dorénavant avoir recueilli au moins 10% des suffrages exprimés au premier tour des élections professionnelles, et ce, qu'elle que soit la taille de leur entreprise.

Jusqu'à la loi du 20 Août 2008, les différentes législations entre entreprises de moins et de plus de cinquante salariés étaient loin d'être anodines en termes de représentation syndicale. Les DP étaient toujours des représentants élus tandis que les DS étaient librement désignés dans les entreprises de plus de cinquante salariés mais désignés parmi les DP dans les entreprises de moins de cinquante salariés. Cela signifie que dans les entreprises de moins de cinquante salariés, les DS étaient pratiquement élus. Si par exemple il n'y avait pas de DP affilié à la CGT dans l'entreprise, la CGT ne pouvait pas être présente dans l'entreprise. La situation était très différente dans les entreprises de plus de cinquante salariés. Prenons un exemple extrême et imaginons que dans une grande entreprise de plus de 1000 salariés, seulement une minorité soutienne la CFDT. Avant la loi du 20 Août 2008, il suffisait qu'un seul salarié accepte d'endosser le statut de délégué syndical CFDT pour que cette dernière puisse s'inviter chaque année à la table des négociations et avoir droit de signature. On pourrait alors penser qu'un DS CFDT dans une telle entreprise, n'étant absolument pas représentatif, n'aurait aucun poids lors des négociations salariales. Jusqu'au 4 mai 2004, ceci n'était pas vrai non plus : un accord d'entreprise (ou même de branche) était considéré valide dès lors qu'il était signé par un représentant de la direction et par UN syndicat représentatif du personnel (de droit ou prouvé). La CFDT étant représentative de droit, elle pouvait donc, dans notre exemple fictif, signer un accord contre le gré des autres organisations syndicales et rendre celui-ci valide. On comprend ici la nature des avantages que procurait la présomption irréfragable de représentativité et les nombreux débats autour de cette notion typiquement française. Dans les faits, l'exemple précédent n'est pas tout à fait vrai : un syndicat représentatif pouvait tout de même faire appel en justice et s'opposer à la signature d'un accord. Si ce syndicat prouvait sa représentativité et le bien fondé de sa requête, l'accord pouvait être retiré. Le 4 mai 2004, la loi a été modifiée une première fois sur ce point. Un accord était désormais valide s'il était signé par un syndicat majoritaire aux élections du personnel

(DP et CE) ou si aucun syndicat majoritaire ne s'opposait à sa signature. La loi du 20 Août 2008 va encore plus loin dans ce sens : un accord collectif n'est désormais valide que (i) s'il est signé par une ou plusieurs organisations syndicales ayant recueilli ensemble au moins 30% des suffrages exprimés aux élections professionnelles, et (ii) s'il ne fait pas l'objet d'opposition de la part d'une ou plusieurs organisations syndicales ayant recueilli la majorité des suffrages exprimés aux élections professionnelles.

La France par rapport aux autres pays développés

Les deux principaux traits caractéristiques des relations professionnelles en France sont (i) un système de négociation à trois niveaux – national, sectoriel, et entreprise ou établissement –, (ii) un écart très important entre taux de couverture syndicale et taux de syndicalisation.

Le premier point n'est pas uniquement spécifique à la France : en Australie, en Belgique, en Finlande et en Espagne, on négocie également à la fois au niveau national, au niveau des branches et au niveau des entreprises (figure 1). Sur la période 1980-1994, le niveau privilégié de la négociation en France était la branche (figure 1). Mais du fait de la perte de vitesse de la négociation de branche durant les trente dernières années (suite aux Lois Auroux de 1982 ayant instauré les négociations annuelles obligatoires dans les entreprises pourvues de syndicats), notamment en ce qui concerne les salaires, on peut considérer que le niveau principal pour la négociation en France est aujourd'hui l'entreprise (voir la deuxième section du chapitre 1 pour plus de détails sur ce point).

Dans les pays anglo-saxons, tels que le Royaume-Uni ou les Etats-Unis, la négociation a surtout lieu au niveau des entreprises. A l'inverse, elle est surtout centralisée dans les pays scandinaves (Norvège, Suède) tandis qu'elle a lieu au niveau des branches en Allemagne.

Avec moins de 8% de salariés syndiqués en 2008 et plus de 95% de salariés couverts par la négociation collective, la France affiche à la fois l'un des plus bas taux de syndicalisation et le plus haut taux de couverture parmi les pays développés (OCDE, 2004). Avec ce grand écart entre taux de syndicalisation et taux de couverture par

TABLE 1 — *Niveaux de négociation collective et coordination dans les pays de l'OCDE, 1980-1994*

	Niveau institutionnalisé de la négociation collective	Niveau privilégié de la négociation collective	Coordination au niveau de l'ensemble de l'économie	
			En tant qu'objectif	Capacité de mise en œuvre
Australie	1,2,3	2→3,1	Coordination explicite	Forte
Autriche	2,3	2	Coordination implicite	Forte
Belgique	1,2,3	2	Coordination explicite	Limitée
Canada	1,2	1	Absence de coordination	Absente
Finlande	1,2,3	3→2,1	Coordination explicite	Forte
France	1,2,3	2	Coordination explicite	Limitée
Allemagne	1,2	2	Coordination implicite	Forte
Japon	1,2	1	Coordination implicite	Forte
Pays-Bas	1,2,3	2	Coordination explicite	Limitée
Nouvelle-Zélande	1,2	2→1	Coordination explicite	Absente
Norvège	1,2,3	2→3	Coordination explicite	Forte
Portugal	1,2,3	2→2,3	Coordination explicite	Limitée
Espagne	1,2,3	2,3→2	Coordination explicite	Limitée
Suède	1,2,3	3→2	Coordination explicite	Limitée
Suisse	1,2	2	Absence de coordination	Limitée
Royaume-Uni	1,2	2→1	Absence de coordination	Absente
Etats-Unis	1,2	1	Absence de coordination	Absente

Notes: 1 : Entreprise/Etablissement ; 2 : Branche ; 3 : Central. Les flèches indiquent la direction du changement au cours du temps. Par coordination explicite on entend une concertation entre syndicats de travailleurs et associations d'employeurs, éventuellement avec la participation de l'État. La coordination implicite prend en compte le contrôle des centrales syndicales et le rôle modèle joué par certains secteurs d'activité.

Source : OCDE (1997)

la négociation, le syndicalisme en France est l'exemple de plus emblématique de ce qu'on appelle "syndicalisme de représentativité". Deux éléments permettent d'éclairer cette typicité française.

D'un côté, comme nous l'avons déjà dit, il est très facile pour les syndicats de signer des accords collectifs. Devant les difficultés récurrentes des organisations patronales et syndicales à s'entendre d'elles-mêmes, l'Etat français a petit à petit mis en place au cours du 20ème siècle, par le biais législatif, un cadre institutionnel très favorable à la présence syndicale en entreprise : apparition des délégués du personnel en 1936, présomption irréfragable de représentativité pour la CGT, la CFDT, FO, la CFTC et la CGC en 1966, délégués syndicaux en 1968, négociations annuelles obligatoires sur les salaires et les conditions de travail dans les entreprises pourvues de syndicats avec les lois Auroux en 1982. Plus récemment, en 2005, dans un contexte où les salaires conventionnels avaient décroché par rapport au Smic dans un certain nombre de branches, les pouvoirs publics ont impulsé un processus de relance de la négociation salariale de branche (comité de suivi, commissions mixtes paritaires, conditionnalité des allègements de charge²⁴). Les efforts constants des pouvoirs publics pour dynamiser la négociation collective expliquent donc en bonne partie le taux de couverture conventionnelle particulièrement élevé en France.

Mais pourquoi le taux de syndicalisation est-il si bas en France ? La principale raison est qu'il n'y a pas besoin d'être syndiqué pour bénéficier des fruits de la négociation : les accords collectifs doivent couvrir tous les salariés, qu'ils soient syndiqués ou non. Il n'y a donc pas d'incitation économique pour les salariés à se syndiquer, contrairement à ce qui peut se passer dans d'autres pays. Aux Etats-Unis par exemple, un syndicat doit gagner une élection à la majorité pour avoir le droit de s'implanter et de négocier dans une entreprise. Dans certains Etats (*closed shop*), tous les salariés ont alors l'obligation de se syndiquer. Dans les pays scandinaves, une partie des fruits de la négociation ne revient qu'aux salariés syndiqués. Dans les deux cas, on aboutit à des taux de syndicalisation plus élevés et à une adéquation plus forte

²⁴l'article 27 de la loi du 3 décembre 2008 prévoit que dans les entreprises ressortissantes de branches dont le minimum conventionnel est inférieur au Smic, les allègements de cotisations sociales ne soient plus calculés sur la base du SMIC mais sur la base du minimum conventionnel. Ce dispositif devait entrer en vigueur au 1er janvier 2011 mais en raison de l'amélioration de la conformité globale des branches par rapport au Smic, son entrée en vigueur a été reportée au 1er janvier 2013.

entre la proportion de syndiqués et le taux de couverture des syndicats. En France, l'absence d'incitations directes à se syndiquer peut expliquer le faible taux de syndicalisation aujourd'hui. Conformément à la théorie de l'action collective d'Olson (1965), les salariés ont intérêt à agir "en passagers clandestins" et à bénéficier des fruits de la négociation sans en supporter les coûts. Cela est d'autant plus vrai dans le contexte actuel d'un syndicalisme "de clients" : "Les syndicats deviennent traités comme des institutions ordinaires dont la légitimité est liée à de simples critères d'utilité. A l'ancien présumé d'une identité de nature et de but entre l'organisation et la base s'est substituée une relation plus instrumentale, fondée sur le constat d'une extériorité de fait" (Rosanvallon, 1998, p. 35). En revanche, elle était probablement insuffisante du temps des Trente glorieuses, lorsque le syndicalisme était encore construit comme "un fait social global" et que les taux de syndicalisation étaient encore relativement élevés.

Chapitre 1

What do unions do in France ?

This chapter is organized in three independent sections. The first one presents a study of the union wage premium in France with a particular attention given to the identification of the underlying mechanisms. The second section complements the first one by providing a series of more descriptive results on the relationship between firm-level union recognition and (i) sectoral level bargaining, (ii) the structure of wages, (iii) job protection and voluntary quits. With all these results at hand, it is possible to draw a more global picture of what unions do on the labor market in France. The third section presents an original attempt to identify the causal effect of union recognition on wages using the particular relationship that exists between establishment size and the probability of union recognition. A short chapter conclusion follows. Descriptive statistics, the union wage premium obtained by each particular French large union and other robustness checks are presented in an appendix section at the end of the chapter.

1.1 Firms' rents, workers' bargaining power and the union wage premium in France

1.1.1 Introduction

Why are workers covered by unions paid more than their non-covered counterparts? An obvious explanation, often called the “causal effect” of unions, is that

unions raise wages through bargaining and rent extraction. But a wide range of alternative explanations are possible: union members can be more productive than nonunion members (selection of union members), organized firms can have unobserved characteristics correlated with higher wages (selection of organized firms or reverse causality) and wage gains for union members can be counterbalanced by losses on other aspects (compensating wage differentials). Due to econometric limitations, studies are often unable to disentangle completely these various explanations. Typically, microeconomic studies based on a sample of workers may potentially confound bargaining status with other firm-level characteristics such as firm size. This is the case for a huge body of studies in the United States that finds sizeable union wage premiums¹. However, more recently DiNardo and Lee (2004) used a regression discontinuity design technique to identify the “causal effect” of unions. Using a sample of U.S. establishments that changed union status as a result of a union certification election, they found no causal effect of union coverage on wages.

Consistent with the rent-extraction interpretation is the idea that the wage differential between unionized and non-unionized firms² should be increasing both with the amount of rent per worker available to the unionized firms and with the bargaining power of unions in these firms. In this chapter, I derive these two predictions from a simple bargaining model and test it using a detailed linked employer/employee dataset from the French private sector. First, the data contains subjective information on the surveyed firms’ market share. Under the assumption that firms declaring a high market share should have on average more rents per worker that unions can potentially extract than those declaring a low market share, I split the sample of firms in two groups according to their declared market shares. I then compare the *ceteris paribus* wage differential between unionized and non unionized firms obtained in these two groups. I argue that a higher differential observed in the group of high-market-share firms would strongly reinforce the rent extraction interpretation of the wage differential between organized and non organized firms. Second, France is a country

¹ Studies that use a panel of workers from the Current Population Survey (CPS) cannot take into account firm’s characteristics. See Lewis (1986) for an extensive survey of the early literature and Freeman and Medoff (1984) or Card (1996) for famous examples based on the CPS.

²In this chapter I focus on the usual “union recognition wage premium”, that is the wage differential between workers who are covered by unions at the firm level and those who are not covered.

of “open-shop” unionism, with no requirement for workers to be union members when a union is recognized in their firm. I argue that a larger proportion of union members in a firm where a union is recognized indicates a higher support toward the union and thus a higher bargaining power of the union. The rent-extraction view of union wage differentials then predicts that the wage premium obtained by unions should increase with the proportion of union members in organized firms. I take advantage of the information available on the proportion of union members in the dataset I use to test empirically this second prediction. The workers’ bargaining power is likely to be endogenous to the rents available in their firm (the higher their potential gains, the higher the incentive for workers to pay the cost to organize and bargain collectively). I thus estimate a more structural wage equation derived from a simple bargaining model that models simultaneously the rents per worker available at the firm level and the workers’ bargaining power. Finally, the workers’ productivity is also likely to be endogenous to the rents available in their firm (more productive workers are more likely to generate higher profits and rents). To control for this possible selection effect, I use the workers average productivity at the firm level as an additional explanatory variable in some of my regression models.

A second important feature of this study is that it focuses on France, a country which has the reputation to have extremely powerful unions. According to an article by Craig Smith published in the New York Times in 2006³, “Despite one of the lowest rates of unionization — only about 8 percent of the French work force are members — the unions have enormous leverage over the government. They play a unique organizational role in France’s hierarchical society, rallying the populace accustomed to a confrontational relationship with leaders considered elitist. Spark-plug unions, some people call them.” This commonly accepted view on the strength of French unions relies on evidence at the national level and on large national strikes or demonstrations occurring from time to time and largely advertized in the general media. But what is the strength of French unions at the firm level?

I answer this question by comparing the estimated wage differential between organized and non organized firms in the private sector for France with measures of this

³ See the following webpage for the entire article: <http://www.nytimes.com/2006/03/29/international/europe/29unions.html>

differential obtained abroad. In particular, using a dataset similar to theirs, I reproduce the main empirical specifications of Card and De La Rica (2006) who studied the wage premium associated with firm-level contracting in Spain. As France and Spain are neighbor countries with similar industrial relation systems, the comparison should shed some light on the real strength of French unions at a decentralized level.

It is often said that since most workers are covered by collective agreements at the industry level in France, a union wage premium cannot be estimated. The next subsection describes the French institutional settings, with a particular attention paid to the strength and the role of industry-level bargaining. I argue that industry-level bargaining is very weak, which motivates my choice to focus primarily on firm-level bargaining, and to estimate the effect of unions at the firm level on top of the industry-level contracts.

Subsection 1.1.3 describes briefly the data and the empirical choices that have been made. Subsection 1.1.4 presents estimates of the union wage premium using standard wage determination models similar to those used by Card and De La Rica (2006). Subsection 1.1.5 builds a simple bargaining model while the next two subsections present estimates of predictions derived from this model. Finally, the last two subsections present a discussion of the potential biases and a brief conclusion.

1.1.2 Institutional Settings

The legal settings of union representation in France have been slightly modified on the 4th of May 2004 and more recently on the 20th of August 2008. As this study focuses on years 2002 and 2004, I describe the functioning of industrial relations before these two laws were passed. I begin with a brief description of industry-level bargaining and then turn to a more precise description of firm-level industrial relations.

At first sight, France shares with most continental Europe countries characteristics of a regulated industrial relation system with multi-level bargaining. First, industry wide agreements negotiated by unions and employer associations cover most of the workforce. Second, individual employers can sign firm specific agreements with unions when unions are recognized at the firm level. According to the Statistics Department

of the French Ministry of Labor (DARES), 97.7% of the workforce was covered by a collective agreement in 2004. With a union density around 8%, France is the OECD country with both the highest coverage rate and the lowest union density (OECD Employment Outlook, 2004).

Industry-level bargaining is organized by branches. A branch is a bargaining unit regrouping workers in a same industry or group of industries, sometimes in a delimited region and sometimes also with a specific occupation⁴. When an agreement is signed in a branch between unions and an employer association, only the firms whose the employer is a member of the association are initially covered. An extension of the agreement for all workers in the branch can be asked by unions, the government or another employer association. The extension is made as soon as the agreement is proved conform to the general law⁵. In practice, the extension mechanism is very common (Barrat and Daniel 2002), which explains that most of the workforce is covered by industry-wide agreements.

In 1982, the Loi Auroux (August 4, 1982) encouraged decentralized bargaining. As a consequence, industry-level bargaining became less significant (Barrat et al 1996). In the early 2000s, many of the existing wage agreements are even outdated because they have been rarely renegotiated in the past two decades and they are weaker than national standards in many sectors and regarding many topics. In 2007, exactly 50% of the 160 branches covering more than 5,000 employees⁶ had a branch minimum wage which was below the national minimum wage and was consequently useless. Figure 1.1 illustrates this point and plots the French national minimum wage in 2007 as well as the distribution of the 160 largest branch minimum wages. To summarize, almost all workers are covered by industry-level agreements (which renders impossible, in the absence of a comparison group, the identification of the effect of these industry contracts on wages) but a lot of these contracts are weak or even outdated, which

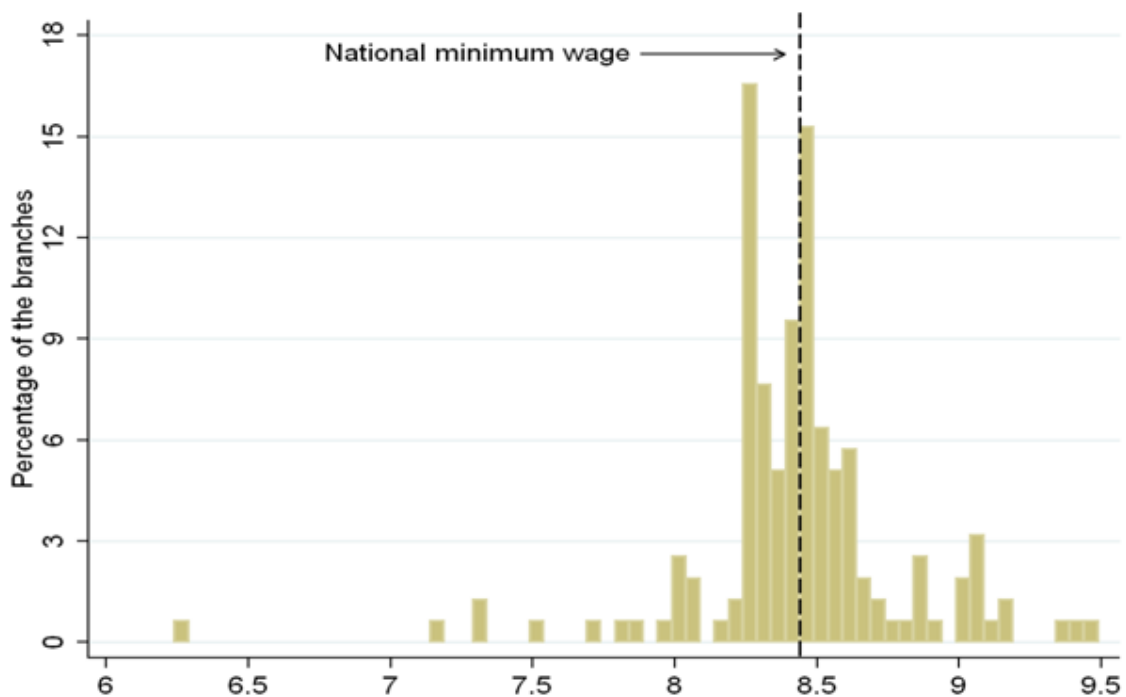
⁴ For example, white collars workers in the construction sector bargain at the national level whereas other occupations bargain at the regional level (see Ayoubi-Dovi et al, 2009).

⁵ This differs, on the one hand from Spain where industry-level agreements are automatically extended to the entire industry and, on the other hand from Germany where conditions of representativeness are also necessary for the extension (see Du Caju et al. 2008 for details).

⁶ There are about 700 branches in total. The Ministry of Labor provides information on the 160 that cover more than 5,000 employees each. In total, these branches cover more than one half of the private sector total employment.

leaves room for unions to bargain at the firm level.

Figure 1.1: *Distribution of the branches hourly minimum wages in 2007.*



Notes: The hourly national minimum wage in the 1st of July 2007 was equal to 8.44€. Source: Author's computations from the Collective Bargaining annual book (2007). Only the 160 branches covering more than 5,000 workers are represented. They cover 10 million workers, which is more than one half of the private sector total employment.

Making comparisons between the degree of bargaining at the national, industry and firm level, the 2004 OECD Employment Outlook classifies France in the second group of OECD countries with the most decentralized bargaining institutions (with Australia, Italy, the Slovak Republic and Switzerland) just behind the U.S., the U.K., Canada, Poland, Korea and Japan. Regarding this classification, I only focus on the union wage premium at the firm level, similarly to the approach taken in Anglo-Saxon studies (where bargaining in the private sector is only decentralized) and by Card and De La Rica for Spain (2006). In that sense, my approach differs from a recent literature on continental Europe countries which focuses on industry-level bargaining or examines the relative influence of the different levels of bargaining on the overall structure of wages (Ayoubi-Dovi et al 2009, Cardoso and Portugal 2005, Fitzenberg et al 2007, Plasman et al 2007, Rusinek and Rycx 2008).

Firm-level agreements can be signed between unions and employers as soon as unions have been recognized within firms. Concerning wages, these agreements can only improve the industry minimum wage and must be above the national minimum wage. Three key institutional features differentiate France - and most European countries (see Slomp, 1998) - from the United-States concerning industrial relations at the establishment and firm levels. First, there is no certification election. Second, many unions can be present in the same firm and represent workers collectively. Third, unionism is completely “open shop”.

There is no certification election:

To be recognized in a firm with more than 50 employees, the main unions almost only need to find one worker who accepts to officially represent the union in the firm. Such a worker is called a union representative. Table 1.1 presents a brief description of the main French unions and gives the distribution of the union representatives in terms of the unions they belong to. We can see that more than 95% of union representatives belong to the 5 largest national “historical” unions. These “historical” unions are recognized as legal bargaining units within firms as soon as a worker accepts to be their representative⁷. This is a fundamental feature of the French industrial relations: there is no certification election required for historical unions to organize larger firms. In firms with size between 10 and 50 employees, unions have to choose their representatives among workers who have already been elected, the so-called “firm delegates”. These “firm delegates” are legally recognized non-union representatives acting as the voice of the workers in their day-to-day relationship with the employer (they are generally also members of the work councils). They are elected every four years by workers in firms with more than 10 employees among voluntary candidates in a simple majority rule voting (the winning candidates are simply those who have collected the larger number of votes). The process of union recognition is more binding in firms with size between 10 and 50 employees, but even in these firms, union recognition remains less binding than the U.S. certification process which requires a majority of workers to be pro-union. The very weak legal constraints bearing on firm-level union recognition makes it easier for unions to legally

⁷ The other non historical unions might have to win a certification election to be recognized at the firm level if the employer or a worker asks for it.

organize firms and get a legal framework to bargain over wages officially. However, the low organizational cost paid by unions in these firms and the fact that they are not necessarily supported by the majority of the workforce should limit their bargaining power and the scope of their action.

Table 1.1: *Description of the French main unions in 2004*

French union	Historical/ Ideological roots	Represent- entation (in 2004)
Confédération Générale du Travail (CGT)	Marxism	27.6%
Confédération Française Démocratique du Travail (CFDT)	Socialism	27.3%
CGT-Force Ouvrière (FO)	Trotskyism	19.7%
Confédération Générale des Cadres (CGC)	white collars	11.3%
Confédération Française des Travailleurs Chrétiens (CFTC)	Christians	10.5%
Others (these are generally local or sector specific unions)		3.5%

Notes: The last column gives the distribution of all the union representatives among establishments with more than 20 employees in 2004 (obtained from the REPONSE dataset using a weighted average of the number of union representatives in each workplace). This statistic differs from the figures usually used to assess the relative importance of the large French unions (which are the votes at the professional elections and the number of members self declared by unions themselves).

Different unions can organize the same firm:

The recognition process described above applies to each union, which makes in theory unlimited the total number of unions that can cover the workers of a given firm. Table 1.2 shows the distribution of the workplaces in terms of the number of unions present in them. The second column gives the non weighted distribution in the dataset I use- the REPONSE data described in the next subsection- whereas the third and fourth columns are obtained using weights that make the data representative of French private sector workplaces with more than 20 employees or of the workers in those workplaces. It can be derived from table 1.2 that around 36% of the private sector workplaces with more than 20 employees are organized, which represents 64% of the workforce in these workplaces. This discrepancy is explained by the fact that the firm's probability to be organized increases considerably with its size (see table A1 in appendix A).

Unionism is completely "open shop":

When one or more unions are recognized in a firm, in place and newly hired employees do not have the duty to become union members, neither to participate in

Table 1.2: *Distribution of the workplaces with more than 20 employees in terms of the total number of unions present (in 2004)*

Number of unions present in a workplace	Proportion of workplaces in the datasample (in %)	Proportion of French workplaces concerned (in %)	Proportion of French workers concerned (in %)
0	33.90	64.34	36.03
1	18.09	19.32	19.04
2	13.29	7.60	13.07
3	12.16	3.73	10.44
4	9.98	2.60	8.37
5	9.38	1.98	8.78
6	2.36	0.27	3.34
more than 6	0.83	0.17	0.94

Notes: From Author's computation using the REPONSE dataset and the set of weights provided by the ministry of Labor to make the data sample representative of the French private sector workplaces with more than 20 employees or of the workers in those workplaces.

strikes. This enables me to use the percentage of union members at the establishment-level as a measure of the unions' bargaining power. Finally, union contracts must apply to all workers in the firm. For this reason, I will study the effect of unions on both the wages of union and nonunion members.

Finally, the institutional settings concerning industrial relations and bargaining at the establishment level are exactly identical to the institutional settings at the firm level: to be recognized in an establishment, unions basically only need to find a voluntary worker who accepts to be their representative. In smaller establishments (less than 50 employees), this representative nevertheless has to be chosen among the elected "firm delegates". Finally, there is in theory no link between bargaining in different establishments of a same firm: unions can be recognized only in some of the establishments of a multi-establishment firm and not in the other ones. As it appears to be more relevant, I conduct the empirical analysis of the effect of union recognition on wages at the establishment level⁸.

1.1.3 Data description

The empirical analysis is made using two sources of data.

⁸ It is difficult to know exactly what the actual bargaining unit is. For mono-establishment firms, establishment-level and firm-level union recognition are of course confounded. Multi-establishments firms are large enough to always have in practice unions recognized at the firm-level. For these firms, only establishment-level union recognition varies enough to offer a matter of comparison.

First, the 2002 French Wage Structure Survey (ESS02) collected detailed salary and job information for up to 60 employees in each of some 15,000 private sector establishments in the manufacturing, construction, trade and service industries. The design of the survey allows to model wage outcomes at the employee level while including controls for establishment characteristics. Agriculture, mining, and household services are missing from the ESS02 sample as are small establishments (less than 10 employees). As firm-level union coverage is extremely low for small workplaces and in the industries missing from ESS02, the limited coverage of the ESS02 is not a major problem for my study. I have excluded from the sample senior management as well as workers having their wage in the first and last percentiles of the hourly wage distribution. The final sample contains 91,562 full-time workers and 15,172 part-time workers for which we know the hourly wage and if unions are present in their firm.

The second dataset I use is the 2004 French Workplace Employment Relations Survey (REPONSE04) conducted by the Ministry of Labor towards up to 10 employees in each of 2929 business establishments with more than 20 employees. REPONSE04 contains extensive information on industrial relations at the workplace level and on the firms' organizational and technological structure. In each surveyed workplace, union density, the name of the unions that are present and the existence of a firm-level contract are available. I will use union density to proxy the union's bargaining power. REPONSE04 also contains information on the market share of each establishment, as declared by its manager. I will use this information to proxy the firm's market power and potential rents. Net hourly wages in December 2003 have been retrieved from Social Security records (the *Déclaration Annuelles de Données Sociales*, DADS) by the Ministry of Labor for the workers surveyed in REPONSE04 and have been matched with the dataset. I have also excluded from the data sample senior management⁹. The REPONSE04 survey covers mainly the private sector but some public companies are also present, as well as non-profit associations and cooperative firms. Since this chapter focuses on unions and rent-sharing, I have removed these observations and kept a final sample of 2451 business establishments owned by private

⁹ Since wages come from an administrative source, I have not excluded workers having extreme wages. However, I have also performed the whole empirical analysis both on the full and truncated samples (removal of 0.5% or 1% tails of the wage distribution) of both the ESS02 and REPONSE04 datasets. The results (available on demand) are always very close.

non cooperative firms.

Comparing to ESS2002, the main inconvenience of REPONSE04 is that it is relatively small, and its main advantage is to contain extensive workplace-level information. I use ESS2002 to estimate precisely the cross-sectional union wage gap and make comparison with similar studies and REPONSE04 to test the more elaborate predictions that these union wage gaps should increase with firms' market shares and workers' bargaining power if they are due to rent extraction¹⁰.

1.1.4 The union wage premium in a standard wage determination model

Before turning to a more sophisticated econometric analysis that aims at capturing the causal effect of unions on wages, I provide a precise estimation of the union wage premium that controls for individual-level and establishment-level observable characteristics. To do so, I present a series of regression models of the type:

$$\ln(w_{ij}) = X_i\beta + Z_j\gamma + U_j\alpha + \epsilon_{ij} \quad (1.1)$$

where w_{ij} represents the hourly wage of individual i in establishment j , X_i is a set of observed skill characteristics (such as age and education) of worker i , Z_j a vector of firm-level covariates and U_j an indicator for the presence of one or more unions in establishment j . Assuming that $\mathbb{E}[\epsilon_{ij}|X_i, Z_j, U_j] = 0$, the effect of establishment-level union recognition can be estimated consistently by a conventional (OLS) regression applied to (1.1).

The first 3 columns of table 1.3 present a series of regression models following equation 1.1 on the ESS02 dataset. In the first column (specification 1), only a dummy for union recognition at the workplace level is included. The estimated coefficient is just over 20% suggesting a large premium associated with union recognition. As shown by the results in column 2, more than 80% of this gap is explained by differences

¹⁰ The two datasets I use have twins in other countries that have been used a lot to study unions. REPONSE follows the same design than WERS in the U.K. See Bryson et al. 2011 for a study that uses both REPONSE and WERS to study unions and workplace performance. Wage Structure Surveys similar to ESS have been used by Plasman et al (2006) to study the effect of multi-level bargaining on wages in Belgium, Denmark and Spain and Card and De La Rica (2006) in Spain.

in the characteristics of workers and firms between unionized and non unionized workplaces. The covariates in this specification include the individual worker's age, education and occupation (both divided in 4 groups), a dummy indicating whether he or she was employed on a temporary contract, and dummies for establishment size, occupation, industry, and region. Many of the control variables are highly statistically significant, and their inclusion raises the R-squared above 60%. The estimated marginal effects of the control variables are consistent with what is usually found in the literature when estimating this type of linear wage equations. The wage increases by about 1% per additional year of experience (as proxied by age) which is exactly what Card and De La Rica found for Spain with similar data. The returns to education (without controlling for selection) are such that workers with a high school degree (resp. college or university degree) earn about 10% more (resp. 25% more) than high-school drop-outs. The gender wage gap is estimated to be around 13%, which is standard in this type of linear wage equation and a bit higher than what is found using a more suited wage decomposition (*i.a.* an Oaxaca Blinder decomposition, see Meurs and Ponthieux, 2000). Workers with a fixed-term contract are paid less than those with an open-ended contract. Finally, wages are increasing with establishment size. All the estimates found here for control variables using the ESS02 data are very similar to those obtained from a similar wage equation estimated using the REPONSE survey (see table 1.22 in the appendix section of the chapter).

Table 1.3: *Log Hourly Wage Regressions (ESS02)*

	<i>Dependent variable: log of gross hourly wage (from ESS02)</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Workplace Union Recognition	0.201*** (0.007)	0.0272*** (0.005)	0.0173*** (0.005)			
Firm Wage Contract				0.073*** (0.015)	-0.006 (0.008)	-0.007 (0.007)
<i>Worker's characteristics</i>						
Women		-0.132*** (0.003)	-0.133*** (0.003)		-0.133*** (0.005)	-0.136*** (0.005)
High School		0.097*** (0.004)	0.099*** (0.004)		0.099*** (0.005)	0.101*** (0.005)
Some College		0.136*** (0.004)	0.139*** (0.004)		0.141*** (0.006)	0.143*** (0.006)
College or University Degree		0.268*** (0.005)	0.277*** (0.005)		0.274*** (0.008)	0.282*** (0.008)
Age (in years)		0.011*** (0.0001)	detailed		0.012*** (0.0002)	detailed
Fixed Term Contract		-0.055*** (0.008)	-0.021** (0.008)		-0.052*** (0.011)	-0.017 (0.012)
<i>Establishment's characteristics (reference: workplaces with 10 to 20 workers)</i>						
20-50 Workers		0.030*** (0.006)	0.028*** (0.006)	0.018* (0.009)	0.013 (0.009)	
51-100 Workers		0.036*** (0.007)	0.033*** (0.006)	0.032*** (0.010)	0.024** (0.009)	
101-200 Workers		0.050*** (0.007)	0.048*** (0.007)	0.056*** (0.009)	0.047*** (0.009)	
Over 200 Workers		0.076*** (0.007)	0.072*** (0.007)	0.083*** (0.009)	0.075*** (0.009)	
Intercept	2.63*** (0.005)	2.71*** (0.023)	2.87*** (0.027)	2.73*** (0.012)	2.69*** (0.037)	2.86*** (0.020)
Industries	No	1 digit	2 digits	No	1 digit	2 digits
Observations	106,734	97,751	97,751	70,987	64,987	64,987
R-squared	0.034	0.625	0.636	0.000	0.626	0.637

Notes: All models except (1) and (4) also include 10 indicators for region and 4 indicators for occupation. Standard errors are calculated with clustering by establishments in models (1) to (3) and by firms in models (4) to (6). Models (2) and (5) include 9 indicators for industry. Models (3) and (6) include 47 indicators for industry as well as 10 indicators for worker's age and 4 indicators for worker tenure.

*: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

Estimating a standard wage determination model, Card and De La Rica (2006) found a wage premium of around 12% for women and 8% for men for firm-level contracting. To describe their results, the authors explained that “these models are very similar to the specifications fit in many previous studies of wage determination in the United States, the United Kingdom, and continental Europe, and yield estimated premiums for firm-level bargaining that are comparable to (or little smaller than) the unionized wage premiums typically estimated in the United-States”. Specification 2 of table 1.3 presents the results of a similar wage determination model for France but shows that the wage premium associated with establishment-level union recognition is only around 2.5%¹¹. This premium is a lot lower than what is found with this kind of cross-sectional approach in most developed countries¹². Finally, column 3 of table 1.3 presents the results of a regression model with an extended set of control variables: 2-digit industry dummies as well as 10 dummies for age and 4 dummies for tenure have also been included as controls. The wage premium associated with union recognition at the workplace level is reduced by one additional third (comparing with column 2). Overall, the results of table 1.3 are close to those found in older firm-level data studies in France (Coutrot, 1996; Laroche 2004). As a robustness check, I have reproduced in appendix table A3 the wage models estimated with ESS02 in table 1.3 using the alternative dataset REPONSE04 and I find very similar results.

In their study of Spain, Card and De La Rica (2006) looked at the effect of firm-level contracting (rather than union recognition) on wages. Results for firm-level contracting¹³ in France are presented in columns 4 to 6 of table 1.3. The estimated coefficient for firm-level contracting is not statistically significant and very close to

¹¹ Specification (2) of table 1.3 tries to reproduce very closely specification (2) of the third table in Card and De La Rica. In their specification, they included 2 additional controls for the market orientation and public ownership status of the firms that are not available in ESS02 and produced estimations for men and women separately. They control for years of education and I use 4 education dummies, they have 16 indicators for regions and 6 for industries, I use 10 indicators for regions and 9 for industries. The other control variables are rigorously identical. When I produce separate estimates for men and women as they do, I obtain a slightly higher coefficient for women than for men (the regression coefficient is 0.028 for women and 0.026 for men). For detailed studies of the effect of union recognition on men and women in France, see Leclair and Petit (2004) and Duguet and Petit (2009).

¹² The recent study by Blanchflower and Bryson (2010) finds a union wage premium around 5% in the UK (private sector, years 2001-2006). This is lower than previous estimations for the UK but still at least twice larger than my estimates for France.

¹³ The variable “Firm wage contract” is an indicator of the signing of a new workplace or firm-level contract on wages in 2002. It is equal to 1 for 62.6% of the observations in ESS2002.

0 in specifications that include controls for workers and firms characteristics. The reason why I use union recognition rather than firm-level contracting is that reaching an agreement at the workplace or firm level is not necessarily the sign of strong unions. Unions can obtain a wage rise (through the threat of strike for example) without signing any agreement. When unions' demands are very strong for instance, the employer might only concede part of it, still leading to wage rises but with no final agreement reached. Also, multi-unionism put unions in competition at the firm level. In 2004, an agreement was considered legally valid as long as it was signed by one union in the firm. As a consequence, when more than one union are recognized in a firm, the employer might manage to reach an agreement with one of the least combative unions, actually leading to smaller wage rises than when there is only one combative union and that no agreement is actually reached. A practical example of this situation is illustrated by the CGT union (see table 1.1). This union is the most combative of the large French unions. By tradition, it signs very few agreements. Nevertheless, the CGT union seems to obtain larger wage rises than other large unions that sign many agreements (see the appendix section of the chapter).

Why is the union wage premium for France so much smaller compared to that in most other developed countries, , while France is supposed to have powerful unions? A first explanation is the existence of a high and binding national minimum wage in France. In 2004, 15.6% of French workers (excluding temporary and agricultural workers) benefited from the annual raise of the national minimum wage¹⁴. The high national minimum wage may simply leave little room for further bargaining at a decentralized level. A slightly different explanation relies on the work by Aghion et al (2008). France has evolved towards an equilibrium (in terms of industrial relations) with a highly regulated minimum wage and poor labor relations. In their view, the state regulation of the minimum wage crowds out the possibility for workers and employers to experience negotiation and develop trustful labor relations. If we suppose that wage rises at a decentralized level are more likely to be obtained when labor relations are good, then a high degree of regulation of the minimum wage is a substitute for good labor relations and thus for high wage rises at the decentralized

¹⁴Including the raise of *Garanties Mensuelles de Rémunération* that were put in place after 35 hours working-time reduction. See Seguin, 2005

level.

A second explanation for the low union wage premium in France directly derives from the analysis of the French institutional settings. In France, the large national unions are *de facto* recognized in firms or workplaces as soon as they find a worker who accepts to be their representative. This is a very weak legal constraint which implies in particular that a union can be legally recognized in a firm even though a large majority of the firm's workers are in fact against the union. In this case, the union cannot credibly threaten to begin a strike and its bargaining power will certainly be lower, leading to a lower wage premium. Since the cost to do so is low, unions have also an incentive to organize a large number of firms rather than just selecting those with a very high amount of rents. Table 1.2 indeed shows that, despite a low unionization rate, unions are present in a large number of firms. The small average premium associated with union recognition at the decentralized level has thus to be put in the context of the relatively large number of workers who benefit from such a premium. Finally, if the average quantity of rents available in unionized firms is lower than in other countries because unions have selected a larger number of firms, the average wage premium unions can extract is also lower. However, if this explanation holds, the union wage premium should be higher -maybe comparable to what is found in most developed countries- in firms with high potential rents.

Many empirical papers on the union wage premium have favored econometric techniques to deal with the endogeneity of union recognition. Card and De La Rica (2006) include in their regression models a polynomial in the propensity score (probability of union recognition at the establishment level) to control for establishment-related unobserved factors and the mean observable characteristics of co-workers to control for a worker unobserved productivity-related characteristics. Many other papers attempt to model explicitly the selection process of firms by unions and to use two-step procedures *à la* Heckman (Heckman, 1976) to correct for biases induced by selection (see for example Reilly, 1996). However, in the absence of a convincing instrument that would affect union recognition without affecting wages directly, these approaches suffer from the limited quantity of information available in the data that does not allow to control for all potential confounding factors affecting both union recognition

and wages.

To treat causality, this study follows another direction, more structural in spirit: it builds a simple bargaining model that enables to derive prediction consistent with the union wage premium being due to a rent-extraction phenomenon¹⁵. These predictions are then verified empirically.

1.1.5 A bargaining model leading to three predictions

The larger the rents and the workers' bargaining power in a given firm, the higher their wages. In this subsection, I formalize this assumption in a simple bargaining model and derive wage equations to be estimated empirically. The goal of this more structural approach is to give evidence that the union wage premium is indeed due to bargaining and rent extraction, rather than selection effects or compensating wage differentials. This is done by deriving two simple testable predictions compatible with the rent extraction story, but much harder to explain if one believes that only selection effects and compensating wage differentials are at play in the union wage premium.

I first assume that in the absence of unions in her firm, worker i in firm j is paid a market hourly wage w_{ij}^m that depends on her characteristics and on her firm's characteristics. Keeping the notation of the previous subsection, we have, for workers in non-unionized firms:

$$\log(w_{ij}^m) = X_i\beta + Z_j\gamma + \epsilon_{ij} \quad (1.2)$$

A prominent literature (Abowd and Lemieux 1993; Abowd and Allain 1995; Blanchflower, Oswald and Sanfey 1996) has shown that a lot of rent-sharing occurs in the U.S., Canada and France. I nevertheless suppose in equation (1.2) that rent-sharing does not happen at the establishment-level in the absence of unions. Regarding the French law, actual firm-level bargaining (face to face discussion between the employer and a worker representative) can indeed only happen when unions

¹⁵ For the sake of completeness, the full econometric analysis undertaken by Card and De La Rica has been reproduced. Estimates of the link between union recognition and wages presented in table 1.3 are not altered by the introduction of controls for co-workers characteristics and a polynomial in the propensity to be a union-firm in regression models. Full results are presented in Appendix B of this chapter.

are recognized. But one could think that implicit bargaining could still occur in non-unionized firm, leading to some rent-sharing. The existence of industry-level bargaining in France, even if weak (see above), might also imply some rent-sharing in non-unionized firms. Kramarz (2008) estimates a bargaining model with a large longitudinal dataset for France and shows that there is no rent-sharing in firms in which official bargaining does not take place¹⁶, that is in firms in which unions are not recognized. To control for potential rent-sharing at the industry-level, I will nevertheless include in the firm's covariates Z_j detailed industry indicators. I will also provide empirical evidence consistent with the fact that there is no rent-sharing in non-unionized firms in the next subsection.

When unions are present in a firm, each worker's wage w_{ij}^U is the result of a Nash bargaining between the employer and the workers. Each worker's outside option in the bargaining is the market wage she could get in a nonunion firm. The firm threat point is zero profit. Let us denote by $w_j^m = \sum_{i \in j} w_{ij}^m$ the threat point of firm j workers taken as a whole and $w_j^U = \sum_{i \in j} w_{ij}^U$ the total wage bill in firm j . The bargaining consists in maximizing the product of the employer and the workers surplus respective to their threat points:

$$w_j^U = \text{Arg max}(w_j^U - w_j^m)^\varphi (pF(L_j) - w_j^U)^{1-\varphi} \quad (1.3)$$

where L_j is firm j labor force and $F(L_j)$ is its production function, while p is a revenue shifter. $pF(L_j) - w_j^U$ are firm j profits. φ is the union bargaining power. The goal of the chapter is not to make a detailed analysis of the various bargaining models, since it has already been done extensively in the literature (Abowd and Lemieux 1993; Blanchflower, Oswald and Sanfey 1996; Kramarz 2008). Yet some clarification is necessary. In the strongly efficient bargaining model (Brown and Ashenfelter 1986), the union and the firm bargain both on wages and on employment. In the weakly efficient bargaining model¹⁷, the firm and the union bargain over wages only, while the

¹⁶ More precisely, he shows that 50% of quasi-rents are captured by workers in firms with official bargaining on wages and employment, whereas in firms with no official bargaining or official bargaining on wages only, there is no rent-sharing.

¹⁷ This model is a version of the right-to-manage model or labor demand model (dating back to Dunlop, 1944) which includes bargaining on wages in the first step of the model rather than unilateral setting of the wage level by the union.

firm unilaterally sets employment to its profit-maximizing level given the negotiated wage rate. Since it does not set out the arguments of the maximization, equation (1.3) is compatible with these 2 models. Abowd and Lemieux (1993) show that in the 2 models cited above, the solution of equation (1.3) is

$$w_j^U = w_j^m + \phi_j QR_j L_j \quad (1.4)$$

where ϕ_j is equal to φ_j in the strongly efficient bargaining model and to a positive fraction of φ_j in the weakly efficient bargaining model. $QR_j = (pF(L) - w_j^m)/L$ are the quasi-rents per worker in firm j and represent the profit per worker the firm would make if all the workers were paid their market wage. Equation (1.4) gives the share of quasi-rents going to the workforce. To know what each worker gets individually, it is necessary to make an assumption on how the union splits the bargained surplus between the firm workers. I make the usual assumption that the union is egalitarian and splits the surplus equally between all the workers. Under this assumption, equation (1.4) can be rewritten at the individual level:

$$w_{ij}^U = w_{ij}^m + \phi_j QR_j \quad (1.5)$$

This simply means that the wage of worker i in firm j is equal to her individual market wage plus a share of the bargained surplus which is equal for all workers in firm j . Taking the log of equation 1.5, we obtain $\log(w_{ij}^U) = \log(w_{ij}^m) + \log(1 + \phi_j QR_j / w_{ij}^m)$. Since firms' quasi-rents QR_j are usually small relative to their total labor cost and since the workers bargaining power ϕ_j rarely exceeds 0.5 (Kramarz, 2008), we can work with first order terms:

$$\log(w_{ij}^U) = \log(w_{ij}^m) + \phi_j QR_j / w_{ij}^m \quad (1.6)$$

Substituting w_{ij}^m by its expression in equation (1.2) and denoting by U_j an indicator equal to 1 when unions are present in firm j , we finally get a general wage equation for both workers in union and non-union establishments:

$$\log(w_{ij}) = X_i \beta + Z_j \gamma + U_j (\phi_j QR_j / w_{ij}^m) + \varepsilon_{ij} \quad (1.7)$$

Equation (1.7) leads to 3 predictions for the wage premium $\phi_j QR_j / w_{ij}^m$ associated with firm-level union recognition:

Prediction 1: the greater the firm quasi-rents, the larger the union wage premium.

Prediction 2: the larger the union bargaining power, the larger the union wage premium.

Prediction 3: the larger a worker's (market) wage, the smaller his log-wage premium.

Predictions 1 and 2 directly come from the Nash bargaining framework. The idea is to use the large amount of information available in the REPONSE04 dataset to provide reasonable proxy variables for the firms' quasi-rents and union bargaining power and to empirically test these predictions. Prediction 3 however comes from an additional hypothesis on the objective function of unions: if unions are egalitarian, they split the bargained surplus equally between workers and thus, the larger a worker wage, the smaller the share of this fixed bargained wage premium in her total compensation. Prediction 3 leads to study the impact of unions on the intra-firm structure of wages. As this prediction is not a key feature of the bargaining model¹⁸ and can less arguably be used to suggest that bargaining is indeed at play, I only present the results from its test in the next section of this chapter, which also includes an extensive study of the link between union recognition and the structure of wages in France.

1.1.6 Firms' rents, workers' bargaining power and the union wage premium

I first introduce the 2 proxy variables I use for firms' quasi-rents and workers' bargaining power and test predictions 1 and 2 separately. A full estimation of equation (1.7) and a discussion of selection issues will follow in the next subsection.

According to prediction 1, if union wage premiums are due to bargaining, the larger a firm's quasi-rents, the larger these premiums. The *ex ante* quasi-rents on which the bargaining really occurs are not observable. What is observable in the data is the *ex post* result of the bargaining (accounting wages and profits). To recover a measure of quasi-rents, authors like Abowd and Lemieux (1993) or Kramarz (2008)

¹⁸It results from the somehow arbitrary assumption that the union is egalitarian and splits the surplus equally between all the workers.

have used an estimated market wage for each worker (rather than their actual wage) to compute the *ex ante* profits on which the bargaining occurs. Since this measure of quasi-rents remains highly endogenous¹⁹, these authors also instrument it using measures of foreign competition shocks. An alternative strategy proposed by Blanchflower, Oswald and Sanfey (1996) is to use past profits at the industry level rather than current profits²⁰.

In this study, I follow a more direct strategy and use a simple indicator of the existence of potential rents at the establishment level in the spirit of Stewart (1990). This indicator is the establishment's market share as declared by its manager. Stewart (1990) studied the effect of product market conditions on union wage differentials using the 1984 *Workplace Industrial Relations Survey* which is qualitatively similar to the *establishment* REPONSE survey. He used a similar qualitative variable – though less precise – than the one I use²¹. In the REPONSE04 survey, managers are asked if the market share of their establishment is lower than 3%, between 3% and 25%, between 25% and 50% or larger than 50%. Table 1.4 (first and second rows) shows the distribution of this subjective market share variable across the 1861 REPONSE04 establishments for which it is available. The establishments' market share is a direct measure of their market power, that is of their ability to raise unilaterally their sales price and profit margin. It is consequently a good measure of the *ex ante* potential rents firms can get in their industry, relative to their competitors. Of course, a firm's market share in the long run depends on its performance and might be correlated to the quality of its employees. But the market share varies little and is not affected in the short run by variations of wages, contrary to profits that are mechanically correlated to wages. Hence the use of the market share avoids some of the endogeneity problems emerging when using measures of quasi-rents derived from accounting data which in fact represent the *ex post* result of a potential bargaining.

¹⁹ Profits or alternative measures of quasi-rents derived from accounting variables such as sales can be endogenous in many respects. For example, in the efficiency wage theory (Akerlof and Yellen 1986), higher wages lead to higher profits rather than the contrary, leading to reverse causality in wage-profit regressions.

²⁰ There are also several papers that simply link current wages to current profits. See Fakhfakh and FitzRoyb (2002) for an example on French data and a review of the literature.

²¹ Araï, Ballot and Skalli (1996) also used a similar market share variable in a different context.

Table 1.4: *Distribution of establishments in terms of their declared market share, targeted market and percentage of union members (in 2004, from employers' claims in REPONSE04, not weighted)*

Market Share (MS)	MS< 3%	3%<MS<25%	25%<MS<50%	MS>50%		Total
Number of establishments	318	787	451	305		1861
(percentage)	(17%)	(42%)	(24%)	(18%)		(100%)
Nb. of non(unionized estab.	146	257	137	109		649
(percentage)	(22%)	(40%)	(21%)	(17%)		(100%)
Nb. of unionized estab.	172	530	314	196		1212
(percentage)	(14%)	(44%)	(26%)	(16%)		(100%)
Targeted market	Local	Regional	National	European	International	Total
Number of establishments	477	416	576	305	666	2440
(percentage)	(20%)	(17%)	(24%)	(12%)	(27%)	(100%)
Unionization Rate (UR)	UR<1%	1%<UR<5%	5%<UR<10%	UR>10%		Total
Number of establishments	493	560	595	481		2129
(percentage)	(23%)	(26%)	(28%)	(23%)		(100%)
Nb. of non(unionized estab.	473	190	72	18		753
(percentage)	(63%)	(25%)	(9.6%))	(2.4%))		(100%)
Nb. of unionized estab.	20	370	523	463		1376
(percentage)	(1.45%))	(27%))	(38%)	(34%)		(100%)

Notes: The table presents the number and proportion of establishments in each market share group, targeted market group and unionization rate groups for all establishments in the REPONSE survey, and for non-organized and organized establishments taken separately. Results are produced without using sample weights and come from employers answers.

Lecture: 318 employers have declared that their establishment's market share is lower than 3%. They are 146 to declare both no unions and a market share lower than 3%.

Firms' market shares and labor costs are far less volatile and sensitive to economic shocks than profits or sales. The market share can be viewed as an indicator of the long-run firm health. We know from the theory of implicit contracts (Azariadis, 1975) that firms insure their workers against economic fluctuations (Guiso et al, 2005). This makes wages rigid in the short run and implies that the short-term relationship between current profit flows and current wages is a weakened measure of the total quantity of rent-sharing within firms. Indeed, if the bargaining occurs in the long run (as in a repeated game), the workers will want to exchange wage insurance in bad years against less rent sharing in good ones. In other words, the degree of rent-sharing in a given year might depend on the firm performance in the previous years. For this reason, studies that try to link directly profits to wages also have to deal with delicate framing problems (see Abowd and Lemieux 1993) and need to make assumptions on which profits are bargained in a given year (previous year profits, current profits, average past profits, etc). The use of the market share as an indicator of firms' potential rents captures the long-term firms' capacity to raise wages and avoids these delicate framing problems as well as biased relationships between wages and profits that can appear in the short run.

These arguments are confirmed by direct comparisons between our subjective market share variable with accounting profit variables. In order to make these comparisons, I have matched the DIANE dataset, which contains publicly-available company accounts²², with the REPONSE04 dataset. The DIANE dataset provide firm-level accounting information that makes it possible to construct firms' net income, Earnings Before Interest and Taxes (EBIT) or labor productivity for years 1995 to 2004. This latter variable will be included in some wage equations in order to better control for workers' unobserved productivity (see the following discussion subsection). The correlation in 2004 between the subjective establishment-level market share variable I use in this study and usual firm-level profit variables is positive but small (table 1.5, col. 1 and 4). The correlation between market share and EBIT is nevertheless statistically significant at the 5% level. Non surprisingly, the correlation between

²²The DIANE dataset is provided by Bureau van Dijk, a private consulting company, and it is the French source file for the Amadeus database. The match with REPONSE04 leads to a loss of about 500 REPONSE04 establishments, which is a quarter of the REPONSE sample.

long-term average profits and market share is stronger and statistically more significant (table 1.5, col. 2, 3, 5 and 6). This confirms that the market share variable captures in a larger extent the long-term firms' capacity to raise wages rather than their current situation. Using the market share thus avoids the framing problems one has when looking at the relationship between current wages and current profits. Finally, the small correlations I find also show that using a market share variable is not just equivalent to using a profit variable from a statistical perspective.

Table 1.5: *Correlations between subjective market share and contemporaneous or long period average profits*

	Net income			EBIT		
	2004	2000-2004	1995-2004	2004	2000-2004	1995-2004
Market share	0.042	0.061**	0.076***	0.064**	0.072**	0.075***
<i>p-value</i>	<i>0.141</i>	<i>0.032</i>	<i>0.008</i>	<i>0.026</i>	<i>0.012</i>	<i>0.009</i>
Observations	1228	1228	1228	1228	1228	1228

Notes: The table gives the correlation coefficients, their p-value, and the number of observations available to compute the correlation. I have restricted to the common subsample for which accounting information is available all years.

EBIT are Earnings Before Interest and Taxes. 2004 corresponds to the value of the variable for the accounting year 2004. 2000-2004 (resp. 1995-2004) gives the five-years (resp. ten-years) average between 2000 and 2004 (resp. 1995 and 2004).

*: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

From an economic perspective, a high market share certainly implies monopolistic power, but it may also be synonymous of monopsony. Indeed, in addition to be one of the only seller in their industry, high market share firms may also be one of the only possible employers for their workers, providing that they use a labor force with industry-specific human capital. In that case, they should be able to hire workers at a wage lower than the competitive one. This would be so if the labor market is competitive, that is, if there is no union operating on the labor market. The argument can be clarified using the standard neoclassical approach of union behavior initiated by Dunlop (1944). In most models, a union is considered to render the labor market monopolistic (at least in some extent). The union's monopoly power comes from its ability, at least partial, to set the price of labor (*i.e.* the wage level). From this perspective, our approach consists in comparing four different types of situations: (1) A competitive firm (*i.e.* a firm operating on a competitive goods market) facing a competitive labor supply (*i.e.* in the absence of union), (2) A competitive firm facing a

“monopolistic labor supply” (i.e. a unionized workforce), (3) a monopoly firm facing a competitive labor supply, and (4) a monopoly firm facing a monopolistic labor supply. From our bargaining model, we derived that unions should not be able to raise the wage level in competitive firms and that the union wage premium should be increasing with the extent of rents or similarly, with the extent of monopolistic power of the firms unions organize. This means that the wage level in configurations (1) and (2) should be equal (competition on the good market precludes the union to obtain anything) and that the wage level in configuration (4) should be higher than that in configuration (3). But the fact that a monopoly firm is also a potential monopsony gives a third prediction: the wage level in configuration (3) should be lower – or at least not higher – than that in configuration (1). However, we have no prediction on the wage differential between configurations (1) and (4) because two opposite effects are at play: the monopsonistic power of the firm pushes down wages whereas the union pushes them up.

Why not using an objective measure of firms’ market share rather than the subjective market share that is declared by managers? A common problem with objective measures of market share is that they require specifying the geographic units and industries to which firms belong. An objective measure of a firm market share is generally obtained by dividing its sales by the total sales in its industry and country. But some firms are not directly in competition with all other firms in their industry. More problematic, depending on their activity, firms operate at very different geographic scales. As proof of this, table 1.4 (last 2 rows) provides a distribution of the firms in the sample according to their declared targeted market. Only 24% of establishments operate on the national market. For them the standard market share indicators computed at the national level would really include the true competitors. For the remaining 76% of firms, these standard market-share indicators are inaccurate measures of the real competitive pressure that firms face. The subjective measure I use is not subject to these drawbacks since the interviewed managers should easily evaluate the real size of their market. Finally, my approach uses a measure of each establishment market share rather than the broader measure of industry concentration used in other studies (see for example Blanchflower 1986). Since the degree of

concentration of an industry is not informative of the relative market power of each particular firm in this industry, it seems inappropriate for the within-industry comparison of unionized and non-unionized firms I attempt in this study. My approach is also consistent with the results by Hirsch and Connolly (1987) who found suggesting evidence that a firm's market share provides a more likely source for union rents than industry concentration and with the results by Stewart (1990) who found using establishment-level data that union wage differentials are lower in firms facing a higher number of competitors.

The first 2 models of table 1.6 test the relationship between the market share and the union wage premium using the REPONSE04 data²³. Model (1) uses the same workers and establishment control variables as Card and De la Rica (2006) in their study of Spain and model (2) adds more detailed controls for workers' age and tenure and establishment age, as well as detailed industry dummies. The establishment market share (grouped in 4 categories), union recognition and their interaction are the variables of interest in these models. A higher market share in the absence of unions is associated with lower wages in both models, consistent with the fact that the high market share establishments can push wages down using their monopsonistic power. Union recognition in low market share establishments is associated with lower wages in both models but the estimates are imprecise and are not statistically significant at conventional levels. This is consistent with the idea that in firms facing important competitive pressures (those with low market share), there are no rents for unions to bargain over. If any, wage increases obtained by unions in these firms should rise production costs above their competitive level and drive the firms out of the market, making them invisible in our data sample. Finally, the interaction between union recognition and market share is estimated to increase wages by about 2.5% in both models, in accordance with prediction 1. This effect is robust in model 2 to the inclusion of detailed industry fixed effects (161 dummy variables). The idea in model 2 is to identify the union effect based on intra-industry comparison of establishments with various market shares and union-recognition status. This is superior to model

²³Descriptive statistics on REPONSE04 variables are available in the appendix section of the chapter (table 1.21) as well as estimations of the union wage premium with various and extended sets of control variables (table 1.22).

(1) since unions are historically better implanted in specific industries (such as manufacturing) and the average level of wages varies a lot across industries (Krueger and Summers, 1988) as well as the average degree of concentration. Nevertheless, since the REPONSE04 sample is relatively small, it makes sense to test the model's predictions using also the less demanding specification of regression model (1) which includes fewer covariates.

Table 1.6: *Log Hourly Wage Regressions: Union recognition, bargaining power and rents (REPONSE04)*

	<i>Dependent variable: log of net hourly wage</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Union Recognition (estab. level)	-0.028 (0.030)	-0.046 (0.030)	-0.025 (0.020)	-0.018 (0.019)	-0.083** (0.035)	-0.086** (0.035)
Market share	-0.018** (0.008)	-0.022*** (0.008)			-0.024*** (0.008)	-0.027*** (0.008)
Union Recognition*Market share	0.027** (0.011)	0.028*** (0.011)			0.030*** (0.011)	0.032*** (0.011)
Unionization Rate			-0.010 (0.010)	-0.012 (0.009)	-0.006 (0.011)	-0.004 (0.010)
Union Recog. *Unionization rate			0.029** (0.012)	0.024** (0.011)	0.024* (0.013)	0.017 (0.012)
<i>Workers controls:</i>						
Gender, educ., age, occup., full time	Yes	Yes	Yes	Yes	Yes	Yes
Detailed age and tenure	No	Yes	No	Yes	No	Yes
Establishment controls: Size, Region	Yes	Yes	Yes	Yes	Yes	Yes
Establishment controls: Age	No	Yes	No	Yes	No	Yes
Establishment controls: Industries	1 digit	3 digits	1 digit	3 digits	1 digit	3 digits
Observations	4990	4934	5612	5547	4430	4386
R-squared	0.641	0.711	0.640	0.714	0.634	0.684

Notes: In all models, union recognition, market share and unionization rate are defined at the establishment level and standard errors are calculated with clustering by establishments.

Market share and unionization rate are categorical variables both taking four different values (from 0 to 3, in increasing order). All regression models in this table rely on the underlying (and somehow arbitrary) assumption that the log hourly wage varies linearly with these two categorical variables. This assumption will be loosened in figure 1.2.

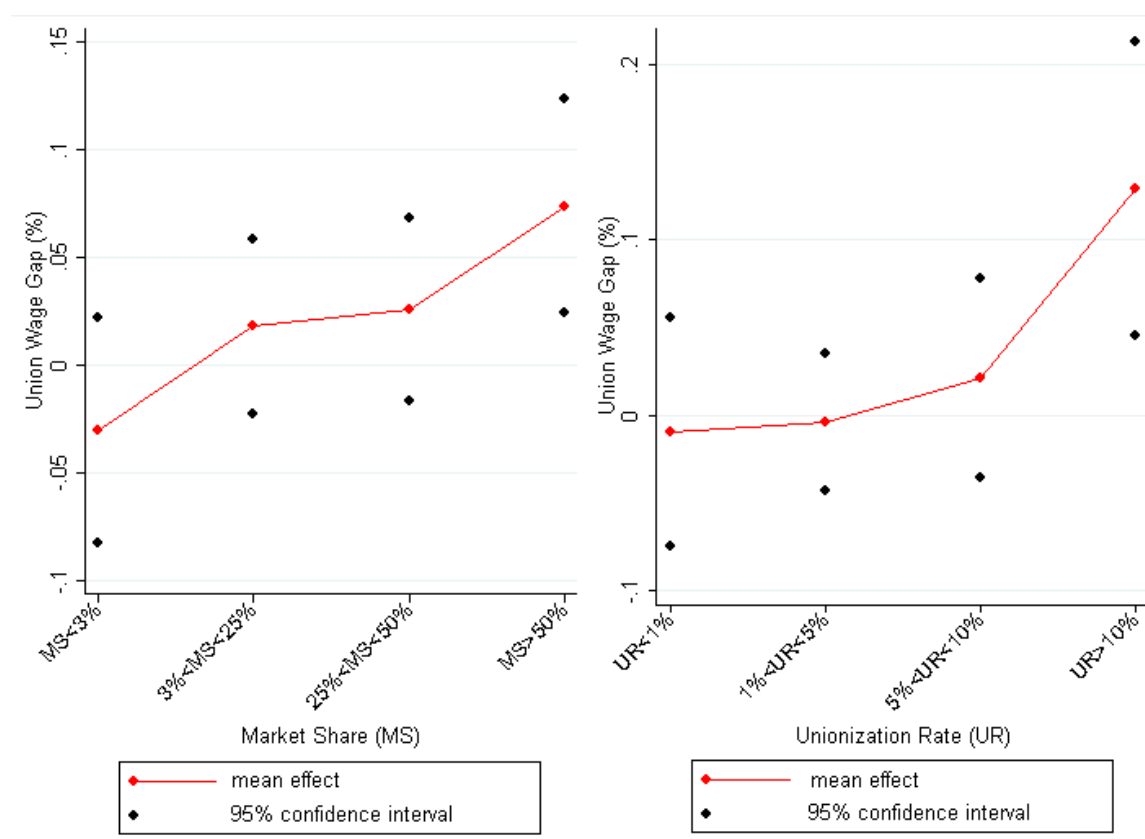
The control variables used are those in columns (2) and (3) of table 1.3, with the exception that the type of working contract is not observable in REPONSE04 and has been replaced by a dummy variable for full time workers.

*: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

Models (1) and (2) in table 1.6 impose a linear increase of the union wage premium with the market share variable²⁴. This assumption is relaxed in figure 1.2 which plots the union wage premium in each market share group, conditional on the detailed set of covariates included in model (2) of table 1.6. The union wage gap varies almost linearly between a non statistically significant -3% gap among the establishments declaring a market share smaller than 5% and a highly significant gap of 7.5% among the establishments declaring a market share larger than 50%. The difference between the union wage gaps in these two groups is thus 10.5%. Fischer's test of equality of the estimated union wage gaps in the first and last market share groups has a p-value of 0.003, implying that the union wage gap is almost surely larger among the firms with a large market share.

²⁴ Remember that the market share variable is categorical. The fact that the union wage premium is linear with the market share variable does not mean that it is linear with the numerical value of the market share, which is actually not the case (see figure 1.2).

Figure 1.2: *The union wage gap in each market share and unionization rate group (controlling for other observable characteristics)*



Notes: The union wage gaps in both graphs are obtained by running 2 regressions of the individual hourly wage from DADS03 on detailed observable individual characteristics (gender, age tenure, education, occupation, full-time job) and establishment characteristics (size, region, firm age, 3-digit industries) and a set of 4 indicators for market share groups (left graph) or 5 indicators for unionization rate group (right graph) as well as the interaction of these indicators with a union recognition dummy. The plotted point estimates and 95% confidence intervals correspond to the estimated effect of these interactions on hourly wages. The point estimates should be interpreted as the union wage premium within each market share or unionization rate group, conditional on other observable workers and establishment characteristics.

The proxy variable I use for unions' bargaining power is the percentage of unionized workers in the establishment. Since workers are not obliged to be union members to be covered by union bargaining, the percentage of unionized workers provides a direct indicator of the number of workers that supports the union(s) recognized in their establishment. Unions have more credibility to bargain and to threaten to go on strike if they are supported by a large number of workers. In this respect, the percentage of unionized workers is a good indicator of the unions' bargaining power. The percentage of unionized workers as declared by the establishments' managers has been bracketed in a 5-values variable. This variable is described in table 1.4 ²⁵.

The relationship between the unionization rate and the union wage premium is tested in models (3) and (4) of table 1.6. The set of control variables in these models is identical to those used in models (1) and (2). In both models (3) and (4), the interaction between union recognition and the unionization rate has a significant impact on the hourly wage, in accordance with prediction 2. Union recognition alone or having a high unionization rate without unions do not affect wages. This is an indication of the validity of the assumption made in the bargaining model that no bargaining occurs in firms where unions are not present. Indeed, if bargaining also takes place in non unionized workplace, we should probably observe a wage premium in non-unionized establishments having a lot of unionized workers. The right panel of figure 1.2 displays the estimated union wage gap in each unionization rate group. The union wage gap increases from virtually 0 in the group of establishments with less than 1% of unionized workers up to 12% among establishments having more than 10% of unionized workers. Fischer's test of equality of the estimated union wage gaps in the first and last unionization rate groups has a p-value of 0.012, implying that the union wage gap is larger among the firms with a large unionization rate at the conventional 5% statistical level.

As a robustness check, models (5) and (6) in table 1.6 provide a joint test of the bargaining model 2 predictions with different sets of control variables. The estimates are closed to what is found when the predictions are tested separately: the

²⁵ Note that only 34% of establishments where unions are recognized have more than 10% of unionized workers. The average unionization rate in establishments where unions are recognized is in fact very low (simple calculation from national statistics shows that it is less than 20%) and far lower than in US where 92% of the covered workers are unionized (Eren, 2009).

estimated coefficient for the interaction between union recognition and market share is slightly higher whereas the coefficient for the interaction between union recognition and unionization rate is slightly lower.

1.1.7 Estimating directly the bargaining model

I now turn to the estimation of a standard bargaining model with proxy variables for both quasi-rents and workers' bargaining power. Consistent with the assumption that there is no rent-sharing in workplaces where unions are not present²⁶, I define workers' bargaining power ψ_j by $\psi_j = U_j \varphi_j$. Equation (1.7) can then be rewritten:

$$\log(w_{ij}) = X_i\beta + Z_j\gamma + \psi_j QR_j / w_{ij}^m + \varepsilon_{ij} \quad (1.8)$$

To avoid the presence of the individual market wage w_{ij}^m that comes in the right hand-side of the log-wage regression when we suppose that the union is egalitarian, a wage equation similar to equation 1.8 can also be estimated²⁷:

$$w_{ij} = X_i\beta' + Z_j\gamma' + \psi_j QR_j + \varepsilon'_{ij} \quad (1.9)$$

I estimate equations (1.8) and (1.9) derived from the bargaining model using two sets of proxy variables for quasi-rents and bargaining power. My first approach is to summarize the four-category market share variable in a “High Market Share” dummy variable (HMS) equal to 1 for establishments with a market share higher than 50% and 0 otherwise. I then postulate a linear relationship between quasi-rents and this high market share variable:

$$QR_j = aHMS_j + b + \mu_j \quad (1.10)$$

with $a > 0$ and $\mathbb{E}[\mu_j | HMS_j] = 0$. The advantage of using a dummy variable rather than the four-category market share variable is that the linear relationship above

²⁶ This result has been proven by Kramarz (2010). The fact that the unionization rate alone does not lead to higher wages (table 1.6, columns 3 and 4) also confirms it. Finally, this assumption is also consistent with the French legal settings that make actual bargaining legal only when unions are recognized.

²⁷ Equation 1.9 is derived from equations 1.5 considering that $w_{ij}^m = X_i\beta' + Z_j\gamma' + \varepsilon'_{ij}$.

can be supposed without loss of generality. The inconvenience is that the way to aggregate the market share categories is somehow arbitrary. I have chosen to isolate the establishments with a market share higher than 50% because the union wage gaps in figure 1.2 are clearly larger among this group.

Similarly, in figure 1.2, the union wage premium jumps up among the groups of establishments with a unionization rate above 10%. I thus approximate the workers' bargaining power by an indicator of High Bargaining Power (HBP) equal to 1 for unionized establishments having more than 10% of unionized workers:

$$\psi_j = cHBP_j + d + \eta_j \quad (1.11)$$

with $c > 0$ and $\mathbb{E}[\eta_j | HBP_j] = 0$. Using equations (1.10) and (1.11), the wage equation (1.9) can be rewritten:

$$w_{ij} = X_i\beta + Z_j\gamma + \alpha_1 HMS_j + \alpha_2 HBP_j + \alpha_3 HMS_j HBP_j + \alpha_4 + \varepsilon'_{ij} \quad (1.12)$$

with $\alpha_1 = ad, \alpha_2 = bc, \alpha_3 = ac$ and $\alpha_4 = bd$. Equation (1.12) is estimated in models (1) and (2) of table 1.7 using 2 different sets of covariates. In the most precise specification (model 2), the estimate of α_3 is statistically significant at the 5% level and equal to 1.78. α_1 is estimated to be significantly negative whereas α_2 is virtually equal to 0. The negative estimate of α_1 would imply that d is negative, which would in turn lead to suppose from equation (1.11) that the true workers' bargaining power ψ_j is on average negative in establishments where HBP_j is equal to 0. Since this bargaining power parameter is derived from a Nash-bargaining, it should be bounded between 0 and 1. In this respect, the negative estimate of α_1 is puzzling. However, it can be explained if the establishments' market share also affects wages in the absence of collective bargaining. This happens for example if high market share establishments act as monopsonies and hire a specialized workforce that cannot easily find a job in another firm. In this case, the market share should also enter in the set of covariates Z_j that affect the market wage and α_1 can no longer be identified²⁸. Finally, the difference in hourly wage between high market share

²⁸ In the same way, α_4 cannot be identified since it is confounded with the constant term.

and high bargaining power establishments in those with only a high market share is 1.75€, which is about 13% of the mean hourly wage in the sample (12.69€). Columns (3) and (4) present the same estimations but using non-aggregated market share and bargaining power variables (the non-aggregated bargaining power variable is equal to 0 for non-unionized establishments and increases from 1 to 5 according to the percentage of unionized workers in establishments in which unions are recognized). The estimated cross-effect of market share and bargaining power is still positive and statistically significant. Finally models (1) to (4) have been reproduced using the log of the hourly wage as a dependent variable instead of the hourly wage. In the sixth column for example, the cross-effect on wages of a high bargaining power and a high market share is estimated to be around 8%.

Table 1.7: *Estimation of wage and log-wage equations derived from the model with proxy variables for quasi-rents and bargaining power (REPONSE04)*

<i>Dependent variable:</i>	<i>Net hourly wage</i>				<i>Log of Net hourly wage</i>			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
High Market Share (HMS)	-0.570** (0.244)	-0.732*** (0.257)			-0.031** (0.015)	-0.039*** (0.015)		
High Bargaining Power (HBP)	-0.022 (0.252)	-0.028 (0.224)			0.023 (0.014)	0.013 (0.013)		
HMS*HBP	1.422* (0.847)	1.782** (0.871)			0.067* (0.039)	0.083** (0.037)		
Market Share (MS, 4 groups)			-0.364** (0.173)	-0.478*** (0.185)			-0.019** (0.008)	-0.022*** (0.008)
Bargaining Power (BP, 5 groups)			-0.303 (0.242)	-0.426* (0.250)			-0.004 (0.009)	-0.009 (0.009)
MS*BP			0.133* (0.070)	0.176** (0.078)			0.007** (0.003)	0.007** (0.003)
<i>Workers controls:</i>			(0.07)	(0.08)			(0.003)	(0.003)
Gender educ. age occup. full time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Detailed age and tenure	No	Yes	No	Yes	No	Yes	No	Yes
Establishment controls: Size Region	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Establishment controls: Age	No	Yes	No	Yes	No	Yes	No	Yes
Industries	1 digit	3 digits	1 digit	3 digits	1 digit	3 digits	1 digit	3 digits
Observations	4430	4386	4430	4386	4430	4386	4430	4386
R-squared	0.393	0.425	0.393	0.425	0.633	0.684	0.633	0.684

Notes: In all models, standard errors are calculated with clustering by establishments. The high market share variable is a dummy equal to 1 for establishments declaring a market share larger than 50%. The high bargaining power variable is a dummy equal to 1 for establishments where unions are recognized and with more than 10% unionized workers. The bargaining power variables is equal to 0 for establishments in which unions are not recognized and varies from 1 to 5 according to the proportion of union members for establishments in which they are recognized. *: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

1.1.8 Selection issues and robustness of the results

Since predictions 1 and 2 are directly derived from a standard bargaining model, their empirical validation reinforces the rent-sharing interpretation of the union wage premium obtained by unions. But a selection process can still be at play, for example if the best workers select themselves in large unionized firms which have the highest market share. Despite my efforts to control for observable individual characteristics, some unobservable component of the individual productivity correlated with the establishments' union status and market share could lead to higher wages. This is unlikely for two reasons. First, the presence of unions in French firms relies on the individual willingness of some particular workers to accept to become union representatives. The union-status of firms depends more on a few individualities than on a global organization process of workers in a common group of interests. As a consequence, the union status of a firm can be expected to be more exogenous with respect to the individual characteristics of the nonunion members who probably did not participate in the firm's unionization process. The surveyed employees in the REPONSE04 dataset are asked if they are union members. I have re-estimated predictions 1 and 2 on the subsample of nonunion members only. The estimated effects on wages of the interaction between union recognition and market share and of the interaction between union recognition and unionization rate are only slightly lower than those found on the entire sample and significant at conventional statistical levels²⁹. The replication on nonunion members of the test of prediction 2 shows that the higher wage premium due to a higher bargaining power is similar for the subgroup of workers that induce this higher bargaining power (union members) than for the workers who legally benefit from the bargaining without being actively taking part in it (nonunion members). This result is consistent with the idea that employers comply with the legal requirement to pay union members and non-members the same wage. It also indicates that the empirical validation of prediction 1 and prediction 2 using individual wage equations is not driven by the unobserved characteristics of union members that are far more likely to be endogenous to the firms' union status. An

²⁹ The point estimates obtained for the interaction between union recognition and market share and the interaction between union recognition and unionization rate using specifications (2) and (4) in table 1.6 are respectively 0.025 with standard error 0.011 and 0.020 with standard error 0.012.

unexplainable selection process of the best nonunion members in establishments with both a high market share and a union recognized could still be at play and explain the results in model (5). Similarly, a selection process of the best nonunion members in establishments with both a high unionization rate and a union recognized can still be at play and explain the results in model (6). Since the point estimates for union recognition and market share (resp. unionization rate) in model (5) (resp. model 6) are all negative, such a selection process needs to take place simultaneously on both variables and cannot be a simple combination of two selection processes in establishments where unions are recognized and in establishments with a high market share (resp. high unionization rate). Moreover, if a selection process of the best workers is at play, this should show up in the labor productivity of the selected establishments. I have thus reproduced the empirical analysis done in this chapter including a linear control for labor productivity (measured as the value added per employee) in all the regression models in order to better capture worker's unobserved ability. The labor productivity variable I use is a firm-level variable that comes from the DIANE dataset which contains publicly-available company accounts and that I have matched with the REPOSE04 dataset. Its inclusion in regression models tends in fact to increase both the point estimates and the significance of the estimates for the variable of interest of this study, suggesting that there is no selection of the best workers into organized establishments with a high market share or a high unionization rate³⁰.

Another potential source of biases is the selection by unions of the firms with the highest potential of rent extraction, that is the firms that might pay higher wages even in the absence of unions. In this case, the selection does not operate on the individual characteristics of the workers but on the characteristics of their working establishment. If unions target and organize the establishments with the highest potential rents, we should observe a correlation between union recognition and market share. The descriptive statistics in table 1.4 show that the distribution of unionized and non-unionized establishments across market share groups are very close. The link between market share and union recognition is tested more properly in table 1.8

³⁰The DIANE dataset is provided by Bureau van Dijk, a private consulting company, and it is the French source file for the Amadeus database. The match with REPOSE04 leads to a loss of about 500 REPOSE04 establishments, which is a quarter of the REPOSE sample. This is the reason why I have not *de facto* controlled for labor productivity in the regression models.

(col. 1 and 2) which displays the results of 2 establishment-level logit regressions of union recognition on a set of variables for the different market share groups and a range of establishments' characteristics. In both models, a higher market share is not linearly associated with a higher probability of union recognition. The probability of union recognition is higher in establishments with a market share between 3% and 25% or between 25% and 50%, but not in establishments with a market share higher than 50%. The marginal effects for the average establishment in the sample of switching from a market share lower than 3% to a market share between 3% and 25% or between 25% and 50% is close to 6% (see figures in *italic*).

Table 1.8: *Establishment-level regressions: Are Union recognition and bargaining power explained by rents? (REPONSE04)*

<i>Dependent variable:</i>	<i>Union Recognition</i>		<i>Unionization Rate</i>		<i>High Barg. Power</i>	
	(1)	(2)	(3)	(4)	(5)	(6)
MS<3%	REF	REF	REF	REF	REF	REF
3%<MS<25%	0.362**	0.318	0.251*	0.141	0.245	0.173
(robust standard error)	(0.175)	(0.198)	(0.131)	(0.144)	(0.198)	(0.216)
<i>Marginal effect</i>	<i>0.067</i>	<i>0.068</i>	–	–	<i>0.037</i>	<i>0.027</i>
25%<MS<50%	0.357*	0.489**	0.296**	0.202	0.353*	0.357
(robust standard error)	(0.203)	(0.230)	(0.145)	(0.163)	(0.214)	(0.238)
<i>Marginal effect</i>	<i>0.064</i>	<i>0.101</i>	–	–	<i>0.056</i>	<i>0.058</i>
MS<50%	0.199	0.140	0.359**	0.308*	0.602***	0.586**
(robust standard error)	(0.207)	(0.230)	(0.163)	(0.179)	(0.220)	(0.249)
<i>Marginal effect</i>	<i>0.036</i>	<i>0.030</i>	–	–	<i>0.102</i>	<i>0.101</i>
<i>Establishment controls:</i>						
Size and region	Yes	Yes	Yes	Yes	Yes	Yes
Age	No	Yes	No	Yes	No	Yes
Industries	1 digit	3 digits	1 digit	3 digits	3 digits	3 digits
Regression Model*	Logit	Logit	Ologit	Ologit	Logit	Logit
Observations	1860	1591	1647	1644	1639	1466
Pseudo R-squared	0.365	0.369	0.113	0.160	0.126	0.182

Notes: The high bargaining power variable used in the last 2 columns is a dummy equal to 1 for establishments where unions are recognized and with more than 10% unionized workers. The size and region establishment controls used are identical to those in table 1.3. 3 age indicators have also been included in models (2), (4) and (6).

* "Ologit" means "ordered logit" model. *: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

The market share variable used in this study is a simple indicator of the presence of quasi-rents. If unions select firms, they should do so on the ground of their potential or actual rents. The fact that union presence and market share are not clearly

correlated does not necessarily mean that the unobserved component of quasi-rents μ_j is not correlated with union recognition. If such a selection is at play, one could expect that the unionized establishments declaring a low market share have in fact a higher μ_j than those declaring a high market share. This in turn would imply that the estimated relationship between market share and the union wage gap plotted in figure 1.2 is flatter than it should be. In other words, the strategic selection of firms by unions according to their quasi-rents can only bias downward our estimates.

As discussed above, the union status of a firm is more driven by a few individualities than by a global organization process of workers (see also chapter 2 for a detailed study of this point). It is thus not surprising to find that the union status is not highly correlated with market share. However, the unionization rate variable is an aggregate measure of the workers' willingness to organize and should be more largely driven by the amount of rents available. Columns 3 and 4 of table 1.8 present establishment-level ordered-logit regressions of the unionization rate on the market share groups indicators and a range of establishments' characteristics. In both specifications, the unionization rate increases regularly with the market share. In the specification which includes detailed covariates and industry dummies (column 4), the unionization rate is significantly higher (at the 10% level) in establishments with a market share higher than 50% than in establishments with a market share lower than 3%. The fact that workers bargaining power and quasi-rents are positively correlated leads to a positive bias in the previous estimations of the link between union wage premiums and market share or unionization rates that would tend to make steeper the estimated relationships plotted in table 1.2. Since such a bias derives from a rent-extraction view of unions (there is no sense for a selection process of firms regarding their rents if workers cannot expect to bargain these rents), it actually cannot be advocated to prove that union wage premiums are not due to rent-extraction.

From a theoretical point of view, the parameter that is endogenous to the amount of quasi-rents available is the workers' bargaining power. Consider that workers taken collectively have to pay a cost $c(\psi)$ to get a bargaining power equal to ψ , with $c(\psi)$ a convex increasing function. $c(\psi)$ is a simple measure of the aggregate cost paid at the establishment-level by workers to organize. It can for example include union dues

for unionized workers, union work for union representatives and sunk costs invested in the organization process³¹. In a two-step game, the workers should choose in the first step the bargaining power that will maximize their surplus in the subsequent bargaining with the employer:

$$\psi_j = \text{Arg max}(w_j^m + \psi_j QR_j - c(\psi_j))$$

The chosen bargaining power simply satisfies $c'(\psi_j) = QR_j$ and is an increasing function of the expected quasi-rents. I test this link between workers' bargaining power and quasi-rents by estimating a logit regression of the high bargaining power indicator (that combines together union recognition and unionization rate) on the establishments' market share groups and other covariates. The results are displayed in columns 5 and 6 of table 1.8: the probability to have a high bargaining power increases systematically when moving from a market share group to the next one. For example, going from a market share lower than 3% to a market share larger than 50% increases establishments' likelihood to have a high bargaining power by about 10%. Non surprisingly, this relationship between market share and workers' bargaining power is also stronger than that between market share and union recognition or that between market share and the unionization rate. This last result reinforces our approach and our choice to use a bargaining power indicator that combines union recognition with the establishment's unionization rate. Note finally that the endogeneity of the workers' bargaining power to firms' rents observed in table 1.8 is likely to induce an upward bias in most studies that attempt to capture the average degree of rent-sharing with regressions of individual wages on measures of quasi-rents.

A last alternative to the rent-sharing explanation of the union wage premium is the theory of compensating wage differentials. If workers can move with no cost from the non-unionized to the unionized sector, market forces should make them indifferent in equilibrium between working in one or the other of these two sectors. In this case, the wage premium obtained by unions should be compensated by losses on non-wage

³¹The standard question of which workers in particular bear this cost and which are free-riders will be considered in more details in chapter 2. Here, we simply model an aggregate establishment-level cost $c(\psi)$.

aspects of workers' compensation such as working effort, working conditions or job protection. If unions' objective function favors wages at the expense of non-wage aspects of compensation, unions could in fact extract monetary rents in firms where they are present and lose on other aspects in the same time. The simple bargaining model I use in this chapter does not model the non-wage aspects of workers' compensation and makes it impossible to sort out between this weaker explanation and the pure rent-extraction story that would predict that unions manage to make workers better off on all the aspects of their compensation. A key prediction of the compensating wage differential theory is that workers should remain at the equilibrium indifferent between working in the unionized and the non-unionized sectors. I will test this prediction in the next section by looking at voluntary quits in unionized and non-unionized firms. Results will show that the annual rate of voluntary quits is lower by one third in unionized establishments, even when controlling for workers' productivity. This is consistent with the idea that workers might be better off in these establishments. Furthermore, the quarterly dismissal rate is also a bit lower in these establishments, suggesting that job protection is not worse when unions are present. These two results (see next section) suggest that the wage premium obtained by unions is not compensated by losses on other aspects, contrary to what is predicted by the theory of compensating wage differentials.

1.2 Other aspects of bargaining: industry-level wage agreements, wage structure and job separations

This section presents a series of more descriptive results that complement the study of the union wage premium presented in section 1. I first present elements on the strength and the role played by industry-level bargaining. The evidence shows that industry-level wage bargaining is important in term of coverage but remains limited in terms of the actual wage benefits that workers obtain. I then turn to a study of the union wage premium for different groups of workers. I find that low-wage workers, blue-collars and older workers are the workers who enjoy the largest union wage premia and I provide potential explanations for these results. The section concludes with a brief study of the link between union recognition and separations (both dismissals and voluntary quits). I find that the rates of dismissals tend to be lower in union firms, and, interestingly, that quits rates are lower by one third in union firms.

1.2.1 The role of industry-level bargaining

It has been argued in section 1 that industry-level bargaining does not play a crucial role in shaping the structure of wages in France which leaves some space for additional firm-level bargaining. This subsection tests this affirmation. A unique dataset gathering information on both industry-level minimum wages and firm-level union recognition is used to assess: (i) the robustness of the firm-level union wage premium estimated in section 1 to controlling for industry-level minimum wages, (ii) the relationship between industry-level minimum wages and the structure of wages *per se*.

The study presented in this subsection is part of a larger project undertaken in collaboration with the *Direction de l'Animation de la Recherche, des Etudes et des Statistiques* (DARES). The purpose of this project is to study the link between multi-level bargaining and the structure of wages in the spirit of Meurs and Skalli (1997) and of Cardoso and Portugal (2006). More detailed results on branch minimum wages and on the impact of multilevel bargaining on wages will be published soon in

collaboration with the DARES.

1.2.1.1 Data description

The dataset used in this subsection comes from a broader dataset called “base DGT Dares”. The “base DGT Dares” is a retrieval from the *Base de Données des Conventions Collectives* (BDCC) managed by the *Direction Générale du Travail* (DGT). It has been improved and completed by the DARES for study purposes. For the moment this dataset can only be used at DARES. This explains why it has not been used in other sections of this thesis. The two data sources that we used to create the final dataset are presented below successively:

a) Industry-level minimum wages

Our first and core source of data has been created by the DGT. It covers all branches that have more than 5,000 employees or have been more than 5,000 employees in the past few years³². The final sample contains 276 national or infra-national branch agreements³³ for the year 2006. For each agreement, we know the industry-level minimum wage for four categories of occupations: blue-collars, clerks, “intermediate occupations” (which comprises mostly technicians and salesmen) and managers. Industry-level wage bargaining often leads to an agreement on a complete pay scale that has to be respected. The pay scale specifies not only the minimum wage for each category of worker but also their wage depending on their qualifications and seniority. The data do not include the complete pay scale. However, in addition to the minimum wage, we have access to the highest bargained wage for each category of worker in each branch, that is the minimum wage that has to be paid to the workers within the highest seniority and/or qualification group. From herein, we will refer to “the lowest minimum wage” and to the “highest minimum wage” to qualify the lowest and the highest bargained wage for a given branch and in a given occupation group.

When no agreement was signed in 2006 in a given branch, the minimum wage for

³² There are a few exceptions such as the collective agreement for journalists which is too complex and specific to be followed by DGT. For more information, see Base des accords salariaux de branche, note Dares réf. DARES/STRP/SCS/CA/007/2011, mimeo.

³³ The negotiations occur at a regional level in only 4 branches : Construction, Public works, Metallurgy and Architecture.

each category of worker has been retrieved from the previous valid agreement covering the branch. When more than one agreement were signed in 2006, we have computed an annual minimum wage by taking an average of the different minimum wages valid during 2006, weighted by the time during which each agreement was valid. Some computations have been necessary to get annual minimum wages that are comparable across branches. Indeed, some branches negotiate monthly minimum wages whereas other ones negotiate annual minimum wages. Annual minimum wages bargained during 2006 are retroactive: they apply to the whole 2006 year even if they have been signed late in the year. However, monthly minimum wages only cover workers from the date of the agreement. In some branches, agreements include both annual and monthly minimum wages. There are also branches that have negotiated two or three times during the year 2006, with different types of minimum wages bargained during each negotiation (for example, a monthly minimum wage bargained during a first negotiation and an annual one during a second). Finally, the negotiations on wages sometimes include only the base wage whereas they can also include bonuses. We have computed annual minimum wages in each occupation-industry group by keeping systematically the most favorable case to the workers. This means that when different types of minimum wages were covering the workers or when many negotiations occurred during the year 2006, we computed different annual minimum wages, based on the different possible combinations of negotiated wages, and kept the highest one.

b) ECMOSS 2006

To get information on real wages and union recognition at the firm level, we matched the DGT data on industry-level minimum wages to the *Enquête sur le Coût de la Main d'Oeuvre et la Structure des Salaires* (ECMOSS) dataset for the year 2006. ECMOSS is an employer-employee dataset covering 118,158 employees in 13,915 establishments of 11,046 firms with more than 10 employees. Detailed information on the different components of workers' compensation is available as well as the usual observable individual characteristics: age, tenure, occupation, education, gender, etc. In addition, a branch identification number is also available and enables to obtain for each type of worker the corresponding industry-level minimum wage.

c) Merge and data cleaning

We have been able to retrieve a branch minimum wage for 61,228 workers in the ECMOSS dataset. We have then removed from the data sample branches in which the proportion of firms with less than 10 employees was higher than 50%, workers under 17 or above 66 years old, workers with particular job contracts (such as internships), those who have less than 30 paid days during the year or more than 300 days of declared absence (for vacations, illness, strike, etc), those with less than 20 hours of work declared and those with a hourly gross wage higher than 2000 Euros. This leaves us with a final sample of 58,847 individual observations.

1.2.1.2 Descriptive statistics on branch minimum wages

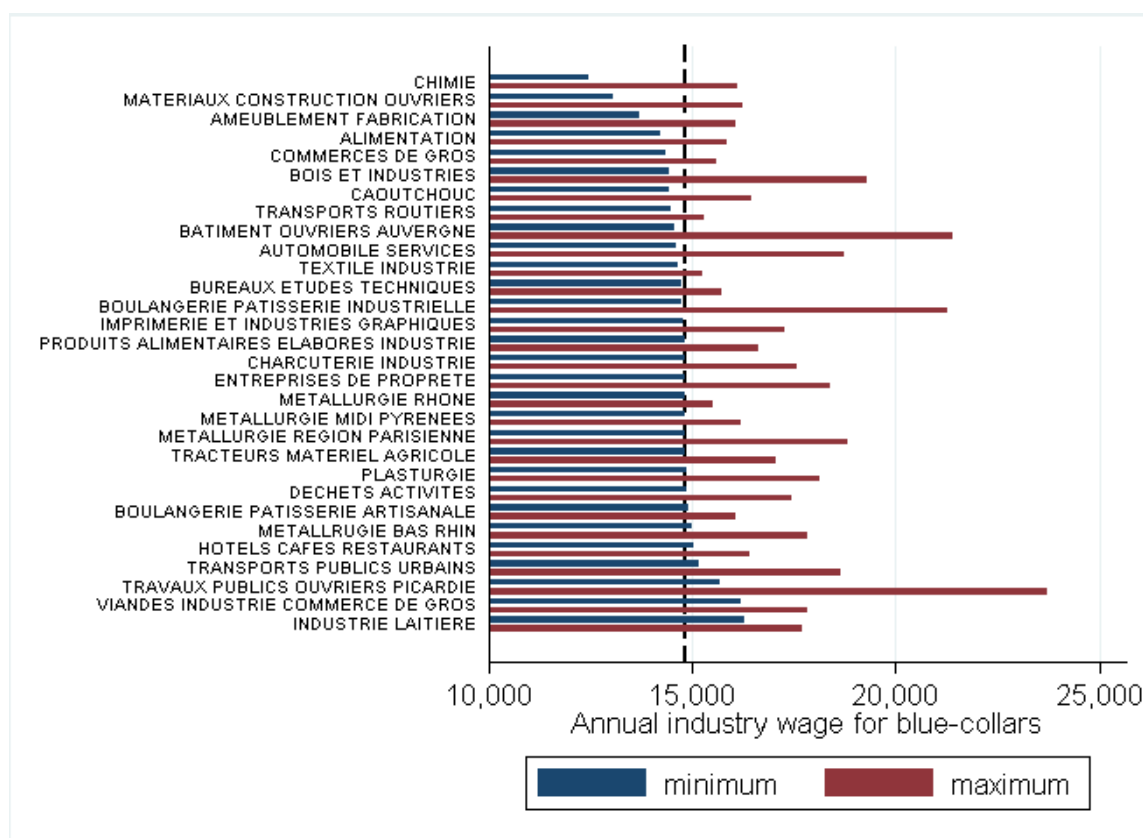
Negotiations within branches might appear as the “black box” of French labor relations. From a statistical point of view, very little is known on industry-level bargaining in France. It is well known that virtually all workers are covered by collective agreements at the industry-level. However nobody really knows what is really achieved, on average, in these agreements. The new data collected by the DGT is used to highlight some descriptive elements on industry-level bargaining³⁴.

Figure 1.3 gives the lowest and highest minimum wages negotiated for blue-collar workers in the 30 branches covering the highest number of blue-collar workers. The annual national minimum wage in year 2006 is given as a comparison. Two stylized facts emerge from figure 1.3. First, most branches have their lowest minimum wage close to the national minimum wage. Only 3 branches have their minimum wage standing substantially above the national minimum wage: the milk industry, the meat industry and the public works in the Picardie region. We can also identify 3 branches with their minimum wage substantially under the national minimum wage: chemicals, construction materials and the furniture industry. Second salient fact: the highest minimum wages bargained vary a lot from an industry to another one. In some industries such as metallurgy in the Rhône region, the highest minimum wage is only slightly higher than the lowest one. In contrast, the construction industry in the Auvergne region or the industrial bakery industry have their lowest minimum

³⁴A more detailed study about branch minimum wages will be published soon in collaboration with the Dares

wage under the national one but their highest one well above it. These very heterogeneous situations probably reflect the different bargaining traditions: in some cases, a complete pay-scale is bargained, whereas in some others the bargaining focuses on the wage of workers with the lowest qualification.

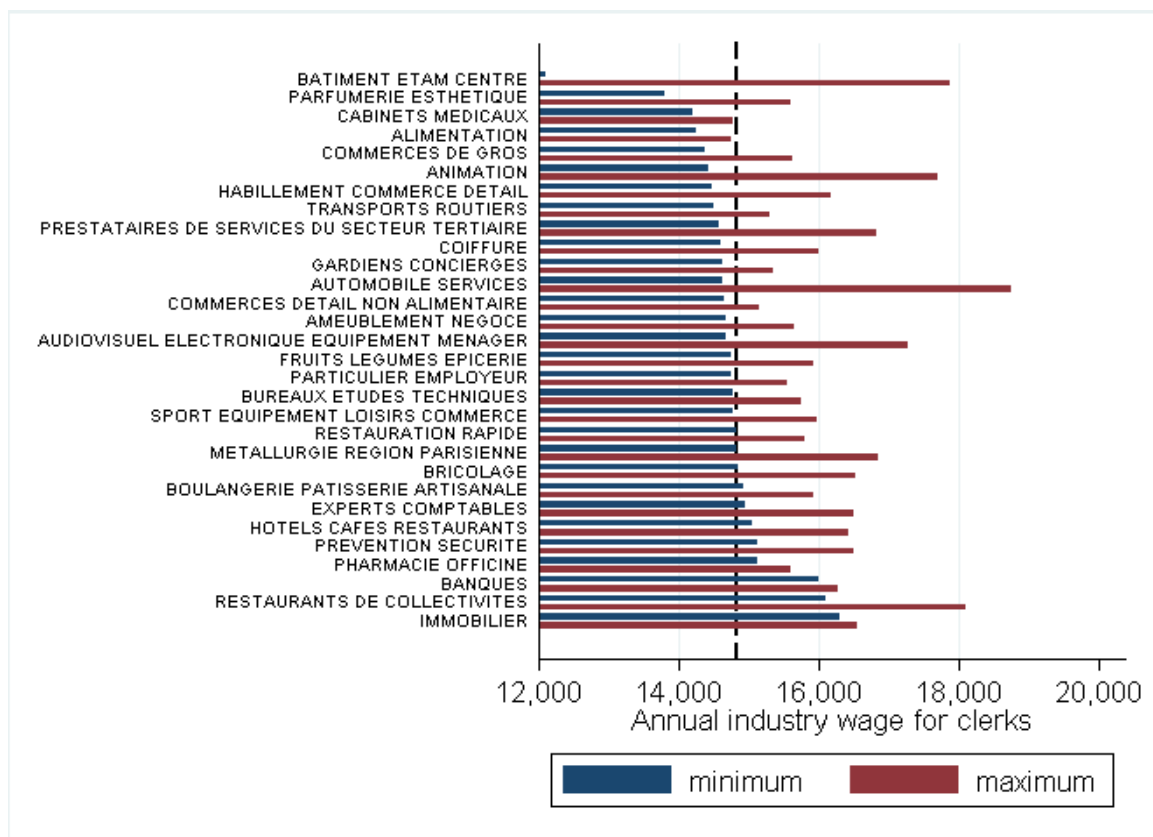
Figure 1.3: *Lowest and Highest minimum wages for blue-collar workers in the 30 largest branches, in 2006*



Notes: The dashed line represents the annual national minimum wage that applied in 2006 (average of the annualized national minimum wages of the 1st of July in 2005 and 2006).

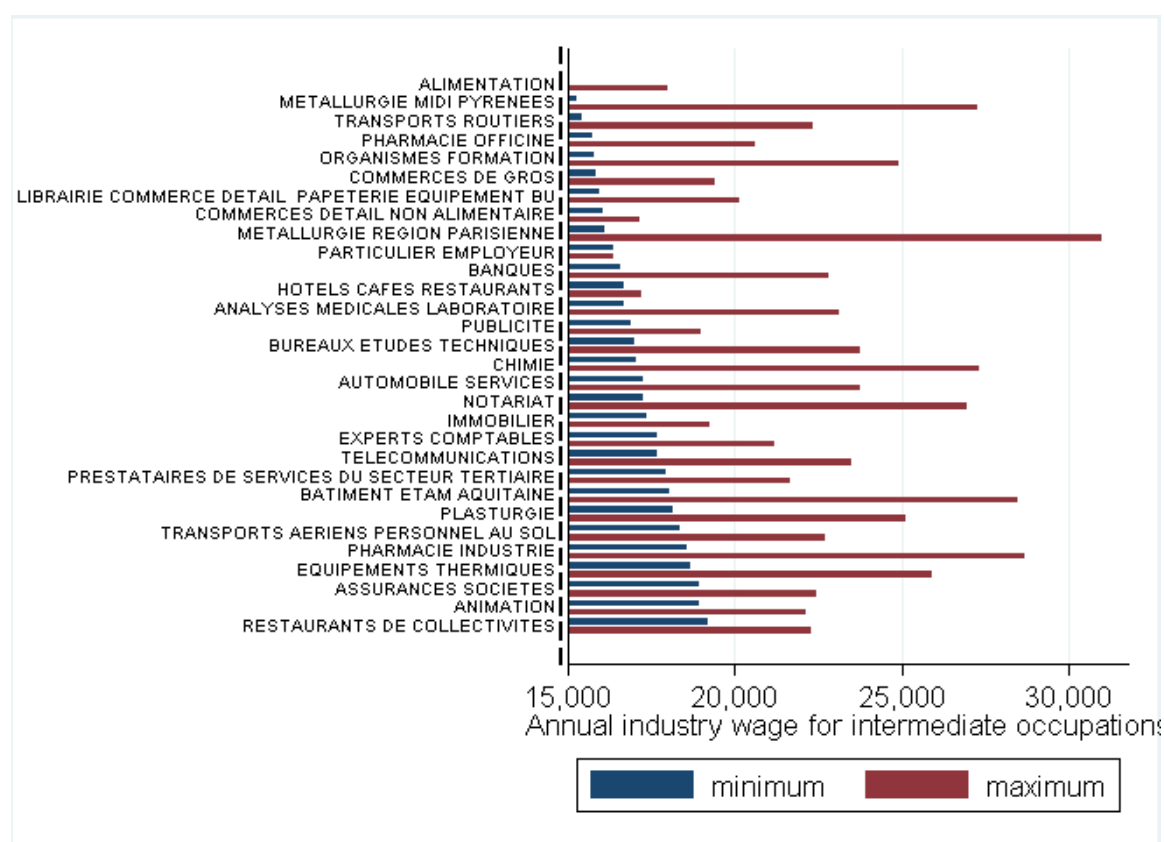
Figures 1.4, 1.5 and 1.6 present similar statistics for clerks, workers in intermediate occupations, and supervisors/managers. The results for clerks are very similar to those for blue-collar workers (figure 1.4). The picture is different for workers in intermediate occupations (essentially technicians and commercials). In most branches, they have their lowest minimum wage above the national one and industry-level bargaining, in large branches at least, can be said to bring them a real protection (figure 1.6). The highest annual minimum wages are also highly variable from a branch to another one, ranging from 17,000 Euros for “individual employers” to 31,000 Euros in metallurgy

Figure 1.4: *Lowest and Highest minimum wages for clerks in the 30 largest branches, in 2006*



Notes: The dashed line represents the annual national minimum wage that applied in 2006 (average of the annualized national minimum wages of the 1st of July in 2005 and 2006).

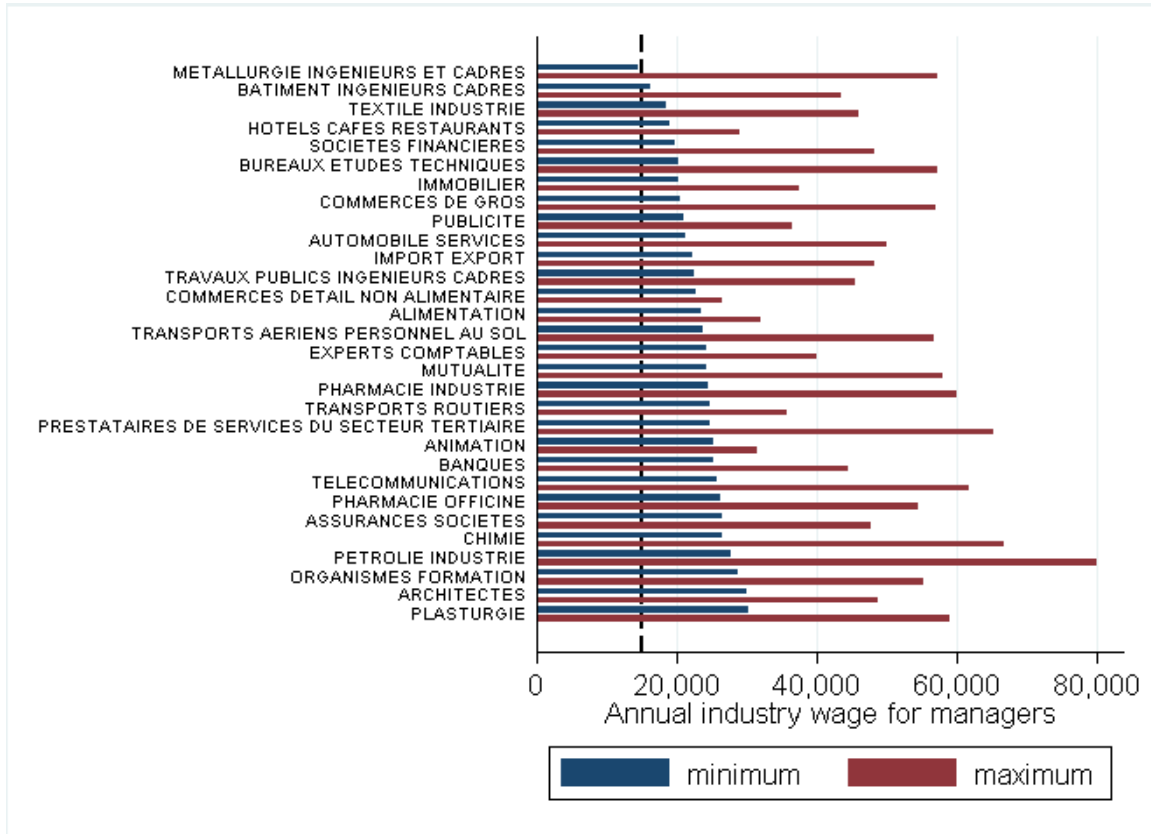
Figure 1.5: *Lowest and Highest minimum wages for intermediate occupations in the 30 largest branches, in 2006*



Notes: The dashed line represents the annual national minimum wage that applied in 2006 (average of the annualized national minimum wages of the 1st of July in 2005 and 2006).

in the Paris region.

Figure 1.6: *Lowest and Highest minimum wages for intermediate occupations in the 30 largest branches, in 2006*



Notes: The dashed line represent the annual national minimum wage that applied in 2006 (average of the annualized national minimum wages of the 1st of July in 2005 and 2006).

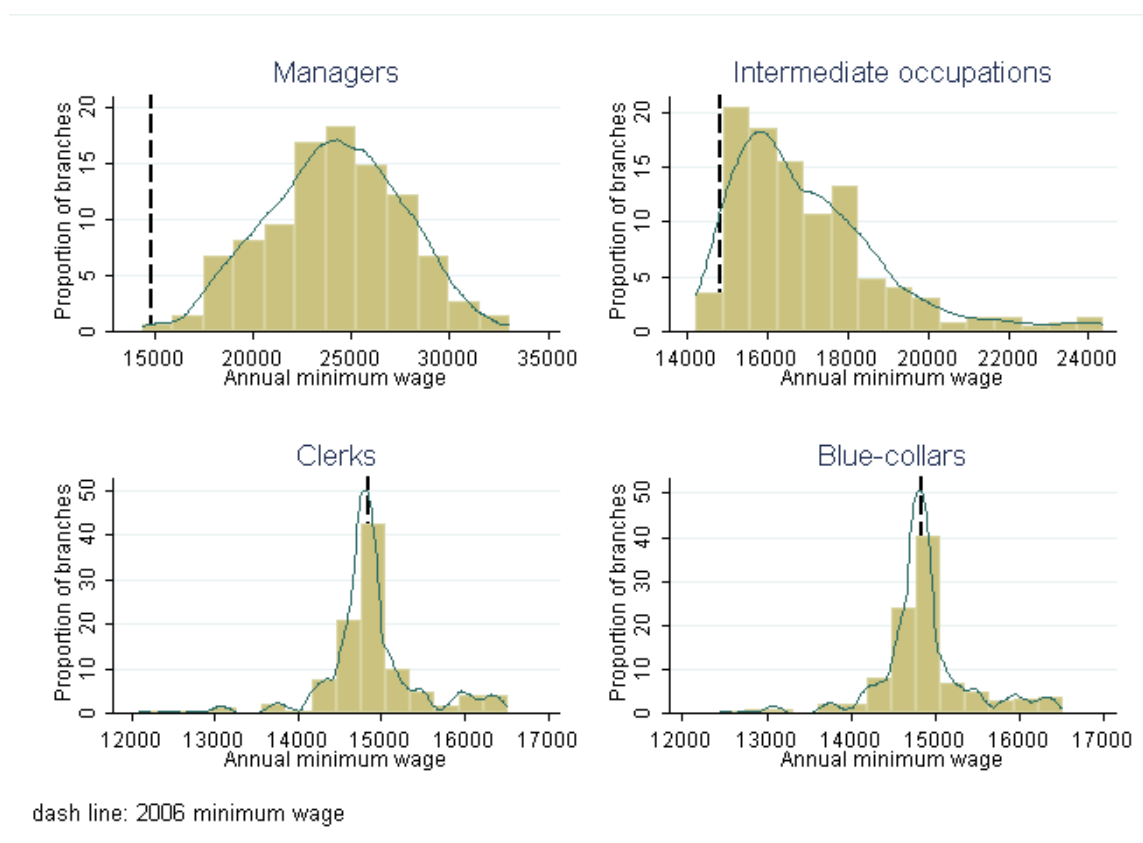
Industry-level minimum wages for managers are also very different from a branch to another one (figure 1.6). In the construction and metallurgy branches, the lowest minimum wage is close to the national one. In contrast, the lowest minimum wage for architects and in the plastics industry peak at roughly 30,000 Euros per year³⁵. The highest minimum wage is above 30,000 Euros in all branches and reaches 80,000 Euros in the oil industry.

To give a more complete picture of industry-level bargaining in the 276 branches with more than 5,000 employees, figures 1.7 and 1.8 plot the distribution of the lowest and highest minimum wages across all branches for each occupation group.

³⁵ As a matter of comparison, the hiring wage of students from Ecole Polytechnique in the private sector was 41,720 €/per year in 2006.

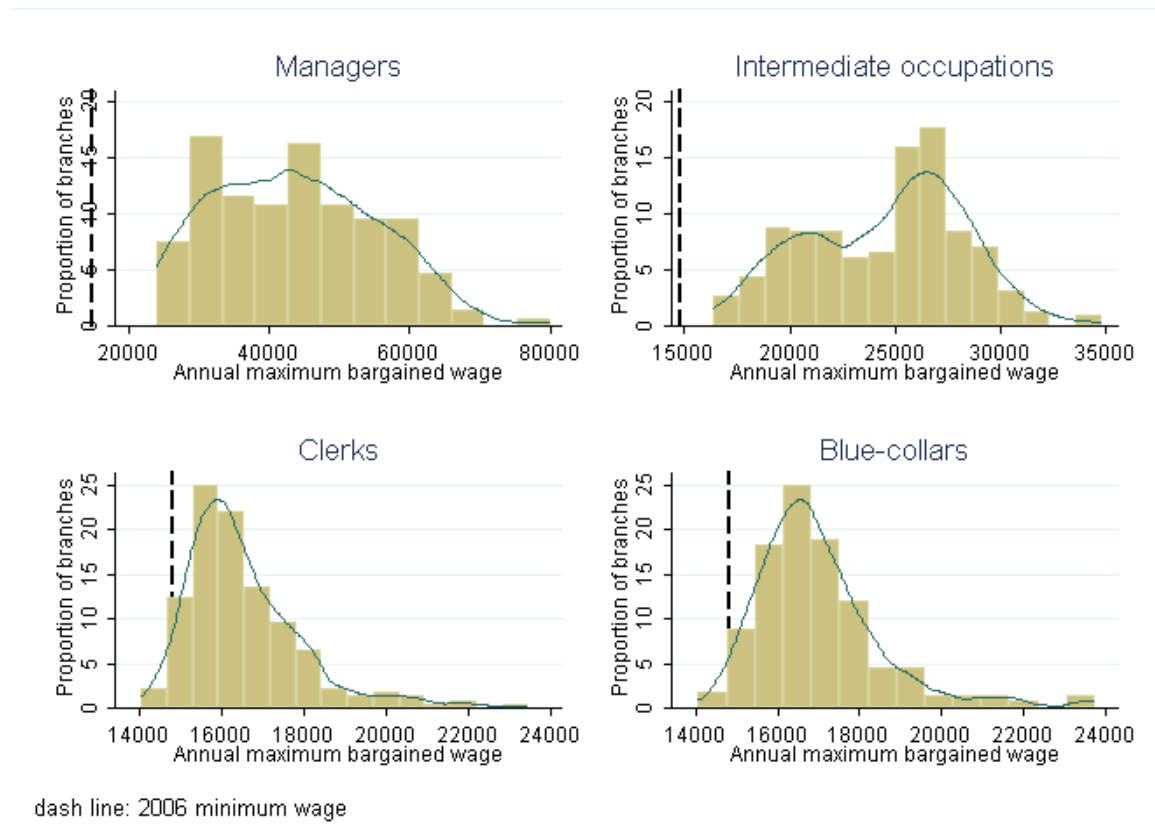
The distributions of the lowest minimum wages for blue-collar and clerks are very tight and centered on the national minimum wage. It confirms that industry-level bargaining does not offer much guaranties in terms of wages for workers in these occupations. The distribution for intermediate occupations is much more skewed, with a mode slightly above the national minimum wage. For managers, the distribution is more symmetric with a mode around 25,000 Euros. Consistent with the observations made from figures 1.3 to 1.6, the distributions of the highest minimum wages (figure 1.8) appear to have a higher variance for all occupation groups (and especially for managers).

Figure 1.7: *Distribution of the branches' lowest minimum wages in the different occupation groups in 2006*



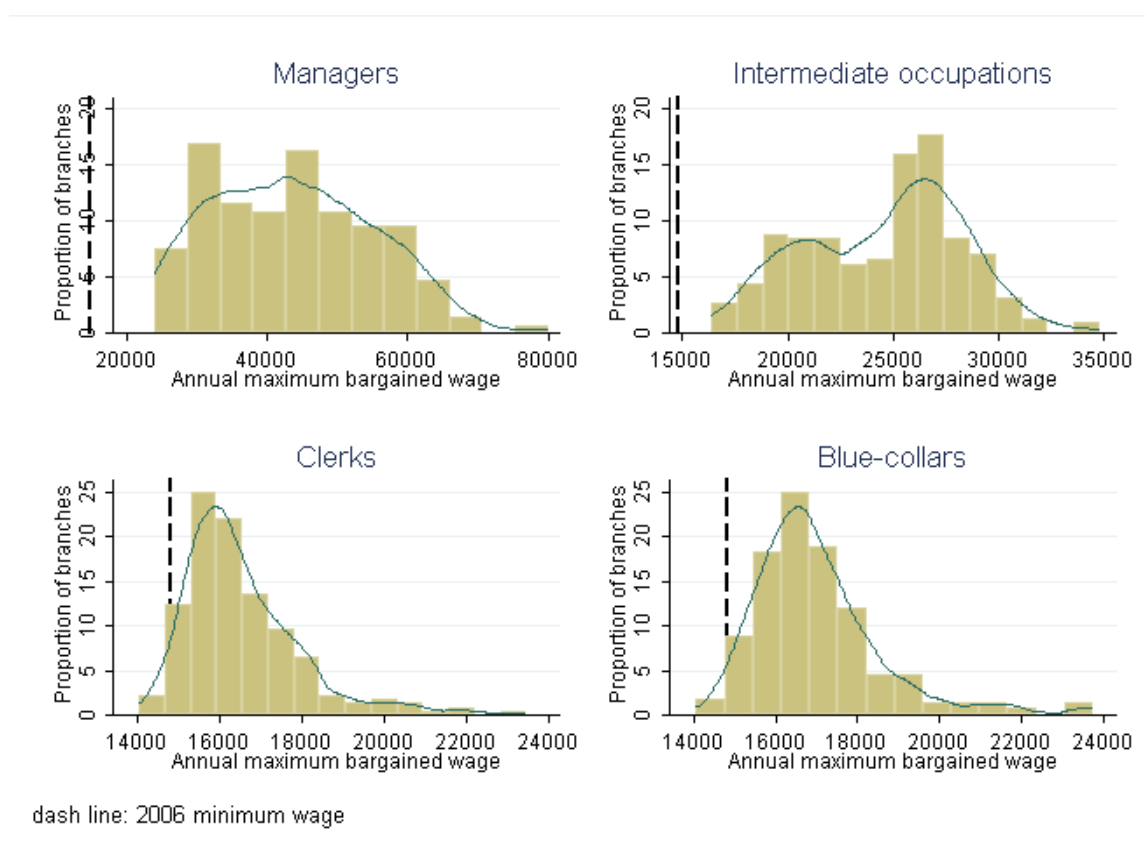
The relationship between lowest and highest minimum wages is illustrated in figure 1.9 which plots the distribution of the differences (in %) between the branches' lowest and highest minimum wages by occupation group. The 4 distributions exhibit a high variance (especially the distribution for intermediate occupations), which confirms

Figure 1.8: *Distribution of the branches' **highest** minimum wages in the different occupation groups in 2006*



that there is no systematic correlation between the lowest and the highest bargained minimum wages. An interesting point is also confirmed by figure 1.9: the career perspectives negotiated for the different categories of workers are quite different. The difference between the contractual wages for the most qualified blue-collar workers or clerks and the least qualified does not exceed 30% to 40%, whereas the corresponding difference can reach 50% for intermediate occupations and 75% for managers.

Figure 1.9: *Distribution of the differences (in %) between the branches' lowest and highest minimum wages in the different occupation groups in 2006*



1.2.1.3 The interaction between industry-level and firm-level bargaining

One concern about the study of the firm-level union wage premium presented in section 1.1 is its robustness to controlling for the role of industry-level bargaining. The estimates produced in section 1.1 derive from empirical specifications that systematically include dummy variables for industries (1, 2 or 4-digit dummies). The objective was to make comparisons within industries and to get rid of any industry-

specific effect. Thus, our earlier estimates should not be biased too much by the role of industry-level bargaining. However, it is possible to check this point directly using the ECMOSS06 dataset matched with the industry-level minimum wages by occupation group. Such a robustness check is necessary for two reasons: first, the bargaining units (called “branches”) do not coincide perfectly with the usual classification of the industries, implying that the dummy variables for industries that was used in section 1.1 did not fully control for the effect of bargaining at the branch/industry level. Second, the industry minimum wages are given by occupation, which allows a better control for their potential effects.

Industry-level bargaining would bias our estimates of the firm-level union wage premium if and only if the presence of unions within firms is correlated with the strength of unions at the industry-level. Put it shortly, when unions are strong at the industry-level, they might also be strong at the firm level or present in many firms. I have first used the ECMOSS2006 dataset to test the relationship between the branches’ minimum wages and the probability for a worker to have a union in her working establishment. To do so, I have fitted, at the individual level, logit, probit and linear models of the probability to have a union in the worker’s establishment, using as covariates the branch minimum wage corresponding to the worker’s occupation and a set of individual and establishment characteristics³⁶. The estimates of the relationship between the industry-level minimum wage and the probability to have a union at the firm-level are never significant (results not reported), suggesting that union presence at the firm level is not correlated to industry-level wage bargaining. As a consequence, our earlier analysis should not be biased by the role played by industry-level bargaining. A direct test is nonetheless presented in table 1.9. Models (1) to (3) first reproduce the main specifications of table 1.3 using the ECMOSS2006 dataset which is similar to the ESS2002 dataset used in section 1.1. The establishment-level union wage premium found in these specifications is close to what has been found with ESS2002 and are even a bit smaller. In models (4) to (6), an additional control for the log of the branch lowest minimum wage (computed for each category of

³⁶Individual control variables are a gender dummy, 10 dummies for age, 4 dummies for tenure, 4 dummies for occupation and 4 dummies for education. Establishment-level control variables include 5 size dummies and 10 region dummies. Dummies for industries are also included in some specifications and their inclusion does not affect the results.

workers) is introduced as an additional control. The point is to test if the estimate of the establishment-level union wage premium is related to industry-level bargaining. As could be expected, the branch minimum wage per occupation group is strongly related to the real wage. However, the estimated effect of union recognition remains virtually unchanged, confirming that industry-level bargaining and firm-level union recognition affect the level of real wages independently. I have also estimated models equivalent to model (6) with a third-order polynomial in the branch minimum hourly wage (instead of just using the logarithm) and with additional controls for the highest branch minimum hourly wage (either a third-order polynomial or the logarithm of the variable). In all cases, the establishment-level union wage premium remains unchanged.

Table 1.9: *Log Hourly Wage Regressions (ECMOS06): the union wage premium when controlling for the branches' minimum wages*

	<i>Dependent variable: log of gross hourly wage (from ECMOS06)</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Workplace Union Recognition	0.117 (0.010)	0.023 (0.007)	0.017 (0.007)	0.112 (0.008)	0.023 (0.007)	0.017 (0.007)
Log of branch hourly minimum wage				1.135 (0.020)	0.091 (0.024)	0.052 (0.023)
<i>Worker's characteristics</i>						
Women		-0.131 (0.005)	-0.128 (0.005)		-0.131 (0.005)	-0.128 (0.005)
High School		0.0839 (0.006)	0.0851 (0.006)		0.0845 (0.006)	0.0854 (0.006)
Some College		0.110 (0.006)	0.111 (0.006)		0.110 (0.006)	0.112 (0.006)
College or University Degree		0.202 (0.010)	0.213 (0.010)		0.204 (0.009)	0.214 (0.010)
Age		0.009 (0.000)	Detailed		0.009 (0.000)	detailed
Fixed Term Contract		-0.008 (0.015)	0.032 (0.016)		-0.008 (0.015)	0.033 (0.016)
<i>Firm's characteristics (reference:workplaces with 10 to 20 workers)</i>						
20-50 Workers		0.008 (0.008)	0.009 (0.009)		0.009 (0.008)	0.009 (0.009)
51-100 Workers		0.022 (0.010)	0.023 (0.010)		0.023 (0.010)	0.023 (0.010)
101-200 Workers		0.026 (0.010)	0.024 (0.010)		0.026 (0.010)	0.023 (0.010)
Over 200 Workers		0.078 (0.010)	0.066 (0.010)		0.077 (0.010)	0.066 (0.010)
Intercept	2.67 (0.007)	2.81 (0.024)	3.02 (0.027)	0.16 (0.043)	2.58 (0.065)	2.89 (0.062)
Industries	-	1 digit	2 digits	No	1 digit	2 digits
Observations	27,389	25,488	23,986	27,389	25,488	23,986
R-squared	0.019	0.585	0.609	0.293	0.586	0.609

Notes: The branch minimum wage is defined by occupation groups. All models except (1) and (4) also include 8 indicators for region and 4 indicators for occupation. Standard errors are calculated with clustering by establishments in all models. Models (2) and (5) include 9 indicators for industry. Models (3) and (6) include 50 indicators for industry as well as 10 indicators for worker's age and 4 indicators for worker tenure.

1.2.2 Unions and the structure of wages

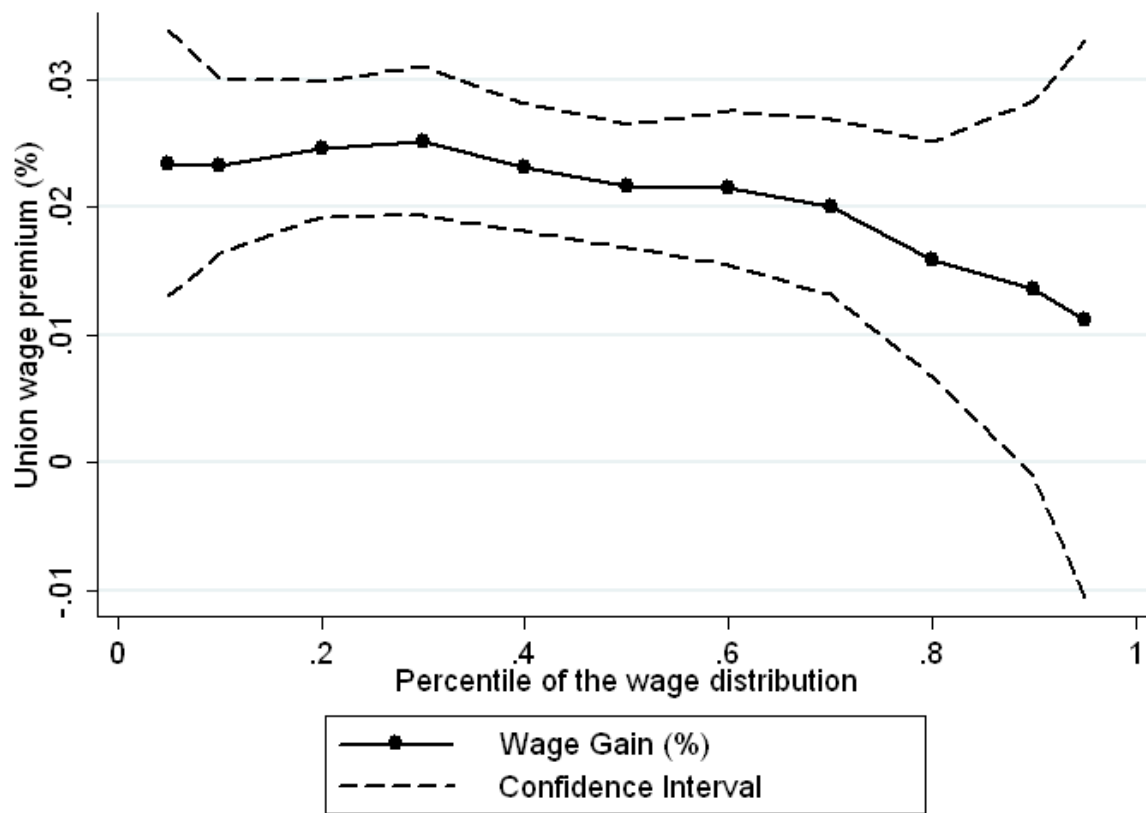
The more concise way to test prediction 3 derived from the model in section 1 (the larger a worker's wage, the smaller his log-wage premium) is probably to use quantile regression models (see for example Koenker and Hallock, 2001). This is done in figure 1.10 which shows how union recognition shifts the different deciles of the overall wage distribution, conditional on other observable variables. Consistent with prediction 3, the union wage premium decreases along the wage distribution. Union recognition is associated with an increase of the 3 first deciles of the wage distribution by roughly 2.5% whereas the shift for the 2 last deciles is only around 1.5%. This observation is consistent with an abundant literature that has studied the effect of unions on wage inequalities (see *i.a.* Freeman (1982) for an early study and Card *et al.* (2004), for a recent one).

Tables 1.10 to 1.13 provide additional evidence on the relationship between the union wage premium and individual or establishment-level characteristics. Overall, the results suggest that the union wage premium is quite heterogeneous across categories of workers and groups of establishments. Unions seem to benefit particularly to blue-collar workers and older workers as well as individual working in the manufacturing sector, outside the Paris region and in medium-size establishments.

In Table 1.10, I consider potential heterogeneity across occupation and education. In order to do that, I interact union recognition with both dimensions. Models (1), (3) and (5) include a full set of establishment and worker controls, together with 2-digit industry dummies. In models (2), (4) and (6), I re-estimate the model with establishment fixed-effects in order to better control for unobserved heterogeneity across plants. Results in model (1) suggest that blue-collar workers earn about 6% more in union establishments than in nonunion ones, while workers in other occupation groups are paid almost equivalently in union and nonunion establishments³⁷. In order to better control for establishment unobserved heterogeneity, I run a fixed effect estimate - see model (2). This confirms that the wage gap between blue-collar workers and workers in other occupation groups is significantly 3 to 4% higher in establish-

³⁷ The coefficient on the UR*Group-type variable gives the wage gap for workers in this group type between union and non-union establishments. For example, the coefficient on the UR*(Managers) variable gives the wage gap for managers between union and non-union establishments.

Figure 1.10: *Quantile estimates of the union wage premium (conditional on other observable variables)*



Notes: Obtained from a quantile regression that includes the detailed controls in model (3) of table 1.3. The individual controls are 10 workers' age groups, 4 workers' tenure groups as well as indicators for workers' gender, education, occupation and an indicator for full-time jobs. The establishment-level controls are 5 indicators for establishment size, 10 indicators for regions and 47 indicators for industries.

ments where unions are recognized³⁸. Regarding education, low-education workers seem to benefit more from union recognition – model (3). When it is controlled for unobserved heterogeneity across establishments – model (4) –, the high-low education wage gap is only slightly smaller (1 to 2%) in union establishments. To control for the colinearity between occupation and education, models (5) and (6) provide a joint test of the differential effect of unions across occupation and education groups. It appears that the differentials related to education disappear – model (5) – or are even slightly reversed – model (6) – whereas the differentials related to occupation remain very stable. Overall, the results suggest that union wage premium is high (around 5%) and significant only for blue-collar workers and that it does not vary much with education.

³⁸ The coefficient on the UR*Group-type variable gives the wage gap between workers in the group type and workers in the reference group (REF) in union establishments as compared to non-union ones. For example, the coefficient on the UR*managers variable gives the wage gap between managers and blue-collars workers in union-establishments as compared to non-union ones.

Table 1.10: *Heterogeneity across workers: Occupation and Education*

	<i>Dependent variable: log of gross hourly wage (from ESS02)</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Union Recognition (UR)					0.059*** (0.006)	
UR* Blue-collar	0.058*** (0.006)	REF			REF	REF
UR* Clerk	0.014* (0.008)	-0.027*** (0.007)			-0.041*** (0.009)	-0.027*** (0.008)
UR* (Intermediate Occupation)	0.008 (0.007)	-0.042*** (0.006)			-0.045*** (0.008)	-0.043*** (0.007)
UR* Manager	-0.011 (0.007)	-0.040*** (0.007)			-0.060*** (0.009)	-0.049*** (0.008)
UR* (less than high school)			0.037*** (0.005)	REF	REF	REF
UR* (High school)			0.014** (0.007)	-0.012** (0.006)	-0.004 (0.007)	0.000 (0.006)
UR* (Some College)			-0.006 (0.007)	-0.015** (0.006)	-0.017** (0.008)	0.003 (0.007)
UR* (College or Univ. degree)			-0.010 (0.009)	-0.002 (0.008)	-0.012 (0.010)	0.021** (0.009)
Observations	97,751	106,734	97,751	106,734	97,751	106,734
R-squared	0.637	0.740	0.637	0.740	0.637	0.740
workers' controls	yes	yes	yes	yes	yes	yes
establishment controls	yes	no	yes	no	yes	no
2-digit dummies	yes	no	yes	no	yes	no
Establishment fixed effects	no	yes	no	yes	no	yes

Notes: In all models, standard errors are calculated with clustering by establishments. UR stands for “Union Recognition”. All models include individual control variables for age (10 groups), tenure (4 groups), gender, fixed-term contract, education (4 groups) and occupation (4 groups). Models (1), (3) and (5) include establishment-level control variables for size (5 groups), region (10 groups) and industry (47 groups). Models (2), (4) and (6) include establishment fixed effects.

Table 1.11 is similar in structure to table 1.10 but focuses on the family wage gap across age and tenure groups. I have constructed four age groups and interacted them with the union recognition variable. These age groups are obtained by aggregating the 10 age indicators that are also included as controls in the regressions. I also interacted with union recognition the usual tenure groups that are also added as controls in the regression models. The results in models (1), (3) and (5) correspond to the specification without establishment fixed effects. Model (1) shows that there is a union wage premium of 5 to 6% for workers above 46 years-old and no union wage premium for younger workers. The old-young wage gap is robust to controlling for unobserved heterogeneity across establishments: senior workers earn significantly more (about 4% more) with respect to younger ones in union establishments as compared to non union ones – model (2). In specifications in which establishments’ fixed-effects are not included, the presence of unions seems to favor only workers with more than 10 years of tenure – model (3). However the difference between tenure groups disappears as soon as establishments’ fixed-effects are introduced – model (4). Finally, models (5) and (6) test jointly the relationship between the union wage premium and age and the relationship between the union wage premium and tenure (because age and tenure are highly correlated). The relationship between the union wage premium and age appears to be virtually unchanged as compared to models (1) and (2) whereas the relationship between the union wage premium and tenure vanishes completely. Overall, the results suggest that union wage premium is high and significant only for older workers and that it does not vary much across tenure groups.

A potential explanation for the relationship between union recognition and the better wages for older workers needs to be mentioned: unions in France tend to negotiate more often early retirement plans. If bad workers leave the union firms earlier due to these early retirement plans, the remaining good old workers in union firms would indeed appear to be better paid. However, the results in table 1.11 indicate that the wage premium for older workers in unionized establishments is almost equivalent for workers between 46 and 55 years old than for workers being more than 56 years old³⁹, implying that the age premium in union firms cannot be

³⁹A more detailed analysis (not reported) shows that there is also a union wage premium 3% higher for workers between 40 and 45 years old as compared to their younger colleagues.

entirely explained by retirement plans that only affect workers above 55 years old.

Table 1.11: *Heterogeneity across workers: Age and Tenure*

	<i>Dependent variable: log of gross hourly wage (from ESS02)</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Union Recognition (UR)					-0.008 (0.010)	
UR* (16 ≤ age ≤ 25)	-0.005 (0.009)	REF			REF	REF
UR* (26 ≤ age ≤ 45)	0.004 (0.005)	0.008 (0.008)			0.002 (0.009)	0.011 (0.008)
UR* (46 ≤ age ≤ 55)	0.053*** (0.006)	0.035*** (0.009)			0.049*** (0.011)	0.043*** (0.009)
UR* (age ≥ 56)	0.057*** (0.012)	0.041*** (0.012)			0.053*** (0.015)	0.051*** (0.013)
UR* (tenure ≤ 2 years)			-0.001 (0.007)	REF	REF	REF
UR* (3 ≤ tenure ≤ 5)			0.010 (0.006)	0.016** (0.007)	0.009 (0.008)	0.013** (0.007)
UR* (6 ≤ tenure ≤ 10)			0.017** (0.007)	0.013* (0.007)	0.012 (0.009)	0.006 (0.008)
UR* (tenure ≥ 10 years)			0.033*** (0.006)	0.004 (0.007)	0.014* (0.008)	-0.012* (0.007)
Observations	97,751	106,734	97,751	106,734	97,751	106,734
R-squared	0.637	0.740	0.636	0.740	0.637	0.740
workers' controls	yes	yes	yes	yes	yes	yes
establishment controls	yes	no	yes	no	yes	no
2-digit dummies	yes	no	yes	no	yes	no
Establishment fixed effects	no	yes	no	yes	no	yes

Notes: In all models, standard errors are calculated with clustering by establishments. UR stands for “Union Recognition”. All models include individual control variables for age (10 groups), tenure (4 groups), gender, fixed-term contract, education (4 groups) and occupation (4 groups). Models (1), (3) and (5) include establishment-level control variables for size (5 groups), region (10 groups) and industry (47 groups). Models (2), (4) and (6) include establishment fixed effects.

In Table 1.12, I investigate the potential heterogeneity of the family wage gap across gender, the type of working contract and the hours worked, as declared by the employer. Results in model (1) suggest that the union wage premium is higher for men than women by about 1.5%. However this result is not robust to controlling for unobserved heterogeneity across establishments – model (2). The same can be said for the difference between workers with a long-term working contract and those with a short-term one – models (3) and (4). By contrast, I find that the returns to hours worked are negatively affected by the presence of unions, even when I control for establishments fixed effects – models (3) and (4) –.

Table 1.12: *Heterogeneity across workers: Gender, Type of contract, Hours worked*

	<i>Dependent variable: log of gross hourly wage (from ESS02)</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
UR *Men	0.023*** (0.005)					
UR *Women	0.008 (0.006)	0.006 (0.005)				
UR *Short-term contract			-0.004 (0.016)			
UR *Open-ended contract			0.019*** (0.005)	0.004 (0.013)		
Union Recongition					0.145*** (0.052)	
log hours worked					-0.106*** (0.005)	-0.116*** (0.004)
UR *log hours worked					-0.018** (0.007)	-0.019*** (0.006)
Observations	97,751	106,734	97,751	106,734	97,751	106,734
R-squared	0.636	0.740	0.636	0.740	0.653	0.756
workers' controls	yes	yes	yes	yes	yes	yes
establishment controls	yes	no	yes	no	yes	no
2-digit dummies	yes	no	yes	no	yes	no
Establishment fixed effects	no	yes	no	yes	no	yes

Notes: In all models, standard errors are calculated with clustering by establishments. All models include individual control variables for age (10 groups), tenure (4 groups), gender, fixed-term contract, education (4 groups) and occupation (4 groups). Models (1), (3) and (5) include establishment-level control variables for size (5 groups), region (10 groups) and industry (47 groups). Models (2), (4) and (6) include establishment fixed effects.

How should we interpret the results about the heterogeneity of the union wage premium across workers?

First, it is not clear that the presence of unions is associated with a reduction of the the returns to observable productive characteristics such as education and experience, contrary to what has often been found in other countries (Freeman and Medoff, 1984; Blanchflower and Bryson, 2003, 2004; Portugal and Cardoso, 2006). Regarding the returns to education, there is actually a reduction but it occurs through a compression of the wage differentials across occupations. It confirms the idea that unions defend more low-skill workers in lower occupations and that the bargaining occurs by occupation units. Once the interaction between union recognition and the wage structure by occupation groups has been taken into account, unions are not found to reduce the returns to education anymore. They even seem to increase them slightly in specifications that control for unobserved heterogeneity across establishments (see table 1.10, model 6). Regarding experience, the union wage premium increases with age but not with tenure. Freeman and Medoff (1984) and Blanchflower and Bryson (2003, 2004) have found different results for the US and the UK where unions seem to favor at first young workers with low tenure (especially in the US). These authors also found that unions tend to reduce strongly the gender gap in the UK and to increase it in the US. Table 1.12 and more detailed studies by Leclair and Petit (2004) and Duguet and Petit (2009) show that the gender gap in France is not significantly affected by union recognition⁴⁰. Finally, the fact that the returns to hours worked are negatively affected by the presence of unions might suggest that unions lower the returns to effort.

Two different types of explanations for our results should be distinguished. First, unions might defend more some categories of workers than others, resulting in better wages for workers in these categories. Second, abilities could also be distributed differently in union and nonunion firms. For example, blue-collars and older workers might be relatively more skilled in union firms, resulting in better wages for them. The current analysis – as well as the studies discussed above – does not enable to separate between these two types of explanations. The reader should thus keep in

⁴⁰ Duguet and Petit (2009) show that the effect of unions on the gender gap varies across occupation: unions increase the gender gap among blue-collar workers and decrease it among managers.

mind that the better wages for blue-collars or older workers in union firms cannot be considered with certainty as a direct consequence of union recognition.

The union wage premium may also vary with establishments' characteristics. This is examined in table 1.13 that presents estimates of the union wage premium for establishments in different sectors – model (1) –, regions – model (2) – and different size groups – model (3). In all models, controls for individual and establishment level characteristics are included. It can be seen from model (1) that there is no union wage premium in services whereas the largest premium is found in the manufacturing sector. The construction and trade sector (retail industries) stand in between with a union wage premium around 2.5%. Model (2) indicates that the union wage premium is around 4 to 5% in all regions but the Paris region where it is found to be even negative. Finally, unions seem to affect wages especially in establishment which have between 100 and 200 employees – model (3) –. These results could be related one with each other: the services sector is more represented in the Paris region and establishments operating in the service sector appear to be larger⁴¹. We could thus wonder if a specific establishment characteristic drives the results obtained for the other ones. It is actually not the case: when estimating together in a single wage equation the union wage premium across sectors, regions and establishment size groups, I still find the same results.

More generally, the links between the union wage premium and workers' or establishments' characteristics have been investigated one by one or two by two in tables 1.10 to 1.13. The most obvious correlations between occupation and education on the one hand and between age and tenure on the other hand have already been dealt with in tables 1.10 and 1.11. The relationships presented in the previous tables can be tested all together in two specifications, one which does not include establishments' fixed effects and another one which does. When I do so, I obtain results very similar to those presented here⁴².

⁴¹The establishments with more than 10 employees operating in the service sector have 75 employees in average (weighted statistic) whereas the average in other sectors is 45 employees.

⁴²Results not reported. I have chosen to present the tests of the different relationships one by one for expositional purposes. Indeed, a simultaneous test of all relationships implies to estimate a "big" regression model with many omitted groups and results tend to be harder to read.

Table 1.13: *Heterogeneity across establishments: Sector, Region, Size*

	Dependent variable: log of gross hourly wage (from ESS02)		
	(1)	(2)	(3)
Union Recognition* Manufacturing	0.059*** (0.007)		
Union Recognition* Construction	0.022* (0.013)		
Union Recognition* Trade	0.026*** (0.008)		
Union Recognition* Services	-0.010 (0.007)		
Union Recognition* (Paris Region)		-0.020*** (0.007)	
Union Recognition*(North-East)		0.039*** (0.007)	
Union Recognition*West		0.052*** (0.008)	
Union Recognition*South East		0.051*** (0.008)	
Union Recognition* (size \leq 50 employees)			0.011 (0.009)
Union Recognition* (50 < size \leq 100)			0.009 (0.009)
Union Recognition* (100 < size \leq 200)			0.030*** (0.009)
Union Recognition* (size \geq 200 employees)			0.019* (0.011)
Observations	97,751	97,751	97,751
R-squared	0.637	0.637	0.636
workers' controls	yes	yes	yes
establishment controls	yes	yes	yes
2-digit dummies	yes	yes	yes

Notes: In all models, standard errors are calculated with clustering by establishments. All models include individual control variables for age (10 groups), tenure (4 groups), gender, fixed-term contract, education (4 groups) and occupation (4 groups) and establishment-level control variables for size (5 groups), region (10 groups) and industry (47 groups).

Conclusion:

The results of studies for the US and the UK – the fact that unions favor more strongly younger workers with low tenure, workers with less education and women (in the UK only) – are consistent with unions having egalitarian objectives and compressing the intra-firm distribution of wages. Equivalently, these results are also consistent with the idea that unions reduce the returns to observable productive characteristics as shown by Portugal and Cardoso (2006) for Portugal. However, results for France cannot be fully interpreted this way. First, the overall reduction in wage dispersion associated with union recognition is small as shown in figure 1.10. Second, unions in France seem to favor older workers, who are already better paid than younger ones. Overall, unions in France seem to favor in priority the groups of workers that have a larger proportion of unionized workers or that are more invested in unions (see chapter 2, tables 2.2 and 2.3). Even if by law, unions bargain for all workers in firms in which they are recognized, they may try to negotiate wage agreements that provide advantages in priority for workers that have the same characteristics than union members. In that sense, French unions could be qualified of “insiders unions”⁴³. This specificity of French unions to defend in priority workers having the same characteristics than their members may be explained by an institutional feature of French industrial relations: since unions do not need to be elected to be recognized at the firm level, their objectives are not shaped by a democratic process that would lead them to defend the median voter. They can as a consequence favor their members with no fear of punishment. However, since it is illegal to negotiate wage agreements that explicitly favor union members, unions instead favor agreements that are indirectly the most advantageous to their members. This is achieved by bargaining higher wages for blue-collars and larger wage increases with experience, which remains perfectly legal.

⁴³ See Blanchard and Summers, 1986 for an early example and Lindbeck and Snower, 2001 for a survey on theories opposing insiders and outsiders.

1.2.3 Unions, quits, tenure and job protection

In the exit-voice model of the social system (Hirschman, 1970, 1976) individuals react to discrepancies between desired and actual social phenomena in one of two ways: by the traditional free market mechanism of “exiting” from undesirable situations; or by directly expressing their discomfort to decision-makers through “voice”. As explained by Freeman (1980) “the exit-voice dichotomy provides a potentially fruitful framework for analyzing the major employee institution of capitalist economies – the trade union. From the perspective of the dichotomy, voice is embodied in unionism and the collective bargaining system (...), while exit consists primarily of quits. A major feature of the Hirschman’s model is a predicted tradeoff between the two adjustment mechanisms: when workers have a voice institution for expressing discontent, they should use the exit option less frequently and thus exhibit lower quit rates and longer spells of job tenure with firms”.

These predictions have been tested by a number of papers, including the seminal paper by Freeman (1980) for the U.S. and Cahuc and Kramarz (1997) for France. Rather than looking directly at unions, the latter authors examine the empirical relationship between the signature of firm-level agreements and employee turnover⁴⁴. I also test Hirschman’s predictions by comparing quits and tenure in union and nonunion firms. The study presented in this section complements the empirical analysis by Cahuc and Kramarz (1997) in 3 ways: (i) I look at establishment-level union recognition rather than firm-level contracting, (ii) I have direct data on quits and I can thus distinguish between voluntary and non-voluntary workers moves from a firm to another one, (iii) I use more recent data which provide a useful extension of their analysis to the recent period.

As discussed in the first section of this chapter, lower quit rates in union firms can also be interpreted as an indication that workers are not less satisfied in union firms and consequently that the union wage premium is not compensated by losses on other dimensions (wage compensating differential). One particular mechanism of compensating wage differential is job protection. I take advantage to have data on

⁴⁴Their results are derived from a theoretical model in which voice and loyalty take consist in a delegation of authority from the employer to the workers in order to set the wage level.

dismissal rates to examine differences in job protection between union and nonunion firms. Evidence on the absence of a compensating differential for the union wage premium would in turn reinforce the rent-extraction interpretation proposed in the first section. Hence, the objective here is twofold: to test Hirschman's exit-voice model of the social system in the context of the labor market and to strengthen the rent-extraction interpretation of the union wage premium. In addition, the study of the separations in union and nonunion firms also presents an interest *per se*.

Empirical specifications:

I investigate whether job security is higher and quits rate lower in union firms. In order to do so, I estimate the relationship between workplace-level union recognition and different types of separations rates. In the data, separation rates are available for each quarter over 2002-2006 whereas union recognition, establishment and firm-level controls are available only for year 2004. Some types of separations, including dismissals, fluctuate quite a lot over time. Therefore, I estimate them over a longer time period (2002-2006) than only the 2004 year. The model that I estimate is thus:

$$S_{jt}^a = \gamma U_j + X_j \beta + D_t + \varepsilon_{jt} \quad (1.13)$$

where S_{jt}^a is the separation rate of type a , in establishment j at quarter t , U_j is a dummy variable indicating the presence of one or more unions in establishment j , X_j is a vector of establishment and firm-level controls and D_t is a time dummy. The various types of separations include: dismissals, voluntary quits, retirement, end of trial period and end of fixed-term contract.

Data description:

I use the DMMO/ EMMO database. The DMMO (Données sur les Mouvements de Main-d'Oeuvre) has exhaustive data on gross worker flows (hirings and separations, excluding workers provided by temporary help supply firms) for establishments with 50 employees or more for each quarter. The data is broken down by type of flow. The EMMO (Enquête sur les Mouvements de Main-d'Oeuvre) has identical information on a representative sample of establishments with less than 50 employees. I match

these dataset with REPONSE 2004. The match of the two datasets is rather good: I obtain 2024 matched establishments reporting information on unions. I use the DMMO-EMMO data to compute indicators of job security and, more specifically, of separation rates at the establishment level. In order to do that, I drop all movements corresponding to job spells shorter than one month. These indeed correspond to very short trial periods or temporary contracts which have little to do with job security for core workers⁴⁵. I also exclude movements due to transfers between two establishments of the same firm. The data allow to build separation rates for each quarter over 2002-2006⁴⁶. As standard in the gross worker flow literature (Davis et al, 2006), separation rates are defined as the sum of all types of exits⁴⁷ divided by average employment. In order to go deeper into the types of separations, I define dismissal rates, quit rates, retirement rates, rates of end of trial periods and rates of end of fixed-term contracts as the ratio of the corresponding type of exit during the quarter to the average employment of the quarter.

Results:

Each quarter, the establishments in my sample separate from about 4% of their workers. Organized establishments appear to have a lower separation rate than their non-organized counterparts (3.6% on average, against 5.3% in non-organized establishments). Each quarter, organized establishments dismiss fewer workers (0.47% on average, as compared to 0.60% in non-organized establishments) and have more separations due to retirement or end of trial period (0.18% and 0.13%, respectively, against 0.13% and 0.08% in non-organized establishments). Less workers quit voluntarily (0.7% compared to 1.55% in non-organized establishments) or separate at the end of a fixed-term contract (1.9%, compared to 2.4% in non-organized establishments). The last row of table 1.14 gives the mean of these different quarterly separation rates.

⁴⁵ The results are nonetheless robust to the inclusion of these very short job spells.

⁴⁶ Potentially we have information for 20 quarters for each establishment. However, there are several missing values and we have complete information for only 750 establishments. The average number of quarters with non-missing data per establishment is 16.3. We have non-missing data in at least half of the quarters in 1756 establishments, while we have less than one fourth of the quarters for 117 establishments.

⁴⁷ Exits can be due to dismissals, quits, retirement and early retirement, end of trial periods, end of fixed-term contracts or other temporary contracts, military service, injuries, death or unknown exits.

Table 1.14 shows that dismissal rates are a bit lower in establishments where unions are recognized even after controlling for a basic set of establishment and worker controls⁴⁸, including 3-digit industry dummies and a full set of time dummies. This result suggests that the union wage premium is not compensated by a worse job security.

The key result presented in table 1.14 is that voluntary quits are a lot lower in organized workplaces, this difference being statistically very significant. The estimate obtained in table 1.14 corresponds to a differential in quits between union and non-union workplaces of one third⁴⁹. This result suggests that workers could be better off in organized workplaces and less willing to leave. It could also mean that they are less productive and have therefore fewer outside options. However, when I add workers productivity at the firm level as an additional control variable in the regression model, I still find that workers in organized workplaces leave their firm far less often (the point estimate is -0.21, which is slightly slower than what is found in column 2 of table 1.14, and the standard error is 0.10). This additional result reinforces the first interpretation: workers in organized workplaces might leave less often because they are better off. This would in turn mean that the wage premium obtained by unions is not compensated by losses on other aspects. The strong relationship between union recognition and quits is also consistent with the prediction of Hirschman's exit-voice model applied to the context of labor markets: when workers have a voice institution for expressing discontent, they seem to exit less.

Turning to other types of separations, organized firms do not differ from their non-organized counterparts regarding retirements' rates. The retirements' rates are largely exogenous to the firms' managing choices and mostly driven by the age profiles of the workers. Since I control in the regression models for the workers characteristics, including their age, it is normal and reassuring to find no difference in terms

⁴⁸Since the DMMO-EMMO files do not report these establishment characteristics, they are therefore drawn from the REPONSE survey and thus refer to 2004. The average workers' characteristics at the establishment level come from the social security records DADS (see data section) and have been matched with the REPONSE dataset by the Ministry of Labor.

⁴⁹ Effects can be quantified by comparing the point estimates to the mean of each variable given in the last row of table 1.14.

of retirements' rates between organized and non-organized workplaces. The lower separation rate for core workers in organized establishments (e.g. those under open-ended contract) seems to be compensated by a larger separation rate for workers under fixed-term contract (fourth column of table 1.14), but this result is not statistically significant. This is consistent with the insider/outsider literature and the idea that unions defend at first core workers. Finally, there is no significant difference between organized and non-organized establishments when we consider all separations together (last column of table 1.14).

Table 1.14: *Establishment-level regressions: Union recognition in 2004 and quarterly separation rates 2002-2006 (REPONSE2004+DMMO2002-2006)*

	<i>Dependent variable (quarterly rates 2002-2006, in %):</i>					
	Dismissals	Quits	Retirement	End trial period	End temporary contract	All separations
Union Recognition (establishment level)	-0.087* (0.048)	-0.278*** (0.089)	-0.007 (0.011)	-0.135** (0.065)	0.254 (0.209)	-0.239 (0.300)
time dummies	yes	yes	yes	yes	yes	yes
<i>Workers' characteristics controls</i>	yes	yes	yes	yes	yes	yes
Estab. controls: age, size, region	yes	yes	yes	yes	yes	yes
Establishment controls: Industries	3-digit	3-digit	3-digit	3-digit	3-digit	3-digit
Observations	32484	32484	32484	32484	32484	32484
Number of establishments	1996	1996	1996	1996	1996	1996
Number of trimesters	20	20	20	20	20	20
R-squared	0.062	0.233	0.070	0.118	0.163	0.218
Mean of the dependent variable (in %)	0.495	0.884	0.180	0.133	2.032	3.975

Notes: All the separation rates are multiplied by 100, so that they are expressed as percentages of the workforce. Workers' characteristics controls are the percentage of blue collars, clerks, technicians and managers as well as the percentage of women and workers above 40 years old at the establishment level. Establishment controls are identical to those used in previous tables.

Standard errors in parentheses are clustered at the establishment level. *** p<0.01, ** p<0.05, * p<0.

If dismissal and quit rates are lower in organized establishments for core workers, these workers should probably have longer tenure. Such a prediction can be simply tested using the ESS02 dataset, which is done in table 1.15 on the subsample of workers with age between 25 and 65 and having an open-ended working contract. Of course, differences in observed tenure also reflect other factors such as hiring rates, so table 1.15 should only be considered as a robustness check. The average difference in tenure between organized and non-organized establishments is 4.4 years – model (1). Once we include basic controls for establishments and workers characteristics, the difference drops to 1.45 years – model (2). Since tenure is strongly affected by the workers’ age structure within establishments, it might be important to better control for the potential differences in the relative numbers of young and old workers between the union and nonunion establishments. This is done in model (3) which includes 10 dummies for workers’ age in the regression model and more detailed controls for industries. Model (4) adds as a control the logarithm of the hourly wage. In both models, union recognition is associated with about 1.3 additional years of tenure, the results being very significant (standard errors close to 0.1).

Table 1.15: *Individual regressions: Union recognition and tenure (ESS02)*

	<i>Dependent variable: tenure in years (from ESS02)</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Union Recognition (UR)	4.377*** (0.121)	1.498*** (0.115)	1.389*** (0.110)	1.325*** (0.109)	0.347** (0.156)	
log hourly wage				2.683*** (0.104)		
UR* Blue-Collar Worker					REF	REF
UR* Clerk					-0.367* (0.206)	-0.0645 (0.179)
UR* (Intermediate Occupation)					0.0807 (0.184)	0.0657 (0.151)
UR* Manager					-1.323*** (0.182)	-1.142*** (0.151)
UR* (25 ≤ age ≤ 45)					REF	REF
UR* (46 ≤ age ≤ 55)					4.458*** (0.175)	4.275*** (0.112)
UR* (age ≥ 56)					5.813*** (0.341)	5.569*** (0.194)
<i>Workers controls:</i>						
Gender, educ., age, occup., full time	No	Yes	Yes	Yes	Yes	Yes
Detailed age	No	No	Yes	Yes	Yes	Yes
Establishment controls: Size, Region	No	Yes	Yes	Yes	Yes	Yes
Establishment controls: Industries	No	1 digit	2 digits	2 digits	2 digits	2 digits
Establishment fixed effects	No	No	No	No	No	Yes
Observations	94,991	87,337	87,337	87,337	87,337	94,991
R-squared	0.045	0.470	0.476	0.483	0.488	0.649

Notes: Samples include only workers of age 25-65 with an open-ended working contract. In all models, standard errors are calculated with clustering by establishments. 2 different sets of control variables have been used. These sets of controls are identical to those used in previous tables. Model (6) includes establishment fixed effects.

*: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

I argued that the lower quit rates and higher average tenure in union firms might reflect the fact that workers are more satisfied and less willing to leave due to the benefits they get from collective bargaining. In this case, the quit rates and average tenure should be particularly high for workers that benefit the most from collective bargaining. Similarly, if the lower quit rates and higher tenure in union firms reflect a trade-off between exit and voice strategies, we also should see particularly low quit rates and particularly high tenure levels for workers that use collective voice the most. Our earlier study of the heterogeneity of the union wage premium across workers showed that this premium is particularly high for blue-collar and older workers. We could thus expect to observe higher tenure and lower quit rates for these groups of workers. Model (5) tests the relationship between union recognition and tenure for workers in different occupation and age groups. The results for occupations are consistent with theoretical predictions: as compared to the difference in tenure between union and nonunion establishments for blue-collar workers, the corresponding difference for clerks is slightly smaller (about 4 months, but significant at the 10% level only), for workers in intermediate occupations, it is almost equal, whereas for managers it is 1.3 years smaller⁵⁰. The differences in the “union tenure premium” across age groups are very large: as compared to the “union tenure premium” for workers with age below 45 years old, older workers have 4 to 6 years more of tenure in union establishments. The interpretation of this last result is subject to an important limitation: if the quit rates are lower in union firms than in nonunion firms but are identical for all workers in both types of firms, we should still observe a higher tenure differential between union and nonunion firms for older workers⁵¹. Consequently, we should remain very cautious and interpret the latter results as not being contradictory with the theoretical predictions we made. Model (6) re-estimates

⁵⁰ An alternative regression model that control for workers’ and establishments’ characteristics but does not include interactions between union recognition and age allow to estimate a difference in tenure between union and nonunion establishments equal to 1.95 years for blue-collar and 0.66 years for managers.

⁵¹ Ideally we would like to compare quit rates or the length of job spells for workers with different age in union and non union firms. Unfortunately, it is difficult to compute quit rates by occupation using the DMMO data and the cross-sectional structure of the ESS02 data does not allow to observe completed spells. Looking at tenure corresponds to looking at truncated job spells and the truncation is mechanically larger for young than for old workers, which explains the potential problem when looking at tenure differentials by age groups.

model (5) with establishment fixed-effects in order to better control for unobserved heterogeneity across plants. Results in both models appear to be very close. Overall, the estimated “union tenure premium” and “union wage premium” by occupation and age groups seem to be correlated, which reinforces the idea of a rent extraction phenomenon.

1.3 Identifying the causal effect of unions on wages: a functional form approach?

In the first section, I developed a simple model in order to show that unions were able to extract a share of firms' rents through bargaining. However, the mean union wage premium in France was estimated using a "standard" wage regression that did not make it possible to fully control for the potential endogeneity of union recognition.

In this section, I attempt an original strategy to estimate the causal effect of union recognition at the establishment level on wages (or other outcomes) in a context where union recognition is endogenous. The idea is to use a function of establishment size as an instrument for union recognition. Establishment size *per se* cannot be a valid instrument since it also affects wages directly. However, union recognition depends on establishment size in a very specific way. More precisely, I am able to build simple model for union recognition that predicts a particular relationship between establishment size and the probability of union recognition. This relationship is strongly validated by empirical data. In the model, wages play no role and we can assume that the theoretical probability of union recognition as a function of establishment size derived from the model is exogenous to wages. We then aim at exploiting the particular form of the function that relates the probability of union recognition to establishment size in order to get rid of the endogeneity of union recognition.

The main difficulty is that establishment size also shapes wages directly: there is a well known positive relationship between establishment or firm size and wages that has nothing to do with union recognition. The goal is thus to split the observed relationship between establishment size and wages in two parts: the first one would reflect the effect of unions and would therefore have the very specific shape of the function that relates the probability of union recognition to establishment size, the second one would capture all the other determinants of the relationship between establishment size on wages. We show that under some restrictive assumptions on the direct effect of establishment size on wages, identification of the causal effect of

unions is possible. In particular, identification is possible if this direct relationship is polynomial. More generally, providing that the direct relationship between establishment size and wages is *not too close* to the relationship that comes through union recognition, identification of the union wage premium should be possible. However, the formalisation of the precise conditions that are necessary to be put behind this “not too close” is beyond the scope of this thesis.

The strategy proposed has strong similarities with regression discontinuity design (RDD) methods. In RDD methods, the effect of an endogenous treatment on a given outcome needs to be evaluated. In the “sharp design”, the treatment depends on a third variable (an “instrument”). In the more general case (the “fuzzy design”), it is the probability to be treated that depends on a third variable. The two key assumptions necessary to identify a Local Average Treatment Effect is that the relationship between the instrument and the probability to be treated is discontinuous at a given point whereas the “direct” relationship between the instrument and the outcome is continuous at this point (Hahn et al, 2001). The enormous advantage of RDD methods in comparison with a standard instrumental variables strategy is that the instrument does not need anymore to be exogenous (the “direct” relationship between the instrument and the outcome does not need to be 0). It only needs to be continuously related to the outcome. In our context, we do not have an exogenous instrument. We do not have either a discontinuity that can be directly exploited. However we know, at every point, the exact form of the function that relates the instrument to the treatment. We then need to make some hypothesis on the “direct” relationship between the instrument and the outcome in order to get identification. Contrary to the RDD case, it is not possible to focus on a single point because, in the absence of discontinuity, our effect cannot be identified locally unless we suppose that our instrument is locally exogenous. However, we can exploit globally the relationship between the instrument and the treatment and try to make global assumptions on the direct relationship between the instrument and the outcome in order to get identification.

As well as RDD methods, the method presented here in the context of the union wage premium may be extended to a large range of situations and contexts. I present

(i) a formal approach to the identification problem with theoretical results, (ii) the relationship that relates union recognition to establishment size, (iii) empirical estimates of the effect of union recognition on wages, (iv) a concluding discussion.

1.3.1 Formal approach

1.3.1.1 General framework and Regression Discontinuity Design

We draw on the presentation offered by Hahn et al (2001). We want to estimate the effect that some binary treatment variable U_j on an outcome w_j . In our context the treated units are establishments of firms and the treatment is union recognition. The outcome is the level of individual wages in the establishment.

The evaluation problem arises because either persons (or firms in our context) receive or do not receive treatment and no individual is observed in both states at the same time. Let w_{1j} denote the outcome with treatment and w_{0j} that in the absence of treatment, and let $U_j = 1$ if treatment is received and U_j equal 0 otherwise. The model for the observed outcome can be written as $w_j = \alpha_j + U_j\beta_j$, where $\alpha_j \equiv w_{0j}$ and $\beta_j \equiv w_{1j} - w_{0j}$.

In the regression discontinuity fuzzy design framework (which is the more general case), the probability to be treated is assumed to depend in a deterministic way on some observable variable n_j (establishment size in our context):

$$\mathbb{E}[U_j|n_j] = P(U_j = 1|n_j) = g(n_j)$$

g is assumed to be discontinuous at a given point n_0 . Assuming further that $\mathbb{E}[\alpha_j|n_j]$ is continuous at n_0 , a constant treatment effect β can be identified (Hahn et al., 2001).

1.3.1.2 A functional approach with no discontinuity

In our framework, g is not discontinuous but it is completely known to the researcher⁵². β_j cannot be identified directly due to the endogeneity of union recognition: $\mathbb{E}[w_j|U_j] = \beta_j U_j + \mathbb{E}[\alpha_j|U_j]$ and we cannot assume that $\mathbb{E}[\alpha_j|U_j] = 0$. Now,

⁵² $g(n_j) = 1 - (1 - p)^{n_j}$ for some parameter p between 0 and 1 (see next subsection)

consider the model of observed wages (or log-wages) conditional on establishment size n_j . $\mathbb{E}[w_j|n_j] = \beta_j \mathbb{E}[U_j|n_j] + \mathbb{E}[\alpha_j|n_j]$. Let $f(n_j)$ denote the “direct” relationship between establishment size and wages: $f(n_j) = \mathbb{E}[\alpha_j|n_j]$. We can then write:

$$\mathbb{E}[w_j|n_j] = f(n_j) + \beta_j g(n_j) \quad (1.14)$$

Theorem 1: If $f(n_j)$ is known, β_j can be identified at any given point such that $g(n_j) \neq 0$.

Proof: $\beta_j = (h(n_j) - f(n_j))/g(n_j)$ with $h(n_j) = \mathbb{E}[w_j|n_j]$.

We now suppose that the treatment effect β is constant across firms, so that $w_j = \alpha_j + U_j\beta$ ⁵³. We establish in theorem 2 the identification of β in the case where $f(n)$ is a polynomial and $g(n)$ is not. To formulalize the argument, we first need to remind some standard notations. For $k > 0$, let $Vect(1, n_j, \dots, n_j^k)$ denote the vectorial space generated by all linear combinations of the vectors $1, n_j, \dots, n_j^k$. $Vect(1, n_j, \dots, n_j^k)$ is the subset of the set of continuous functions defined on \mathbb{R}^+ that can be written as a polynomial of order k or less.

Theorem 2A:

Suppose that $f(n_j) \in Vect(1, n_j, \dots, n_j^k)$ and that $g(n_j) \notin Vect(1, n_j, \dots, n_j^k)$. Then β can be identified.

Proof: $f(n_j) \in Vect(1, n_j, \dots, n_j^k)$ means that there exist $\{\alpha_0, \alpha_1, \dots, \alpha_k\}$ such that $f(n_j) = \sum_{i=0}^k \alpha_i \cdot n_j^i$ for all $n_j \geq 0$. From 1.14, we know that

$$\mathbb{E}[w_j|n_j] = \sum_{i=0}^k \alpha_i \cdot n_j^i + \beta_j g(n_j) \quad (1.15)$$

Equation 1.15 implies that $\mathbb{E}[w_j|n_j] \in Vect(1, n_j, \dots, n_j^k, g(n_j))$.

Since $g(n_j) \notin Vect(1, n_j, \dots, n_j^k)$ and since $(1, n_j, \dots, n_j^k)$ are linearly independent, $(1, n_j, \dots, n_j^k, g(n_j))$ is a set of linearly independent vector (e.g. a basis) and 1.15 is

⁵³The following analysis is also valid if we suppose the treatment to be constant among subgroups of firms rather than on the whole sample. For example, we can divide firms in different size groups, and reproduce the analysis presented here on each size group supposing a constant treatment effect on the firms belonging to the same size group.

the unique possible linear projection of $\mathbb{E}[w_j|n_j]$ on $(1, n_j, \dots, n_j^k, g(n_j))$. β is thus identified by linear projection of $\mathbb{E}[w_j|n_j]$ on the vectors $(1, n_j, \dots, n_j^k, g(n_j))$.

β can easily be estimated by OLS regression applied to the model $w_j = \sum_{i=0}^k \alpha_i \cdot n_j^i + \beta U_j + \epsilon_j$. Indeed, $\mathbb{E}[w_j|n_j] = \sum_{i=0}^k \alpha_i \cdot n_j^i + \beta_j g(n_j)$ implies that $\mathbb{E}[\epsilon_j|n_j] = 0$. This is sufficient to ensure that β is estimated without bias.

Theorem 2 would be valid for any polynomial form given to f , providing that g does not have the same polynomial form. This will allow us to try a large set of possible polynomials for f in the empirical section. In particular, we will take advantage of the fact that the function g that we will be using is exponential and cannot be written as a polynomial.

Theorem 2A can be easily extended to consider that $f(n)$ also depends on other observable variables:

Theorem 2B: Suppose that $f(n_j) \in Vect((1, n_j, \dots, n_j^k), X_j)$ and that $g(n_j) \notin Vect((1, n_j, \dots, n_j^k), X_j)$. Then β can be identified.

Proof: The proof is similar to the one of theorem 2A: simple linear algebra shows that non-colinearity is sufficient to ensure identification by linear projection.

β can then be estimated by OLS regression applied to the model $w_j = \sum_{i=0}^k \alpha_i \cdot n_j^i + X_j \gamma + \beta U_j + \epsilon_j$. Indeed, we have $\mathbb{E}[\epsilon_j|n_j] = 0$, which is a sufficient condition to ensure that β is estimated without bias.

Theorem 2B has important empirical applications. It means that if we have in the data observable variables that control for the endogeneity of establishment size, identification will be possible. In other word, if we believe that union recognition is still endogenous conditional on usual observable variables (industries, regions, etc) but that establishment size is not, our approach allows us to identify the union wage premium. In a sense, our approach translates the endogeneity problems from union recognition to establishment size.

1.3.1.3 Approaching the direct link between establishment size and wages by a series of polynomials?

We now present a short discussion on the possible directions that may lead to identification under weaker assumptions. However, no formal results are established and this subsection may be skipped.

It might be possible to identify β under weaker assumptions on f . Suppose that f and g are defined on a compact set I and that they are not too “close”, meaning that $\exists \eta > 0$ such that $\min_{a,b} \|a + bf - g\| > \eta$ for a well chosen norm $\|\dots\|$ on the set of the functions measurable on I with this norm.

To set things, we can for example consider the set $\mathcal{C}^0(I)$ of the continuous functions on I and define $\|\dots\|$ such that $\forall h \in \mathcal{C}^0(I), \|h\| = \max_{n \in I} |f(n)|$. We know from the Weierstrass approximation theorem that there is a series of polynomials $P_k(n) = \sum_{i=0}^k \alpha_i \cdot n^i$ such that $\|P_k - f\| \xrightarrow{k \rightarrow \infty} 0$ and such that $\|P_k - f\|$ is strictly decreasing.

Let us write $f(n) = P_k(n) + \lambda_k(n)$ with $\|\lambda_k\| \xrightarrow{k \rightarrow \infty} 0$. We have $\mathbb{E}[w_j|n_j] = \sum_{i=0}^k \alpha_i \cdot n_j^i + \beta g(n_j) + \lambda_k(n_j)$. Imagine now that we estimate the model $w_j = \sum_{i=0}^k \alpha_i \cdot n_j^i + \beta U_j + \epsilon_j$. We would then get a “bias” related to the fact that $\mathbb{E}[\epsilon_j|n] = \lambda_k(n_j)$. But since $\|\lambda_k\|$ is strictly decreasing to 0, we get a “bias” which gets smaller as we add higher order polynomials P_k in the regression of w on $g(n)$. An estimation procedure could thus consist in including progressively higher order polynomials P_k in the regression of w on $g(n)$. We may hope that, doing so, we will get a series $(\hat{\beta}_k)$ of estimators that converges to β .

I have not been able to establish such a result and even believe that it is wrong unless we make additional strong assumptions that render the whole approach not very convincing. A first problem arises due to the fact that inference is only possible if the order of the polynomial is smaller than the total number of establishments in the data. As a consequence, asymptotical results appear to be meaningless. We could try to use theorems on the speed of convergence of P_k : for reasonably smooth functions f (for example if the first derivative of f is bounded), it is possible to bound explicitly $\|P_k - f\|$ using Taylor-Young developments. Then we may get good estimates of β even with low order polynomial approximations of f . However, there

is also a second problem: the higher the degree of the polynomial, the higher the number of parameters to be identified. In other words, we cannot lower the “bias” in the estimated equation without adding parameters to identify. These additional parameters make easier the confusion between what is attributable to f and what is attributable to g . Imagine that there exists a very good approximation of g with a polynomial Q_k of order k such that $\lambda'_k = Q_k - g$ verifies $\|\lambda'_k\| \leq \eta$. Then note that: $\mathbb{E}[w_j|n_j] = P_k + \beta g(n_j) + \lambda_k(n_j)$ can be rewritten equivalently $\mathbb{E}[w_j|n_j] = (P_k + \beta Q_k) + \beta \lambda'_k + \lambda_k$. Since the identification of the coefficients of P_k cannot be disentangled from that of the coefficients of Q_k , the only margin to identify β is through λ'_k . It seems intuitive that if the “bias” λ_k is larger than λ'_k , then identification of β would be difficult. To obtain identification of β through methods that consist in approximating f by a polynomial, we probably need to suppose in addition that g cannot be approximated by a polynomial too easily. More generally, it seems difficult to get identification when we relax the assumptions made in theorems 1, 2A and 2B.

1.3.2 A fitted model for union presence

1.3.2.1 Model

As already said, union recognition in France only depends on the willingness of at least one worker to become a union representative. This is the only condition for bargaining to take place. I build a model – the so called individual probability model – based on this observation.

I suppose that each worker has an equal probability p to become a union representative and that probabilities are independent. Denoting by UR_i a variable equal to 1 if worker i is a union representative and equal to 0 otherwise, this means that the variables UR_i are i.i.d. and follow a Bernoulli distribution of parameter p . The establishment-level probability of union recognition is then equal to the probability to have at least one union representative in the establishment. It can be easily computed as a function of establishment size n as 1 minus the probability to have no workers willing to be a union representative in the establishment:

$$g(n) = P(U = 1|n) = 1 - (1 - p)^n$$

The independence assumption is strong: it corresponds to saying that there is no discussion between workers and that each of them takes his decision alone and does not take in account his co-workers' behaviour. The individual probability to become a union representative may also vary from one firm to another. For example, the potential rents per worker in a given firm should be an incentive for workers to start collective bargaining and thus to become union representatives. Since rents are related to firm size, p may thus vary with firm size. A more complete theory of the determinants of unionization and of the fact to become a union representative will be presented in chapter 2. The goal in this section is only to get a model that fits well the data. Consequently, I acknowledge the above difficulties but yet consider p to be purely exogenous and independent across workers.

1.3.2.2 Fitting the model

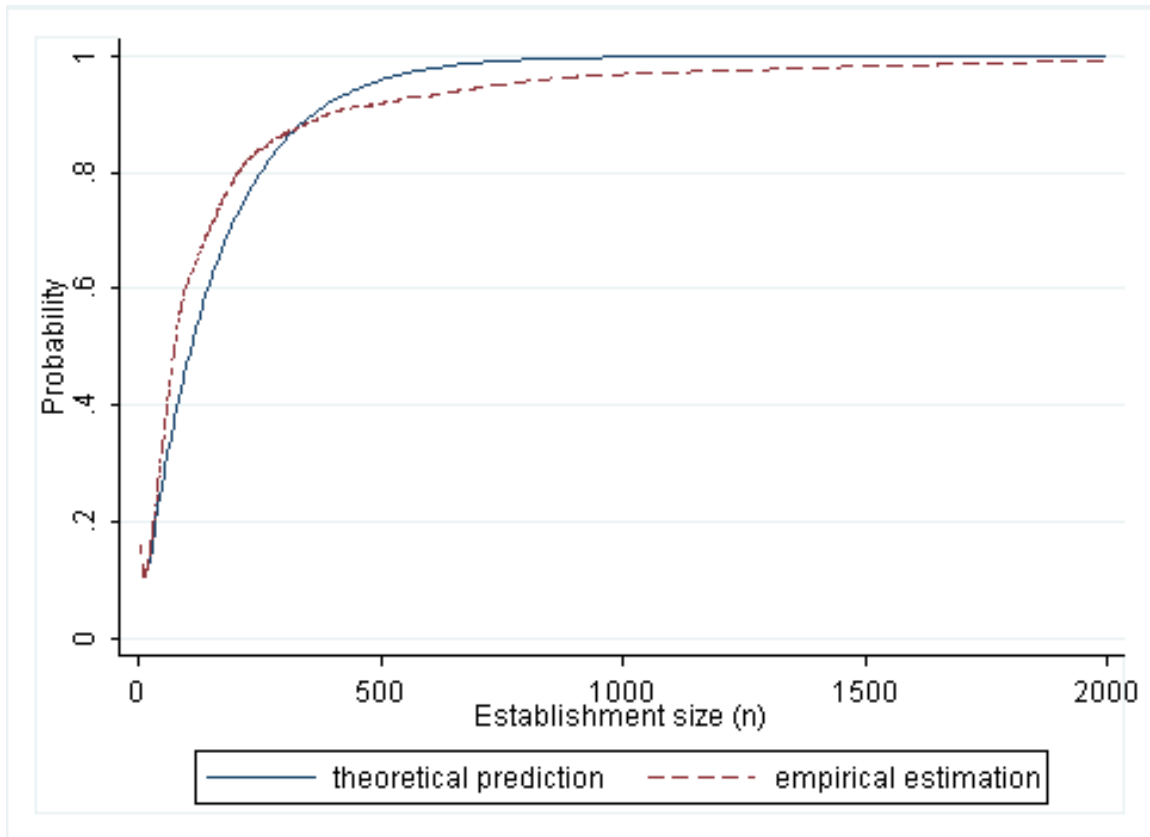
Keeping earlier notations, the log-likelihood is:

$$\begin{aligned}\mathcal{L}(U_j, n_j, p) &= \ln\left(\prod_{j/U_j=0} ((1-p)_j^n) * \prod_{j/U_j=1} (1 - (1-p)_j^n)\right) \\ &= \ln(1-p) \sum_{j/U_j=0} n_j + \sum_{j/U_j=1} \ln(1 - (1-p)_j^n)\end{aligned}\tag{1.16}$$

Maximizing the log-likelihood using the establishments in the ESS02 dataset, we get that the parameter p that best fits the data is $p = 0.0064$. Figure 1.11 displays both the theoretical probability to have a union representative $g(n)$ when $p = 0.0064$ and the empirical proportion of establishments with a union as a function of establishment size (the latter is obtained using a locally weighted regression of U_j on establishment size with bandwidth 0.2). The fit appears to be very good. The key point is that the empirical probability to have a union also looks to be an exponential function of establishment size. The proportion of large (resp. small) establishments with unions is lower (resp. larger) than the theoretical prediction. One possible explanation is measurement error (for example misreporting). Measurement error is likely to affect establishments differently according to their size: in large (resp. small) establishments where unions are almost always present, misreporting would

tend to bias downward (resp. upward) the observed proportion of establishments with unions.

Figure 1.11: *Probability to have a union representative as a function of establishment size)*



Notes: Theoretical prediction is the function $y = 1 - (1 - p)^n$ with $p = 0.0064$.

Empirical estimation is obtained from a locally weighted regression of wages on establishment size (with a bandwidth of 0.2).

Obtained from the ESS02 data. The figure only represents establishments with less than 2,000 employees having information on union recognition (J=10,819 establishments).

The rich REPONSE04 data can be used to undertake a robustness analysis. I have first reproduced the analysis made using the ESS02 dataset. Maximizing the log-likelihood to have a union at the establishment level, I get that the parameter p that best fits the REPONSE04 data is $p = 0.008$ (see table 1.16, second row). This parameter is close but not equal to the one obtained using the ESS02 data. One possible explanation could be that ESS02 includes establishments with size between 10 and 20 employees whereas REPONSE04 does not. A way to test it is to estimate p on the subsample of the ESS02 data that only contains establishments with more

than 20 employees. Doing so, I find a value of p very close from the one obtained with the whole ESS02 sample (see table 1.16, third row), meaning that small establishments are not driving the estimate of p . A second possible reason could be that the REPONSE04 and ESS02 samples are not designed in the same way: agriculture, mining and household services are missing from ESS02 whereas we have removed public companies operating in the private sector, non-profit associations and cooperatives firms from the REPONSE04 data.

In the REPONSE04 data, we also know the exact number k_j of union representatives. $k_j = \sum_{i \in j} UR_i$ where UR_i , the variable indicating if worker i is a union representative is Bernoulli of parameter p . As a sum of i.i.d Bernoulli variables, k_j has a binomial distribution and we have, for $l \in \{1, \dots, n_j\}$:

$$P(k_j = l | n_j) = C_{n_j}^l p^l (1 - p)^{(n_j - l)} \quad (1.17)$$

where C_n^k is the number of combinations of k elements in a set of n elements.

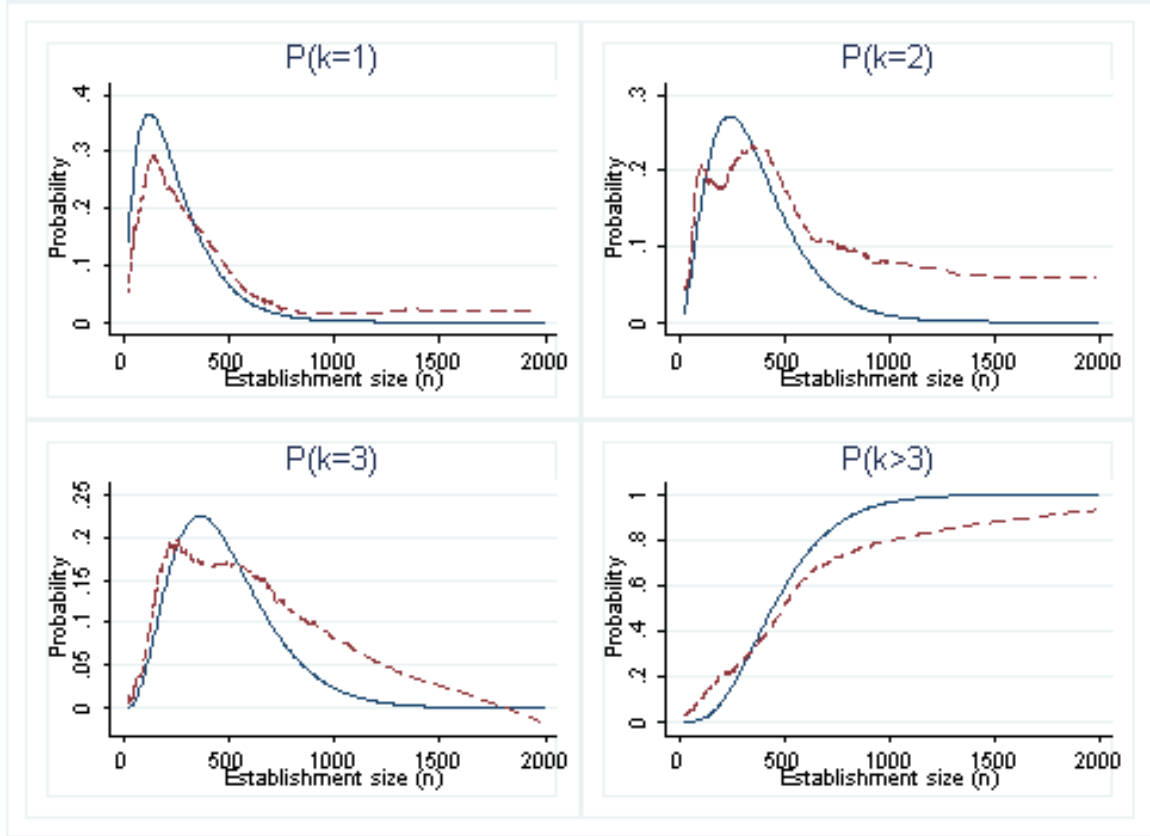
In the ESS02 data, we only know if $k_j = 0$ or if $k_j \geq 1$. The log-likelihood function 1.16 is obtained by exploiting this sole information. But the REPONSE04 data allows for a complete analysis of the distribution of k_j . I have built and maximized on the REPONSE04 sample various log-likelihood functions corresponding to various exploitations of the distribution of k_j . The fourth row of table 1.16 present an estimate of p obtained when maximizing a likelihood computed from the empirical probabilities $P(k_j = 0 | n_j)$, $P(k_j = 1 | n_j)$ and $P(k_j \geq 2 | n_j)$. The 2 next rows provide estimates that also exploit the probabilities $P(k_j = 2 | n_j)$ and $P(k_j = 3 | n_j)$. When we add these additional cases in the likelihood function, the estimate of p goes up by about 10%, from $p = 0.0076$ to $p \approx 0.0084$. Figure 1.12 gives a visual idea of the quality of the fit between the empirical distribution of the number of union representatives conditional on establishment size and the prediction of the individual probability model. The figure corresponds to the model 6 in table 1.16. The parameter p chosen to draw the theoretical predictions is $p = .00833$.

Table 1.16: *Estimated individual probability to become a union representative by maximum likelihood: different models.*

Model:	Sample	Estimated p	Standard Error	Nb. of estab.
1: $k_j = 0$ or $k_j \geq 1$	ESS	$p = .00637$	$9.78 * 10^{-5}$	10,959
2: $k_j = 0$ or $k_j \geq 1$	ESS, $n \geq 20$	$p = .00626$	$9.83 * 10^{-5}$	9,148
3: $k_j = 0$ or $k_j \geq 1$	REP	$p = .00760$	$2.51 * 10^{-4}$	2,435
4: $k_j = 0, k_j = 1$ or $k_j \geq 2$	REP	$p = .00850$	$2.03 * 10^{-4}$	2,435
5: $k_j = 0, k_j = 1, k_j = 2$ or $k_j \geq 3$	REP	$p = .00831$	$1.62 * 10^{-4}$	2,435
6: $k_j = 0, k_j = 1, k_j = 2, k_j = 3$ or $k_j \geq 4$	REP	$p = .00833$	$1.43 * 10^{-4}$	2,435
7: $k_j = 1$ or $k_j \neq 1$	REP	$p = .00660$	$3.33 * 10^{-4}$	2,435
8: $k_j = 2$ or $k_j \neq 2$	REP	$p = .00712$	$2.70 * 10^{-4}$	2,435
9: $k_j = 3$ or $k_j \neq 3$	REP	$p = .00831$	$3.06 * 10^{-4}$	2,435

Notes: The three first rows correspond respectively to maximizing the likelihood 1.16 on the ESS02 sample, on the ESS02 sample keeping only establishments with more than 20 employees and on the REPONSE04 sample. The 3 last rows present estimates obtained using the total number of union representatives at the establishment level k_j which is available in the REPONSE04 data. The distribution of k_j is split in respectively 3 events in the fourth row, 4 events in the fifth row and 5 events in the last row. p is estimated through maximization of the log-likelihood function obtained from these events.

Figure 1.12: Number of union representatives k as a function of establishment size n : theoretical prediction and empirical estimation for $k = 1$, $k = 2$, $k = 3$ and $k \geq 3$.



Notes:

Plain line: theoretical predictions with $p = 0.00832$ (functions obtained from equation 1.17 for the corresponding value of the number of representatives l).

Dashed line: empirical estimation (locally weighted regression with a bandwidth of 0.2).

Obtained from the REPONSE04 data. The figure only represents establishments with less than 2,000 employees ($J=2,407$ establishments).

The value of p obtained in row 4 to 6 of table 1.16 when exploiting further the binomial distribution of p_k are close from that obtained using only the 2 cases $k_j = 0$ versus $k_j \geq 1$. The standard error of the estimated p also goes down as we add information, meaning that using the cases $k_j = 1$, $k_j = 2$ and $k_j = 3$ add more information than noise in the model. The “individual probability model” seems to fit well not only the probability of union recognition, but also the distribution of the number of union representatives. A good way to verify this assumption directly is to use only one of the probabilities $P(k_j = 1|n_j)$, $P(k_j = 2|n_j)$ and $P(k_j = 3|n_j)$. This is done in the 3 last rows of table 1.16. The estimates of p obtained appear to be

remarkably stable. For example the estimate of p based on the comparison between establishments with exactly 3 union representatives and all other establishments is very close to earlier estimates (see model 9 in table 1.16).

1.3.3 New estimates of the union wage premium

Estimates based on theorems 1, 2A and 2B are obtained by plugging directly the function $g(n)$ in the right hand side of an OLS regression (see the formal approach section). Before turning to these estimates, I present more general elements on how wages relates to establishment size.

I first suppose that the model that relates wages (or log-wages) to establishment size is exponential:

$$w = \alpha + \beta(1 - p)^n + \epsilon \quad (1.18)$$

where the parameter p is supposed to be unknown. Note that this model is mathematically equivalent to

$$w = (\alpha + \beta) - \beta(1 - (1 - p)^n) + \epsilon = (\alpha + \beta) - \beta g_p(n) + \epsilon \quad (1.19)$$

The objective is to see if the p that best fits an exponential relationship between individual wages and establishment size is similar to the p that best fits an exponential relationship between the probability of union recognition and establishment size. Table 1.17 presents a series of estimates of p from wage equations of the same type than 1.18. All estimates are obtained by non-linear least squares. The estimates of p is $p = 0.0071$ in the first model which corresponds exactly to equation 1.18. This estimate is very close from the value $p_0 = 0.00637$ that best fits the probability of union recognition on the ESS02 sample: the difference between the 2 estimates is smaller than 10%. In column (2), the same model is estimated after averaging wages at the establishment level, so that we have only one wage observation per establishment. The estimate of p in model (2) is slightly higher. Models (3) to (5) present estimates from models in which the dependent variable is the logarithm of individual wages. Model (4) adds detailed control variables for individual characteristics as well as 16

dummies for industries and 10 dummies for region⁵⁴. Model (5) includes in addition a linear control for establishment size. The idea is to check if the fit of an exponential relationship between establishment size and wages is different when we also control linearly for establishment size. Estimates of p appear pretty in models (3) to (5). They are not significantly modified by the inclusion of control variables or a linear control for establishment size. These estimates of p are also very close to the value $p_0 = 0.00637$ that best fits the probability of union recognition on the ESS02 sample. For example, the difference between the estimate in model (3) and p_0 is lower than 3% and not statistically significant at the 5% level. However, the inclusion of control variables modifies greatly the estimate of β .

Table 1.17: *Estimates of p in wage equations of the type $\log(w_{ij}) = \alpha + \beta(1 - p)^n + \gamma X_i + \delta Z_j$.*

Dependent variable	wage	Averaged wages	log wage		
	(1)	(2)	(3)	(4)	(5)
p	.0071 (0.0003)	.0097 (0.0009)	0.0062 (0.0002)	0.0057 (0.0005)	.0057 (0.0005)
β	-6.89 (0.106)	-5.48 (0.190)	-0.38 (0.005)	-0.10 (0.003)	-0.10 (0.003)
α (constant term)	21.37 (0.080)	20.12 (0.149)	2.93 (0.004)	3.01 (0.016)	3.01 (0.016)
Establishment size n					-2.34e-07 (2.72e-07)
Individual characteristics:	No	No	No	Yes	Yes
Industry and region:	No	No	No	Yes	Yes
Observations	102,613	11,687	102,613	102,613	102,613
R-squared	0.040	0.067	0.060	0.629	0.630

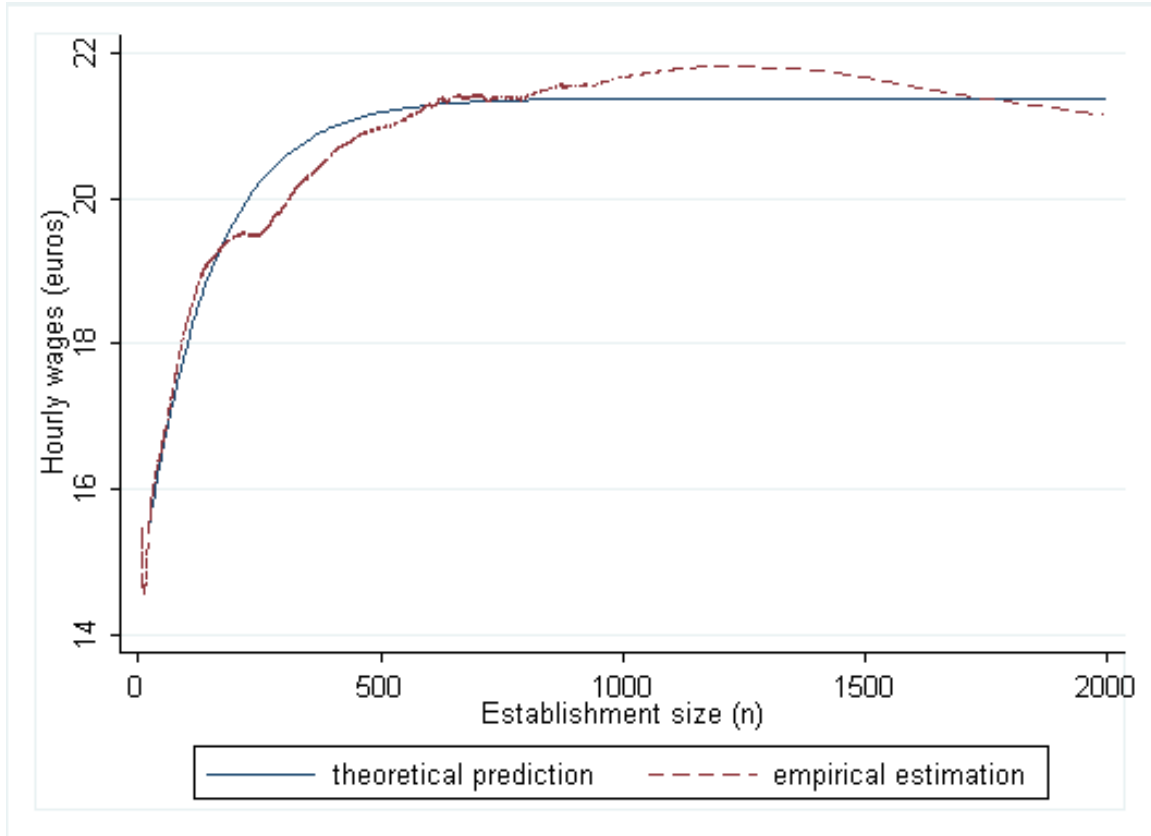
Notes: Standard errors in parenthesis. Individual characteristics are gender, 10 age groups, 4 tenure groups, 4 occupation groups and a dummy for open-ended contracts. Industry and region controls are 16 dummies for industries and 10 dummies for regions.

Figure 1.13 shows the quality of the fit obtained from model 1.18 and confirms that an exponential model is well suited to fit the relationship between establishment size and wages. Figure 1.14 provides a comparison of how wages and the probability of union recognition evolve with establishment size. To make the comparison possible, it is necessary to put hourly wages and the probability of union recognition on the same scale. One way to do it is to take an affine transformation of wages h , so that

⁵⁴The estimates of the coefficient for these variables are not reported. They are qualitatively close from those that would be obtained from standard OLS regressions (see for example table 1.3)

the minimum and maximum values of the transformed wages are close respectively from 0 and 1. I have considered the transformation $h(w) = (w - \alpha - \beta)/(-\beta)$. From equation 1.19, it appears that $h(w) = -\beta(1 - (1 - p)^n) + \epsilon$ is a logical transformation of w . Figure 1.14 confirms that wages and the probability of union recognition evolve in a very similar way with establishment size. One concern is that figure 1.14 plots individual wages as a function of establishment size. I have averaged individual wages at the establishment level and then reproduced figure 1.14 with establishment-level data: the shape of the new figure (not shown) appears very similar. Finally, I have also built a similar figure (not shown) using an affine transformation of log-wages rather than wages and here again, no significant difference could be noted.

Figure 1.13: *Individual hourly wages as a function of establishment size.*



Notes: Theoretical prediction is the function $w = 21.37 - 6.89 * (1 - p)^n$ with $p = 0.0071$. Empirical estimation is obtained from a locally weighted regression of wages on establishment size (with a bandwidth of 0.2). Obtained from the ESS02 data. The figure only represents establishments with less than 2,000 employees (N=100,085 individuals; J=11,143 establishments).

I now exploit theorems 2A and 2B to estimate the union wage premium. Table

Figure 1.14: *An empirical comparison of the functions that relate wages and the probability of union recognition to establishment size.*



Notes: Empirical estimations are obtained from a locally weighted regression of $h(\text{wage})$ and of union recognition on establishment size (with a bandwidth of 0.2), with $h(\text{wage}) = (\text{wage} - 14.48)/6.89$. Obtained from the ESS02 data. The figure only represents establishments with less than 2,000 employees ($N=100,085$ individuals; $J=11,143$ establishments).

1.18 presents consistent estimates of β under the hypothesis that $f(n_j) = P_k(n_j) + \epsilon_j$, with $P_k(n_j)$ a polynomial of order k whose coefficients are unknown and ϵ_j a residual that verifies $\mathbb{E}[\epsilon_j|n_j] = 0$. Polynomials of order 0 to 8 have been included in a regression of log individual wages on the theoretical probability of union recognition $g(n) = 1 - (1 - p_0)^n$. $p_0 = 0.00637$ is chosen as the parameter that maximizes the log-likelihood function 1.16 on the ESS sample (see table 1.16). No other control variables have been included.

The estimated union wage premia in table 1.18 are all around 40%. Adding higher order polynomials in n does not alter the estimated premium much.

Table 1.18: *New estimates of the union wage premium from equation $\ln(w) = P_k(n) + \beta g(n) + \epsilon$ with $g(n) = P(U = 1|n) = 1 - (1 - 0.00637)^n$. No other controls*

	<i>Dependent variable: log of gross hourly wage (from ESS02)</i>								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$g(n)$ (Union wage premium)	0.383*** (0.00963)	0.370*** (0.0119)	0.373*** (0.0135)	0.347*** (0.0160)	0.336*** (0.0196)	0.376*** (0.0246)	0.359*** (0.0305)	0.410*** (0.0409)	0.410*** (0.0539)
n^1		1.28e-05* (7.48e-06)	7.45e-06 (1.33e-05)	5.62e-05*** (2.17e-05)	7.98e-05** (3.56e-05)	-3.16e-05 (5.80e-05)	2.62e-05 (8.62e-05)	-0.000175 (0.000141)	-0.000175 (0.000212)
n^2			7.34e-10 (1.90e-09)	-1.48e-08** (5.97e-09)	-2.70e-08 (1.65e-08)	5.87e-08 (4.03e-08)	-8.35e-10 (7.76e-08)	2.59e-07 (1.66e-07)	2.60e-07 (2.97e-07)
n^3				1.00e-12*** (3.69e-13)	2.77e-12 (2.32e-12)	-1.89e-11* (9.78e-12)	3.68e-12 (2.71e-11)	-1.31e-10 (8.18e-11)	-1.32e-10 (1.83e-10)
n^4					-7.27e-17 (9.24e-17)	1.99e-15** (9.05e-16)	-1.71e-15 (4.26e-15)	3.12e-14 (1.93e-14)	3.12e-14 (5.76e-14)
n^5						-6.45e-20** (2.76e-20)	2.03e-19 (3.01e-19)	-3.79e-18* (2.30e-18)	-3.80e-18 (9.89e-18)
n^6							-6.95e-24 (7.77e-24)	2.26e-22* (1.32e-22)	2.27e-22 (9.34e-22)
n^7								-5.21e-27* (2.91e-27)	-5.24e-27 (4.55e-26)
n^8									7.18e-34 (8.87e-31)
Workers controls	No	No	No	No	No	No	No	No	No
Industry and Region	No	No	No	No	No	No	No	No	No
Observations	102,581	102,581	102,581	102,581	102,581	102,581	102,581	102,581	102,581
R-squared	0.060	0.060	0.060	0.061	0.061	0.061	0.061	0.061	0.061

Notes: Standard errors in parenthesis.

Table 1.19 is equivalent to table 1.18, except that control variables for workers' characteristics and establishment industry and region have also been included. The estimated union wage premia in table 1.19 are around 10%. They also appear quite stable as we add higher order polynomial in n . However, this is only true in a certain extent: in the last column where a polynomial of order 8 in n is included, the estimate of the union wage premium appears strongly modified. This phenomenon appears to be systematic when we include polynomials of order higher than 8 in both the specification with no controls (table 1.18) and with controls (table 1.19). The estimates (not reported) of the union wage premium in such regressions are very different from one another, with no apparent link between them. This result confirms the discussion at the end of the first subsection: when a polynomial of very high order is included as a regressor, the margin for identifying β gets very small (it converges asymptotically to 0), and a lot of statistical power is necessary to get correct estimates.

Table 1.19: *New estimates of the union wage premium from equation $\ln(w) = P_k(n) + \beta g(n) + \gamma X + \epsilon$ with $g(n) = P(U = 1|n) = 1 - (1 - 0.00637)^n$. With a set of controls X*

	<i>Dependent variable: log of gross hourly wage (from ESS02)</i>								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$g(n)$ (Union wage premium)	0.0993*** (0.00570)	0.0963*** (0.00755)	0.102*** (0.00831)	0.0936*** (0.00954)	0.0756*** (0.0117)	0.106*** (0.0139)	0.0958*** (0.0164)	0.109*** (0.0225)	0.0314 (0.0302)
$P_k(n)$	<i>Estimates not reported</i>								
Polynomial in n	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Degree of the Polynomial	$k = 0$	$k = 1$	$k = 2$	$k = 3$	$k = 4$	$k = 5$	$k = 6$	$k = 7$	$k = 8$
Workers controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry and Region	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	102,581	102,581	102,581	102,581	102,581	102,581	102,581	102,581	102,581
R-squared	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630

Notes: Standard errors in parenthesis. Individual characteristics are gender, 10 age groups, 4 tenure groups, 4 occupation groups and a dummy for open-ended contracts. Industry and region controls are 16 dummies for industries and 10 dummies for regions.

1.3.3.1 Discussion

How much should we trust these new estimates of the union wage premium? The first set of estimates in table 1.18 are around 40% and they seem much too high to be plausible. The second set of estimates in table 1.19 are around 10%, which is a more reasonable value. Since it was established under more general conditions, it is logical to keep this value of 10% as our best estimate of the union wage premium using the strategy presented in this section.

On the one hand, the fact that adding control variables shifts strongly our estimates is not good news: it means that the functional form of g alone is not sufficient to capture our effect. This cast doubts on the entire strategy and brings back the classical critic about descriptive econometrics: if controlling for observable characteristics affects strongly the results, what ensure that controlling for unobservable characteristics would not?

On the other hand, the model for the probability of union recognition fits very well the data and the parallel between how union recognition relates to establishment size and how wages relate to establishment size is bluffing. The method *per se* also present some interest, and, if improved, the formal approached proposed here could be used in a wide range of situations.

Overall, we need to remain cautious about the 10% union wage premium. It is a lot higher than the 2 to 3% wage premium that we found from wage models that simply include a dummy for union recognition and control variables as regressors. Such a gap can be explained if union tend to organize more low-wage workplaces. French unions are known to begin to organize workplaces when a conflict occurs. In that case, workers are calling for the help of an official organization to help them. In many cases, the union stays after the conflict. But the conflict is a necessary shock to trigger its entry. Since conflicts are more likely to occur in low-wage firms, we may consider that unions also appear in low-wage firms. It could explain why simple wage models might underestimate the union wage premium and why we found a higher premium here (using the same set of control variables).

Finally, sorting can explain the difference between the 40% union wage premium estimated using the functional form approach without controlling for workers' and

establishments' characteristics (table 1.18) and the 10% 1.19 union wage premium obtained when controls are added in the same wage equation (table 1.19). If high-wage workers are going in high-wage firms (Abowd *et al.*, 1999), the union wage premium is lowered: due to the higher wages initially bargained by unions, employers can attract the best workers. When we control for workers' characteristics, we control, at least partly, for this potential phenomenon and we consequently get lower estimates.

1.4 Conclusion

The first section studied the wage premium associated with establishment-level union recognition in France. A premium of 2 to 3% is precisely estimated in individual hourly wage equations using a large dataset that enables to control for standard observable workers and firms characteristics. Despite the reputation of French unions as being strong and the fact that the system of French industrial relations is to a large extent decentralized, this premium is far lower than what is found in the literature with similar techniques for other countries (Card and De La Rica, 2006). I suggest that this is due to the weak legal barriers to firm-level union recognition in France, which explains both that unions are recognized in a large number of firms but with a low bargaining power on average in these firms.

The first section then pushes the analysis further and investigates whether the union wage premium in France is likely to be due to rent-extraction. If this is the case, the premium should be increasing with the amount of rents available in firms and with the bargaining power of unions. I derive these two predictions from a simple bargaining model and test it using two proxy variables for the existence of potential rents and the unions' bargaining power. Empirical results show that the union wage premium increases from virtually 0 to 8% in firms with high potential rents and from virtually 0 to 12% when unions have a strong bargaining power. This confirms the theoretical predictions of the bargaining framework.

The first section also contributes to the rent-sharing literature. I show that the workers' bargaining power is likely to increase with the amount of rents they can get. This implies that usual estimates of this rent-sharing parameter based on regressions of the individual wage on measures of quasi-rents might be partially biased. Second, it is one of the few attempts to estimate a non-cooperative bargaining model with proxy variables for both quasi-rents and for the workers' bargaining power (see also Doiron, 1992).

The union wage premium I find in firms with high potential rents is close to what is usually found in the international literature for all firms. This suggests that in countries where the cost of organizing is higher than in France, unions organize a smaller number of firms and target only those in which the amount of rents they

can extract will lead to a wage premium that is sufficient to compensate this higher shadow cost to organize the firm. Due to this selection effect of the best firms by unions, the union wage premium in these countries is in average higher. In that vein, our results also contribute to explain the historical decline of unions in the recent period. Brown *et al.* (2009) have shown that the raise in product market competition in the past thirty years explains the historical decline of unions that occurred simultaneously. By showing directly that workers are more likely to pay the cost to organize in a union in firms facing less product market competition, our results comfort the idea that more competition should translate into lower unionization rates. Further research should make it possible to link more precisely the legal cost paid by workers to organize into a union and the wage premium they obtain from bargaining afterwards to the extent of unionization both across countries and time.

The second section of the chapter presented a series of more descriptive results on the role of industry-level wage agreements and on the relationship between union recognition and (i) the wage structure and (ii) job separations. Industry-level wage bargaining appears to be important in term of coverage but it remains limited in terms of the actual wage benefits that workers obtain. In addition, firm-level and industry-level bargaining seem largely uncorrelated, confirming that our measure of the establishment-level union wage premium does not capture an industry-level effect.

Unions appear to favour low wage workers, consistent with an important literature that shows that unions reduce wage inequalities (see *i.a.* Freeman (1982) for an early study and Card *et al.* (2004), for a recent one). However, our estimates suggest that the difference between the union wage premium at the bottom and at the top of the wage distribution is small in France. We also find that unions favour the categories of workers in which unionization rates are the most important, that is blue-collars or older workers. This contrasts partly with results found in the U.S. and U.K. and it suggests that French unions behave more as insiders, trying to favour their members primarily. Since they have the obligation to bargain for all workers, they cannot do it directly. However, they may be able to sign agreements that are indirectly more advantageous to their members, for example by targeting wage increases in some occupations or by bargaining higher returns to experience. Overall,

the different results we find concerning the relationship between union recognition and the structure of wages are consistent with rent-extraction interpretation of the union wage premium. As a consequence, they reinforce this interpretation at the expense of others.

The study of the link between union recognition and separations offers interesting results. I find that (i) the rates of dismissals tend to be lower in union firms, and, interestingly, (ii) that quits rates are lower by one third in union firms. The former result shows that the union wage premium is not compensated by a worse job protection and that unions probably also manage to bargain on employment protection. The very strong relationship between union recognition and quits indicates that labor relations differ between union and nonunion firms. As predicted by Hirschman's *Exit, Voice and Loyalty* theory, unions bring loyalty, which in turn translates in a lower turnover, a lower quit rate and longer tenure. These predictions are fully validated by our empirical analysis. In particular, we find that the workers whose tenure increases the most when unions are recognized are also those who enjoy the largest union wage premium, which strongly suggest that longer workers' tenure and lower quit rates are indeed outcomes of union recognition. These outcomes underline the potential positive effects of unions and suggest that the "good face of unions" – to use the famous expression employed by Freeman and Medoff, 1984, to qualify the loyal labor relations that can be induced by unions – is visible and important in French firms where unions are recognized.

The last section presents an original econometric attempt to estimate the causal effect of union recognition at the establishment level on wages or other outcomes in a context where union recognition is endogenous. We derive a simple, highly stylized model for union recognition that predicts an exponential relationship between the probability of union recognition and establishment's size. This relationship is strongly validated in the data. We then observe that the function that relates wages to establishment's size has exactly the same exponential shape. When we rescale wages so that they can be compared with the probability of union recognition, the proximity between the two empirical curves that relate wages and the probability of union recognition to establishment's size is striking. Wages do not play a role in

our model for union recognition as a function of establishment's size, suggesting that if the proximity between these two curves represents more than a pure coincidence, the causality goes from union recognition to wages. When we estimate the union wage premium using the probability of union recognition conditional on establishment size, we find (in our preferred specification) a union wage premium around 10%. However, this figure corresponds to the true effect of unions on wages only under strong identification assumptions. It should thus be considered cautiously and the 2 to 3% average union wage premium found in section 1 should remain our preferred estimate. Nevertheless, this additional figure reinforces the idea that unions do affect wages.

Considered in its entirety, this first chapter represents a comprehensive study of *what unions do in France?*. We presented much evidence on wages and we saw that in average unions do not affect wages much. However, this becomes less true in large market share establishments where they can expect to extract rents, and when they are supported by a unionized workforce. Some aspects deserve further research. The effect of unions on job protection, quits and tenure seem to be important. However, our results are still too limited to provide a good understanding of the effect of unions on employment. This important dimension of unions' actions needs to be studied in depth. Most of all, the econometric strategy used in the third section also deserve additional research. Some uncertainty remains on its potential scope, internal and external validity. Additional formalization is necessary to understand if and how it is possible to relax the identification assumptions we had to make.

1.5 Some additional results

1.5.1 Appendix A: Description of ESS02 and REPONSE04 variables

Tables 1.20 and 1.21 show that there are more women, older workers and workers with a longer tenure in unionized establishments. The education and occupation profiles of workers in unionized and non-unionized establishments are close with only slightly less clerks in unionized establishments. Unionized workplaces are a lot larger.

They are also older and more intensive in ICT (table A2). Finally, they have more innovative managerial practices and belong less often to a family.

Table 1.20: *Means of individual and establishment-level variables in ESS02*

Individual variables:	Whole Sample (97,751 individuals)		Unionized Estab. (57,435 individuals)		Non-Unionized Estab. (43,316 individuals)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Gross hourly wage (€)	15.09	9.26	16.14	9.56	13.75	8.67
Women	0.35	0.48	0.33	0.47	0.37	0.48
Age	39.15	10.51	40.21	10.32	37.79	10.60
Tenure	11.32	10.25	13.48	10.89	8.53	8.59
Long-term contract	0.93	0.25	0.94	0.24	0.93	0.26
<i>Education:</i>						
Less than high school	0.59	0.49	0.58	0.49	0.61	0.49
High school degree	0.17	0.37	0.16	0.37	0.17	0.38
Some College	0.13	0.34	0.13	0.34	0.13	0.34
College or Univ. Degree	0.11	0.31	0.12	0.33	0.09	0.28
<i>Occupation:</i>						
Blue Collar	0.40	0.49	0.39	0.49	0.40	0.49
Clerk	0.20	0.40	0.17	0.38	0.24	0.43
Supervisor or Technician	0.24	0.43	0.25	0.43	0.22	0.41
Manager	0.17	0.37	0.18	0.39	0.14	0.35
Establishment variables:	Whole Sample (10,741 estab.)		Unionized Estab. (5,659 estab.)		Non-Unionized Estab. (5,082 estab.)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Union recognition	0.22	0.41	1.00	0.00	0.00	0.00
Size	59.07	1496.43	179.57	3047.14	25.84	540.11

Notes: Individual (resp. establishment) variables are weighted by ESS02 workers (resp. establishments) sampling weights.

Table 1.21: Means of individual and establishment-level variables in *REPONSE04*

Individual variables:	Whole Sample (6,629 individuals)		Unionized Estab. (4,459 individuals)		Non-Unionized Estab. (2,152 individuals)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Net hourly wage (€)	12.60	8.23	13.36	8.01	11.18	8.47
Women	0.38	0.49	0.37	0.48	0.41	0.49
Age	39.95	9.80	40.65	9.73	38.65	9.83
Tenure	11.77	10.17	13.25	10.58	9.01	8.75
Full-time worker	0.90	0.29	0.91	0.29	0.89	0.31
<i>Education:</i>						
Less than high school	0.57	0.50	0.55	0.50	0.60	0.49
High school degree	0.13	0.34	0.13	0.34	0.14	0.35
Some College	0.15	0.35	0.15	0.36	0.14	0.35
College or Univ. Degree	0.15	0.36	0.17	0.37	0.12	0.32
<i>Occupation:</i>						
Blue Collar	0.36	0.48	0.36	0.48	0.36	0.48
Clerk	0.17	0.37	0.14	0.35	0.22	0.41
Supervisor or Technician	0.27	0.45	0.28	0.45	0.26	0.44
Manager	0.20	0.40	0.22	0.42	0.16	0.37
Establishment variables:	Whole Sample (2,451 estab.)		Unionized Estab. (1,612 estab.)		Non-Unionized Estab. (839 estab.)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Union recognition	0.36	0.48	1.00	0.00	0.00	0.00
Size	77.24	172.20	134.16	270.37	45.29	39.37
Establishment Age:						
less than 5 years	0.04	0.20	0.04	0.21	0.04	0.20
5 to 9 years	0.10	0.30	0.08	0.27	0.11	0.31
10 to 19 years	0.28	0.45	0.26	0.44	0.29	0.45
20 to 49 years	0.40	0.49	0.39	0.49	0.41	0.49
50 years or more	0.18	0.38	0.23	0.42	0.15	0.36
ICT use	7.19	3.44	7.65	3.20	6.95	3.55
Managerial practices	4.65	1.60	5.03	1.47	4.43	1.63
Belong to a listed firm	0.02	0.12	0.02	0.15	0.01	0.11
Belong to a family Firm	0.59	0.49	0.42	0.49	0.69	0.46

Notes: Individual (resp. establishment) variables are weighted by ESS02 workers (resp. establishments) sampling weights. ICT use and managerial practices are aggregated indexes (see chapter 3 for details).

1.5.2 Appendix B: The union wage premium in 2004 using the REPONSE dataset

Table 1.22 provides a reproduction of table 1.3 on the REPONSE sample. Models (1), (2) and (3) of table 1.22 obtained with REPONSE04 are equivalent to models (1), (2) and (3) of table 1.3 obtained with ESS02 with the exception that the type of working contract is not observable in REPONSE04 and has been replaced by a dummy variable for full time workers (which is observable only in REPONSE04). The estimated wage premium associated with union recognition is very close in both tables. Standard errors for all coefficients in table 1.22 are about twice larger than those in table 1.3. This is consistent with the fact that there are around 3,000 establishments of firms in REPONSE and around 13,000 in ESS02 (since standard errors decrease with the square root of the number of observations, a multiplication by 4 of the sample size indeed corresponds to a division by 2 of the estimated standard errors) but renders the estimated effect of the union wage premium insignificant at the 5% level in models (3), (4) and (5).

Model (4) of table 1.22 uses 4-digit instead of 3-digit industry controls. Model (5) uses the large amount of information available in REPONSE04 to control for other firm characteristics. First, unions play a role in their firm's decision to invest in Information and Communication Technology (ICT). An indicator of ICT intensity similar to the one used in chapter 3 has thus been added in the regression model. Unions also influence management practices (being against performance pay for example). For this reason, an indicator of so-called modern management practices has been included in the model (see chapter 3 for details). Finally, I also include 2 control variables for listed and family firms since unions are known to be more present in large listed firms that offer larger wages and less present in family firms that offer lower wages (Muller Philippon, 2006).

Table 1.22: *Log Hourly Wage Regressions (REPONSE04)*

	<i>Dependent variable: log of net hourly wage</i>				
	(1)	(2)	(3)	(4)	(5)
Workplace Union Recognition	0.191*** (0.016)	0.031** (0.013)	0.019 (0.013)	0.018 (0.013)	0.021 (0.014)
<i>Worker's characteristics</i>					
Women		-0.139*** (0.008)	-0.134*** (0.008)	-0.135*** (0.008)	-0.145*** (0.009)
High School		0.056*** (0.010)	0.056*** (0.009)	0.048*** (0.009)	0.054*** (0.011)
Some College		0.111*** (0.012)	0.111*** (0.012)	0.108*** (0.011)	0.115*** (0.013)
College or University Degree		0.222*** (0.017)	0.235*** (0.017)	0.224*** (0.016)	0.219*** (0.018)
Age		0.011*** (0.000)	detailed	detailed	detailed
Full time		0.068*** (0.012)	0.051*** (0.012)	0.038*** (0.012)	0.027*** (0.014)
<i>Firm's characteristics (reference in (5): workplaces with 20 to 50 workers, not intensive in ICT, not family and not listed)</i>					
51-100 Workers		0.000 (0.015)	0.000 (0.014)	-0.003 (0.015)	-0.004 (0.017)
101-200 Workers		0.028* (0.016)	0.030* (0.015)	0.028* (0.015)	0.006 (0.018)
Over 200 Workers		0.074*** (0.015)	0.060*** (0.015)	0.064*** (0.015)	0.049*** (0.019)
ICT use					0.009*** (0.002)
Managerial practices					0.007 (0.004)
Listed					0.081** (0.035)
Family firm					-0.023** (0.011)
Intercept	2.30*** (0.013)	2.365*** (0.041)	2.495*** (0.038)	2.475*** (0.041)	2.385*** (0.054)
Industries	No	1 digit	2 digits	3 digits	4 digits
Observations	6610	6449	6357	6357	4990
R-squared	0.042	0.628	0.656	0.678	0.709

Notes: Notes: All models except (1) also include 10 indicators for region and 4 indicators for occupation. Standard errors are calculated with clustering by establishments in all models. Model (2) includes 14 indicators for industry. Model (3), (4) and (5) include 10 indicators for worker's age, 4 indicators for worker's tenure and 5 indicators for firm's age. Models (3), (4) and (5) include respectively 51, 168 and 328 indicators for industry.

*: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

1.5.3 Appendix C: Estimating the union wage premium with additional controls for coworkers characteristics and establishments' propensity to be unionized

A potential issue in the estimation of the wage premium associated with union recognition at the establishment level is the presence of unobserved ability differences across workers. One way to partially control for associated biases that has been used by Card and De La Rica (2006) is to include measures of the skill characteristics of coworkers in similar positions at the same establishment. Controlling for a worker's observed skills, a higher level of coworker skills implies that the worker has above-average unobserved skill characteristics.

Models (1) and (4) in table 1.23 reproduce models (2) and (3) of table 1.3 with the inclusion of mean coworkers characteristics averaged over all employees in the ESS02 survey working at the same establishment in the same broad occupational group⁵⁵. In model (1), the addition of coworkers variables has reduced the estimated effect of union recognition by about 15% (point estimate 0.0238 as compared to 0.0272 in model (2) of table 1.3). This is very much in line with what has been found by Card and De La Rica in their study of Spain. However, in model (4), the inclusion of coworkers characteristics in the regression does not alter much the estimated effect of union recognition (0.0168 as compared to 0.0173 in model (3) of table 1.3), suggesting that the more detailed individual variables included in this last regression might be sufficient to control for workers' ability.

A second source of potential bias in the estimated union wage premium is the presence of workplace-specific factors that are correlated with the presence of unions. The approach followed by Card and De La Rica to treat this problem is to augment the wage equations with a low order polynomial function of the estimated probability of having a union at the individual's workplace. If the presence of a union is

⁵⁵ There are four occupation groups: blue-collar, clerk, intermediate occupations, and supervisors or managers. This way of grouping workers by establishment and occupation follows closely the strategy adopted by Card and De La Rica (2006). Due to the relatively low number of workers per establishment in the ESS02 dataset (around 10 workers per establishment in average), our measure of coworkers average characteristics by establishment and occupation is subject to measurement error. However, when I only group workers by establishment and ignore their occupation in order to lower the amount of measurement error, the estimated effect of union recognition is virtually unchanged.

ignorable (or as good as random) conditional on the observed control variables, this strategy should eliminate biases arising from the correlation between union recognition and firm characteristics (see Imbens, 2004). Fundamentally, the inclusion of the conditional probability to be a union establishment in regression models is aimed at capturing more complex interactions between establishments' characteristics and union recognition that cannot be captured in linear specifications.

Results are presented in models (2), (3), (5) and (6) in table 1.23 where a third-order polynomial in the estimated propensity score has been included in the previous regression models. All models also control for individual and establishment characteristics. models (3) and (6) control in addition for coworkers characteristics. The propensity score has been calculated as the predicted probability obtained by fitting a probit model for union recognition, using as covariates the mean age, the fraction of workers in different education and occupation groups, the fraction of female workers and workers with a temporary contract, dummies for the size, industry and region of the establishment. The estimated effect of union recognition is about 15% larger when a polynomial in the propensity score is added as control. The estimates of the propensity score terms suggest that a higher propensity to be in a union establishment is associated with a lower wage. Indeed, the polynomials obtained in the different regression models are decreasing functions for all values of the propensity between 0 and 1. It is thus not surprising that controlling for the propensity raises the estimated effect of union recognition.

Table 1.23: *Log Hourly Wage Regressions with controls for co-workers' characteristics and establishments' propensity to be unionized (ESS02)*

	<i>Dependent variable: log of gross hourly wage (ESS02)</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Union recognition	0.0238*** (0.005)	0.0287*** (0.006)	0.0264*** (0.005)	0.0168*** (0.005)	0.0207*** (0.005)	0.0203*** (0.005)
<i>Average Characteristics of Coworkers in Same Firm and Occupation Group:</i>						
Proportion Female	-0.000 (0.008)		-0.003 (0.008)	0.004 (0.008)		-0.003 (0.008)
Proportion High School	0.103*** (0.011)		0.104*** (0.011)	0.088*** (0.011)		0.090*** (0.011)
Proportion Some College	0.102*** (0.011)		0.103*** (0.011)	0.085*** (0.011)		0.087*** (0.011)
Prop. College or University Degree	0.118*** (0.014)		0.114*** (0.014)	0.099*** (0.014)		0.094*** (0.014)
Proportion Fixed Term Contract	-0.114*** (0.018)		-0.117*** (0.017)	-0.067*** (0.017)		-0.071*** (0.017)
Proportion under 30	-0.053*** (0.008)		-0.047*** (0.008)	0.009 (0.009)		0.022** (0.009)
Proportion over 50	-0.086*** (0.008)		-0.097*** (0.008)	0.006 (0.010)		-0.012 (0.010)
<i>Polynomial in the Propensity to be a Union Establishment:</i>						
Propensity score		-0.519*** (0.131)	-0.562*** (0.133)		-0.806*** (0.130)	-0.739*** (0.131)
Squared Propensity score		0.554** (0.261)	0.608** (0.259)		0.979*** (0.255)	0.869*** (0.254)
Cubed Propensity score		-0.184 (0.172)	-0.216 (0.171)		-0.467*** (0.168)	-0.404*** (0.168)
Gender, educ., age, occup., fixed-term contract	Yes	Yes	Yes	Yes	Yes	Yes
Detailed age and tenure	No	No	No	Yes	Yes	Yes
Establishment controls: Size, Region	Yes	Yes	Yes	Yes	Yes	Yes
Establishment controls: Industries	1 digit	1 digit	1 digit	2 digits	2 digits	2 digits
Observations	99,479	99,667	99,479	99,479	99,667	99,479
R-squared	0.573	0.565	0.574	0.583	0.577	0.584

Notes: In all models, standard errors are calculated with clustering by establishments. In all models, individual and establishment-level control variables have been included: these variables are those used in models (2) and (3) of table 1.3. *: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

1.5.4 Appendix D: The union wage premium per union and market share in 1998 and 2004

The union wage premium per union and market share in 1998

In the first section of the chapter, we have studied the relationship between the union wage premium and the establishments' market share using the REPONSE04 data. As a robustness check, we reproduce our principal specifications using the REPONSE data for the year 1998.

The main drawback of the version of the REPONSE data we have in 1998 is that it does not include workers' wages. We thus work at the establishment level⁵⁶. Since we could not obtain wage data at the establishment level either, we had to merge the REPONSE dataset to the EAE dataset. This dataset contains the annual accounting of each French firm in the major sectors of the economy. In particular, we get the yearly compensation for workers within the firm and the labor productivity (value added per employee).

In the absence of workers' data, we try to take advantage of the extensive information contained in the REPONSE data to control as much as possible by establishments' characteristics. Our control variables are presented in table 1.24.

Table 1.25 gives the results of a first OLS regression of the logarithm of the annual wage bill per worker of firms on the union status of one corresponding establishment. This regression is run using all the control variables presented in table 1.24.

In column (1) we observe a 5.4% difference in wages between unionized and non-unionized firms. In column (2) we run the regression on the 737 mono-establishment firms only, so that the firm-level wage variable we use is defined at the same level than our controls and union variable. Doing so, we get a lower and less significant coefficient. CGC is the only union concerning white collars workers. Even if we control these regressions for the workforce composition, we can still suspect that these controls will not be sufficient to get rid of the workers' ability bias. Thus we have added a specific control for the presence of CGC in column (3) to check if the result for the presence of unions overall could be driven by the presence of this particular union

⁵⁶For the research presented in chapter 3, we were authorized to match the REPONSE data in 1998 with the exhaustive DADS files, so that we indeed have workers' wages in 1998. However, this could not be done for the results presented in this appendix.

Table 1.24: *Control variables used in REPONSE 98*

1) Sector of activity : - 16 dummies for the different sectors (NAF 16)
2) Size of the establishment : - 4 size groups: 20 to 49 employees, 50 to 99 employees, 100 to 500 employees, more than 500 employees
3) Age of the establishment : - 5 age groups: 0 to 4 years, 5 to 9 years, 10 to 19 years, 20 to 49 years, more than 50 years
4) Workforce composition : - 4 dummies for the presence of blue collars, employees, technicians and managers - 4 variables giving the percentage of blue collars, employees, technicians and managers, and 4 variables giving the square of these percentages
5) Establishment status : - one dummy equal to one for mono establishments
6) Environment of the establishment : - 3 groups: evolution of the activity in the sector easy to anticipate, slightly difficult to anticipate, or difficult to anticipate
7) Financing and remuneration practices : - firm present on the stock market - employees own stocks of the firm
8) New Technologies : - proportion of workers who have access to a computer (5 different groups) - proportion of workers who have access to an internet network (5 different groups)
9) Organizational practices : a) Innovative practices : - total quality management - workers solve their problems by themselves - just in time used with suppliers and clients - diminution of the number of hierarchical levels in the past 3 years - a majority of workers participate to « groups of quality » - a majority of workers participate to « groups of expression » b) Traditional practices : - controls are frequent - fixation of global goals

which is associated with the presence of more qualified workers. The lower coefficient obtained in column (3) as compared with column (1) indicates that this is indeed the case. Column (4) shows that controlling for the presence of CGC and restricting to the small sample of mono-establishment firms do not give a significant relationship between unions and wages anymore. Column (5) indicates that additional controls for the working conditions and the conflicts in the establishments do not seem to affect the results.

Table 1.25: *Estimated Proportionate Effects of the Presence of Unions on Wages in 1998 (REPOSE98+EAE98)*

	Dependant variable : log of wage per worker (firm-level)				
	(1)	(2)	(3)	(4)	(5)
Union Representative	0.054*** (0.015)	0.040* (0.022)	0.039*** (0.015)	0.022 (0.022)	0.053*** (0.015)
Union Representative CGC	-	-	0.084*** (0.015)	0.12*** (0.029)	-
Mono-establishments only	NO	YES	NO	YES	NO
Controls :					
Controls detailed in table 1.24	YES	YES	YES	YES	YES
Presence DS CGC	NO	NO	YES	YES	NO
Working conditions+conflicts	NO	NO	NO	NO	YES
Observations	1824	737	1824	737	1797
R2	0.57	0.57	0.58	0.58	0.58

Notes: The dependant variable is the total wage bill divided by the number of workers (in log). A set of establishment level control variables is included in all regressions (see table 1.24). *: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

Table 1.26 reproduces our identification strategy based on the use of the market share. More specifically, we present the results of the estimation of the following wage equation:

$$\ln(\bar{w}_j) = \alpha [UR * (1 - HMS)] + \beta [(1 - UR) * HMS] + \gamma [UR * HMS] + Z_j \delta + \epsilon_j$$

where UD is a dummy variable equal to one for the presence of the union indicated in the column title.

In the first column UR is a dummy variable equal to one for unionized establishments, unless the only union present in the establishment is CGC. In the next columns, UR is dummy variable equal to one if the union indicated on top of the column is present in the establishment. All the coefficients on the third row are very

close to 0. In sharp contrast with our results for 2004, this shows that working in a high market share firm alone does not bring higher wages. We thus do not find any monopsony effect of having a high market share from our specifications in 1998. This could be due to the worse quality of the data used here, and to the fact that our wage variable is available at the firm level whereas the control variables are defined at the establishment level. In the second row, the coefficients for the effect of unions on wages in low market share establishments are non-significant for CFDT, FO and CFTC, and are significant for all unions except CGC together (column 1), for CGT and for CGC (last column). CGC appears as obtaining the best wage gains in low market share establishments. Two explanations are possible for this particular pattern. On one hand, one can conceive that CGC is powerful enough to obtain wage raises even in a low market share establishment. But CGC is only the fourth largest union in France and, according to the sociological literature on French unions, the fact that only CGC manages to get wage raises among low market share establishments seems very unlikely. On the other hand, CGC is the only one of the five unions studied representing more specifically white-collar workers and its presence is associated with better quality workers. As we already suspected in our comments of the proportionate union wage effect, the control variables for the workforce composition (see table 1.24) are probably not good enough to tackle the workers' quality biases. In this case, the 7.4% difference in wages associated with the presence of CGC in low market share establishments would be essentially due to a workforce composition effect. The fourth row highlights a significant relationship between the presence of any of the five largest French unions in a high market share firm and the average compensation received by workers. If we except CGC, CGT is associated with a 10.4% gain and seems to be the union performing the best. CFTC and CFDT are coming second and third respectively with gains roughly equal to 8%. The effect of unions in high market share firms is significantly higher than the one in low market share firms for all unions except for the CGC (row 5). Even if it is non-significant, the 3.2% difference obtained when subtracting the coefficients in the second and third rows to the one in the fourth row in column 5 is probably a better estimate of the real effect of CGC on wages.

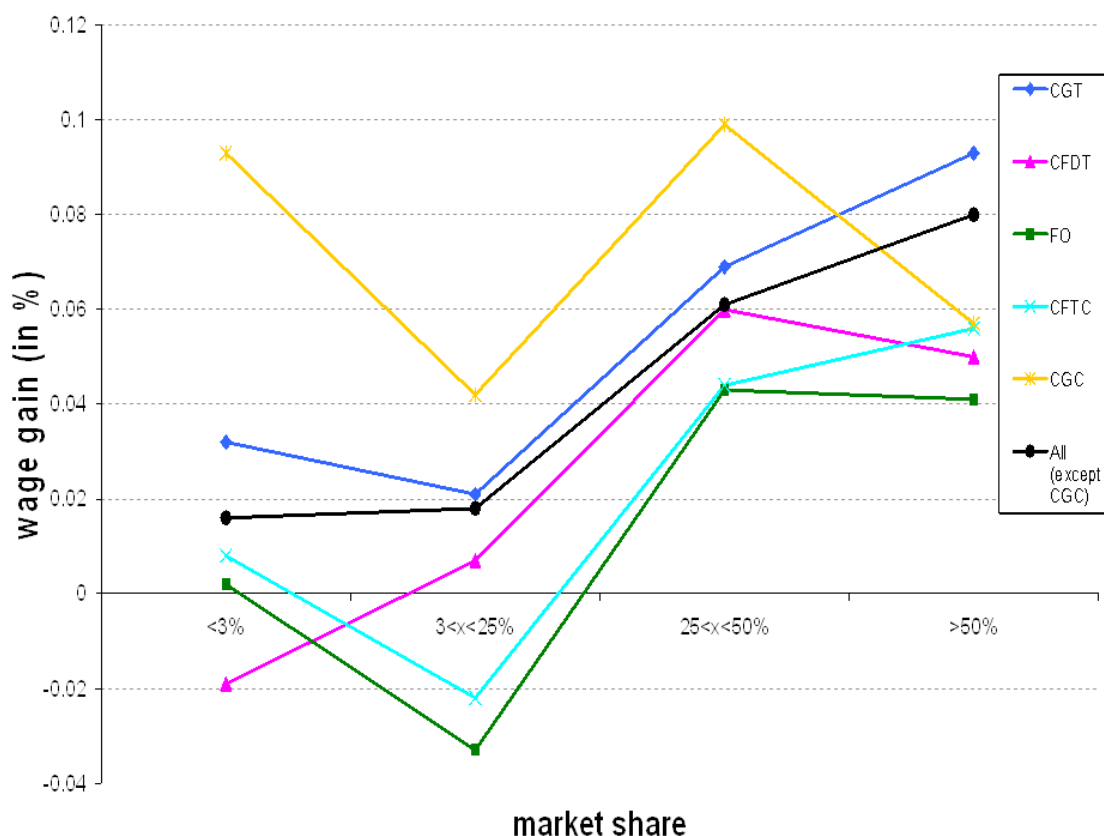
Table 1.26: *Union recognition, market share and firms' wages (establishment level regression, REPONSE98+EAE98)*

<i>Union concerned</i>	Dependant variable : wage per worker (in log)					
	1: All (except CGC)	2: CGT	3: CFDT	4: FO	5: CFTC	6: CGC
$(1 - UR) * LMS$	REF	REF	REF	REF	REF	REF
$UR * LMS (\alpha)$	0.036** (0.018)	0.047*** (0.018)	0.026 (0.018)	-0.005 (0.019)	0.017 (0.025)	0.074*** (0.021)
$(1 - UR) * HMS (\beta)$	-0.013 (0.19)	-0.002 (0.015)	0.003 (0.015)	-0.002 (0.014)	0.011 (0.013)	0.011 (0.014)
$UR * HMS (\gamma)$	0.078*** (0.019)	0.104*** (0.020)	0.081*** (0.020)	0.068*** (0.020)	0.087*** (0.026)	0.117*** (0.022)
Observations	1435	1435	1435	1435	1435	1435
R2	0.57	0.57	0.56	0.56	0.56	0.57
Test of " $\gamma - \beta - \alpha = 0$ " (p value)	0.023	0.013	0.032	0.004	0.08	0.24
Controls detailed in table 1.24	YES	YES	YES	YES	YES	YES
Control for organization	YES	YES	YES	YES	YES	YES

Notes: The dependant variable is the total wage bill divided by the number of workers (in log). A set of establishment level control variables is included in all regressions (see table 1.24). *: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

Figure 1.15 plots union wage differentials for each union and each market share category in 1998. For each union, results are obtained through an OLS regression of the firm log wage per capital with all the control variables in table 1.24 included and 4 additional controls for the presence of the other unions. This is a way to tackle a potential pitfall when trying to evaluate separately the effect of each union: as many unions can be present at the same time in an establishment, it is possible that the coefficients found for a specific union are in fact driven by the joint presence of other unions. The profile of the relationship between the wage premium and market share is globally increasing for all unions except CGC. This abnormal pattern for CGC which is the only white collar union suggests that our establishment-level controls in 1998 are probably not sufficient to get rid off the baisses induced by the workforce composition when the CGC union is present. Among other unions, CGT seems to perform the best, with a union wage premium close to 10% among establishments having a market share higher than 50%. By contrast, the presence of FO does not seem to be associated with high wage premia. However, note that the differences between the wage premia obtained for each union in each market share group are not statistically significant at conventional levels.

Figure 1.15: *The union wage gap in each market share group for different unions in 1998 (controlling for other observable characteristics)*



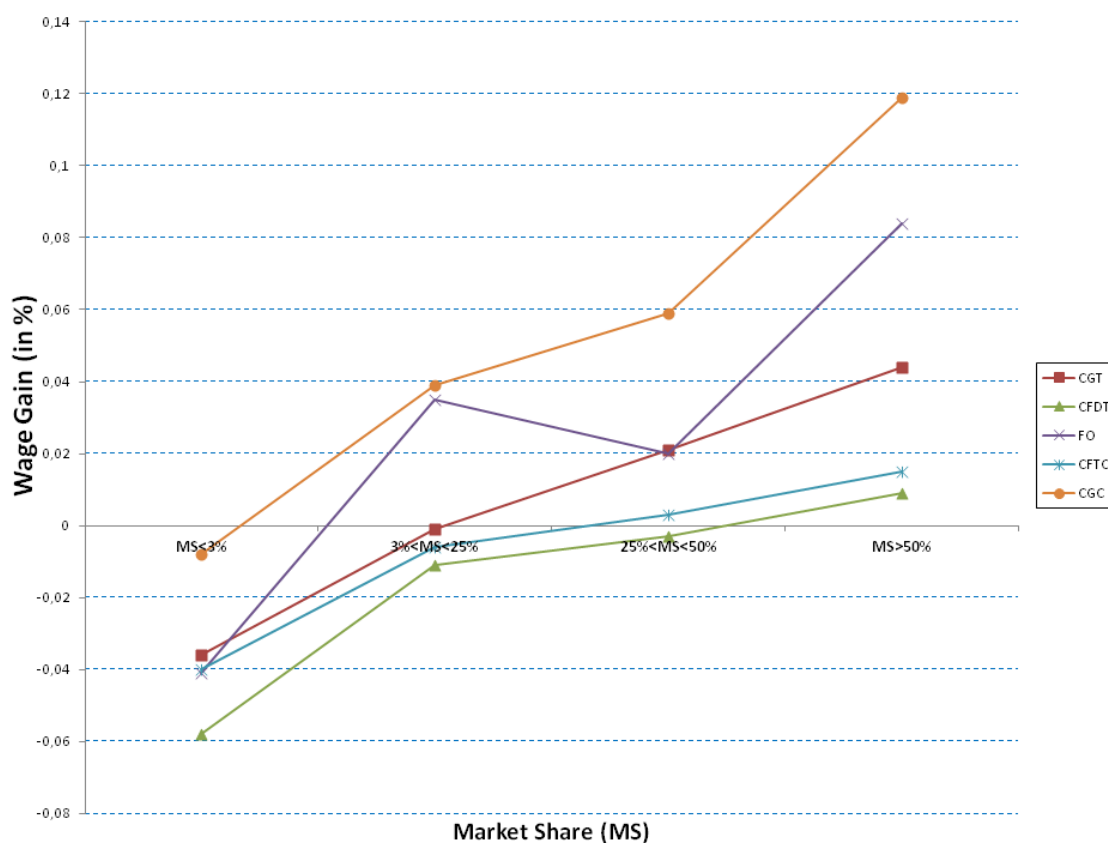
Notes: The curve for the CGT union is obtained by running a regression of the log wage per capita from EAE98 on detailed observable establishment characteristics (see table 1.24), a set of indicators for the presence of each large union other than CGT, and a set of 4 indicators for market share groups as well as the interaction of these indicators with a dummy equal to one when the CGT is present. The dots on the curve are the estimates obtained for these interactions. The point estimates should be interpreted as the union wage premium obtained by the CGT union within each market share or unionization rate group, conditional on other observable workers and establishment characteristics (including the presence of other unions). The other curves are constructed similarly for the other unions.

The union wage premium per union and market share in 2004

Figure 1.16 plots union wage differentials for each union and each market share category in 2004. It is similar in structure to Figure 1.15, except that we could take advantage of the employer-employee structure of the REPONSE04 data to work with individual log hourly wages and to add workers' controls in the regressions. For each union, results are obtained through an OLS regression with detailed establishments' and workers' controls and 4 additional controls for the presence of the other unions. The profile of the relationship between the wage premium and market share is globally increasing for all unions, even for CGC. This suggests that our better control in 2004 are now probably sufficient to get rid off the biases induced by the workforce composition when the CGC union is present. Among other unions, FO seems this time to perform the best, followed by CGT, CFTC and finally CFDT. However, the differences between the wage premia obtained for each union in each market share group are not statistically significant at conventional levels. The results should thus be considered cautiously.

Additional investigations would be necessary to assess more precisely the effectiveness of each union. The first one would be to look specifically at the types of workers that each union is supposed to represent the most (e.g. white-collar workers for the CGC union and blue-collar workers for the CGT union).

Figure 1.16: *The union wage gap in each market share group for different unions in 2004 (controlling for other observable characteristics)*



Notes: The curve for the CGT union is obtained by running a regression of the individual log hourly wage from DADS03 on detailed observable individual characteristics (gender, age tenure, education, occupation, full-time job), establishment characteristics (size, region, firm age, 3-digit industries), a set of indicators for the presence of each large union other than CGT, and a set of 4 indicators for market share groups as well as the interaction of these indicators with a dummy equal to one when the CGT is present. The dots on the curve are the estimates obtained for these interactions. The point estimates should be interpreted as the union wage premium obtained by the CGT union within each market share or unionization rate group, conditional on other observable workers and establishment characteristics (including the presence of other unions). The other curves are constructed similarly for the other unions.

Chapter 2

Union representatives and employers: theory and evidence

2.1 Introduction

On paper, it definitely looks attractive to become a union representative. When a worker accepts to become a union representative, he¹ gets additional rights and legal protections: he is allowed to negotiate wage levels and working conditions in his firm at least once a year with the employer, he is protected against layoffs (the employer needs to be authorized by the French work inspection authority to fire him) and he has paid working discharges for his union job (representing about 10% of total hours worked). In addition to these legal advantages, union representatives might also benefit from a more favorable socio-economic position: they have an informational rent due to their participation to work councils and the duty of the employer to inform them about important decisions; they also may get the esteem of their coworkers and thus a higher social status. A key feature of the French industrial relations system is that unions can be recognized in firms or establishments of firms as soon as they find a worker who is willing to become their union representative²: there is no election. Despite this absence of legal constraints and the apparent advantageous situation of union representatives, unions have recurrent difficulties to find workers

¹As about 80% of union representative are men, we have chosen to adopt the convention to refer to union representatives whose gender is unknown by “he” or “him” rather than “she” or “her”.

²Union representatives are also called shop stewards in the UK.

who are willing to take the job: only one worker out of 125 is union representative, implying that 65% of establishments with more than 20 employees have no unions at all. Why are workers so reluctant to become union representatives? The goal of this chapter is to answer this question by studying more carefully the situation of union representatives and how they interact with their employers.

Looking at the situation of union representatives is fairly new in the labor economics literature and it thus needs to be justified carefully. By taking explicitly into account the fact that a union is not an aggregated group of identical workers and that its development relies, as with any organization, on the higher implication of some of its members, a research agenda focused on the study of union leaders should improve our current understanding of the determinant of collective action. In section 2.2, I review the existing theories unions and on the determinants of collective action. I then discuss how these theories could be improved by taking into account explicitly the role of union leaders.

France is a country of open shop unionism in which only few designated workers within firms or workplaces represent all their coworkers, even those who are not unionized. Such a legal setting implies that firm-level collective bargaining between an employer and the workers takes naturally the form of an “individual bargaining” between the employer and the union representative. Two main features differentiate this bargaining from a classical Nash bargaining. First, the union representative is under the authority of the employer as a salaried worker. Using a more theoretical language, it means that one of the bargaining groups has an idiosyncratic power on the negotiator of the other group. Second, the union representative defends the interest of a community of workers that did not elect him through a democratic process and that does not necessarily support and monitor him. There are no systematic mechanisms guaranteeing that his own interest is aligned on his coworkers’ interest, implying that the bargaining problem is coupled with an agency problem on the workers’ side.

The last part of section 2.2 proposes a model of intra-firm bargaining that explicitly takes into account the two features detailed in the previous paragraph. The

model supposes that the employer can offer a compensation package to the union representative that is different to the wage rate bargained for the entire workforce. Depending on the stake of the bargaining and how well the representative is monitored by his coworkers, the employer and the union representative will cooperate or not. In the cooperative case, the employer offers individual benefits to the union representative in exchange for social peace. In the non-cooperative case, the union representative fully defends his coworkers whereas the employer discriminates against him.

One reason that explains the absence of studies on union representatives is the absence of empirical data. To my knowledge, there does not exist any individual data sources in which union representatives can be directly identified. In section 2.3, I develop an econometric technique that allows me to estimate a wage differential between union representatives and their coworkers using only indirect information. I use a linked employer-employee dataset from the French private sector to compare union representatives' wages to their coworkers' wages. On the employee side of the data, I only know if the surveyed workers are unionized or not. The empirical difficulty is thus the impossibility to distinguish, among the unionized workers, those who are a union representative from those who are only a member of a union without being a union representative. To sidestep this problem, I use available information in the employer part of the data on the number of union representatives (there can be more than one) and the number of unionized workers in each workplace. These variables enable to construct the workplace-level probability for a randomly drawn worker to be a union representative. This probability is equal to 0 for the workers declaring that they are not unionized (since union representatives have to be unionized) and is equal to the proportion of union representatives among unionized workers in their workplace for the workers declaring that they are unionized. I use this probability variable to split the directly observable wage differential between unionized and non-unionized workers into two differentials: one between union representatives and non-unionized workers and another one between unionized workers who are not a union representative and non-unionized workers. Assuming that these two differentials do

not vary with the probability variable (or vary according to a parameterized curve), I show that they can be estimated consistently, conditional to workers characteristics and firm-level fixed effects. The estimation relies on the fact that the observed wage differences between unionized and non-unionized workers are more likely to be wage differences between union representatives and non-unionized workers in workplaces in which the proportion of union representatives among unionized workers is higher.

Estimating a series of standard wage determination models that control for individual and firm-level characteristics, I find that unionized workers taken as a whole are paid 2 to 3% less than non unionized ones. When the technique described above is used to split this directly observable wage differential, I find that union representatives are paid around 10% less than non-unionized workers whereas the other unionized workers are paid equivalently or slightly more than non-unionized workers.

There are three main potential explanations for the large wage differential between union representatives and their co-workers: unobserved adverse selection (their unobserved ability is lower), compensating wage differential for the legal advantages they get from their situation (protection against layoffs and working discharges) and the non-cooperative strategic interaction they have with their employer. In the last part of section 2.3, I propose additional empirical tests that favor this last explanation.

Section 2.4 is a study of the union representatives' own opinions concerning the impact that their role of representative has had on their career. Their answers appear to be very much in line with the results obtained from the study of their wages and they are fully consistent with the wage penalty for union representatives being due to discrimination.

Section 2.5 starts with a series of additional pieces of evidence concerning the strength of the job protection offered to union representatives. First, the average dismissal rate of union representatives is estimated and appears to be higher than the average dismissal rate in firms with more than 10 employees. Second, the union representatives with the lowest wages are also those with the highest estimated dismissal

rate. These two results suggest that the lower wages for union representatives are not compensating a better job protection. Section 2.5 then provides a brief survey of the existing civil and legal procedures for “union discrimination” and of their functioning. It provides much anecdotal evidence on union discrimination and shows that more than one hundred French union representatives have sued their employer for discrimination since the end of the 90s. Hence, even if it is new to scholars, the question of union discrimination is certainly not new to lawyers or to unions themselves.

From the theoretical and empirical material presented in this chapter, I conclude in section 2.6 that one potential answer to our initial research question could be: workers are so reluctant to become union representatives despite all the apparent advantages they would get because if they do so, they would be rationally discriminated by their employer due to their role of bargainer.

2.2 Theoretical analysis

This theoretical analysis starts with a quick review of the theoretical literature on unions. A theoretical model that encompasses both the decisions to become a union member and to become a union representative and that details the subsequent possible actions and roles of these two types of workers is then presented. The literature review serves as an introduction for the theoretical model. Its main objective is to underline the aspects of union bargaining that may have been under-investigated and the possible missing bits in the current state of the art of the literature. The model then proposes an approach of firm-level bargaining that takes in account these possible missing bits. The model also serves as the basis for interpreting the results found in the empirical section.

2.2.1 Literature review

Labor economists devoted much effort to understand the determining factors of unionism and the impact of these institutions on wages, employment and welfare. This subsection provides a quick summary of the abundant theoretical literature on

unions, from the earlier debates in the fifties between Dunlop and Ross to more recent contribution in the eighties that use median voter models (Atkinson and Stiglitz, 1980) or social custom models (Akerlof, 1980).

2.2.1.1 Dunlop versus Ross: the origin of a longstanding debate

As explained by Besancenot and Vranceanu (1999), modern union analysis usually draws on the classical study of Dunlop (1944). Dunlop was the first to argue that unions, like other economic agents, maximize some objective function subject to various constraints. He favored as an objective the wage bill of the union members and considered two constraints: a standard labor demand function and a membership function which is supposed to be increasing with the wage rate and to reflect the union leaders' views concerning the willingness of the workers to become affiliated. The final wage can then be deduced from the maximization of the wage bill under these two constraints.

Ross (1948) challenged Dunlop's views and argued that "the wage policy of unions (...) is not to be found in the mechanical application of any maximization principle". "It is the beginning of wisdom in the study of industrial relations to understand that the union, as an organisation, is not identical with its members, as individuals", he said. Ross considered that the objective of unions, especially when not yet fully established, was to survive and grow. Accordingly, he argued that membership should be seen as the goal rather than the constraint, especially in open-shop firms where union membership is not mandatory when unions are recognized. In this context, the wage rate is drawn up by union leaders, so as "to harmonize the various pressures which are focused upon them in the bargaining process" (p. 43).

2.2.1.2 Following Dunlop: the neoclassical analysis of unions and wages

In the earlier neoclassical analysis of unions, a union was seen as a monopoly operating on the labor market. The main property of a monopoly firm is to operate alone on a given market and to be as a consequence price maker on the market. The profit-maximizing monopoly considers the demand function as given and maximizes its profit subject to this demand function. The monopoly union is supposed to operate

in the exact same way on the labor market: it can set the price at which it sells its members. The firm(s) then adjusts its demand for labor as a function of the price of labor – the wage level – set by the union. The monopoly union will thus choose the wage level that maximizes its objective function subject to the labor demand function of the firm: when the union set the wage, it understands how the firm will respond.

The assumption that the union can set the wage unilaterally has been considered as too strong by many scholars. As written by Layard *et al.* (1991): “The union never gets what it wants. It bargains. Thus we reject an excessively simple model in common usage – the model of the monopoly union”. Two major attempts have been made to model the bargaining between a union and a firm. First, the so-called right-to-manage model considers that the wage level is bargained in a first step between the union and the firm but that the firm remains entirely free to adjust employment in a second step. Second, the efficient bargaining model considers that the union and the firm bargain simultaneously both on wage and employment, so that the final outcome is Pareto-optimal (see McDonald and Solow, 1981 and Oswald, 1985 for a survey). The efficient bargaining model has also been adapted to include other potential dimensions of the bargaining such as working hours (see Cahuc and Zylberberg, 2004, for a survey of these last models). In all cases, the bargaining was modeled using the so-called “Nash bargaining”, following the axiomatic approach developed by Nash (1950, 1953) and the new developments in game theory in the eighties that gave more serious microeconomic foundations to the outcome of the Nash bargaining (Rubinstein, 1982; Binmore *et al.*, 1986; Sutton, 1986). For example, the bargaining power of the negotiating parties is completely exogenous in the axiomatic approach whereas it is derived from economic parameters such as the preference for the present in the game-theoretical approach. However, the latter parameters remain usually difficult to measure and to put into the data and there is certainly room for improvement in our understanding of what determines the bargaining power of the different negotiating groups. There is also some room to adjust the firm’s and union’s outside options in the bargaining. The union outside option is often the workers’ reservation wage or the amount of unemployment benefits whereas the firm

outside option is often considered as being the zero-profit situation. But the union outside option can also be what the workers would get if they go on strike. On the firm side, Grout (1984) was the first to underline the fact that the bargaining can lead to under-investment by the firm because the union will capture part of the future returns to any investment made (see also Malcomson, 1997).

Another strand of the literature tries to understand the role of strikes in the bargaining. The main problem faced by this literature is to understand how a strike can be Pareto-optimal *ex ante*. Workers going on strike are indeed hurting both their employer and themselves. If both parties are rational in a perfect information setting, they should therefore agree on the outcome of the strike *ex ante*, thereby avoiding the strike and its associated costs: this is the Hick's paradox (Hicks, 1963). To understand strikes, the literature has thus developed along two lines: first, under the hypothesis that workers are not rational and, second, under the hypothesis that there is asymmetric information. Ashenfelter and Johnson (1969) initiated the first line by developing a model in which the union has an *ad hoc* "concession schedule" that indicates the wage acceptable to union members after a strike of given length (see also Farber, 1978a). The second line followed the developments in repeated game theory (Rubinstein, 1982 *i.a.*). In models developed by Hayes (1984), Hart (1989), Card (1990), Crampton and Tracy (1992), Kuhn and Gu (1999), the firm has private information about its own profitability. In these dynamic models, the bargaining process enables the union to reveal information about the firm profit and the strike is thus *ex ante* Pareto-optimal. A recent experimental study by Tournade and Villeval (2004) has confirmed that information on the stake of the bargaining does play a role: the strike incidence is lower when there are information spillovers between comparable pairs of bargainers. However, unions do not exploit fully the information spillovers and their striking strategy is not necessarily Pareto optimal. Other motives, such as social comparisons and envy among unions also play a role.

There is finally a long standing debate on the union objective function. Dunlop considered that the most convincing objective function was maximization of the total wage bill of the membership. This is simply the product of the wage level and of the number of union members that are finally hired by the firm(s). An alternative

trade union objective which is quite similar to maximization of the total wage bill is rent maximization (see Rosen, 1969; de Menil, 1971; Calvo, 1978). For example, de Menil assumes that the union cares about the real wage surplus, that is, the difference between the real wage bill in the union sector and that in the perfectly competitive sector. Then comes the utilitarian objective function which is simply the sum of the union members' individual utilities. Finally, the expected utility approach considers that the union maximizes the expected utility of union members, that is, the weighted sum of their utility when they are employed and when they are unemployed, the weights being the share of union members being respectively employed and unemployed.

The study of the union objective function can arguably be considered as an old debate. To make some progress in the understanding of the union objectives, it is necessary to better understand why workers organize in a trade union and what their exact motives to do so are. This leads us to the theories that tried to understand the determinants of collective action.

2.2.1.3 Mancur Olson and the determinants of collective action

In his famous book *The Logic of Collective Action* (1965), Mancur Olson theorized the free-riding problem inherently associated with collective action. In open-shop contexts, that is, when the benefits of the collective action are not going to the union members only, there is an incentive for workers to free-ride and to benefit from the collective action without taking part in it and supporting the costs that would be incurred in that case.

In open shop countries such as France or in right-to-work states in the United States, why do some workers are unionized and pay union dues whereas they could simply be free-riders and benefit from the union contracts without getting involved? The literature has proposed two main types of explanations to solve this apparent paradox. First, according to the classical Olson explanation (Olson, 1965), if a large group exists, it must have formed either because membership is compulsory or because the group provides private goods and services accessible only to its members, with ancillary provision of the collective good as a “by-product”. In open shop countries, we

should thus observe that union members obtain specific advantages that are not going also to non-union members, even if contracts are supposed to cover both union and non-union members. An empirical literature has tried to measure if union members enjoy non official wage premiums. In the United States, studies by Blakemore et al. (1986), Schumacher (1999), Budd and Na (2000) and Eren (2008) find a membership wage premium around 10%. In contrast, Hildreth (2000) and Booth and Bryan (2004) in Britain as well as Bunel and Raveaud (2008) in France do not find any wage premium for union members.

However, the specific advantages going to union members are not necessarily monetary gains. Drawing of the model of social custom developed by Akerlof (1980), Booth (1985) and Naylor (1989) developed models in which workers remain union members because they care about their reputation and because they would incur a reputation loss if they stop being union members in a context of high unionization. In such a case, being a union member is indeed a social custom, and not following the social custom is costly.

2.2.1.4 Following Ross: unions as political organizations

The earlier models such as the monopoly union model are based on the assumption of identical individuals and a fixed and exogenous membership level. Several attempts have been made to endogenize the decision to become a union member using social choice theory and the model of the median voter. In these models, unions are considered to be democratic organizations, with their leader elected by union members. The goal of the union leader is to be re-elected, which can be achieved by maximizing the utility of the median union member. This approach gives a good foundation for the objective function of a democratic union with heterogeneous members. Differences in union workers' preferences have been assumed to arise for various reasons, including for example age (Farber, 1978b), seniority (Grossman, 1983) or labour market outside opportunities (Booth, 1984). These differences can explain why some workers become union members and why some others do not. Consider for example that the union set a unique wage level for all union members, and that workers have different market opportunities outside the union. Then, only the workers whose market oppor-

tunities are lower than the union wage will be willing to join the union and the union membership thus depends on the wage level chosen by the union. The union thus set the wage level in order to maximize the utility of its median member under two constraints: (i) the labor demand function of the firm(s) as in the monopoly union model, (ii) a union membership function that determines the total membership for a given wage level and consequently the nature of the median voter.

Even if it has some theoretical attractiveness, the median voter model is not applicable in most countries. To be valid, it requires the union to be both (i) a closed shop and (ii) a democratic organization. Two important traits of the French industrial relations system is that unionism is open shop and that unions are not democratic organizations, especially at the firm level. Indeed, as already said, firm-level agreements signed by union representatives cover all the workers in the firm and the union representatives are voluntary workers that are simply approved by their union to be in charge of the bargaining (see Figure 2.1).³ In such a context, a median voter model cannot be used to understand the role of unions and the determinants of collective action.

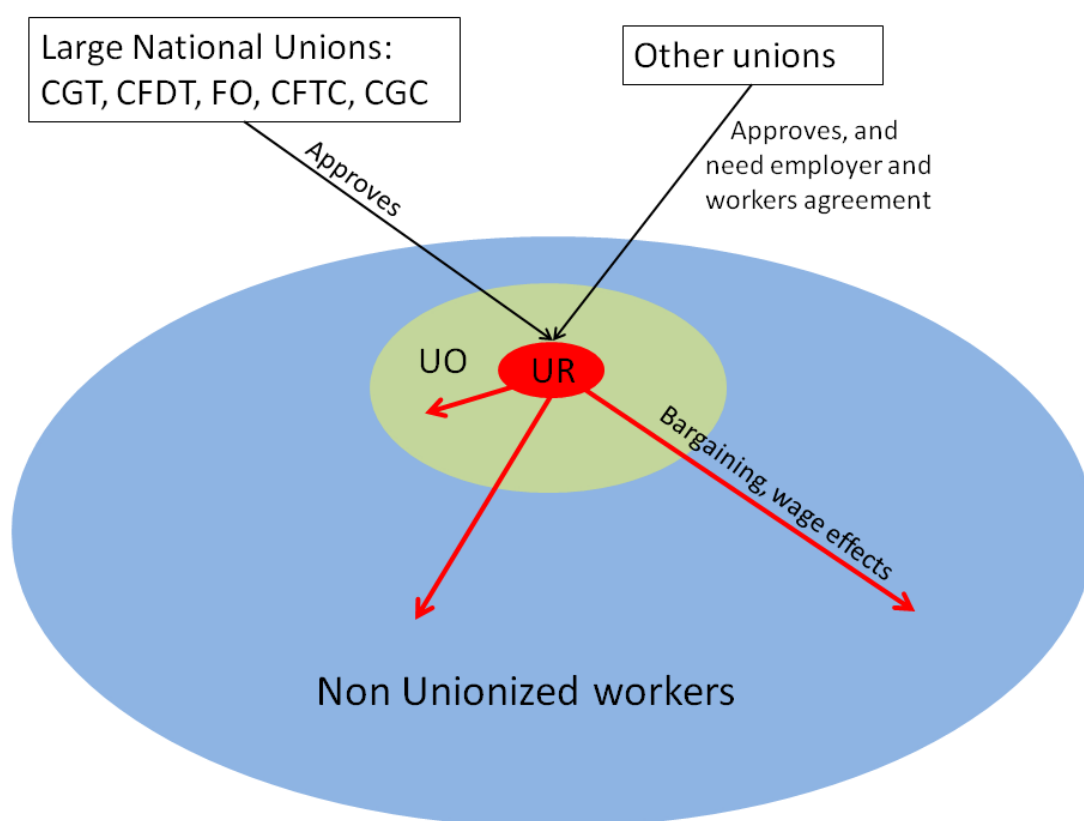
Another drawback with the median voter model is that it requires the union leaders to be elected. This is rarely the case in practice. Even in the US, the country where the median voter model probably fits the best to the institutional settings, the union leaders are not necessarily elected at the local level. The presence of unions in firms results from a democratic process: the union needs to win a majority vote to be legally recognized. But union leaders themselves do not need to be elected.

Starting from Ross, early scholars have underlined the potential conflict of interests between union leaders and membership (see Berkowitz, 1954; Atherton, 1973). However, there are only very few attempts to model explicitly the role of union leaders. Pemberton (1988) proposes a version of the monopoly union model in which the union leadership sets the wage level that maximizes its own objective function. He supposes that the leadership's objective is simply to maximize membership. Besancenot and Vranceanu (1999) also develop a model in this vein⁴. Jones (1989) argues

³The reader interested by a more complete description of French industrial relations system should read the second subsection of chapter 1.

⁴In their model, the union leadership maximizes its own payoff that depends positively and linearly on the unionization rate and negatively and quadratically on the number of union members.

Figure 2.1: *Within firm industrial relations in 2004*



Notes: UO: Unionized Only, UR: Union Representative.

Proportions have been respected: the relative sizes of the different areas correspond exactly to the relative shares of the different types of workers in the data sample.

that delegation of authority to negotiators can be optimal if these negotiators have particular preferences such that even if they follow their own interest, they will also favor the other union members. This seems to apply mostly if the other union members or workers tend to have irrational behaviors that a rational negotiator could avoid. Finally, Faith and Reid (1987) develop a agency theory (with no model) of unionism and they discuss the potential agency problems that can emerge within union. In parallel to these few theoretical attempts, I am not aware of any papers that look empirically at the situation of union leaders.

Overall, the Dunlop neoclassical approach of unions had developed far more than the more political approach proposed by Dunlop. This is certainly because it conceives unions broadly as organizations that maximize an objective function under constraints and can thus be more easily translated into tractable models that can then be used in a wide variety of contexts (e.g. as building blocks in other models, see Pemberton, 1988).

2.2.1.5 What could be gained from a better understanding of within-firm bargaining and of the role of representatives?

The (very) few attempts to take into account the role of union leaders described above tend to conceive unions as bureaucratic organization. The leadership does not belong to a particular agent that maximizes his own utility function. Only Jones (1987) suggests that the individual preferences of the workers appointed as negotiators can play a role. The union leadership also appears to be broadly defined, so that it can apply to a wide range of situations. But the theories developed seems to be better suited for unions' top executives rather than for the several local-level union representatives that take at their charge the firm-level bargaining.

More precisely, what are the possible missing bits of the current theories of unions? First, union representatives are both bargaining with the employer and under his authority as salaried workers. It implies that the employer has some idiosyncratic power on the representative situation that he may use. Second, the representative's individual incentives are not automatically aligned on his coworkers' and agency problems within unions need to be considered carefully. In particular, usual political

models from social choice theory (e.g median voter models) should not be applied to derive the incentives of union leaders.

The model presented in the next subsections builds on these two key ideas. The latter idea that consists in examining the agency and monitoring problems that are likely to appear within unions has been underlined by Ross and a few scholars have proposed theories going in that direction. However, the idea that the bargaining within firms is asymmetric because the local union representatives are both negotiators and salaried workers has never been exploited (to my knowledge).

The model presented in the next section is also designed to fit well with the specific traits of the French industrial relations system and the following two main characteristics: (i) workers can become a union representative and bargain on a voluntary basis, (ii) firms are open-shop, so that firm-level collective agreements cover both union and non union members in the firm.

Nevertheless, these two features do not concern only France. The United-Kingdom for example is also open-shop and it seems that the designation of the local shop stewards that bargain in firms is not subject to a fully democratic process. Southern Europe countries such as Spain and Italy also share these features. However, the bargaining in “German” countries (Germany, Belgium, the Netherlands and Austria) and in Scandinavian countries (Sweden, Norway, Finland and Denmark)⁵ appears more centralized, so that union bargainers have already quite a high position in the union and are not bargaining with their direct employer.

In the United-States, the bargaining is fully decentralized at the firm or plant level. However, it is submitted to a more democratic process, and union recognition is not just bounded to a single worker willingness to become a representative. Once a union has managed to organize a firm, it seems difficult for the employer to target the local union leader in order to avoid the union. Indeed, in that case, the recognized union has won a majority election and the representative gets a lot of support from his coworkers. If a company were to pay a union representative less, the union would use the law and the contractual grievance procedure to fight back. Since discrimination against the local union leader is unlikely to lead to the union withdrawal in the U.S.

⁵see Slomp, 1998, for a classification of industrial relation systems between “German” and Scandinavian countries.

case, it seems to be just pointless⁶. However, in the U.S., there is a lot of evidence that anti-union policies and discrimination take place when a union tries to organize a firm (see Bronfenbrenner, 2009, for a recent study). Employers also discriminate against pro-union job applicants (Leap et al, 1990). Anti-union action on the behalf of employers is thus certainly not new. It seems to appear quite rational for employers to try to avoid unions. The best way of proceeding may thus vary from a country to another one, depending on the institutional context.

2.2.2 A theoretical model

A first attempt to integrate the specific role of union representatives in within-firm bargaining is now presented.

2.2.2.1 Idea

In countries with open-shop unionism (such as the UK, France and some US states), workers do not need to be union members to be covered by union contracts when a union is present in their firm. In these unionized firms, unions bargain with the employer for all workers in the firms. A few union representatives represent the unions on the job floor and are in charge of the negotiations. These representatives are designated among a pool of potential candidates.

This subsection complements some of the standard bargaining models used in labor economics or industrial relations to include both the specific role of the negotiators (the union representatives) and the role of the unionized workers. Both the workers decision to become a union member and to become a candidate to be a union representative are endogenous.

The interaction between a union representative and his employer can be best understood using the tools offered by the theory of games. On the one hand, the employer can try to buy out the representative by offering him monetary or non-monetary advantages in exchange for social peace or at least a less tough bargaining. On the other hand, the employer might also try to discourage unions by making their representatives' lives particularly difficult. The final outcome (cooperation or

⁶The previous points derive directly from informal discussions with Chris Tilly, from UCLA.

not between employers and union representatives) should depend on the stake of the bargaining, on the potential bargaining power of the workforce and on its capacity to monitor the union representative's actions. The union representative as a negotiator has access to crucial information on the situation of the firm and on the potential willingness of the employer to accept workers' demands. He will be able to use this informational advantage to extract a share of the firms' rents at the expense of the other workers. However, the union representative is also at the mercy of his employer as a salaried worker. This idiosyncratic power of one of the bargaining groups on the negotiator of the other group is a particular feature of intra-firm bargaining that needs to be considered carefully. Employers might have the power to avoid bargaining by specifically targeting the union representatives.

The classical study of the determinants of unionization (Olson, 1965) can then be rethought once both the agency problem arising from the asymmetric information between the workers and their representative and the discretionary power of the employer on the representative have been accurately understood. When unionism is open shop, workers might be willing to become union members for two (economic) reasons: it would increase the bargaining power of their representative and thus their own share of the firm's rents and it would be a way to monitor what is done by the union. Unionization in an open-shop context might thus be explainable without invoking (as is usually done) the specific advantages going to union members (Olson, 1965) or a social custom (Akerlof, 1980). Conversely, the absence of unions could be explained, not by the classical free riding phenomenon, but by the higher cost that the employer might threat to inflict on the bargainers.

2.2.2.2 Framework

We consider a given firm that lives infinitely. Each year, the following sequence occurs:

- **Step 0:** The firm draws a random profit flow Π according to a given distribution.
- **Step 1:** Workers decide to be unionized for the year or not. μ is the proportion

of unionized workers.

- **Step 2:** Some workers may want to become union representative and to bargain for all the other workers in the firm. If there is more than one candidate, one is picked up randomly⁷.
 - **Step 3:** If there is a representative in the firm, bargaining occurs between the employer and the union representative. The representative can choose two strategies:
 - In the so-called “red strategy”, he does his job properly and bargain for all his coworkers with the employer. In that case, a Nash bargaining occurs and the representative’s bargaining power is equal to the proportion of unionized workers μ .
 - In the so-called “yellow strategy”, the representatives does not bargain and the wage level remains unchanged. Crucial in the model, the employer has some power over the representative’s utility: he can inflict him a specific cost or benefit, depending on his strategy.
 - **Step 4:** Unionized workers may protest if they find the bargained wage not satisfactory. In that case, they take at their charge the bargaining and all workers get the bargaining wage, as it is the case with the “red strategy”. The union representative is dismissed and he is not in charge of the bargaining anymore. He may leave the firm or stay and incur a social punishment.
- We suppose that unionized workers never protest if the representative has adopted a red strategy and have a probability $p(\mu)$ to protest and reinstate the red strategy when the yellow strategy was initially chosen by the union representative. $p(\mu)$ is increasing in μ : a larger share of unionized workers increases

⁷In practice, there can be more than one union representative in French firms. In this model, we ignore the complications implied by multi-unionism and we deliberately focus on the single-unionism case. Allowing more than one union representative in the model would not change our results providing that all representatives behave the same way. The case where different union representatives are allowed to behave differently is however beyond the scope of the model.

the probability that workers react.

2.2.2.3 Utility functions and payoffs

A firm is composed of n homogenous workers regarding their tastes and productivity with reservation wage \bar{w} . Let us denote by w the final wage rate in the firm. w is identical for all workers in the firm. If there is no union representative, w is set unilaterally by the employer to the workers' reservation wage: $w = \bar{w}$. If there is a union representative but the union representative does not bargain (yellow strategy), workers also get paid the reservation wage $w = \bar{w}$. Otherwise, w is the result of a Nash bargaining between the employer and the union representative.

Workers can engage in collective action at each period, either becoming unionized (step 1), or becoming representative (step 2). There are thus 3 types of workers: non unionized workers, “only unionized” workers, and union representatives.

We suppose that utility functions are linear in the wage rate. Workers may also have long-term career perspectives in their working firm. These career perspectives derive from the implicit contract between them and their employer. Hence, the utility function of a non-unionized worker is simply $U^{nu} = w + v$, where v represents the value of the implicit contract between non-unionized workers and their employer.

This implicit contract corresponds to the positive relationship between wages and seniority which cannot be accounted for by accumulation of human capital – either firm or non-firm specific. Such a positive relationship is found empirically (*i.a.* Abraham and Farber, 1987; Topel, 1991). It is theoretically motivated by agency problems for efficiency reasons (see Lazear 1979, 1981), as it is described for example in the well known “shirking model” (Harris and Holmstrom, 1982). In our model, we do not legitimate the existence of a dynamic implicit contract. Instead, we draw on the abundant existing literature to suppose that such a contract is optimal. We call v the present value of the implicit contract for the worker and we suppose that there is a loss of efficiency for the employer not to offer the implicit contract to workers.

Worker i simply has to pay a cost c_i to become a union member. We suppose

that c_i is heterogenous across workers and distributed uniformly between c_1 and c_2 . This heterogeneity cannot be implied by union dues. However, it may reflect political views: in addition to its bargaining role, a union is often politically oriented, and the effort to join the union should be lower for workers who are *ex ante* closer to the union political identity⁸. We also consider that the decision to become a union member is not directly observable by the employer and that union members benefit from the same type of implicit contract than non-union members. Thus, for unionized worker i , we have $U_i^{uo} = w + v - c_i$, with $c_i \sim U([c_1, c_2])$.

However, the employer directly observes the union representative since he bargains with him. As a consequence, the employer can offer to the workers an implicit contract that is conditional on not becoming a union representative. In that case, he deprives the representative from the implicit contract and incurs an efficiency loss ϵ . The employer can also buy immediately the representatives and offer them a bribe $b \geq 0$ depending on their strategy. The representative's utility is then simply $U^r = w + v + b$ if the implicit contract is maintained, and $U^r = w + b$ if it is not. Discrimination toward the representative occurs if $b = 0$ and if v is not maintained. This way of modeling the positive/negative discrimination that the employer can offer/inflict to representatives reflects the fact that the employer cannot afford to immediately cut a representative's wage, due to anti-discrimination laws (see section 5). However he can offer him a worse career perspective without being easily sued for discrimination. Our modeling choice also put a natural upper bound on the discrimination: the representatives cannot lose more than the value of the implicit contract. However, representatives can be bought instantly and there is no upper bound on the premium they can get. The key aspect of the model remains that the employer can discourage workers to become a union representative for a small cost.

Representatives may also enjoy additional benefits due to their working discharge, to the protection they get against layoffs, to the informational rent they have or to

⁸This argument can also apply to union representatives: workers may incur a specific cost or benefit that varies with their political identity when they become a union representative. Such a refinement is not necessary to provide the main intuitions of the model. Nevertheless, the consequences of an extension of the model along these lines are discussed latter on.

the higher social status they can get from their position. They may also have to pay the cost to be unionized. To keep the model as simple as possible, these aspects are ignored at this stage.

2.2.2.4 Bargaining and monitoring

Each period, we define the profit flow Π by the quasi-rent available in the firm. Π corresponds to the firm's profit when all workers are paid their reservation wage. We denote $\pi = \Pi/n$ the quasi-rents per worker.

At step 3, a Nash bargaining occurs between the employer and the union representative on the current profit flow. The workers' outside option is equal to the total wage bill if they were paid their reservation wage. The employer outside option is zero profit. v represents future benefits and does not appear in the bargaining of current profits. By definition, the employer maximal surplus is Π and is obtained when workers get \bar{w} .

A standard bargaining (Nash 1953; Rubinstein 1982) consists in maximizing the product of the employer's and the workers' surplus respective to their threat points:

$$\arg \max [n(w - \bar{w})]^\mu [\Pi - n(w - \bar{w})]^{1-\mu}$$

The result of such a bargaining is as follows: the workers get the wage rate $w = \bar{w} + \mu\pi$ and their surplus respective to their outside option is $\mu\pi$, the firm final payoff is $(1 - \mu)\Pi$.

We would like to take explicitly into account the fact that the bargaining occurs privately only between the union representative and the employer. We suppose that this private bargaining occurs as follows: the union representative can either bargain the wage rate $w = \bar{w} + \mu\pi$, or he can refuse to bargain and all workers would get $w = \bar{w}$. The employer offers $b \geq 0$ to the representative if he cooperates. It is clear that the employer has never interest to bribe a fighting union representative. First, the bribe is a direct cost for the employer. Second, it also increases the bribe that is necessary to obtain the representative's cooperation. Third, it increases the probability to have a representative in the firm, which necessarily generates additional

costs for the employer. We thus immediately consider that the bribe associated with a red strategy is 0.

If the collusion between the employer and the representative is discovered, the representative is dismissed. He may exit the firm or stay. In all cases, we consider that he gets back his outside option and gets zero surplus. If he stays in the firm, he does not recover the value of the implicit contract v if he has lost it. His coworkers also have a retaliation power on him, so that his utility is brought back to his outside option level \bar{w} even if a bargaining occur⁹. Finally we also suppose that the union representative keeps his premium b even if he gets dismissed¹⁰. The representative surplus (relative to \bar{w}) in case of collusion is thus b , whether or not collusion is discovered.

2.2.2.5 Solution of the one period game

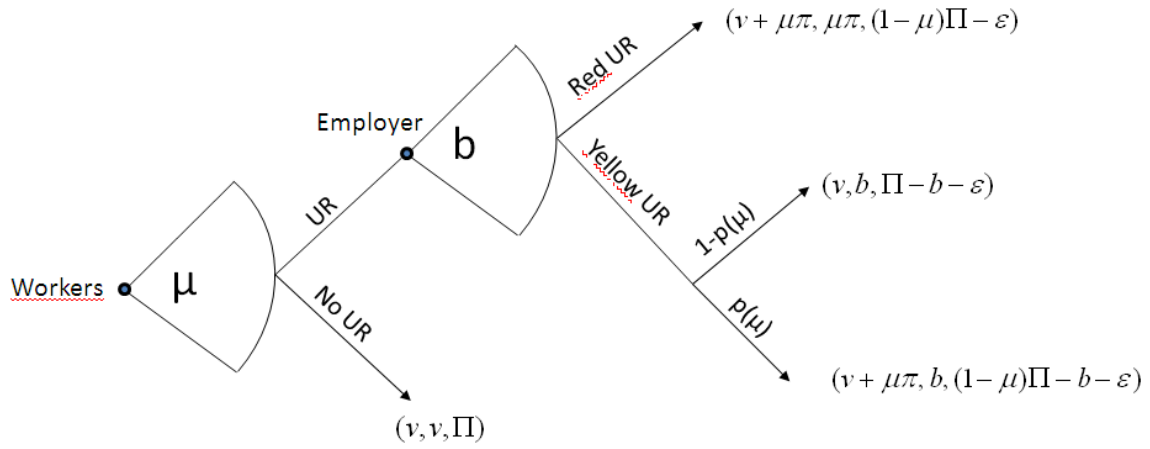
We solve (by backward induction) the one period game in the case where the employer does not offer the implicit contract to the union representative. In that case, the employer incur a small sunk cost $\epsilon \geq 0$ due to efficiency loss. We suppose to simplify the exposition that the employer cannot credibly distinguish between the fighting and the cooperative union representatives and only deprive the fighting representatives from their implicit contract¹¹. The tree of the game and players' payoffs are summarized in figure 2.2.

We discuss in the next subsection the conditions under which the employer's strategy that consists in discriminating against the representatives is sustainable in a repeated game environment.

⁹This assumption simplifies the calculations: we suppose that the representative is covered by collective bargaining so that his particular wage does not alter the employer payoff in the Nash bargaining problem. He is however brought back to his outside option if he leaves the firm or accept to endure a social punishment.

¹⁰Whether or not the representative loses b if collusion is discovered does not change fundamentally the results.

¹¹Since the cooperative union representative receives a bribe anyway, the outcome of the game would not change fundamentally if we allow him to keep his implicit contract. Our assumption is thus just a simplifying normalization. However we believe that it is more natural: once a worker has "betrayed" the terms of the implicit contract and became a union representative, he may be bribed by the employer as long as he is in charge of the bargaining. However, once he is not anymore, there is no clear reason why he should keep his implicit contract.

Figure 2.2: Game tree and players' payoffs

Lecture: UR stands for Union representative. Payoffs are given in the following order: (non unionized workers, union representative, employer). Union member i simply pays an additional cost c_i respective to the non-unionized workers. For workers, payoffs are given respective to their outside option \bar{w} .

- **At step 3:**

Once a worker has chosen to become representative, he will cooperate with the employer if and only if the payoff under the yellow strategy is higher than his payoff under the red strategy, that is if $\mu\pi < b$. Conversely, the employer will be willing to cooperate if and only if his profit under the yellow strategy is higher than his profit under the red strategy, that is if $b < (1 - p(\mu))\mu\Pi$.

Cooperation will thus occur if and only if the employer can set b such that the two conditions above are verified. Combining these conditions, we get that cooperation can occur if and only if $\mu\pi < (1 - p(\mu))\mu n\pi$, that is if:

$$p(\mu) < 1 - 1/n$$

For a given μ , the probability of cooperation increases with firm size. This reflects the fact that the incentive for the employer to buy a representative is higher when the representative has more leverage, that is, when he can bargain for a potentially large number of workers. However, the probability of cooperation is independent from firms' quasi-rents per worker. Larger quasi-rents give

an incentive to the employer to buy the representative, but they also give an incentive to the representative to fight since he will in this case get his share of the quasi-rents. The two effects cancel out, so that only the scale factor – firm size – remains. Finally, a larger μ lowers the opportunity of cooperation: when the union representative is accurately monitored by his coworkers, cooperation gets too risky.

The employer will simply set b to minimize its costs. He offers to a yellow representative the minimal premium necessary to buy him under the constraint that this premium would not cost more than entering into a Nash bargaining with the representative:

$$b = \min(\mu\pi, (1 - p(\mu))\mu n\pi)$$

• **At step 2:**

At step 2, workers decide if they want to become a union representative. Their decision does not depend on what happens at step 3. Indeed, at step 3, the employer adjust b such that the representative is just indifferent between the yellow and red strategies.

If the red strategy is to happen at step 3, workers will be willing to become a union representative if and only if their share of the bargained profits compensate for the loss of the implicit contract. If the yellow strategy is to happen at step 3, workers will be willing to become a union representative if the bribe compensate for the loss of the implicit contract. In both cases, the condition for having a union representative is:

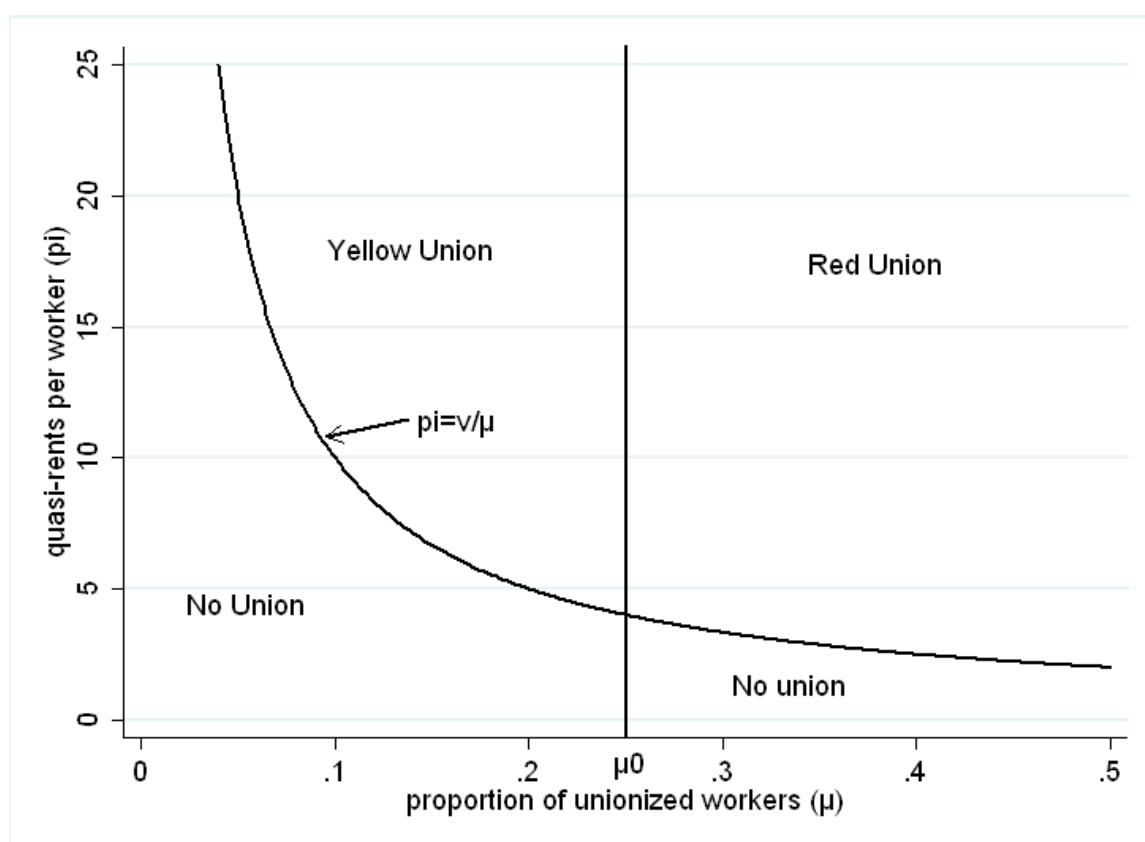
$$\mu\pi > v \Leftrightarrow \mu > v/\pi \tag{2.1}$$

There will be a representative in firms with a sufficiently large amount of quasi-rents per worker and with a sufficient share of unionized workers. If the proportion of unionized worker is too low, then the representative will have no bargaining power and he will not be able to extract a sufficient amount of prof-

its to compensate the loss of his implicit contract with the employer. For a given value of v , the final outcome will thus depend on the proportion of unionized workers and of the profit flow per worker π .

Figure 2.3 illustrates the different possible configurations when π and μ vary. $\mu_0 = p^{-1}(1 - 1/n)$ denotes the minimum unionization rate necessary for a fighting representative.

Figure 2.3: *Presence and strategy of the union representative as a function of the proportion of unionized workers and of the profit flow per worker*



Lecture: When the profit multiplied by the proportion of union members is smaller than the value of the implicit contract, there is no union representative and thus no union in the firm. Otherwise there is a union and the union representative's strategy depends on the unionization rate μ : the representative will fight as long as μ is larger than μ_0 .

- **At step 1:**

Gain to become a union member as a function of μ :

A worker that decides to become a union member will increase the unionization

rate by $1/n$. He will thus increase the union bargaining power μ by $1/n$ and the workers' reaction capacity $p(\mu)$ by $p(\mu + 1/n) - p(\mu)$. We consider that n is large enough so that we can take a first order approximation of the latter term: $p(\mu + 1/n) - p(\mu) \approx p'(\mu)/n$. Consequently, the gain g to become a union member is:

$g(\mu) = \pi/n$ if $\mu > v/\pi$ (there will be a union representative) and $\mu > \mu_0$ (the red strategy is to happen).

$g(\mu) = (p(\mu) + \mu p'(\mu))\pi/n$ if $\mu > v/\pi$ (there will be a union representative) and $\mu < \mu_0$ (the yellow strategy is to happen).

When the unionization rate reaches v/π , the firm switches from the non-union to a union configuration. Consequently, the individual decision to become a union member affects the final configuration of the firm for a unionization rate equal – or sufficiently close – to v/π . If $v/\pi < \mu_0$, the gain to become a union member at $\mu = v/\pi$ is thus equal to the gain from switching from the non-union to the *yellow* union configuration, plus the gain in bargaining power and reaction capacity that one additional union member brings in the yellow union configuration¹² (see the expressions given in the previous paragraph). If $v/\pi > \mu_0$, the gain to become a union member at $\mu = v/\pi$ is equal to the gain from switching from the non-union to the *red* union configuration, plus the gain in bargaining power and reaction capacity that one additional union member brings in the red union configuration.

When the unionization rate is equal to μ_0 , with $\mu_0 > v/\pi$, the firm switches from the yellow union configuration to the red union configuration and the individual gain from unionization at this point is the sum of the absolute gain from switching from yellow to red union plus the marginal gain in bargaining power brought by an additional union member under a red union.

¹²The gain in bargaining power and monitoring capacity from one additional union member should actually be omitted for a worker that moves the unionization rate from below v/π to exactly v/π when he becomes a union member. It should however be included for a worker that moves the unionization rate from just below v/π to above v/π when he becomes a union member. For simplicity, we neglect these additional refinement and consider that workers at switching points benefit from the marginal gains derived from their membership under the new configuration.

Unionization rate at equilibrium:

A given unionization rate μ is an equilibrium if and only if for this value of μ , no worker wants to switch from union member to non-union member or vice versa. Let us call F^{-1} the inverse Cumulative Distribution Function (CDF) of the unionization costs. We can characterize equilibrium solutions as follows:

Proposition 1: Characterization of the equilibrium unionization rates

- **No union trap:** $\mu^* = 0$ is always an equilibrium if one union member is not sufficient to ensure the presence of a union representative, that is, if $\pi/n < v$.
- **Interior solutions:** for $\mu^* \in]0, 1[- \{v/\pi, \mu_0\}$, μ^* is an equilibrium solution if and only if $g(\mu^*) = F^{-1}(\mu^*)$ and $\frac{\delta g(\mu^*)}{\delta \mu} < \frac{\delta F^{-1}(\mu^*)}{\delta \mu}$.
- **Corner solutions:**
 - if $v/\pi < 1$: $\mu^* = 1$ is an equilibrium if and only if $g(1) \geq F^{-1}(1)$.
 - if $v/\pi < \mu_0$: $\mu^* = \mu_0$ is an equilibrium if and only if $g(\mu_0) \leq F^{-1}(1)$ and $\mu_0(1 - p(\mu_0))\pi + g(\mu_0^-) \geq F^{-1}(\mu_0)$ with $g(\mu_0^-) = \lim_{\mu \rightarrow \mu_0^-} g(\mu)$.
 - if $v/\pi < \mu_0$: $\mu^* = v/\pi$ is an equilibrium if and only if $g(v/\pi) \leq F^{-1}(v/\pi)$ and $p(v/\pi) * v \geq F^{-1}(v/\pi)$
 - if $v/\pi \in [\mu_0, 1]$: $\mu^* = v/\pi$ is an equilibrium if and only if $g(v/\pi) \leq F^{-1}(v/\pi)$ and $v \geq F^{-1}(v/\pi)$.

Proposition 1 simply reflects an adaptation to our specific context of more general results of public good provision. Formally, we have a n players game. Players decide on paying heterogenous costs to contribute to the provision of a public good – which is in our case a mix between bargaining power and monitoring of the union representative –. We naturally have free-riders (non unionized workers) and multiple Nash equilibria. Proposition 1 simply characterizes the Nash equilibria by the proportions of unionized workers for which there can be no workers willing to switch from union member to non-union members or vice versa. Interior solutions can be more easily characterized since both the cost and gain functions are continuous at these points. For interior solutions, there is only one distribution of workers across union and non-union members that

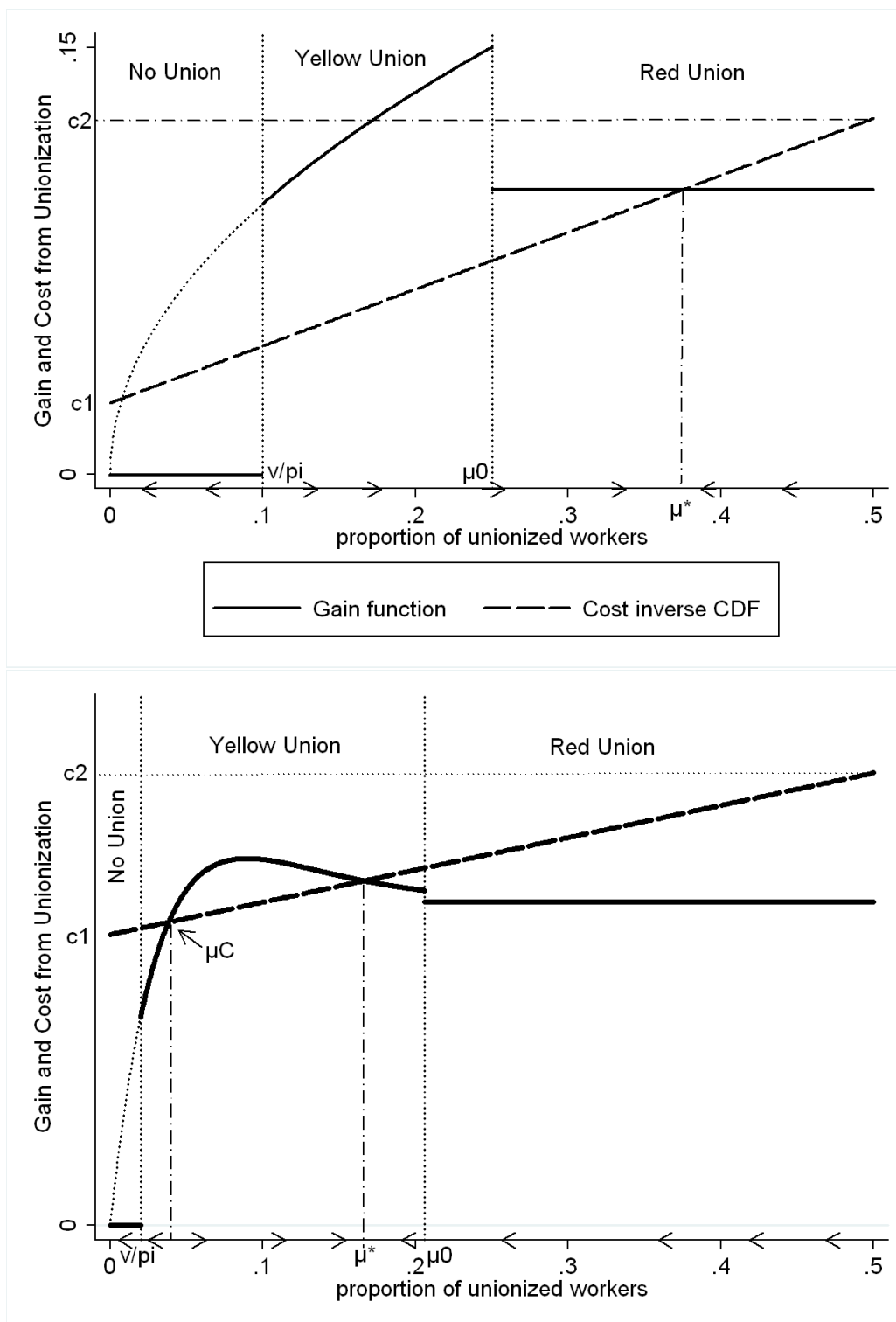
actually corresponds to a Nash equilibrium. This distribution corresponds to the case where workers with the lowest unionization costs always become union members first.

Figure 2.4 illustrates the possible interior solutions for two different functions $p(\mu)$. We assume on figure 2.4 that workers with the lowest unionization costs become union members first.

On the top panel, for an initial $\mu \in [0, v/\pi[$, there is no gain to become a union member for any worker and union members have interest to become non-unionized. The firm converges towards $\mu = 0$. For $\mu \in [v/\pi, \mu^*[$, there are non-unionized workers who would gain from unionization and the unionization rate increases to reach μ^* . For an initial $\mu \in]v/\pi, 1]$, there are unionized workers who would gain from becoming non-unionized and the unionization rate decreases to reach μ^* . Providing that the workers with the lowest unionization costs are the union members, no worker has interest to switch from union to non-union member or vice-versa at μ^* .

On the down panel, the firm will converge to μ^* for any initial value of μ that is initially higher than μ_C . We thus have 2 possible equilibria: one with no union and no unionized workers and one with a few unionized workers and a yellow union representative. The function $p(\mu) = 1 - (1 - p)^{n\mu}$ (with $p = 0.2$) chosen in the down panel can be microfounded: it corresponds to the case where each union member has an equal probability p to react and dismiss the union representative.

Figure 2.4: *Determination of the proportion of unionized workers: 2 examples of interior solutions*



Notes: CDF: Cumulative Distribution Function. Parameters' values: $v = 1$ and $n = 100$ in both panels. In the top panel, $\pi = 10$ and $p(\mu) = 2\sqrt{\mu}$. In the down panel, $\pi = 50$ and $p(\mu) = 1 - (1 - 0.2)^{n\mu}$.

Lecture: When the gain from unionization is higher (resp. lower) than a worker's individual cost, this worker becomes union member (resp. non union member) and the unionization rate increases (resp. decreases).

Remember that the corner solutions are switching points, that is points where the workers decision affect the final configuration of the firm (no union, yellow union or red union). The gain to become a union member at this points is equal to the gain from switching from a configuration to another one, plus the usual marginal gain in bargaining power or reaction capacity that one additional union member brings in the new configuration. In addition, if an equilibrium exists at a swiching point, the discontinuity of the gain function implies that many distributions of the workers across union and non-union member can be sustainable at equilibrium. The equilibrium is thus not unique in that case.

2.2.2.6 The equilibrium unionization rate as a function of profit flows

We now discuss how evolves the proportion of union members μ when (π/n) varies. Since F is the CDF of a uniform distribution between c_1 and c_2 , we have $F^{-1}(\mu) = c_1 + (c_2 - c_1)\mu$.

We first describe interior solutions:

- If the red strategy is to occur, that is if $\mu \in]\max(v/\pi; \mu_0), 1[$, the equilibrium μ^* is given by:

$$\pi/n = c_1 + (c_2 - c_1)\mu^* \Leftrightarrow \mu^* = ((\pi/n) - c_1)/(c_2 - c_1)$$

- To provide the equilibrium μ as a function of (π/n) under the yellow strategy, we consider the particular case in which $p(\mu) = 2\sqrt{\mu}$ (see top panel of figure 2.4).

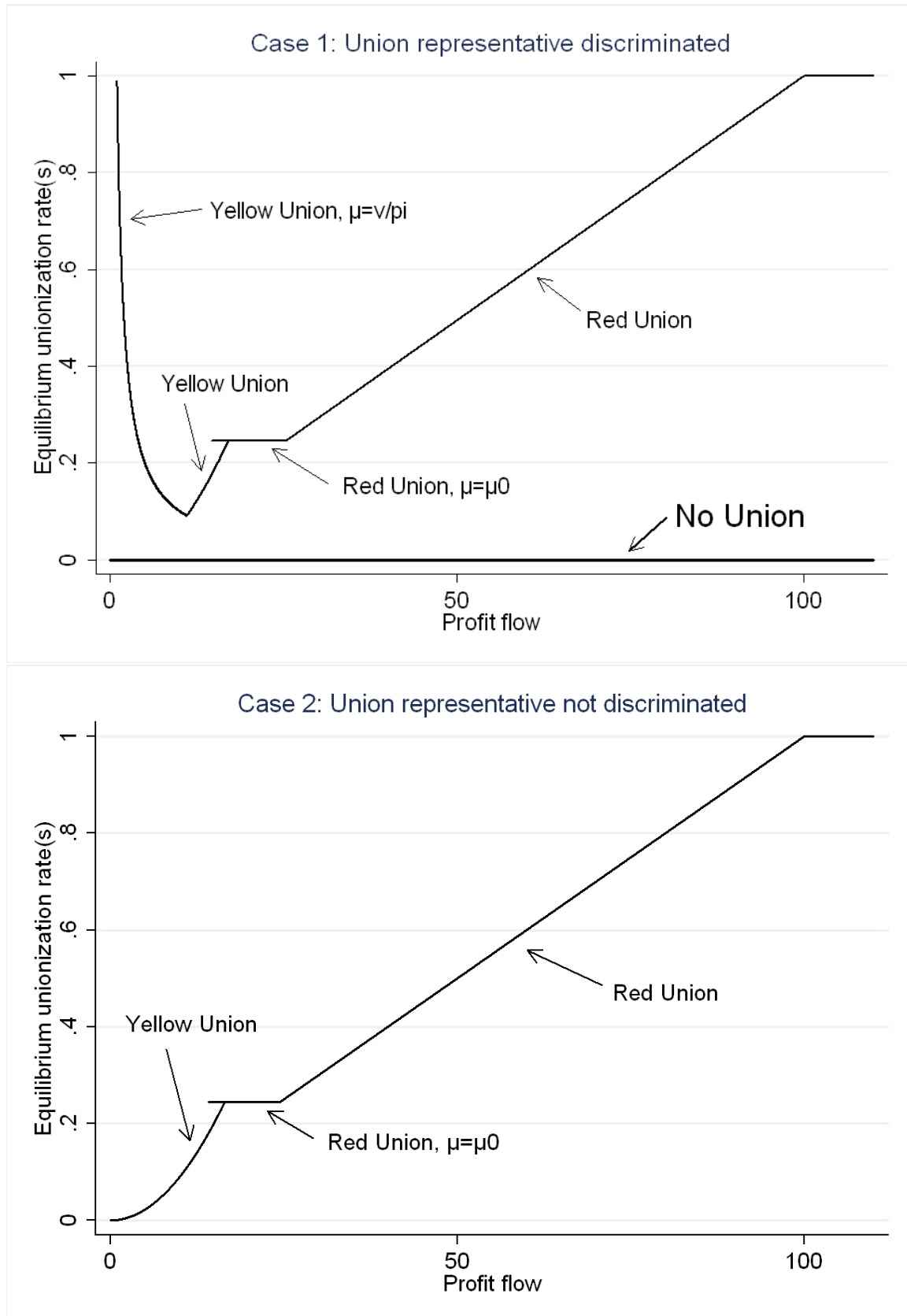
Under the yellow strategy, that is if $\mu \in]v/\pi, \mu_0[$, the equilibrium μ is given by:

$$3\sqrt{\mu}(\pi/n) = c_1 + (c_2 - c_1)\mu \Leftrightarrow \mu^* = \left(\frac{3(\pi/n) + \sqrt{9(\pi/n)^2 - 4c_1(c_2 - c_1)}}{2(c_2 - c_1)} \right)^2$$

The existence of corner solutions for a given value of π can be tested using the conditions given in proposition 1. We do not present the calculations. However, the top panel of figure 2.5 gives the different possible equilibria when the cost function

is a standard uniform distribution (e.g. $c_1 = 0$ and $c_2 = 1$). Both corner and interior solutions are possible. $\mu = 0$ is always an equilibrium and $\mu = 1$ is an equilibrium for $\pi \geq 100$. There is in general one equilibrium other than 0. But for π very small (smaller than 1), 0 is the only equilibrium. Then, the non-zero equilibrium is a continuous function of π . It is first decreasing when $\pi < 10$. That can be explained easily: when π is small, the minimum unionization rate necessary to get a union representative in the firm (v/π) is a binding constraint. Since this minimum unionization rate is decreasing with π , so is the equilibrium unionization rate. When π gets higher, some workers are willing to become union member at $\mu = v/\pi$ in order to increase their payoff, and the equilibrium departs from v/π . The non-zero equilibrium unionization rate is then increasing. For π close to 20, 2 equilibria other than 0 coexist: one of them is an interior solution under yellow union representative, the other one is $\mu = \mu_0$. Then, when π gets large, the non-zero equilibrium necessarily corresponds to a red union representative. It increases linearly until it reaches 1.

Figure 2.5: *Equilibrium unionization rate(s) when the profit varies*



Notes: Parameters' values: $c_1 = 0$, $c_2 = 1$, $v = 1$ and $n = 100$ in both panels. In the top panel, the worker who becomes a union representative loses the value of the implicit contract v . In the down panel, he does not.

2.2.2.7 The one period game with no discrimination:

We have now solved the one period game when the employer “discriminate” against the union representative, that is when he deprives the representative from the implicit contract. What happens if the employer does not discriminate against the representative?

In that case, the condition $\mu\pi > v$ necessary for the presence of a union representative disappears and there is always a representative in the firm (since it is costless to become a representative). The determination of the yellow and red equilibria strategies are unchanged, e.g. there is a red union representative if and only if $\mu \geq \mu_0$. The down panel of figure 2.5 shows the possible equilibria for the unionization rate when the union representative is not discriminated. For large values of π , these equilibria are identical to those obtained under discrimination. However, for low values of π , the equilibrium(a) unionization rate is small and increasing with π . Since the constraint $\mu > v/\pi$ does not exist anymore, workers that coordinate on a low unionization rate will still have a representative. A last crucial point is that $\mu = 0$ is not an equilibrium anymore. Since there will always be a union representative, the first worker to become a union already obtain some gain from its membership. As long as there are workers with a low unionization cost, there will be at least a small proportion of union members in the firm to monitor the union representative and increase his bargaining power.

More specifically, the equilibrium unionization rates depicted on figure 2.5 depends on the value of our parameters. The fact that 0 is never an equilibrium when the representative is not discriminated comes from the fact that $c_1 = 0$ (there is at least one worker who pays nothing to become a union member) and from the fact that even under the yellow strategy, the first union member already brings some monitoring and bargaining power. For other functions $p(\mu)$, there could be a segment $[0, \pi_0]$ on which $\mu = 0$ is the only equilibrium. However, we still have the following proposition:

Proposition 2: In the absence of discrimination against the representative and as long as $p(\mu)$ is continuous, the graph of the possible equilibrium unionization rates lower than μ_0 as a function of the firm’s profit is a connected graph¹³.

¹³In the case where there is only one possible equilibrium lower than μ_0 for any given value of

Proposition 2 derives trivially from the continuity of the gain function for union members if the union representative adopts the yellow strategy. Even its formulation is very theoretic, proposition 2 has a simple meaning: in the absence of discrimination, the unionization rate can adjust continuously to the current profit level and the equilibrium with no union members, when it exists, is not anymore separated from other possible equilibria.

2.2.2.8 Repeated game and discrimination in the long run

What is the interest for an employer to penalize a union representative and to pay the cost ϵ associated with the removal of the representative's implicit contract?

There are two possible reasons. First, discriminating union representatives in high profit periods will discourage workers to become union representative in low-profit periods. The discrimination in high profit periods (e.g. when there will always be a representative providing there is a few unionized workers) enables the employer to save its profits in low profit periods. Second and far more crucial, $\mu = 0$ is a “no-union” trap under discrimination, meaning that workers can get stucked to this equilibrium, even in high profits periods. That is the key point of discrimination: the potential penalty for union representatives renders necessary a minimum number of union members to actually have a representative. If there are initially no union members in a firm, coordination problems make it impossible for the union to organize the firm since a minimal threshold in union membership needs to be reached in order to have a worker willing to become a representative. That is not the case without discrimination: the representative can come freely, and the unionization rate then adjusts year by year depending on the current profit flow. When profits are high, more workers pay the cost to join the union whereas the opposite happens when profits are low. In all cases, the fact that the graph of equilibrium unionization rates when the profit varies is connected ensures that the firm cannot remain stucked in a no-union trap in high profit period. That is the key idea behind proposition 2.

Let us formalize this idea: suppose that the profit flows per worker π at each period are equal to π_0 with probability p_0 and to 0 otherwise. Suppose to simplify

the firm's profit, the proposition is equivalent to say that the function that gives this equilibrium is continuous in the firm's profit.

that the non-zero equilibrium unionization rate when $\pi = \pi_0$ is equal to 1, both with and without the representative being discriminated. Assume that workers are not forward looking: they take their decision only on the ground of current profits¹⁴. Suppose finally that at the beginning of the game $\mu = 1$. Then the employer's payoff without discrimination is 0: the unionization rate will be 1 when $\pi = \pi_0$ and 0 when $\pi = 0$ and it will adjust instantly from one period to the next one. Under discrimination, the unionization rate falls to 0 as soon as a null profit is drawn and it remains equal to 0 afterwards. Denoting by r the actualisation rate, we can calculate easily that the overall cost C of the discrimination strategy is:

$$\begin{aligned} C &= p\epsilon + p^2(\epsilon + r\epsilon) + p^3(\epsilon + r\epsilon + r^2\epsilon) = \epsilon \sum_{k=1}^{\infty} (p^k \sum_{i=1}^k r^i) \\ &= \frac{(rp^2)\epsilon}{(1-p)(1-pr)} \end{aligned}$$

In parallel, the gain G from the discrimination strategy is:

$$G = (1-p)\frac{r\pi_0}{1-r} + (1-p)^2\frac{r^2\pi_0}{1-r} + \dots = \frac{(1-p)r^2\pi_0}{(1-r)(1-(1-p)r)}$$

We see immediately that for values of ϵ reasonably small, discrimination is the best strategy for the employer.

2.2.2.9 Concluding remarks

The results in a nutshell:

The model presented here includes in a single framework the determinants of collective action and their potential effects or dysfonctionning. As far as we know, it is the first to model both the decisions to become a union member and to become a union leader. A key aspect of the model is that the employer can easily adopt an anti-union behavior by targetting the workers that are the most visible and important in the union, that is, the workers that are in charge of the bargaining. The model

¹⁴This is the case if they do not know the profit distribution and have adaptative anticipations, thinking at each period that the same profit flow will come in the next period. If the hypothesis that workers are not forward looking is relaxed, the resolution become far more complicated, but the intuition remains.

underlines that such anti-union policy increases again the problem of coordination in collective action: in addition to the free-riding problems among union members in an open-shop context, the union may have difficulties to find a leader that accepts to lead the negotiations. Indeed, if such a worker is discriminated against by his employer, he will need a sufficient support (or reward) from his coworkers to compensate for this discrimination. This additional (and new) constraint makes collective action even more difficult. On the employer's side, it is clear that discrimination against the union representative, even if costly, can be beneficial in the wide range of situations in which it enables him to avoid collective action.

The role of firm size:

The present framework is not able to take correctly into account the role played by firm size. In the model, a larger firm size lowers the individual gain from becoming a union member. This is because the individual contribution of a worker to the total firm labor force is obviously smaller in larger firms. As a consequence, the model predicts that collective action is more difficult in larger firms and the observed unionization rate is smaller. This is in contradiction with the stylised fact that there are far more often unions in large firms (see chapter 1). To reconcile the model with empirical facts, one might argue that there is indeed more collective action in small firms but that such a collective action is less formally organized and that workers in smaller firms do not feel necessary to set up a union. The argument is debatable and hard to verify empirically. However, firm size might also be related to firm profitability: the quasi-rents per worker are likely to be higher in larger firm. As a consequence, the final outcome we would obtain in the model if we link the profit per worker to firm size remains unclear. It seems that the latter effect would need to be larger to be able to compensate the first one but no exact prediction can be made. A simple way to reconcile the model with stylised facts and with our empirical analysis in chapter 1 (section 3) is to consider that workers are heterogeneous with respect to the utility they could derive if they become a union representative. Imagine that workers differ according to their altruism, their interest for a higher social status, or their political views. In that case, some workers enjoy a higher *ex ante* private benefit if they become a representative. For a given firm profit flow and unionization

rate, there is a threshold in this private benefit above which workers are willing to become a representative. A randomly drawn worker has a probability p to be above the threshold (p depends on the distribution of the private benefits across workers). As a consequence, the probability to find a worker that is above the threshold is a given as a function of firm size n by $1 - (1 - p)^n$ and it increases exponentially as a function of firm size. Adding heterogeneity in the individual benefit a worker would get from becoming a representative is thus a simple way to find back in the model the empirical relationship between union recognition and firm size and to be fully consistent with the empirical analysis we made in chapter 1 section 3.

Model predictions that can be tested empirically:

Four of the model predictions can be tested empirically. First, the probability to have a union increases with firms' profitability or equivalently, with firms' rents. Second, the unionization rate also increases with firms' rents. Third, the union representative is more likely to be combative when the unionization rate is high. More precisely, the union representative is combative if and only if the unionization rate is above the threshold μ_0 . Fourth, the probability to observe a combative union representative increases with firms' rents. This last prediction derives for the fact that only equilibria with either no union or a high unionization rate (that converges to one at the limit) and a fighting union can exist when profits are high (see figure 2.5).

This two first predictions has already been discussed and tested in chapter 1 using the subjective market share variable as a proxy for firms' potential rents (see table 1.8). Predictions 3 and 4 will be tested in the next section of this chapter.

Implicit contracts and family firms:

Modelling discrimination as the loss of an implicit contract put a natural upper bound on the potential discrimination. It also represents the idea that wage cuts are not possible and that discrimination appears in the long run as a flat career. But it also has a third interest by offering a simple way to understand why unions are far less present in family firms¹⁵. Family firms are known for their paternalist management practices and the potentially better job protection they offer to their workers. We can

¹⁵From probit regressions using the REPONSE survey, unions are about 30% less likely to be present in a family firm than in a non-family one, even when controlling for firm size and a wide set of covariates

reasonably make the assumption that they are able to offer higher implicit contracts to their workers. In that case, the potential loss for a worker that becomes a union representative is higher, and unions are thus less likely to find a worker who is willing to bear this higher cost.

2.3 Empirical analysis of union representatives' wages

I now turn to an empirical analysis of the wage differential between union representatives and their coworkers.

To do so, I use the REPOSE survey which is a linked employer-employee dataset. On the employee side of the data, the surveyed workers are asked if they are unionized but we do not know which unionized workers are union representatives. On the employer side of the data, I have access to the number of union representatives and unionized workers in each firm. I use this information to construct an indicator of the firm-level probability for a randomly drawn unionized worker to be union representative. This indicator is then used to split the directly observable wage differential between unionized and non-unionized workers into two differentials: one between union representatives and non-unionized workers and another one between unionized workers who are not a union representative and non-unionized workers.

The estimation strategy used to measure the wage differential between union representatives and their coworkers is presented first. The presentation of the core results comes next. A discussion of the results and additional interpretation tests conclude.

2.3.1 Empirical specifications and estimation strategy

2.3.1.1 General framework with constant wage premia

I first provide a precise estimation of the wage differential between unionized and non unionized workers that controls for individual-level observable characteristics and establishment-level fixed effects. To do so, I present a series of regression models of the type:

$$\ln(w_{ij}) = \alpha U_{ij} + \beta X_i + \eta_j + u_{ij} \quad (2.2)$$

where w_{ij} represents the hourly wage of individual i in establishment j , X_i is a set of observed skill characteristics (such as age and education) of worker i , η_j an establishment-level fixed effect and U_{ij} an indicator equal to 1 if worker i in establishment j is unionized. In some specifications, the fixed effect η_j will be replaced by a vector Z_j of establishment-level covariates.

In equation 2.2, α can be interpreted in log-points as the within-establishment wage premium for unionized workers conditional on their observable skill characteristics. These unionized workers can be split in two groups: the workers who are Union Representatives (UR) and the other ones who are “Unionized Only” (UO). The wage premia for union representatives and workers who are “unionized only”, conditional on their characteristics and on establishments fixed-effects, are defined similarly as the coefficients α_1 and α_2 in the following regression model:

$$\ln(w_{ij}) = \alpha_1 UR_{ij} + \alpha_2 UO_{ij} + \beta X_i + \eta_j + u_{ij} \quad (2.3)$$

Let us assume that the standard identification assumption $\mathbb{E}[u_{ij}|UR_{ij}, UO_{ij}] = 0$ holds. In this case, α_1 and α_2 can be estimated consistently by conventional OLS regression applied to equation (2.3)¹⁶. The problem is that the variables UR_{ij} and UO_{ij} are not observable directly in the data (see next subsection). The goal of this subsection is to recover the wage premia α_1 and α_2 using proxy variables for UR_{ij} and UO_{ij} that are available in the data. In other words, we assume that the wage premia for union representatives and workers who are “unionized only” would be identified if these variables were observable directly and we try to recover an estimate of these wage premia using an indirect estimation strategy.

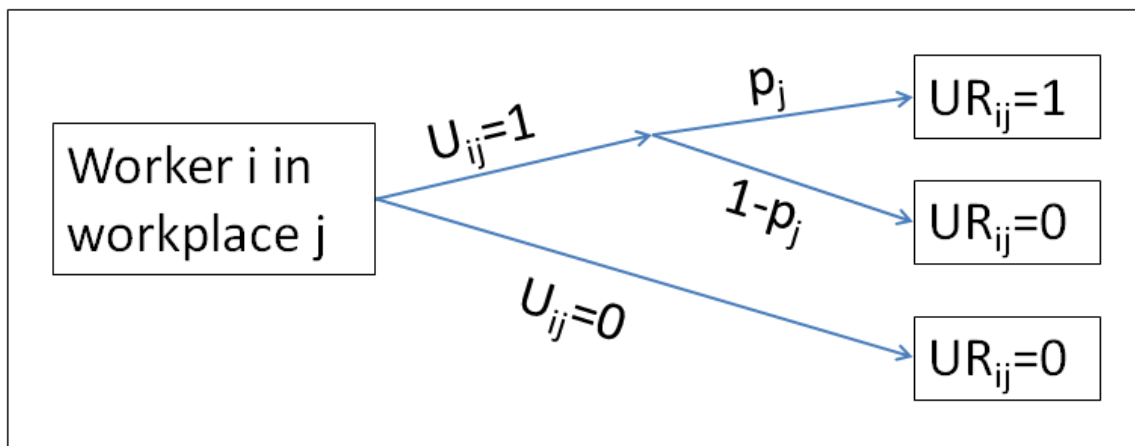
Let us define by p_j the probability for a surveyed unionized worker in workplace j to be a union representative. Figure 2.6 provides an illustration of the link between the variables U_{ij} , UR_{ij} and p_j . Notice that if workers are sampled randomly, as it is the case in the data I use (see next subsection), p_j is simply equal to the proportion of union representatives among unionized workers in workplace j ¹⁷, providing that

¹⁶Note that we do not need to suppose $\mathbb{E}[u_{ij}|UR_{ij}, UO_{ij}, X_i, \eta_j] = 0$ to get consistent estimates of α_1 and α_2 . $\mathbb{E}[u_{ij}|UR_{ij}, UO_{ij}] = 0$ is a sufficient condition (see for example Wooldridge 2002).

¹⁷This is a key point in order to get identification: if instead of being sampled randomly in each workplace, workers were selected according to some of their observable characteristics (age, gender,

the response rates to the survey of union representatives is equal to that of other union members¹⁸.

Figure 2.6: Link between the variables U_{ij} and UR_{ij}



Lecture: U_{ij} is equal to 1 if worker i in establishment j is a union member and 0 otherwise.

UR_{ij} is equal to 1 if worker i in establishment j is a union representative and 0 otherwise.

Worker i in establishment j cannot be a union representative if he is not a union member. If he is a union member, he has a probability p_j to be a union representative.

The key result is that the unobservable variable UR_{ij} (resp. UO_{ij}) in equation 2.3 can be replaced by the proxy variables $p_j U_{ij}$ (resp. $(1 - p_j) U_{ij}$). In other words, we will still have an estimation of the desired wage premium if we replace the dummy variables for being a union representative by the probability to be a union representative. This probability is equal to the individual indicator of being unionized (U_{ij} , which is observable) times the establishment-level probability of being a union representative conditional on being a unionized worker (p_j). Formally, we have the following propositions:

etc), the probability for a surveyed unionized worker in workplace j to be a union representative could be different from the proportion of union representatives among unionized workers. For example, if union representatives are older than the average unionized worker and if the workers' sampling strategy over-represents older workers, then the probability for a sampled unionized worker to be representative is higher than the proportion of union representatives among unionized workers.

¹⁸If, for example, the response rate of union representatives is lower than that of other union members, the final proportion of union representatives among union members in the sample will be lower than p_j .

Proposition 1: Let us write $e_{ij} = UR_{ij} - p_j U_{ij}$. If e_{ij} is not correlated with the error term u_{ij} in equation 2.3 then the wage premia α_1 and α_2 can be consistently estimated by OLS regression applied to:

$$\ln(w_{ij}) = \alpha'_1(p_j U_{ij}) + \alpha'_2((1 - p_j)U_{ij}) + \beta' X_i + \eta'_j + v_{ij} \quad (2.4)$$

Mathematically, this means that $\mathbb{E}[\alpha'_1] = \alpha_1$ and $\mathbb{E}[\alpha'_2] = \alpha_2$.

Proposition 2: If e_{ij} is not correlated with the error term u_{ij} in equation 2.3 then the variances σ_u^2 , σ_v^2 and σ_e^2 of u , v and e are related as follows:

$$\sigma_v^2 = \sigma_u^2 + (\alpha_1 - \alpha_2)^2 \sigma_e^2 \quad (2.5)$$

Propositions 1 and 2 are proved in the mathematical appendix of this chapter. In the empirical section, I will estimate equation 2.4 by conventional (OLS). I will also correct the standard errors of the OLS estimates and provide a maximum-likelihood estimator of the desired wage differentials. These procedures are quickly described below.

Correction of standard errors and tests:

Calling $\hat{\sigma}_{\alpha_1}$, $\hat{\sigma}_{\alpha'_1}$ the usual finite distance consistent estimators of the standard errors of α_1 and α'_1 , we have from proposition 2:

$$\hat{\sigma}_{\alpha_1}^2 = \hat{\sigma}_{\alpha'_1}^2 - (X'X)_{11}^{-1}(\alpha_1 - \alpha_2)^2 \sigma_e^2 \quad (2.6)$$

where $(X'X)_{11}^{-1}$ designates the first diagonal coefficient (the one corresponding to α_1) of the variance covariance matrix of the regressors. This formula will be used in the empirical analysis to correct the estimated standard errors and run the appropriate Student's tests.

Maximum likelihood estimator:

There is *a priori* no reason why the OLS “indirect estimation” (IE) procedure proposed above would provide, as in the case of standard OLS, the most efficient estimators of α_1 and α_2 . I thus also compute the log-likelihood of the sample under the hypothesis of normality of the residuals and show that the maximum (log)likelihood estimator (ML) provides different estimates (and not only different standard errors) than the IE estimator.

Let us consider that the data obey to the following linear model (illustrated on figure 2.6):

$$\begin{cases} \ln(w_{ij}) = \beta X_{ij} + v_{ij0} & \text{if } U_{ij} = 0 \\ \ln(w_{ij}) = \alpha_1 + \beta X_{ij} + v_{ij1} \text{ with probability } p_j & \text{if } U_{ij} = 1 \\ \ln(w_{ij}) = \alpha_2 + \beta X_{ij} + v_{ij2} \text{ with probability } 1 - p_j & \text{if } U_{ij} = 1 \end{cases}$$

with $v_{ij0}, v_{ij1}, v_{ij2} \sim \mathcal{N}(0, \sigma^2)$

For simplicity, I have included individual, establishment-level characteristics and the constant term in the unique vector X_{ij} . Doing this modeling, I have made two non obvious assumptions. First, the return to observable characteristics β is identical for non-unionized workers, only unionized workers and union representatives. Otherwise, I would be doing a kind of Oaxaca-Blinder decomposition estimated by maximum likelihood, which is not our goal here since we would like to estimate an equivalent of equation 2.3. Second, the standard deviation of the residuals σ is also identical across groups of workers, as it is the case in the OLS estimation. I will show that under this hypothesis the ML estimator is not identical to the ME estimator. But later on, in the empirical analysis, I will allow the standard deviations to be different across groups.

We denote by w , X , U and p respectively the vectors of the N observable variables w_{ij} , X_{ij} , U_{ij} and p_j and by ϕ , the standardized normal density. The log-likelihood $\mathcal{L}(w, X, U, p, \alpha_1, \alpha_2, \beta, \sigma^2) = \ln(\prod_{i=1}^N (P(w_{ij}, p_j, X_{ij}, U_{ij} | \beta, \alpha_1, \alpha_2, \sigma^2)))$ can be writ-

ten:

$$\begin{aligned}\mathcal{L} = -N \ln(\sigma) + \sum_{i=1}^N \ln[(1 - U_{ij})\phi(w_{ij} - \beta X_{ij}) \\ + p_j U_{ij}\phi(w_{ij} - \beta X_{ij} - \alpha_1) \\ + (1 - p_j)U_{ij}\phi(w_{ij} - \beta X_{ij} - \alpha_2)]\end{aligned}\tag{2.7}$$

It is easy to check that differentiating equation 2.7 relative to β , α_1 and α_2 does not simplify as in the case of OLS. Indeed, in the case of OLS, the \ln functions have as argument only one normal density function which equals $e^{-(u_i^2/2)}/\sqrt{(2\pi)}$. Consequently, maximizing the likelihood is equivalent to minimizing the sum of the square of the residuals. In equation 2.7, this is not true anymore because the \ln functions have as arguments a sum of 3 density functions that does not simplify. Consequently, the IE and ML estimators have no reasons to be equal and estimates of the parameters that minimize the log-likelihood defined in equation 2.7 will be also presented in the next subsection.

2.3.1.2 Allowing for non-constant wage premia:

There are good reasons to think that the wage differential between union representatives and their coworkers can vary with the proportion of union representatives among unionized workers. According to the model presented in the first section for example, union representatives are more likely to be combative when the unionization rate is higher, that is, when the proportion of union representatives among unionized workers tend to be lower.

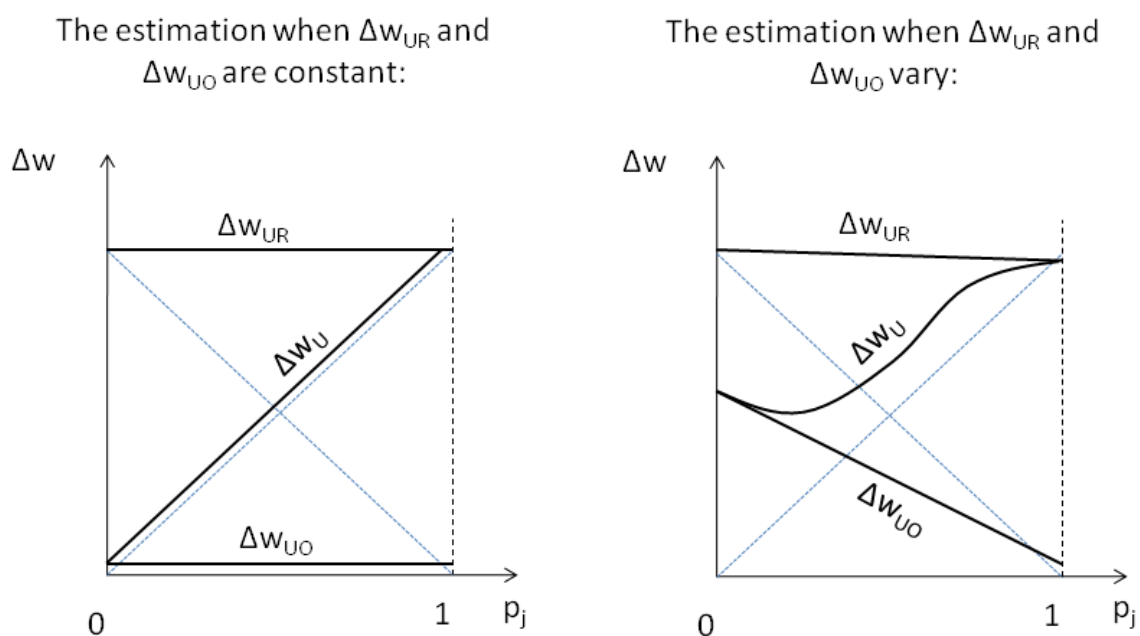
However, we have assumed in proposition 1 that the measure of the wage penalties α_1 and α_2 are constant and independent of p_j . This is a usual and implicit assumption that one makes when estimating a linear model. It offers a convenient way to get the effect of a variable on the mean of another one. But, in our case, the fact that α_1 and α_2 do not depend on p_j is crucial when replacing the unobserved variable UR_{ij} by the proxy $p_j U_{ij}$.

Figure 2.7 illustrates this point in the simpler case with no control variables. On the left chart, the wage differentials $\Delta w_{UR} = \alpha_1$ between union representatives and

non unionized workers and $\Delta w_{UO} = \alpha_2$ between workers who are “unionized only” and non-unionized workers remain constant when p_j varies. The observed within workplaces wage differential $\Delta w_U = \alpha$ between unionized and non-unionized workers has for equation $\Delta w_U = [p_j \Delta w_{UR} + (1 - p_j) \Delta w_{UO}]$. It is a straight line. In this case, the estimation strategy resulting from proposition 1 simply consists in estimating the slope and the y-intercept of this straight line (which can be obtained by a simple orthogonal projection of Δw_U on the lines $y = p_j$ and $y = 1 - p_j$ represented as dashed lines on the chart). However, if Δw_{UR} and Δw_{UO} are not constant with p_j , Δw_U is not a straight line any more. This is illustrated on the right chart of figure 2.7. In that case, the estimation strategy resulting from proposition 1 fails to identify the wage premia for union representatives and workers who are “unionized only”. In the case of standard OLS estimation, a non-constant parameter would be estimated to be equal to its mean. But in our case, the possibility to estimate a wage premium explicitly relies on the fact that this wage premium is constant. If instead α_1 and α_2 vary with p_j , their estimation through equation 2.4 can be completely erroneous. To overcome this problem, I propose 2 solutions:

- When $p_j = 1$, $\alpha_1 = \Delta w_{UR} = \Delta w_U$ and is thus observable directly (when a sampled worker declares itself as unionized in a workplace where only the union representatives are unionized, we know with certainty that he is a union representative). I will thus estimate α_1 on the subsample of establishments with $p_j = 1$.
- I will plot the observable wage differential between unionized and non-unionized workers for different values of p_j and see if it varies linearly such as in the left chart of figure 2.7.

Figure 2.7: *Link between the different wage differentials when p_j varies*



Notes: $\Delta w_U = [p_j \Delta w_{UR} + (1 - p_j) \Delta w_{UO}]$ with Δw_U , Δw_{UR} and Δw_{UO} denoting respectively the wage penalty for all unionized workers, union representatives and only unionized workers.

2.3.2 The data

The dataset I use is similar to the core dataset used in chapter 1. It is the 2004 French Workplace Employment Relations Survey (REPONSE04) conducted by the Ministry of Labor towards up to 10 employees randomly drawn in each of 2929 business establishments with more than 20 employees. REPONSE04 contains extensive information on industrial relations at the workplace level and on the firms' organizational and technological structure¹⁹. In each surveyed workplace, union density, the name of the unions that are present and the number of their representatives are available. I will divide the total number of union representatives by the number of unionized workers (which is equal to union density at the workplace-level times the number of employees in the workplace) to get the proportion of union representatives among unionized workers. Net hourly wages in December 2003 have been retrieved from Social Security records (the *Déclaration Annuelles de Données Sociales*, DADS) by the Ministry of Labor for the workers surveyed in REPONSE04 and have been matched with the dataset. The REPONSE04 survey covers mainly the private sector but some public companies operating in the commercial sector are also present. After cleaning, the employee survey contains 7814 workers for whom we have the usual observable characteristics (education, gender, age) and for whom we know if they are union members or former union members.

In the REPONSE survey, exactly 10 workers are randomly drawn in each establishment and receive a written questionnaire. Due to a response rate of roughly 30% – usual with written surveys –, we finally get an average of 3 to 4 workers per establishment. Table 2.1 gives the distribution of the workplaces in the REPONSE survey in terms of the number of their number of sampled unionized and non-unionized workers. Estimations of the wage penalty for unionized workers that include workplace fixed effects will rely on the 658 workplaces with at least one unionized and one non-unionized worker. Even if the sample size is relatively small, this number is large enough to run fixed effects estimations. A key aspect of the sample design is that the number of workers sampled does not depend on establishments' character-

¹⁹REPONSE follows the same design than WERS in the U.K. See Bryson et al. (2009) for a study that uses both REPONSE and WERS to study unions and workplace performance or Blanchflower and Bryson (2008).

istics such as establishment size. This implies that our estimates will not be driven by a particular type of establishments in which more workers are sampled, so that the probability to observe a union representative would be higher in these establishments. In contrast, the sample design in the REPONSE survey is such that the *ex ante* probability to observe a union representative is identical in all establishments.

Table 2.1: *Distribution of the workplaces in the REPONSE04 survey with respect to the **sampl**ed number of unionized and non-unionized workers (not weighted).*

		Number of sampled unionized workers in the workplace						Total
		0	1	2	3	4	6	
Number of sampled non unionized workers in the workplace	0	0	57	25	8	3	0	93
	1	434	122	37	10	4	1	608
	2	544	145	49	9	1	0	748
	3	415	126	31	5	1	0	578
	4	289	57	10	1	0	0	357
	5	159	31	5	0	0	0	195
	6	52	11	0	0	0	0	63
	7	19	0	0	0	0	0	19
	8	7	1	0	0	0	0	8
	9	0	1	0	0	0	0	1
Total		1919	551	157	33	9	1	2670

As explained in introduction, the REPONSE04 survey actually comprises 3 distinct surveys: a survey toward employers, a survey toward employees and a survey toward the representatives of the workforce. This last survey will be used in the next section to study the opinion of the representatives about their career opportunities and the presentation of its exact content is also left for the next section.

2.3.3 Results

2.3.3.1 Descriptive statistics

Table 2.2 provides summary statistics on currently unionized workers and past unionized workers who are not unionized anymore. Figure 2.8 shows which observable characteristics in the data affect the most the probability to be unionized. It can be seen in particular that unionized workers are more often men than women and that the probability to be unionized increases with age and increases sharply with tenure.

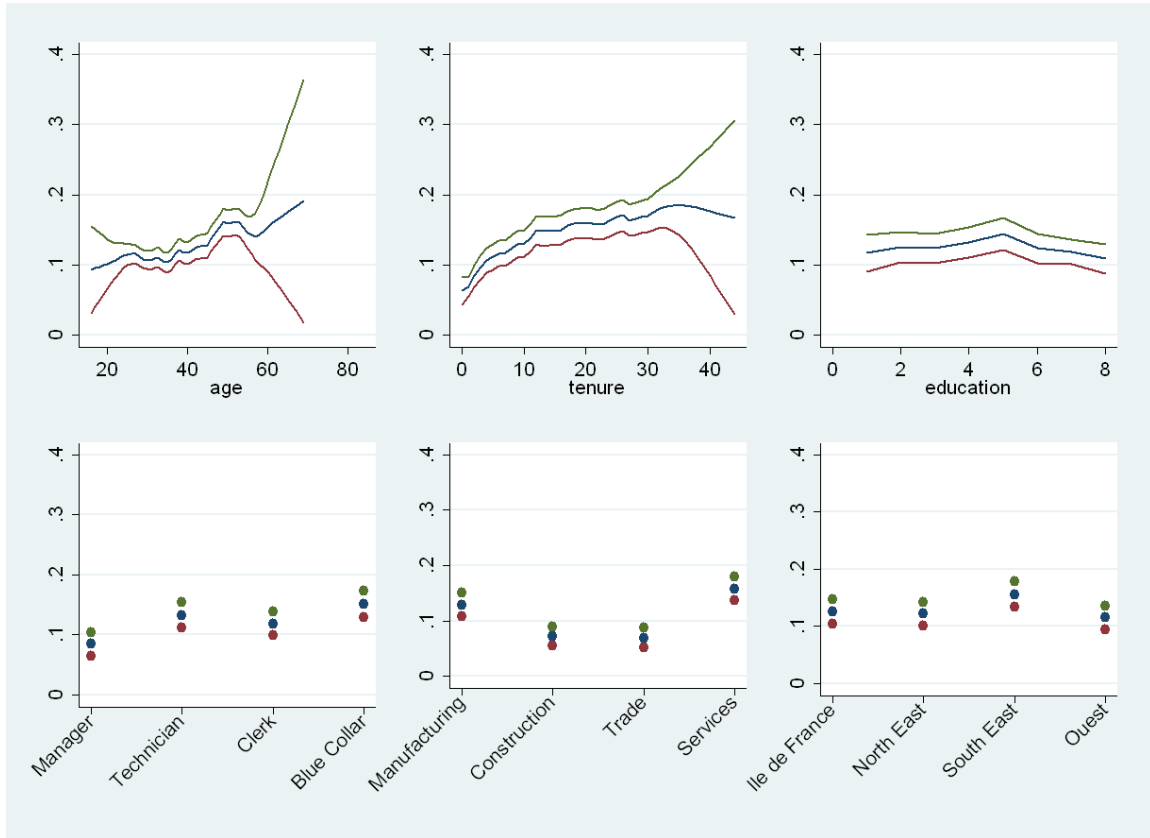
Table 2.2: *Descriptive statistics: distribution of current and past unionized workers in terms of their observable characteristics (weighted).*

	Currently Unionized	Previously unionized
Average	7,4%	13,3%
Gender:		
Men	8,6%	15,1%
Women	5,6%	10,3%
Occupation:		
Blue collar	8,2%	16,4%
Clerk	6,0%	9,6%
Technician	8,9%	14,1%
White collar/manager	5,5%	9,8%
Diploma:		
None	8,2%	14,2%
Less than Bac	8,5%	17,1%
Bac	7,6%	9,7%
More than bac	5,2%	7,5%
Working time:		
Part time	6,2%	10,7%
Full time	7,5%	13,6%
Sector:		
Industry	9,4%	17,4%
Construction	3,7%	13,5%
Trade	3,6%	9,6%
Services	8,9%	13,4%
Region:		
Ile de France (Paris)	8,1%	10,0%
North East	7,3%	16,5%
South East	10,2%	14,7%
Ouest	7,0%	12,9%

Notes: All statistics are weighted using weights provided by DARES that make employees in the survey representative of all French employees working in establishments with more than 20 employees in the commercial sector.

Source: REPONSE04 workers' survey.

Figure 2.8: *Probability to be unionized as a function of observed characteristics (estimate and confidence interval)*



Notes: Results obtained via simultaneous smoothing using a non parametric estimation procedure.

Lecture: The top left panel shows that the probability to be a union member increases with age from 10 to roughly 15%.

Source: REPONSE04 workers' survey.

It is possible to use the third REPONSE survey toward the representatives of the workforce in order to get an idea of the observable characteristics of the union representatives²⁰. Table 2.3 uses informations from both the workers and the representatives of the workforce REPONSE surveys in order to provide (comparable) descriptive statistics on the individual characteristics of all employees, union members, representatives of the workforce, union representatives and union representatives from the CGT union. It appears that women represent 39% of the workers in establishments with more than 20 employees. The proportion of women among union members is lower and becomes even twice lower among union representatives from

²⁰See the next section for a detailed description and exploitation of this third survey

the CGT union. The average and median of both age and tenure appear to be higher for representatives of the workforce than for the average worker.

Statistics on education provide interesting stylized facts. Union members are slightly less educated than the average worker. However, this is not the case for all workers and union representatives (columns 3 and 4): they appear to have approximately the same level of education than the average worker and to be more educated than the average union member. This suggests that more educated workers are more likely to take responsibilities in unions. The difference in education patterns between the different subgroups is particularly high concerning workers with no diploma: their proportion is about twice lower among representatives. The occupations of the representatives of the workforce are very similar to those of the average worker (columns 1 and 3). There is however a higher proportion of blue-collar workers and of workers in intermediate occupations among union members. The proportion of blue-collars is also higher among union representatives at the expense of the proportion of clerks. The proportions of managers and workers in intermediate occupations are very close among union representatives and among all workers. Overall, the differences in occupation patterns between all workers, union members, all representatives of the workforce and union representatives remain small. In contrast, the union representatives affiliated to the CGT are far more often blue-collars and far less often managers than the workers in the other groups. This shows that we need to control for occupations, at least in some empirical specifications.

Table 2.3: *A comparison of individual attributes of all workers, unionized workers, representatives of the workforce and union representatives in 2004.*

	All workers	Union members	All representatives	Union representatives	CGT union representatives
<i>Gender</i>					
% Women	39	30	29	22	17
% Men	61	70	71	78	83
<i>Age</i>					
Average age (in year)	39	43	44	46	46
Median age (in year)	39	44	45	47	47
<i>Tenure</i>					
Average tenure (in year)	11	15	19	21	22
Median tenure (in year)	8	14	17	21	23
<i>Education</i>					
% No degree at all	12	13	4	4	6
% Vocational training	45	52	51	55	66
% High school degree	14	14	17	15	12
% Some college	14	12	13	12	9
% Col. or Univ. degree	15	9	15	13	7
<i>Occupation</i>					
% Blue-collars	35	39	34	39	55
% Clerks	22	18	21	18	13
% Intermed. Occupation	25	30	27	25	26
% managers/supervisors	18	13	18	17	6

Notes: Statistics in the two first columns are calculated from the employee part of the REPONSE survey. They are weighted using weights provided by DARES that make employees in the survey representative of all French employees working in establishments with more than 20 employees in the commercial sector.

Statistics in the 3 last columns are calculated from the representatives of the workforce' part of the REPONSE survey. The column for all the representatives of the workforce also includes the union representatives. They are not weighted (no weights available). The representatives interviewed come from the most important workers organization in each establishment. Consequently, they are not representative of all representatives of the workforce in the French commercial sector.

2.3.3.2 Wage differential between unionized and non-unionized workers

The hourly wage of union members – being either union representative or not – is in average 7% higher than that of workers that have never been a union member (table 2.4, col. 1: specification with no control variables). The hourly wage of former union members is also higher – 6% in average – than that of workers that have never been a union member²¹.

We use alternatively two sets of control variables for workers in our empirical analysis. The first one (“Mincer”) only includes the predetermined and more exogenous workers’ characteristics: age, square of age, education and gender. The goal, when using this first set of controls, is to estimate wage differentials that are conditional on these more exogenous characteristics. Possible interpretations of our estimates are left for the next section. At this stage, there is not any causal interpretation behind the statistics we produce: they are only *measured differentials* and not *effects*. When workers’ “Mincer” controls are included in a wage regression, as well as controls for establishments’ size, industry, region and age, the wage differential between union and non-union members vanishes entirely (col. 2).

The second set of workers’ controls that we use contains, in addition to “Mincer” controls, tenure, the square of tenure, workers’ occupation, the number of hours worked and a dummy for part-time workers. The goal when using this second set of controls is to produce measures that better control for differences in workers’ characteristics. However, this second set includes more endogenous variables that are potentially codetermined with being a union representative (tenure for example). When using this second set of control variables rather than the “Mincer” controls, the estimated wage differential between union and non-union members is slightly higher (col. 3) and it becomes significantly positive at the 10% level.

Establishments controls can be replaced by establishments fixed effects. When doing so, we observe that union members are paid 3 to 4% less than their co-workers that have never been a union member (col. 4 and 5). The gap is slightly smaller for

²¹In the REPOSE04 survey, the workers are also asked if they were unionized in the past. In all specification I add a dummy variable for workers who have been unionized and are not unionized anymore. This implies that the omitted group to which the unionized workers are compared is the group composed by the workers that have never been unionized.

former union members (e.g. 2 to 3%) ²².

Table 2.4: *Wage differential between union and non-union members – various sets of controls.*

	<i>dependant variable: log of hourly wage</i>				
	(1)	(2)	(3)	(4)	(5)
Union member	0.068*** (0.013)	-0.001 (0.011)	0.015* (0.009)	-0.045*** (0.012)	-0.029*** (0.010)
Former union member	0.057*** (0.014)	-0.005 (0.011)	0.011 (0.010)	-0.039*** (0.011)	-0.017* (0.010)
Observations	7826	7814	7814	7814	7814
R-squared	0.004	0.523	0.648	0.781	0.845
workers' controls	No	Mincer	Detailed	Mincer	Detailed
Establishments' controls	No	Standard	Standard	Fixed effects	Fixed effects

Notes: The “Mincer” workers’ controls are education (9 groups), age (in years), the square of age and gender. The “detailed” workers’ controls also include tenure, the square of tenure, occupation (4 groups), the number of hours worked, and a dummy for part-time working contracts. The “standard” establishments’ controls are establishment size (5 groups), industry (16 groups), region (10 groups), age (5 groups) and a dummy for the presence of a union representative (union recognition).

Establishment age, union recognition, workers’ occupation, tenure and hours worked have been treated for missing values: when any of these variables is missing, we recode it as equal to 0 and we include a dummy in the regression taking value 1 only when the variable is missing. Doing so, we recover about 400 additional observations. The “Mincer” workers’ controls have not been retreated for missing, so that specification (4) for example is free of any treatment for missing.

Robust standard errors in parenthesis. *: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

2.3.3.3 Wage differential between union representatives and non unionized workers

I now turn to the key estimation of the chapter : I split the 2.5% negative wage differential between unionized workers and their coworkers found in table 2.4 (col. 5) in two differentials, one for union representatives and one for the other unionized workers. To do so, I use the variable p_j , that is the proportion of union representative among unionized workers in each workplace.

Among establishments in which unions are present, the number of union representatives mainly varies between 0 and 5 (figure 2.9, left chart). The corresponding proportion of union representatives in the total workforce is usually quite low (lower

²²For a thorough study of the “union membership” premium, see Bunel and Raveaud (2008). For typical estimates obtained for the control variables, see the more detailed tables of results presented in chapter 1 and obtained from specification that are close from those in this chapter.

than 2% in 3/4 of the sampled establishments – see figure 2.9, right chart). The majority of the establishments have unionization rates between 0 and 20% (figure 2.10). Finally, the variable p_j (the proportion of union representatives among the unionized workers) varies quite much across workplaces, which gives scope for identification. The distribution of p_j exhibits a decreasing profile. p_j is lower than 0.2 in 60% of the establishments, but there is also a non neglectible share of the establishments that have a large p_j . For example, p_j is equal to 1 in 10% of the sampled establishments. These establishments are either (i) establishments that have declared that a union representative is present and a 0% unionization rate, or (ii) establishments that have declared a strictly positive unionization rate and an equal or even higher share of union representatives. The first case corresponds to a completely isolated union representative with no other union member in its establishments and it seems to occur occasionally (according to what union leaders say). I have not applied any cleaning of the p_j variable in this case. The second case may correspond to establishments that have declared an anormally high number of union representatives, higher than the legally authorized number²³. I have therefore built two alternative variables for the proportion of union representatives among union members. The first one has a missing value for all establishments that have declared a number of union representative higher than legally authorized for any of the unions present in the establishment. The second variable is built by imputing the maximum number of union representatives legally recognized to establishments that have declared a higher number of representatives. The empirical analysis presented in this section has been entirely reproduced with these 2 alternative variables and it gives very similar results (results not reported).

It has been possible to construct the variable p_j for 7597 employees working in 2570 workplaces. 28 of these employees are union members in an establishment in which p_j is equal to 1 and are identified with certainty as union representatives (if there is no measurment error). Since the other union representatives cannot be identified

²³The number of union representatives per union that can be legally recognized for bargaining at the establishment-level varies with establishment size as follows. Between 10 and 999 employees: 1 union representative. Between 1000 and 1999 employees: 2 union representatives. Between 2000 and 3999 employees: 3 union representatives. Between 4000 and 9999 employees: 4 union representatives. Above 9999 employees: 5 union representatives. See Article R2143-2 of the French *code du travail*.

with certainty, we cannot be sure of their total number in the sample. However, $p_j U_{ij}$ is the individual probability for a sampled worker to be union representative. Taking the sum of this variable over the entire REPOSE04 sample gives the expectation of the total number of union representatives in the data. It is equal to 128.

Figure 2.9: *Distribution of the number and proportion of union representative across workplaces where unions are recognized (e.g. with at least one union representative).*

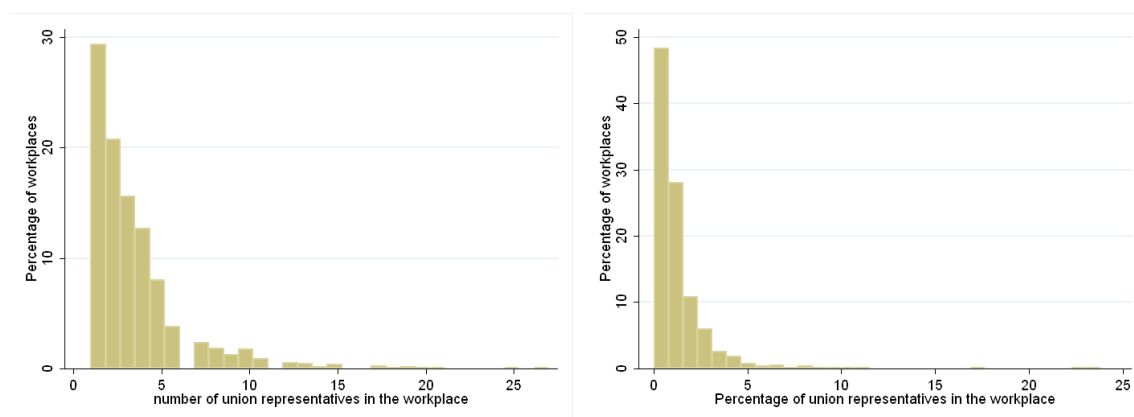


Table 2.5 displays the results obtained when estimating equation 2.4 by OLS (the so-called IE estimation strategy) and when maximizing the log-likelihood function 2.7 (the so-called ML estimation strategy). The results are striking: in all specifications, a large wage penalty of around 10% appears for union representatives whereas the other union members have wages equivalent or even higher than their non-unionized counterparts. The raw wage penalty (with no controls) for union representatives is estimated at 0.09 points of logarithm (col. 1) and is statistically significant at the 10% level only. However, when controls for observable workers' and establishments' characteristics are included in the regression, the penalty for union representative is comprised between 12 and 15% (col. 2 and 3). Finally, this same penalty is slightly lower (around 8%) in specifications that include establishments' fixed effects (col. 4 and 5). For all produced estimates, I present both standard errors corrected using equation 2.6 and standard errors not corrected but clustered at the level of the "treated units", that is, clustered by groups of workers being in the same establishment with the same union membership status (either union member or non-union member). The two types of standard errors are always very close, showing that the correction

Figure 2.10: *Distribution of the proportion of unionized workers across workplaces where unions are recognized (e.g. with at least one union representative).*

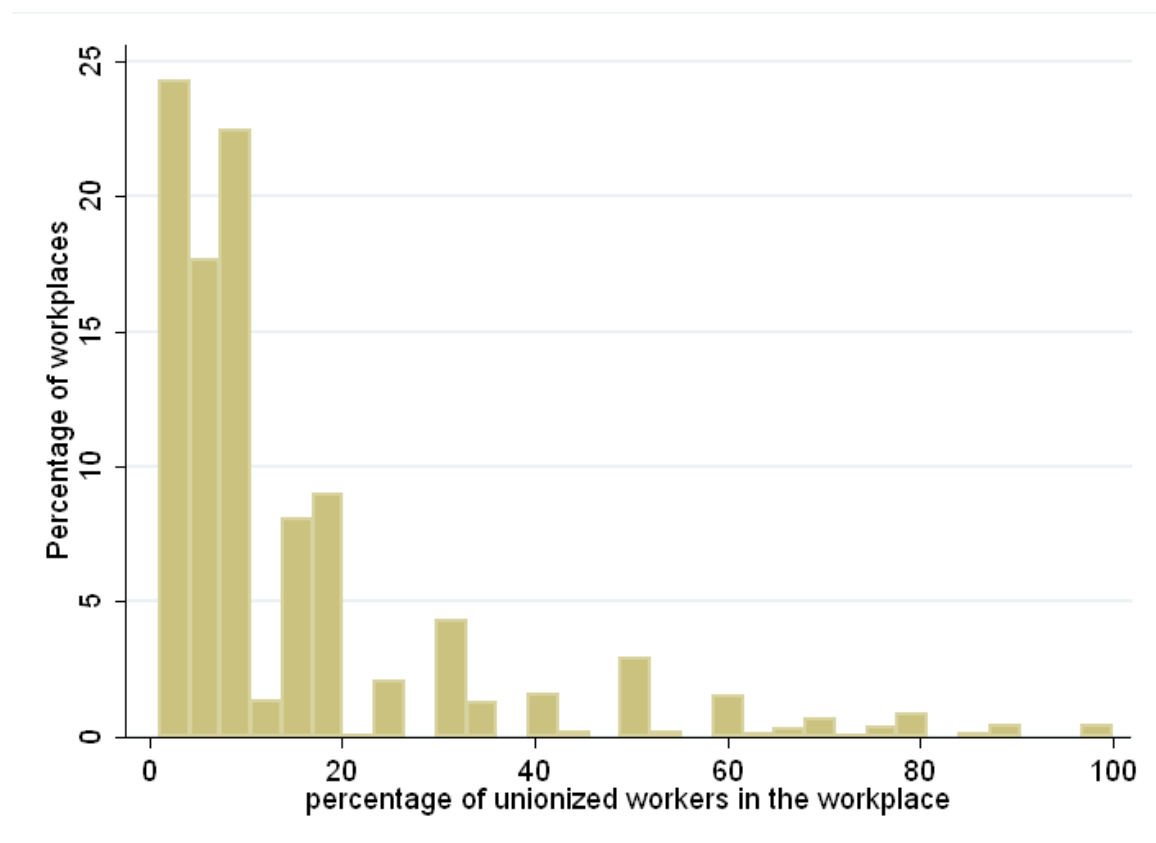
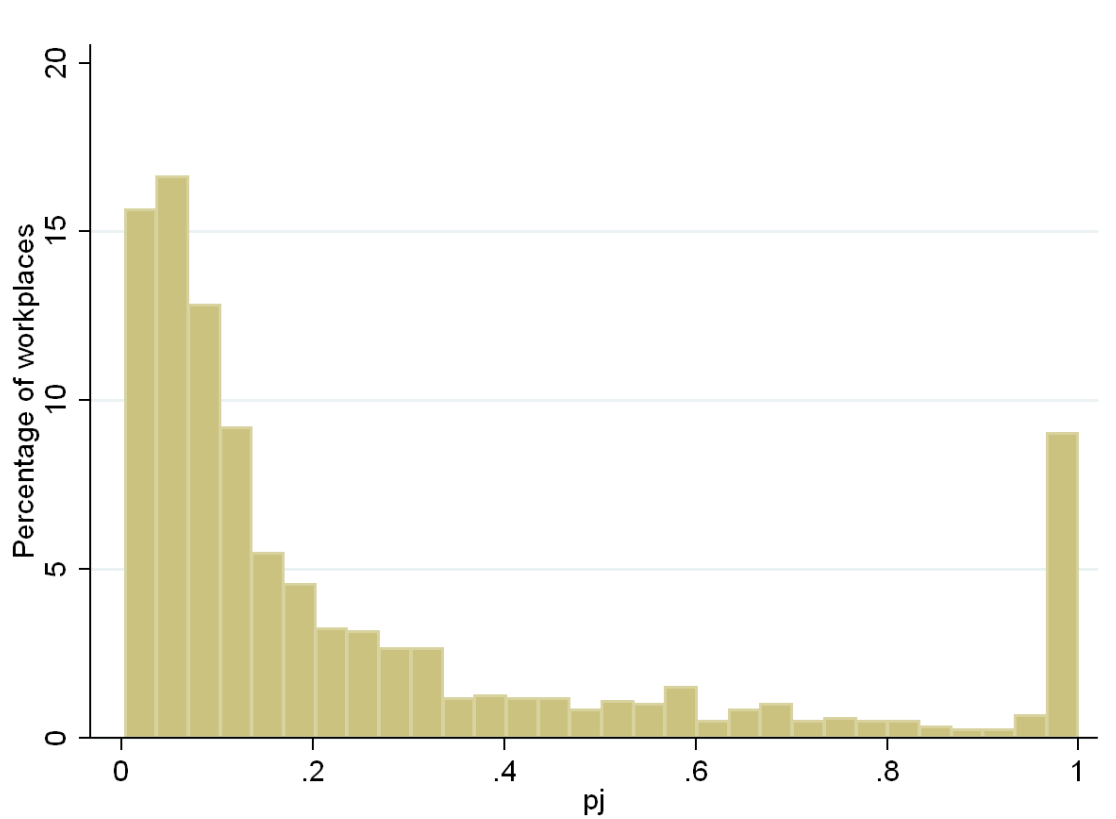


Figure 2.11: *Distribution of the variable p_j (ratio between the proportions of union representatives and union members) across workplaces where unions are recognized (e.g. with at least one union representative).*



derived from equation 2.6 remains small. The p-value of the estimates of the wage penalty for union representatives is smaller than 1 per thousand in specifications without fixed effects and smaller than 5 percent in specifications that include fixed effects.

The estimates obtained by maximum likelihood (col. 6 and 7) in specifications without fixed effects²⁴ are consistent with those obtained by the OLS indirect strategy. As discussed earlier, these estimates have no reason to be perfectly equal to those obtained through the indirect estimation strategy. They are the most efficient that can be obtained at finite distance under the hypothesis of normality of the residuals. These estimates are even slightly more precise than those obtained through the OLS indirect strategy. The wage of the union representatives is estimated to be 10 to 13% lower than that of non-union members whereas the other union members are paid between 1 and 3% more than non-union members.

²⁴I have not been able to produce estimates by maximum likelihood from specifications that include fixed effects: the algorithm I used to maximize the log-likelihood function did not converge after running more than one month and I had to stop it.

Table 2.5: *Indirect Estimator (IE) and Maximum Likelihood estimator (ML) of the wage differentials between union representatives, only unionized workers and non-unionized workers.*

Estimator	<i>dependant variable: log of hourly wage</i>						
	(OLS: Indirect Estimator)					(Maximum Likelihood)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Union representative	-0.090*	-0.152***	-0.126***	-0.081**	-0.087**	-0.137***	-0.109***
<i>Standard error</i>	(0.049)	(0.040)	(0.034)	(0.041)	(0.035)	(0.033)	(0.028)
<i>Corrected standard error</i>	(0.058)	(0.040)	(0.034)	(0.043)	(0.037)	-	-
Only unionized worker	0.080***	0.021	0.040***	-0.031**	-0.016	0.018	0.037***
<i>Standard error</i>	(0.021)	(0.016)	(0.014)	(0.014)	(0.013)	(0.014)	(0.012)
<i>Corrected standard error</i>	(0.020)	(0.014)	(0.012)	(0.016)	(0.014)	-	-
Observations	7587	7576	7576	7576	7576	7576	7576
R-squared	0.002	0.526	0.650	0.785	0.848	-	-
Workers' controls	No	Mincer	Detailed	Mincer	Detailed	Mincer	Detailed
Establishments' controls	No	Yes	Yes	Fixed effects	Fixed effects	Yes	Yes

Notes: In specifications (1) to (4), the non-corrected standard errors have been clustered by groups of workers with the same observable union status (unionized or not) in the same workplace. Corrected standard errors are obtained from equation 2.6.

The control variables are defined in the note of table 2.4.

*: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level. Significativity thresholds are computed using the clustered standard errors.

As discussed earlier, the results in table 2.7 would be biased if the wage penalty for union representatives varies with p_j . We can get around by focusing only on workers for whom we know with certainty either or not they are a union representative (these are all workers for whom $p_j U_{i,j} \in \{0; 1\}$). When we restrain to these workers, we still find a wage penalty ranging from 10 to 15% for union representatives and no penalty for union members that are not a representative (table 2.6, rows 1 and 2²⁵). Point estimates in these specifications are a bit larger (in absolute value) and standard errors are a bit higher, but the results obtained with the indirect estimation strategy or by maximum likelihood are corroborated. Our second proposed robustness check consists in examining directly if the observable wage differential between union and non-union members (conditional on their observable characteristics) is a linear function of p_j , as should be the case if the wage penalty for union representatives is constant with p_j . Figure 2.12 plots the observable wage differential between unionized and non-unionized workers for different values of p_j . More precisely, I have reported the estimated wage differential between union and non-union members (conditional on observable characteristics) in the 2 groups of establishments with $p_j = 0$ and $p_j = 1$ (those are identical to the estimates in the last columns of table 2.7). I have then divided the workplaces having p_j strictly between 0 and 1 in 4 quartiles and reported on the plot the average p_j and the average conditional wage differential in each of these groups. In each case, the wage differential increases regularly from virtually 0 in establishments where $p_j = 0$ to 10% or more in those where $p_j = 1$. Even though the estimated functions $\alpha(p_j) = \Delta w_u(p_j)$ are not perfectly linear as in the theoretical case exposed on the left panel of figure 2.7, they do not exhibit any abnormal point and they present a globally increasing profile. Considering the small number of observations on which is based the estimation of the representatives' wage penalty (the expected number of representative in the data is 128), this second test is rather reassuring: it shows that our estimates do not rest only on a few particular establishments and that they draw on the full set of variations of the share of representatives among the union members.

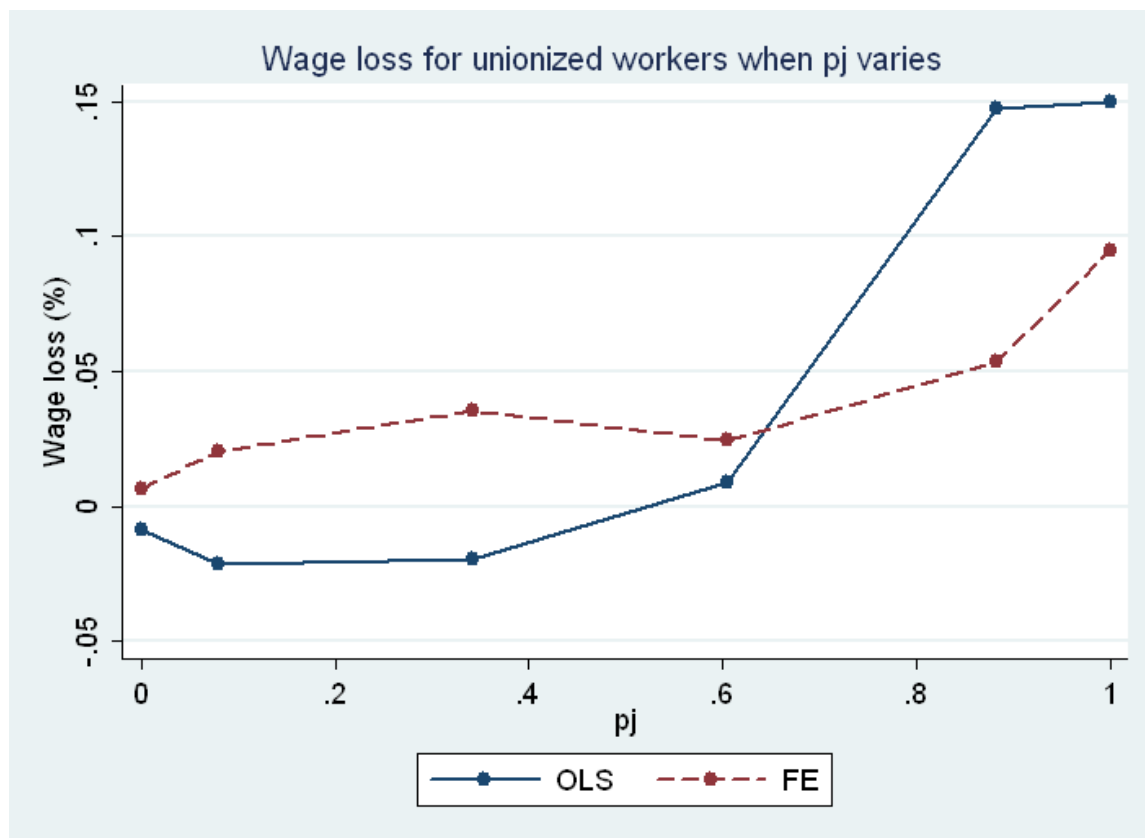
²⁵Results in table 2.6 are presented with detailed workers' controls only. They are similar in substance when using the "Mincer" controls instead of the detailed controls.

Table 2.6: *Wage differential between the union representatives and their co-workers for directly identified representatives, and by establishment size and sector subgroups.*

Sample	Establishment controls	Observations	Union Representative		Unionized only	
$p_j \in \{0; 1\}$	Industry, size, region, age	6950	-0.157***	(0.049)	0.019	(0.027)
	Fixed effects	6950	-0.094*	(0.055)	-0.015	(0.021)
<i>Estab. Size:</i>						
20-100 salaries	Industry, size, region, age	2919	-0.112***	(0.042)	0.042*	(0.024)
	Fixed effects	2919	-0.129***	(0.041)	-0.006	(0.020)
100-200 salaries	Industry, size, region, age	1489	-0.162**	(0.079)	0.096***	(0.035)
	Fixed effects	1489	-0.092	(0.076)	0.028	(0.027)
200-500 salaries	Industry, size, region, age	1193	-0.084	(0.104)	0.009	(0.035)
	Fixed effects	1193	0.077	(0.107)	-0.065*	(0.034)
sup 500 salaries	Industry, size, region, age	1975	-0.078	(0.137)	0.002	(0.025)
	Fixed effects	1975	-0.102	(0.120)	-0.049*	(0.026)
<i>Sector:</i>						
Services	Industry, size, region, age	2929	-0.107**	(0.042)	0.041*	(0.022)
	Fixed effects	2929	-0.061	(0.046)	0.007	(0.020)
Construction	Industry, size, region, age	470	-0.075	(0.130)	0.035	(0.061)
	Fixed effects	470	0.037	(0.094)	-0.013	(0.070)
Manufacturing	Industry, size, region, age	2929	-0.166**	(0.073)	0.028	(0.021)
	Fixed effects	2929	-0.140*	(0.073)	-0.038*	(0.020)
Retail sector	Industry, size, region, age	1248	-0.157*	(0.093)	0.029	(0.038)
	Fixed effects	1248	-0.115	(0.081)	-0.064*	(0.037)

Notes: Standard errors given in parenthesis are clustered by groups of workers with the same observable union status (unionized or not) in the same workplace. The control variables are defined in the note of table 2.4. *: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

Figure 2.12: *Estimation of the wage differential between unionized and non unionized workers when the probability for unionized workers to be union delegate increases*



Notes: The estimates are obtained by running on 6 subsamples of the dataset OLS regressions of the individual wages on a dummy for union membership as well as detailed controls for individual characteristics and either controls for workplaces characteristics or workplaces fixed effects.

The first subsample (corresponding to the estimates on the left of the chart) comprises all workers in establishments where $p_j = 0$. The 4 next subsamples are obtained by dividing in 4 quartiles the workplaces where p_j is strictly comprised between 0 and 1. The last subsample (corresponding to the estimates on the right of the chart) comprises all workers in establishments where $p_j = 1$.

The robustness of the estimates is further confirmed when we focus on subgroups of establishments with different sizes or operating in different sectors. The wage penalty seems higher in smaller establishments and in the retail and manufacturing sector (table 2.6), but all establishment size groups and sectors experience a wage penalty for the representatives. Of course, the estimates produced on each subsample are to be considered cautiously because they rely on a small number of representatives²⁶. However, the general robustness of the results between the different sub-

²⁶The estimates can sometimes appear unstable: see for example the difference between the estimates without and with establishments' fixed effects among the sub-group of establishments

groups indicates that we are not measuring only a local phenomenon. In particular, the larger penalty found in small establishments shows that the phenomenon does not concern only the large firms among which there is (a lot of) anecdotal evidence concerning legal actions undertaken for “union discrimination” (see section 5).

2.3.4 Discussion and interpretation tests

Why are union representatives so badly paid? Two usual explanations are possible: discrimination and adverse selection. Keeping the previous notations (without the j subscript) and denoting by θ_i the productivity of worker i , we can give a mathematical definition of these 2 usual statistical notions in the context of this study:

$$\left\{ \begin{array}{ll} \text{- Discrimination (taste based):} & \mathbb{E}[w_i|\theta_i, UR_i = 1] < \mathbb{E}[w_i|\theta_i, UR_i = 0] \\ \text{- Adverse selection:} & \mathbb{E}[\theta_i|X_i, UR_i = 1] < \mathbb{E}[\theta_i|X_i, UR_i = 0] \end{array} \right.$$

Adverse selection reflects the fact that, for identical observable characteristics, the union representatives are less productive than their co-workers.

Statistical discrimination on wages is impossible in the long run. Indeed, there is statistical discrimination if the employer does not observe a worker productivity and lower this worker’s wage regarding an observable non productive characteristic (such as gender, race or union status) because he knows or thinks that this unproductive characteristic is correlated with some unobservable component of productivity (for example laziness is unobservable and affects productivity and the employer thinks that unionized workers are more lazy). In the long run, unionized workers average productivity is observed by the employer and lower wages can only reflect adverse selection (unionized workers are indeed more lazy) or taste based discrimination (unionized workers are not more lazy, the employer knows it but still he pays them a lower wage, see Becker, 1971).

having between 200 and 500 employees.

The legal settings in France tend to isolate the union representatives on the field and to turn collective bargaining into a more individual bargaining between the employer and the representative. Consequently, a specific strategic interaction can then take place between the employer and the few union representatives in the firm. A careful look at the incentives of the employers in this strategic game shows that they can rationally have interest to hurt the representative to discourage other workers to become representatives and to discourage further attempts to organize (see the theoretical section of the chapter). In that sense, the term “taste based discrimination” is misleading even though the employer consciously pays to the union representatives wages that are lower than their productivity. From a statistical point of view, we can speak about discrimination. However, from an economic point of view, the potential discrimination should probably be seen as the result of a non-cooperative strategic interaction between the employer and the union representatives.

The lower wages for the union representatives could also be explained by the theory of compensating wage differentials. According to this theory (see Rosen, 1986), market forces imply under perfect competition that identical workers reach at equilibrium the same level of utility. Workers with a lower wage need to be compensated accordingly by non-monetary advantages. The lower wages for union representatives could thus be compensated by other aspects, such that a better job protection or a less strenuous work. Notice that our definition of wage discrimination is not incompatible with the existence of compensating wage differentials. Wage discrimination means that identically productive workers are paid differently. This does not mean that these differences in pay are not compensated by something else. As workers have the choice to become a union representative²⁷, it is clear that the few ones who do so become better off and are compensated on other dimensions for any wage discrimination they may suffer from (see the model in the previous section for example).

To avoid any confusion, we need to distinguish between two types of compensations: (i) *global* compensating wage differentials that would apply potentially to all workers that become a union representative (such compensations are for example directly attached to the position of union representative) and (ii) *specific* compensat-

²⁷This is not the case for the usual sources of discrimination: gender or ethnicity cannot be modified (except for some rare exceptions).

ing wage differential that only result from the particular individual preferences of the workers that are willing to become a union representative (more altruist, more militant, more willing to struggle, etc.). It is likely that the representatives do not have the same preferences than their co-workers and that it can explain their commitment in unions despite a potential discrimination. We do not discuss this point. However, the existence of *global* compensating wage differentials – to which the economic theory traditionny refers – needs to be discussed. Such differences could indeed justify the lower wages for union representative from a normative point of view since they would be in that case systematically compensated by some objective advantages.

Some arguments plead for the existence of *global* compensating wage differentials that may also lead to an adverse selection. First, the law gives in average 3 hours a week of time off (work discharge) for their union work. From a legal point of view, the employer should not pay these workers less because of their work discharge. These work discharges are indeed a legal duty whose the cost has in theory to be entirely borne by the employer. But from an economic perspective, if union representatives work less, they might well be paid less as a consequence. Second, the union representatives are protected against layoffs: an authorization from the labor inspection is necessary in order to fire them. This protection gives an incentive to become a union representative for workers that are at risk to be fired and can induce a selection bias. However, the protection benefiting to union representatives does not seem to be very effective (see the detailed study presented in section 5).

I do not have an experimental design that enables to identify with certainty the causal explanation of the wage penalty for union representatives. Two informal argument supports the “discrimination interpretation”. The union representatives are drawn among the unionized workers and they share with these unionized workers a lot of socio-economic characteristics (see table 2.3 in the next section). This implies that they are not very likely to be far less productive than the other unionized workers (table 2.3 shows for example that they are more educated than the average union member). Hence, the high wage differential between union representatives and the workers who are “unionized only” is unlikely to reflect a selection process. Such a selection process should concern only the representatives but not the other unionized

workers who do not appear to be paid less than their non-unionized counterparts. Second, the wage penalty for the union representatives is larger among small establishments. Unions are present in only 34% of the establishments that have between 20 and 200 employees whereas they are present in 90% of the establishments that have more than 200 employees (weighted statistics from the REPONSE04 survey). It is thus among the small establishments that the employers are more likely to be able to avoid the presence of unions if they behave strategically (since among large establishment, the presence of unions is almost systematic). As a consequence, if the wage penalty for union representatives reflects a rational strategy from the employers, it is logical to find a larger penalty in smaller establishments.

I now present two tests that reinforce the idea that the wage penalty for union representatives reflects a discrimination rather than a lower productivity or a compensation in exchange of other institutionnal advantages such as the working discharges or the protection against layoffs.

The first test I provide consists in separating the representatives according to their tenure. If discrimination is at play, it cannot happen instantly. In practice, it can take the form of a lower rate of promotions and pay raises for the representatives. However, if the “bad workers” select themselves among the union representatives, this means that the representatives are drawn from the bottom of the wage distribution (conditional on their observable characteristics). In that case, we should already observe a negative wage differential between the representatives with a short tenure in their working establishment and their coworkers. Denoting by ST_i a dummy variable equal to 1 for workers having less than 5 years of tenure in their establishment, I estimate in table 2.7 (col. 1 and 2) the following equation²⁸:

$$\ln(w_{ij}) = \alpha_1^{ST}(p_j U_{ij} ST_i) + \alpha_1^{LT}(p_j U_{ij} (1 - ST_i)) + \alpha_2((1 - p_j) U_{ij}) + ST_i + \beta X_i + \eta'_j + v_{ij} \quad (2.8)$$

In both specifications, the wage penalty for union representatives is borne by those having more than 5 years of tenure in their working establishment. Since union representatives with short tenure are given the same work discharge than the ones

²⁸Unionized workers with less than 5 years of tenure represent exactly 25% of the sample of unionized workers.

with longer tenure, the results in table 2.7 (col. 1 and 2) show that work discharges do not explain entirely the wage penalty for union representatives. Two potentially important caveats need to be mentioned. First, equation 2.8 provides consistent estimates of the wage penalty for union representatives with low and high tenure only if tenure is orthogonal to p_j , that is if $\mathbb{E}[ST_i U_i | p_j] = 0$. This assumption is not verified if for example union representative have more tenure in average than other union members, which appears to be indeed the case (see table 2.3). Second, if discrimination is indeed at play, the accurate determinant of discrimination in the long run is the seniority of the workers as union representatives and not their tenure in their working establishment. In table 2.7, I implicitly assume that tenure in the establishment is a good proxy for the seniority as a representative in the establishment. This questionable assumption will be discussed in the next section. More generally, the first test proposed here of the relationship between tenure and the wage penalty for union representatives will be completed and reinforced by a precise analysis of representatives' opinions in the next section.

My second approach to suggest that discrimination and strategic interaction is at play is to look at the wage penalty for representatives from different unions and to correlate the results to the behavior of each particular union. In the REPOSE survey, the managers are asked the number of union representatives of each of the French main unions. It is thus possible to compute the proportion p_j of union representatives among unionized workers for each main union and to apply the IE and ML techniques to obtain consistent (IE) or most powerful (ML) estimators of the wage penalty for the union representatives of these different unions. Due to the relatively small sample size of the data, I have done it only for the 3 largest unions and I do not present estimates for the other unions. These 3 largest unions are the “Confédération Générale du Travail” (CGT), the “Confédération Française Démocratique du Travail” (CFDT) and “Force Ouvrière” (FO). CGT and CFDT have almost the same size and FO is slightly smaller. Almost 70% of the union representatives belong to these unions (about 27% belong to CGT, 27% belong to CFDT and 15% belong to FO). CGT is historically a communist union. Even though since the mid '90s communism no longer stands out as the dominant ideology driving the organization, its concrete

counterpart of class struggle still characterizes the action of CGT today. According to a large sociological literature, CGT can be seen as more aggressive and less willing to make concessions than CFDT, its more direct rival. As a matter of fact, statistics from the Ministry of Labor show that, in 2004, the number of strikes initiated by the CGT union was more than twice higher than the number of strikes initiated by the CFDT union, even though the two unions are equally implanted within firms (Carlier et De Oliveira, 2005). Finally, the results in chapter 1 (see additional material of section 1) indicate that CGT is probably the union that bargains the largest wage premium for all the workers in the establishments in which it is represented, suggesting that it indeed adopts a combative strategy (in the sense of the model) and cannot be bribed easily in exchange for a less tough bargaining.

Among the largest unions, union representative from the CGT union are particularly badly paid (table 2.7, col. 3, 4 and 6). CGT union representatives appear to be paid around 20% less than non-unionized workers in all specifications. CFDT union representatives seem to be paid roughly 10% less when using the indirect estimation strategy with no fixed effects but this result is not very stable and not statistically significant in other specifications. The union representatives affiliated to the FO union representatives do not appear to be paid differently than non-unionized workers. The fact that union representatives from CGT, who are the most fighting and the more able to bargain better wages for the workers in their firm, are less paid than union representatives from other unions reinforces the idea that they play a non-cooperative game with the employers which leads the employer to pay them poorly²⁹. The results in table ?? also strongly contradict the fact that union representatives are paid less because of their institutional advantages (work discharge and protection against layoffs). Indeed, if this were the only explanation, we should observe an identical wage penalty for the representatives of each union since they are all granted the same work

²⁹It should be kept in mind that these last results rely on a small number of “observations”. The expectation of the number of CGT, CFDT and FO union representatives on the sample is respectively 38, 41 and 26 individuals. In addition, those workers union status is not observable directly. But yet results for CGT are very significant. This probably means that, conditional on observables, almost all the few workers identified as likely to be CGT union representatives experience far lower wages. Of course, standard errors and confidence intervals are large too and direct data on the workers’ union status would be necessary to assess precisely what is the size of the gap. Yet, the 95% confidence interval for the wage penalty experienced by CGT union representatives is close to [-25%, -15%].

discharge.

Table 2.7: *The representatives' wage penalty as a function of their tenure and of the union they are representing*

	<i>dependant variable: log of hourly wage</i>					
	(OLS: Indirect Strategy)				(ML)	
	(1)	(2)	(3)	(4)	(6)	(7)
Union rep. *tenure \leq 5 years	-0.046 (0.053)	0.022 (0.067)			-0.050 (0.054)	
Union rep. *tenure $>$ 5 years	-0.155*** (0.040)	-0.125*** (0.036)			-.131 (0.033)	
Union rep. from CGT			-0.207*** (0.078)	-0.243*** (0.062)		-0.21 0.059
Union rep. from CFDT			-0.141** (0.059)	0.003 (0.073)		-0.075 (0.053)
Union rep. from FO			-0.011 (0.081)	-0.006 (0.078)		-0.044 (0.083)
Union rep. from other unions			ns	ns		ns
Observations	7494	7494	7576	7576	7494	7576
R-squared	0.650	0.850	0.650	0.848		
Workers' controls	Detailed	Detailed	Detailed	Detailed	Detailed	Detailed
Establishments' controls	Standard	Fixed effects	Standard	Fixed effects	Standard	Standard

Notes: Standard errors given in parenthesis are clustered by groups of workers with the same observable union status (unionized or not) in the same workplace. The control variables are defined in the note of table 2.4. Corrected standard errors are not reported. *: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

2.3.5 Testing the model's predictions

It is possible to go beyond the discussion of the possible interpretations of our econometric results and to test directly some hypothesis derived from the theoretical model. Unfortunately, the quality of the data on union representatives does not allow us to design too sophisticated tests and the use of an indirect strategy to recover representatives' wages renders necessary to make additional identification assumptions.

An obvious and direct prediction of the model is that the combative union representatives are discriminated whereas the other ones are not. The comparison we made between the wage penalties incurred by representatives from different unions confirms this simple prediction. If we suppose, in the spirit of the model, that CGT union representatives cannot be bribed (because they are always well monitored or because representatives that refuse to be bribed select themselves in the CGT union). Then, only the non-cooperative equilibrium is possible with the CGT union and it is logical to observe a higher wage penalty in that case.

Let us restate quickly the four other main testable predictions from the model. First, the probability to have a union increases with firms' profitability or equivalently, with firms' rents. Second, the unionization rate also increases with firms' rents. Third, the union representative is more likely to be combative when the unionization rate is high. Fourth, the probability to observe a combative union representative increases with firms' rents (as depicted in figure 2.5).

The two first predictions has already been discussed and tested in chapter 1 using the subjective market share variable as a proxy for firms' potential rents (see table 1.8). We now propose a test of the third and fourth predictions. Unfortunately, we cannot observe directly if union representatives follow the yellow or the red strategy (e.g. if they are combative or not). However, according to the model, and as confirmed by the comparison of the representatives from the different unions, only the union representatives adopting the red strategy are discriminated. We can thus simply try to see if the wage penalty against union representatives is higher in establishments having a high unionization rate or a high market share. To do so, we have split establishments in two groups according to their unionization rate or to their market

share³⁰. Both in specifications with and without establishments' fixed effects, the wage penalty for union representatives is higher in establishments whose market share is higher than 25% than in establishments whose market share is lower than 25% (table 2.8 col. 1 to 4).

Similarly, the wage penalty for union representatives is higher in establishments with a unionization rate higher than 10% than in the other establishments (table 2.8 col. 5 to 8). The difference in the wage penalty for union representatives between establishments with less and more than 10% of union members is statistically significant at the 1% level (whereas the equivalent difference across market share groups is not). Another potential caveat needs to be mentioned here. The proportion of union representatives among union members that we use to estimate the representatives' wages is different across groups of establishments with different unionization rate. The average proportion of union representatives among union members is equal to 19% among establishments with less than 10% of union members, and to 7% among establishments with more than 10% of union members. This difference appears because, for a given number of union representatives, a higher unionization rate translates into a lower proportion of union representatives among unionized workers. When we estimate the representatives' wages on subsamples of establishments with different unionization rates, we consequently also exploit another section of the support of the distribution of p_j to get our results. If the wage penalty for union representatives varies with p_j , this might be a problem.

³⁰More detailed desegregations are also possible. Overall, they give similar results. However these results appear less stable and less significant. Due to the limit of the data sample, we only provide a rough test of the model's prediction and we present results obtained when separating the sample in only two sub-groups

Table 2.8: *Testing the model's prediction: Wage differential between the union representatives and their co-workers by establishment unionization rate and market share subgroups.*

Sample	dependant variable: log of hourly wage							
	Market share lower than 25%		Market share higher than 25%		Unionization rate lower than 10%		Unionization rate higher than 10%	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Union representative	-0.095 (0.066)	-0.065 (0.067)	-0.161** (0.063)	-0.121* (0.073)	-0.010*** (0.035)	-0.077** (0.036)	-0.331** (0.129)	-0.235** (0.098)
Only unionized worker	0.0009 (0.022)	-0.061*** (0.021)	0.049* (0.028)	-0.008 (0.026)	0.034* (0.020)	-0.023 (0.019)	0.050** (0.024)	-0.020 (0.019)
Observations	3,001	3,001	1,940	1,940	5,029	5,029	1,614	1,614
R-squared	0.66	0.84	0.68	0.87	0.67	0.85	0.61	0.85
Workers' controls	Detailed	Detailed	Detailed	Detailed	Detailed	Detailed	Detailed	Detailed
Etablissements' controls	Yes	Yes	Fixed effects	Fixed effects	Yes	Yes	Fixed effects	Fixed effects

Notes: The “detailed” workers’ controls are education (9 groups), age (in years), the square of age, gender, tenure, the square of tenure, occupation (4 groups), the number of hours worked, and a dummy for part-time working contracts. The establishments’ controls are establishment size (5 groups), industry (16 groups), region (10 groups), age (5 groups) and a dummy for the presence of a union representative (union recognition).

Establishment age, union recognition, workers’ occupation, tenure and hours worked have been treated for missing values: when any of these variables is missing, we recode it as equal to 0 and we include a dummy in the regression taking value 1 only when the variable is missing. Doing so, we recover about 400 additional observations. Standard errors given in parenthesis are clustered by groups of workers with the same observable union status (unionized or not) in the same workplace. The control variables are defined in the note of table 2.4. *: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

Interpreting the wage penalty for union representatives as the result of their non-cooperative interaction with their employers enables us to solve our initial apparent paradox: even though union recognition at the workplace level only depends on the presence of a volunteer worker to be a union representative, unions are only present in 36% of private sector workplaces with more than 20 employees. How comes so few workers accept to become representatives even though it apparently looks to be a privileged position (union representatives have a direct access to important information about their firm, they participate to work councils, they get working discharges and they might also enjoy a form of social reward by getting the esteem of their coworkers and a higher social status)? If true, the fact that workers are discriminated and have to renounce partly to their professional career when they become a union representative could be the hidden factor that makes such a decision difficult to take.

2.4 The opinion of representatives concerning the impact of their position on their career

I use in this section the additional survey on union representatives to provide some results on their opinion concerning the impact that their role of representative has had on their career.

2.4.1 The data used

The REPONSE survey also comprises a survey toward the representatives of the workforce. There are many different types of representatives of the workforce : union representatives, “mandated workers”, elected members of the establishment or firm work council, members of the work council representing a union, workers’ delegate or members of the health and safety committee of the firm. Among these various types of representatives, only the union representatives, the mandated workers and the members of the work council representing a union are necessarily unionized. The other types of representatives may or may not be unionized. There is a representative of the workforce (of any type) in 1,970 of the 2,930 establishments of the REPONSE

survey. In these establishments, a representative from the most influential workers' organization in the workplace (according to the view of the employer) has been interviewed³¹. He was asked questions about himself and his perception of the firm³². In particular, the representatives of the workforce were asked if they think that their participation in a workers' organization has had a positive or a negative impact on their career. I use this information with two objectives: first, test if the empirical analysis of the wage differential between union representatives and their coworkers correspond to the views of representatives themselves; and second, provide additional evidence suggesting that this wage differential results from discrimination.

2.4.2 Results

The representatives' opinions concerning the impact of their participation in workers' organization on their career³³ appear to vary strongly with the type of position they have. As shown by figure 2.13, 80% of the representatives who are not member of a union (they can be elected members of the work council or workers delegates for example) think that their participation in a workers' organization has had no impact on their career. They are only 8% thinking that it has had a negative impact. The opinion of the representatives who are union members is quite different. The proportion of unionized representatives thinking that their position has had a negative influence on their career varies from 31% for those who are not a union representative and not affiliated to the CGT union, to 50% for those who are both union representatives and affiliated to the CGT union. These figures reinforce the idea that the wage penalty for union representatives could be a negative outcome of their interaction with their employer and reflect discrimination for at least three reasons. First, the proportion of representatives thinking that their participation in a workers' organization has had no impact on their career is higher for union repre-

³¹In small establishments, there is only one representative of the workforce who is in this case automatically interviewed.

³²Unfortunately, there is no information on representatives' wages in the survey toward representatives, which explains why I used the employee survey to estimate the wage differential between union representatives and their coworkers.

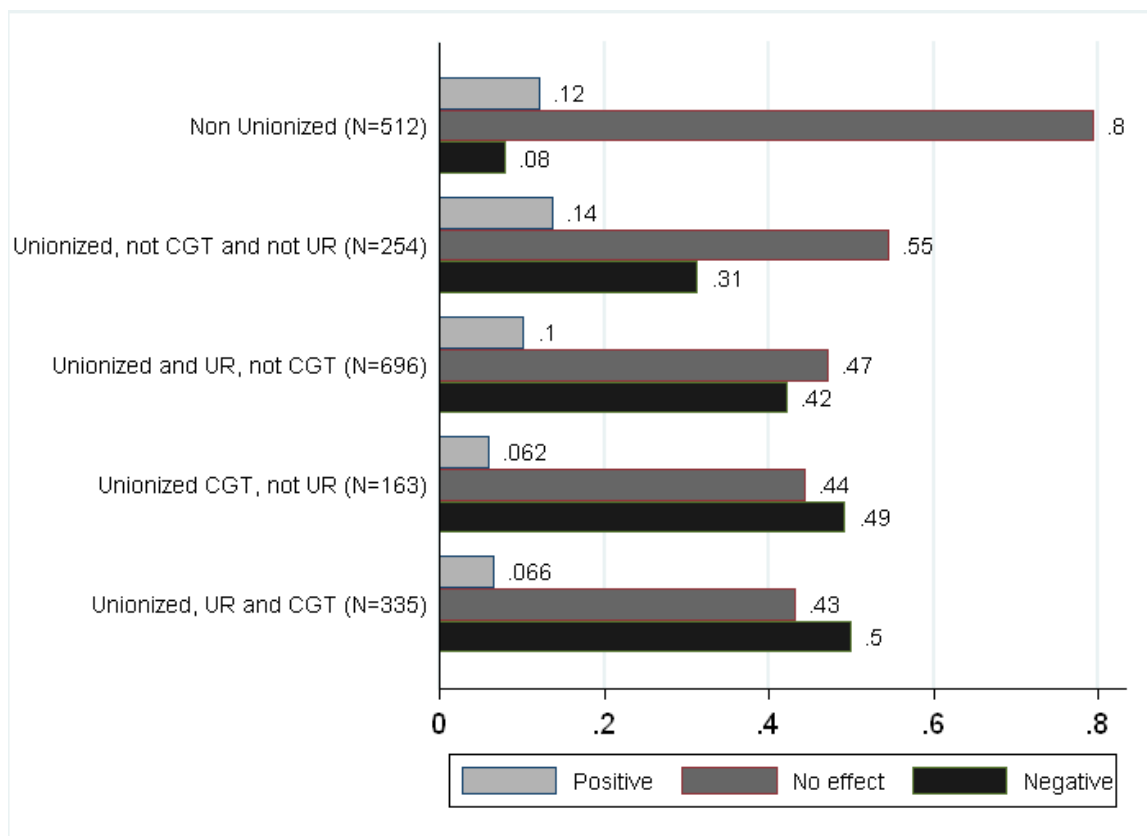
³³The exact question asked to representatives is: "Concerning your career opportunities inside your working establishment, would you say that your position of representative of the workforce has been a benefit, a handicap or has had no effect?"

sentatives than for other types of representatives. Since only union representatives officially take part to the bargaining – the other types of representatives act as the voice of workers in their day to day relationship with the employer but they do not officially negotiate with him –, this result indicates that being a negotiator makes it more likely to feel discriminated. Second, the proportion of union representatives thinking that their position has had a negative impact on their career appears to be quite high in absolute value, ranging from 42% for those who are not member of the CGT union to 50% for those affiliated to CGT. Third and also consistent with earlier results, members of the CGT union who are known to be more combative seem to be more exposed to discrimination (according to their own beliefs).

Figure 2.16 in the next section will present a very similar pattern concerning job security: the proportion of representatives thinking that their position is a threat for their job is higher for union representative and representatives who are members of the CGT union³⁴.

³⁴However, for all types of representatives, the proportion of representatives feeling that their position affects negatively their job security is a lot smaller than the proportion feeling that it affects negatively their career. This is certainly due to the fact that representatives are protected against layoffs by the law. The next section provides an extensive discussion on this point.

Figure 2.13: *The opinion of the different types of representatives of the workforce about the impact of their participation in workers' organization on their career (from the representatives' interviews in REPONSE04)*



Lecture: “UR” means Union Representative. 80% of the 512 representatives in the sample who are not union members declare that the fact to be a representative did not affect their career. 50% of the union representatives who are members of the CGT union think that their position has a negative effect on their career.

Source: REPONSE survey. Representatives of the workforce part.

Note: The surveyed representatives of the workforce come from the main workers' organization in the establishment. As a consequence, they cannot be considered as statistically representative of all the representatives of the workforce in the economy.

The stylised facts presented in figure 2.13 could be driven by unobserved confounding factors. For example, if unqualified blue-collar workers are paid the minimum wage, it might be difficult to wage discriminate against them. Table 2.3 in the previous section also showed that union representatives are more tenured and more often blue-collar workers than other types of representatives.

In order to better control for some of the potential factors that could drive the stylized facts emerging from figure 2.13, I estimate the determinants of the representatives' opinions concerning their careers using a series of ordered logit models that allow me to control for the effect of all the relevant observable characteristics available in the data. Table 2.9 provides the estimates. The individual characteristics included in model (1) are those described in table 2.3 – except education dummies that are first omitted due to their high correlation with occupation –, as well as 3 dummy variables for being a union member, being a union representative and being a union member affiliated to the CGT union and the seniority as a representative within the workplace. Control variables for establishments' size, industry and region are also included.

The stylized facts appearing in figure 2.13 are fully confirmed: union members declare more often than non union members that their position of representative has a negative effect on their career. This is even more the case if they are a union representative or affiliated to the CGT union. The second column gives the marginal effect (at the mean) of these variables on the probability that a representative declares that his position has a negative impact on his career. The latter probability is 12% higher for union members than for non union members and 21% higher for union representatives than for non union members.

It also appears in model (1) of table 2.9 that the probability to declare a negative impact on the career increases by almost 0.5 percent per additional year of seniority as a representative within the establishment. This result is consistent with the idea that the representatives' answers reflect actual discrimination. As already said, if there is indeed some discrimination, it will not appear instantly since employers cannot cut representatives' wages overnight. In contrast, if discrimination is at play against representatives, it should appear gradually from the time when a worker becomes a

representative and it should thus increase with the representatives' seniority. The fact that more senior representatives declare more often that their participation in a worker organization has had a negative impact on their career is thus consistent with the idea that representatives are discriminated.

Concerning the other results presented in model (1): there are no differences in the representatives' opinions between men and women and qualified blue-collar workers are those who think the most that their participation in a worker organization has had a negative impact on their career. The higher probability to declare a negative impact for qualified blue-collars with respect to non-qualified ones could simply be due to the fact that the latter cannot be discriminated since they have almost no career opportunities (Beaud and Pialoux, 1999) and get a wage often close to the national minimum wage.

Model (2) is similar to model (1) but with a control for tenure in the establishment instead of the control for seniority as a representative within the establishment³⁵. In contrast to seniority as a representative, it appears that tenure has no significant effect on the opinion of representatives concerning the impact of their position on their career. Such a result is even a bit surprising since tenure is highly correlated with seniority as a representative (the coefficient of correlation is 0.77) and might be suspected to play the role of proxy for the latter variable. This was actually the assumption underlying the test of the relationship between tenure and the wage penalty for union representatives that we made in table 2.7. The absence of link between tenure and the feeling of discrimination suggests that the former assumption was maybe too strong and it confirms that the results on the relationship between tenure and the wage penalty for union representatives should be interpreted cautiously. However, this absence of link between tenure and the representatives' opinions goes against the idea that representatives are adversely selected. If the "bad workers" select themselves among the representatives, they might get confused and believe that they are penalized in term of career because of their position as a representative, while they are actually penalized due to their lower ability. But if such a confusion is at play, the representatives' actual penalty in term of career and their

³⁵Since seniority as a representative and tenure are highly correlated, I first include them separately in the regressions, before putting them together in model 3.

statement about this penalty should vary with their tenure rather than with their seniority as a representative.

Model (3) includes simultaneously control variables for seniority as a representative within the establishment and tenure. An additional control for the seniority as a representative in any establishment is also included. The three variables are highly correlated and it might be difficult to disentangle between their respective effects on the feeling of discrimination³⁶. This high correlation might explain that the coefficient for the seniority in the establishment jumps off in model (3) whereas the coefficient for tenure falls down as compared to their values in the previous specifications. The results from the previous econometric models are nonetheless confirmed: seniority within the establishment keeps driving the representatives' answers. The fact that the total seniority as a representative does not play a role is an additional indication that these answers reflect actual discrimination rather than an adverse selection of the representatives.

Finally, model 3 also includes a set of control variables for the educational attainment of the representatives. Representatives with no education have a lower probability to declare a negative impact than those who have more than a high school degree. However, here again, educational attainment and occupations are probably too much correlated to allow us to disentangle fully their respective effects. The estimated coefficient for blue-collars has indeed jumped off when we have included controls for education. I have also run an ordered logit regression with control variables for education but not for occupations and I found the estimates of the effect of education on the representatives' opinions in this last model to be non significant (results not reported). All together, these results suggest that occupation matters more than education and that the higher probability to declare a negative impact for qualified blue-collar workers is robust to controlling for education.

³⁶The correlation matrix between these variables is:

	Tenure	Seniority as a rep.	Seniority as a rep. in the estab.
Tenure	1.0000		
Seniority as a representative	0.6583	1.0000	
Seniority as a rep. in the estab.	0.7701	0.9374	1.0000

Table 2.9: *When do representatives think that their participation in a workers' organization has had a negative impact on their career? Estimation from a series of ordered logit regression (REPOSE04)*

<i>Dep. var.: representatives' opinion concerning the impact of their position on their career (variable taking values -1 for a positive impact, 0 for no impact and 1 for a negative impact)</i>				
	(1: estimate)	(1: marginal effect)	(2)	(3)
<i>Individual characteristics (ref.: non unionized male manager with at least some college education)</i>				
Union member	0.57*** (0.16)	0.12*** (0.03)	0.56*** (0.16)	0.60*** (0.16)
Union Representative	0.22* (0.121)	0.05* (0.03)	0.25** (0.12)	0.20 (0.12)
Member of CGT union	0.39*** (0.12)	0.09*** (0.03)	0.42*** (0.12)	0.38*** (0.12)
Seniority as a representative within the workplace	0.020*** (0.007)	0.0044*** (0.001)		0.05*** (0.02)
Seniority as a representative				-0.018 (0.016)
Tenure			0.0012 (0.006)	-0.018** (0.009)
Age	0.0031 (0.007)	0.00067 (0.002)	0.0141* (0.008)	0.0163* (0.008)
Woman	-0.02 (0.12)	-0.005 (0.026)	-0.04 (0.12)	-0.03 (0.12)
Non-qualified blue-collar	0.23 (0.23)	0.052 (0.053)	0.26 (0.23)	0.53** (0.25)
Qualified blue-collar	0.388** (0.16)	0.087** (0.037)	0.42*** (0.16)	0.67*** (0.19)
Clerk	0.29* (0.17)	0.065* (0.038)	0.32* (0.17)	0.47** (0.18)
Intermediate occupation	0.107 (0.15)	0.024 (0.033)	0.14 (0.15)	0.27* (0.15)
Manager/Supervisor	REF	ref	REF	REF
No education at all				-0.46*** (0.173)
Vocational training				-0.31** (0.14)
High school				-0.25* (0.15)
More than high school				REF
industries, regions, age dummies	yes	yes	yes	yes
Observations	1,941	1,941	1,939	1,919

Notes: All estimates include 16 indicators for industries, 10 indicators for regions and 5 indicators for establishments size. The dependent variable takes values -1, 0 and 1 and is ordered from being a representative having a positive impact to a negative impact on the career. The second column present the marginal effect (at the mean) on the probability to declare that being a representative has a negative impact on the career for the covariates included in model (1).

*: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

To conclude this section on the opinion of representatives concerning the impact of their position on their career, figure 2.14 provides a visual summary of the relationship between these opinions and the seniority as a representative. Results are obtained using a non-linear simultaneous smoothing technique that allow both to control for other determinants of the representatives' opinions and to take into account the potential non-linearity of the relationship between seniority as a representative and these opinions. Figure 2.14 confirms that tenure and age are not strongly related to the representatives' answers whereas the seniority as a representative within the workplace affects them strongly and positively. Seniority as a representative in any workplace affects representatives' answers negatively. Once again, the effects of the two seniority variables might compensate each other. However, seniority as a representative within the workplace is clearly the strongest determinant of the representatives opinions: the probability to declare that being a representative has had a negative impact on their career goes from 10% for representatives with no seniority to 70% for those who have been a representative in their workplace for 30 years.

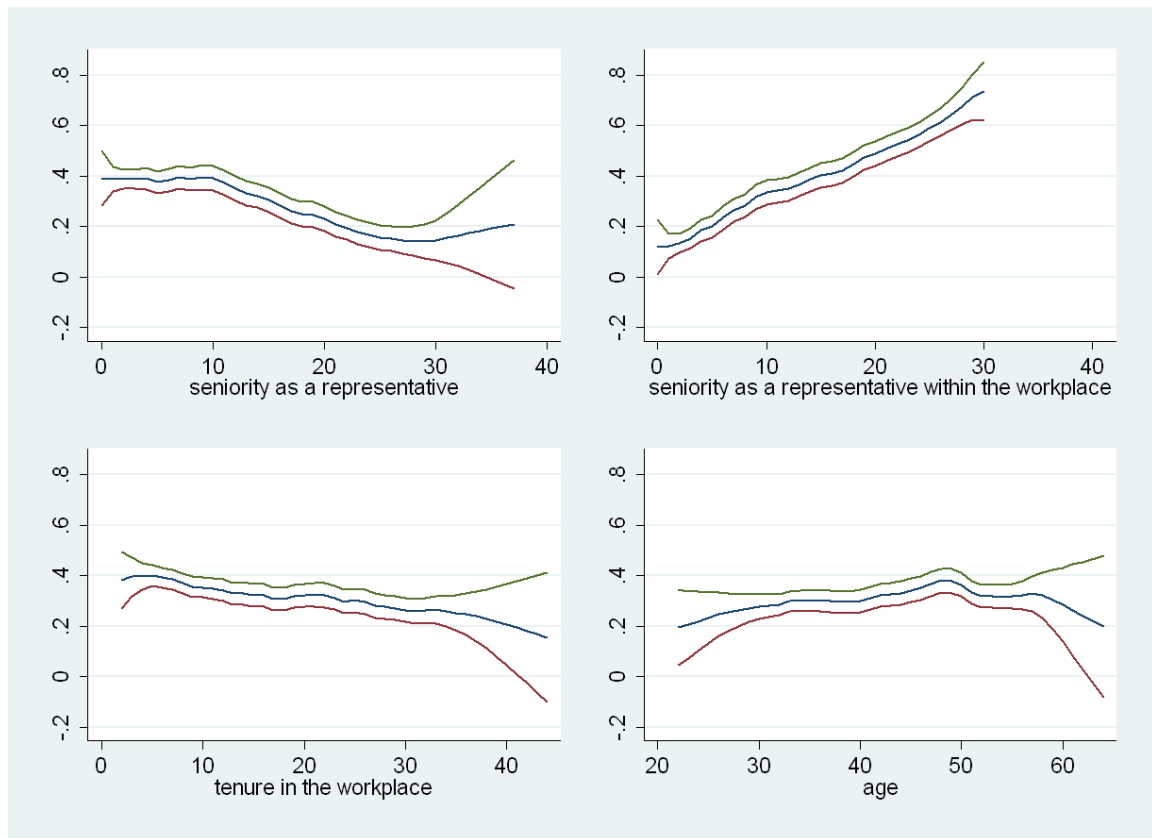
Overall, the results on the potential discrimination felt by the representatives confirm the earlier study of the wage penalty for union representatives. Put together, the pieces of evidence presented on both representatives' wages and opinions in this section and the previous one strongly suggest that representatives are discriminated. To conclude this study of union representatives, I now present elements on the strength of the protection against layoffs offered to union representatives and on existing lawsuits for union discrimination.

2.5 Procedure for layoff of protected employees and lawsuit for union discrimination

This section presents elements on both procedures used to lay protected employees off, and on legal actions undertaken for anti-union discrimination.

The first part provides information about how layoff procedures for protected employees work, and notably statistics on their rate of use and rate of success. Without

Figure 2.14: *The relationship between seniority as a representative and the fact to declare that being a representative has had a negative impact on the career*



Notes: Obtained from a non-linear simultaneous smoothing. The dependant variable is equal to 1 for representatives who declare that their position has had a negative impact on their career and 0 otherwise. It is smoothed over a set of covariates: seniority as a representative, seniority as a representative within the workplace, age and tenure, union membership, the fact to be a union representative, affiliation to the CGT union, gender, education (5 groups), occupation (5 groups), establishment size, 16 dummies for industries and 10 dummies for regions. The (non-linear) relationship between these covariates and the fact to declare that being a representative has had a negative impact on the career is represented above only for seniority as a representative, seniority as a representative within the workplace, age and tenure.

further analysis, it is difficult to know exactly to what extent protection against layoff is really effective. However, given the available studies and statistics, it appears that protection against layoff leaves some latitude to employers and does not particularly protect representatives so much.

The second part briefly presents the history of the many actions undertaken for anti-union discrimination and how they work. It should be seen as an illustration of the statistical estimation of wage gaps presented above. It also has a legal interest *per se*, notably because the statistical methods originally developed to invoke union discrimination are also applied to the much wider field of gender discrimination.

2.5.1 The layoff of protected employees

The employees covered by protective legislation are first of all workforce representatives: workers delegates (*délégués du personnel*), work council members (*membres du comité d'entreprise*³⁷), health, safety and working conditions committee members, union representatives, union members of the work council, unique workforce commission representatives (*membres de la délégation unique*). But other categories of employees are also protected: delegates in industrial courts (*conseillers aux prud'hommes*), occupational physicians, workers representatives in companies put into receivership, workers advisors (*conseillers du salarié*) since 1991, mandated employees (*salariés mandatés*) since 1998 and representative of a union section (*représentants de la section syndicale*) since 2008. The law also protects, under certain conditions, employees who ask for organization of workers delegates elections (*élections professionnelles*) in their firm, whether or not they will be candidates thereafter. Finally, the protective procedure is applicable to both candidates in elections and former representatives during one year after the end of their term.

Any employer wishing to lay off, dismiss or transfer a protected employee to another establishment must first ask permission to the labor inspector (*inspecteur du travail*), who may authorize or reject it. The employer or the protected employee can contest the labor inspector's decision and lodge an informal administrative appeal

³⁷We provide a systematic French translation of the specific vocabulary related to industrial relations or legal affairs.

(*recours gracieux*) to the inspector, and / or an administrative appeal (*recours hiérarchique*) to the Labor Ministry, and / or a contentious appeal (*recours contentieux*) to the administrative court (De Oliveira, 2006).

From herein, we include in “lays off” all types of dismissals but we exclude transfers from an establishment to an other one. In the early 2000s, there were about 12,000 requests for layoff of protected employees each year. More precisely, the number of applications has risen from 10,463 in 1998 to 12,145 in 2004 (De Oliveira, 2006). About 70% of these requests are made for economic reasons and more than 80% of them result in a layoff authorization from the Labor Inspection.

The regular analysis conducted by the DARES on protected employees (Merlier, 2000; Merlier, 2002, De Oliveira, Merlier and Zilberman, 2005; De Oliveira, 2006; Carlier, 2009), as well as some legal studies (Weidenfeld, 2003; Maggi Germain, 2006) reveal a number of stylised facts :

1. Requests for layoff of protected employees are often accepted and recourses from employees are rare.

As indicated above, over 80% of requests for layoff of protected employees are accepted by the Labor Inspection. Employees very rarely contest the decision and lodge an administrative appeal: they do it in less than 2% of cases. On the contrary employers contest much more frequently refusals: about once in three. When lodging an appeal, employees and employers get the cancellation of the original decision of the Labor Inspection in about 25% of cases. Table 2.10 provides detailed statistics on appeal rates over the decade 1990-2000.

Table 2.10: *Rates of employers' and employees' appeals and rate of confirmation of the Labor Inspection decisions by the Ministry, all types of layoffs.*

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Number of layoff requests											
Denied by the Labor Inspection (against the employer's request)	1,517	1,736	2,406	3,522	2,254	2,209	2,251	2,400	1,727	1,917	1,817
Authorized by the Labor Inspection	9,299	12,086	14,345	15,282	12,499	11,309	11,815	13,521	10,953	13,348	12,852
All	10,816	13,822	16,751	18,804	14,753	13,518	14,066	15,921	12,680	15,265	14,669
Number of cases investigated following an appeal lodged by:											
Employers who contest against a layoff refusal	na	380	496	874	806	518	535	677	647	587	na
Employees who contest against a layoff authorization	na	181	224	257	224	191	203	201	216	197	na
All	576	561	720	1,131	1,030	709	738	878	863	784	842
Recourse rate (in %):											
By employers	na	22	21	25	36	23	24	28	37	31	na
By employees	na	1	2	2	2	2	2	1	2	1	na
All	5	4	4	6	7	5	5	6	7	5	6
Number of Ministry confirmations											
Of refusal decisions contested by employers	na	na	na	730	598	420	401	536	541	442	na
Of authorization decisions contested by employees	na	na	na	156	171	133	167	144	154	135	na
All	na	na	na	856	769	553	568	680	695	577	608
Ministry confirmation rate (in %)											
Of layoff refusals	na	na	na	84	74	81	75	79	84	75	na
Of layoff authorizations	na	na	na	61	76	70	82	72	71	69	na
All	na	81	84	78	75	78	77	77	81	74	72

Notes: Source: Merlier, 2002. Données traitées par la Direction des Relations de Travail, DARES.

The information published annually by the DARES also reveals a deterioration in the condition of protected employees since the early 1990s. The numbers of requests for layoff of protected employees is cyclical and it tends to increase over time. The proportion of approved requests by the Labor Inspection, has also increased over time. This does not seem to be explained neither by a hypothetical increase in the number of representatives, nor by economic conditions (see Merlier, 2002 for a deeper analysis of time trends). Besides, the existing legal studies (Weidenfeld, 2003) show a number of dysfunctions of the protective mechanism: employees do not seem to be able to fully exploit the legal devices intended to protect them, while employers manage more frequently to set up strategies to circumvent the law.

Since our goal is not to detail all the known information about protected employees, the following points focus on aspects directly related to the results presented in this chapter.

2. The dismissal rate of protected employees seems close to the average layoff rate in establishments with more than 10 employees.

This section proposes a comparison between the layoff rates of protected employees versus all employees. Available figures on the number of protected employees, on the one hand, and the rate of layoff of all employees, on the other hand, are not necessarily of high quality and controversial (Serverin and Valentin, 2008). However, there are good quality estimates of the average layoff rates in establishments with more than 10 employees based on the use of the data and survey on workforce movements: the *Données sur les Mouvements de Main d'Oeuvre* (DMMO) and the *Enquêtes sur les Mouvements de Main d'Oeuvre* (EMMO). Since there are no workers' representatives in firms with less than 10 employees and therefore no protected workers, it is judicious to compare the layoff rate of workers' representatives to the average layoff rate in firms with more than 10 employees. As a consequence, the fact that the DMMO-EMMO data do not include smaller firms is not a problem for our comparison and the DMMO-EMMO sample provides a good comparison group³⁸. Based on DMMO-EMMO, I try

³⁸The layoff rate appears to decrease with firm size. Estimates of layoff rates obtained on the whole market sector (establishments with less than 10 employees included), using data on enrollments at the ANPE following a layoff, are therefore higher.

to use all available information to produce a comparison of the layoff rates of protected employees versus all employees in firms with more than 10 employees. The results are mainly illustrative.

The Dares estimated to be 550.000 the number of protected employees in the late 90s (Merlier, 2000) ³⁹. At the same time, 15.921 requests for layoff of these employees were made in 1997 and 12.680 in 1998. The result is a request rate equal to 2.9% in 1997 and 2.3% in 1998. 85% of the requests were accepted in 1997 and 86% in 1998. To finely assess the level of layoff of protected employees, it is normally necessary to take into account not only the decisions of the Labor Inspection, but also the subsequent court decisions in case of appeal. Available statistics show that employees almost never contest the decisions of the labor inspector when laid off (they do it in about 2% of cases) while employers contest in about 30% of cases when the decision is not in their favor. Then, when there is an administrative appeal, the Ministry often confirms the decision of the Labor Inspection (in about 75% of cases in 1998, whether the appeal is from the employee or the employer). These figures allow us to evaluate that the final proportion of accepted requests for layoff, before or after an administrative appeal, is close to 85%. The final layoff rate of protected employees would be then around 2.6% in 1997 and 2.1% in 1998.

The DMMO-EMMO data allow us to know quite precisely the request rate for layoff in establishments with more than 10 employees. This field excludes very small firms but, as there are very few workers representatives and therefore protected employees in very small firms, it seems to provide a good comparison group⁴⁰. Annual rates of layoff requests are estimated at 2.7% in 1997 and 2.5% in 1998 (Martin Richet, 2003). These figures are very close to those obtained for protected workers. Unprotected employees can also lodge an appeal to industrial court when laid off. They are almost a third to do so following a dismissal, and it seems that they get

³⁹The method used to get this estimate does not take into account the fact that a protected employee can hold concurrently several positions in workers' organizations and probably leads to overestimate the actual number of protected employees. The layoff rate that will be estimated for protected employees could then be undervaluated because of this problem. Details on the methodology and sources used to estimate the number of protected employees are presented in the notes of the Table 2.11 below.

⁴⁰The layoff rate appears to decrease with firm size. Estimates of layoff rates obtained on the whole market sector (establishments with less than 10 employees included), using data on enrollments at the ANPE following a layoff, are therefore higher.

compensation or reinstatement in about 25% of cases. We unfortunately do not know the relative proportion of reinstatements and layoffs. I made the cautious (and arbitrary) assumption that reinstatements were relatively rare and obtained in only 10% of appeals (in the other 15% of cases, employees only receive damages). This leads to estimate that 98% of layoff for unprotected employees are finally effective, which gives an actual layoff rate close to 2.6% in 1997 and 2.4% in 1998. The estimate of the proportion of layoff requests which are finally accepted after appeal (90%) is obviously questionable. However, even assuming that all requests are accepted, we get actual layoff rates extremely close (they would be 0.1% higher).

Table 2.11 summarizes the results and presents a comparison of different rates in 1997 and 1998, as well as detailed notes on methods and sources used to construct these estimates. It follows: (1) that the estimated rates of layoff for protected employees are very close to those for all employees in establishments with more than 10 employees, (2) that both the estimated rates of layoff for all protected employees and for all employees in establishments with more than 10 employees are lower than the layoff rates estimated for union representatives.

Table 2.11: *Assessment of request rate and actual layoff rate for protected employees in 1997 and 1998*

Year Sample	1997			1998		
	(1) All employees	(2) Protected employees	(3) Union representatives	All workers (4)	(5) Protected employees	(6) Union representatives
Number of employees concerned ^a	23,327,300	550,000	39,450	23,780,500	550,000	39,450
Layoff requests ^b	≈ 1 million	15,921	1,636	≈ 800,000	12,680	1,559
Appeal rate if layoff for economic reasons ^c	2%			2%		
Appeal rate if dismissal for personal reasons ^c	≈35%			≈35%		
Acceptance rate by the Labor Inspection ^d		85%	80%		86%	78%
Final acceptance rate of demands ^e	≈98%	86%	77%	≈98%	87%	80%
Rate of request for dismissal ^f	2.7% (DMMO)	2.9%	4.1%	2.5% (DMMO)	2.3%	3.9%
Actual layoff rate ^g	2.6%	2.5%	3.2%	2.4%	2.0%	3.1%

Notes:

^a: Columns (1) and (4): total employment on 31th, December of that year (Source: INSEE, localized estimates of employment). The estimated numbers of protected employees and union representatives come from various sources (see Merlier, 2000). The final estimate - column (2) and (5) - is obtained by summing estimates for different categories of protected employees: 115.000 elected employees and 115.000 deputies in work councils in 1996 (Ruelland, 1997), 265.000 workers representatives in 1994 (Hamon-Cholet, 1996), 39.450 union representatives in 1993 (Deville, 1996), 7.317 industrial tribunal advisors, 4.160 workers advisors and 13.000 mandated employees. Therefore it does not consider the plurality of positions held and so may overestimate the number of employees actually protected. The estimated number of union representatives dates from 1993, four years before the period 1997-1998. As the unionization rate has declined over the period (from 9.8% in 1993 to 8.3% in 1998), it is unlikely that the number of union representatives has increased significantly between 1993 and 1997-1998.

^b: Source: Merlier, 2000. Data on the layoff of protected employees identified by the Ministry of Labor through the sections of the Labor Inspection and the local government body for labor, employment and vocational training.

^c: Appeals to the industrial court. The vast majority of appeals are related to dismissals. Source: Serverin and Valentin, 2009. Obtained from the *Répertoire Général Civil*.

^d: Source: Merlier, 2000. The acceptance rate for requests for layoff by the Labor Inspection is not provided for union representatives directly in the available data. I have considered instead the average acceptance rate for all unionized protected employees (calculated from data provided by Merlier, 2000, Table 4, p.5).

^e: The final acceptance rates (ie after any legal appeal) of requests for layoff have been estimated from various sources:

For all employees, there is no precise estimate but it seems that about 25% of appeals following a dismissal lead to the rehabilitation of employee (Serverin and Valentin, 2009). In other cases, the appeals do not necessarily fail, but most often lead to the payment of compensation by the employer. In the late 1990s and early 2000s, layoffs have been divided between redundancies and dismissals in proportions close to 2/3-1/3 (eg DARES INDICATORS, February 2011 - No. 014 , Figure 5). Assuming that the appeals after redundancies are routinely lost, we obtain the final acceptance rate shown in columns 2 and 5. The figures are nevertheless subject to considerable uncertainty.

For protected employees and union representatives, the data provided by the DARES allow estimating that employers dispute about 30% of the decisions of the Labor Inspection with a success rate of about 25% of these disputes. Employees contest their layoff only rarely. Applying these rates for both all protected employees and union representatives, we obtain the figures in columns 3, 4, 6 and 7.

^f: In columns (1) and (4), it is the average layoff rate in the sample of establishments with more than 10 employees estimated from DMMO (Richet-Martin, 2003). Another estimate, which would also include small firms, is possible using the job applications registered by the ANPE following layoff. However, the fact that there is virtually no workers representatives in small firms and that the ANPE data are declarative led me to discard them.

The rates for protected employees (including union representatives) are obtained by dividing the number of requests by the number of protected employees.

^g: Obtained by applying the final acceptance rate to layoff request rate. In columns (1) and (4), the acceptance rate is calculated from statistics on all layoffs, while the rate of layoff requests only applies to establishments with more than 10 employees. This assumes implicitly that the acceptance rate of requests is the same for establishments with more and less than 10 employees.

3. There are more layoff requests against CGT protected employees, but these requests are less frequently accepted.

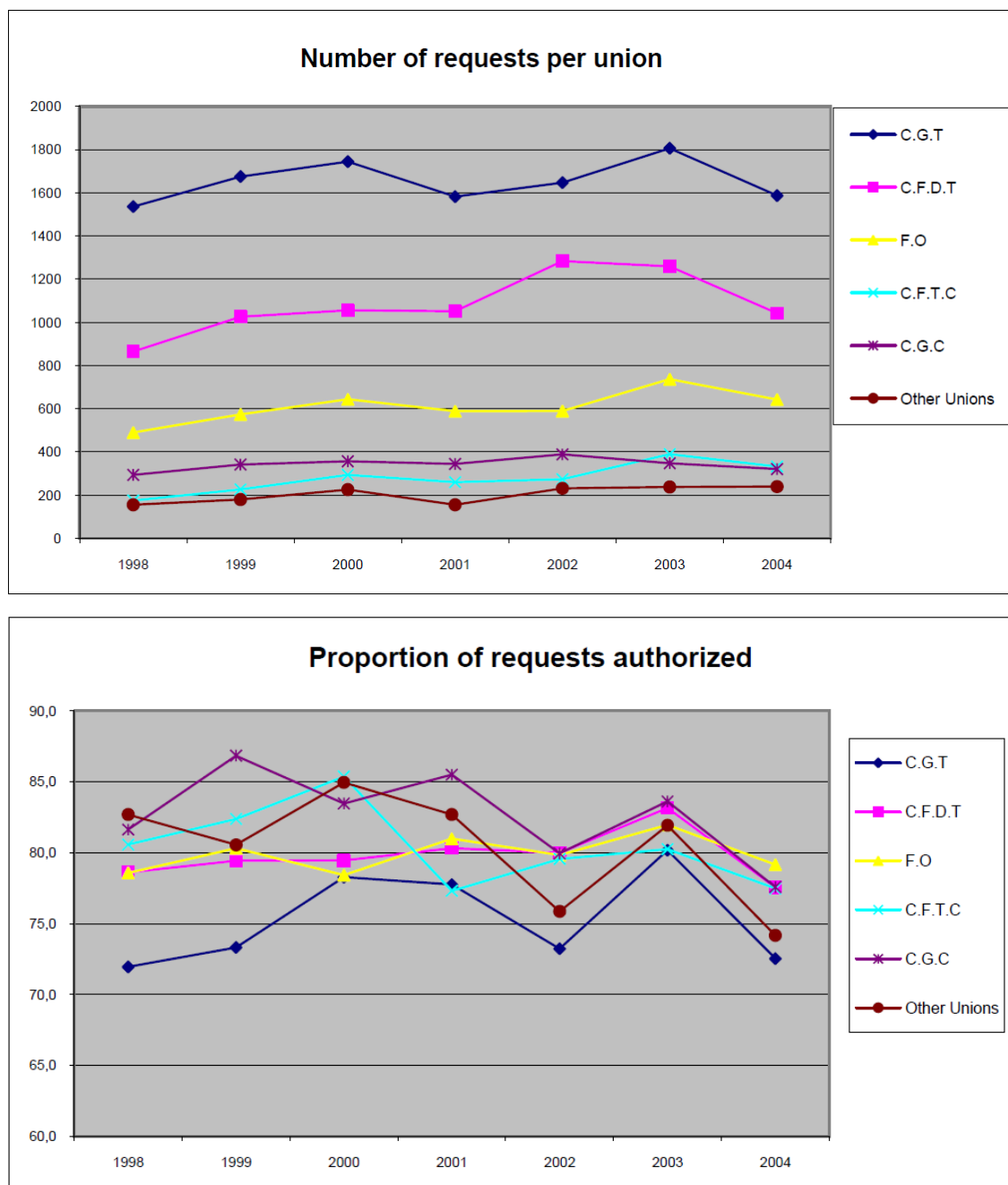
About a third of requests for layoff of protected employees involve unionized employees (4,778 requests compared to a total of 13,440 in 2003). The figures in Figure 2.15 show that there are many more claims against workers affiliated to the CGT union compared to claims against workers affiliated to the CFDT union, even though the two unions are close in size (similar number of members, professional election results and total estimated number of union representatives on the shop floor). In 2004, 38.1% of requests for layoff of unionized protected employees relate to the CGT union, while, for example, only 27% of union representatives from establishments with more than 20 employees are CGT members (see Table 1.1). This overrepresentation of the CGT among layoff requests of protected employees is not occasional since it occurs all years from 1998 to 2004.

Figure 2.15 also shows that requests for layoff of workers affiliated to the CGT union are less often accepted than requests against protected employees affiliated to other unions and non-affiliated. This result appears to be stable over time. From a statistical estimate for the years 2001 to 2003 which controls for observable characteristics of protected employees and of their working establishment (occupational status, number and type of positions held, establishment size, industry and reason for the layoff), De Olivera et al. (2005) have shown that the probability that the Labor Inspection refuses a request for layoff is always stronger when it is a claim against a worker affiliated to the CGT union. All these results could indicate that more employers would try to lay GGT representatives off in a manner contrary to labor law. We then have an additional clue about the particularly negative strategic interaction that could occur between some unions and employers.

4. Protected employees that are members of a union seem more exposed

There are no data on the number of unionized protected employees. It is therefore not possible to compare the rates of layoff request for unionized and non unionized employees. However, it is possible to compare the rates of authorizations granted by

Figure 2.15: *Requests for layoff (all reasons) depending on union affiliation: number and proportion authorized by year. 1998-2004*



Lecture: In 2004, for a total of 1,587 requests for layoff for a protected employee affiliated to the CGT union, 72.5% of them were authorized by the Labor Inspection. Transfers between firms or establishments are not included. *Source:* Data on protected workers, Dares.

the Labor Inspection for unionized and non-unionized employees. In 2004 the Labor Inspection has accepted 87.6% of layoff requests for non-unionized protected employees but only 75.7% of requests for unionized protected employees. The table below shows that such a trend already existed in the late 90s. The previous paragraph has shown that there were, in proportion, more layoff requests for protected employees affiliated to the CGT union, and more frequent refusals from the Labor Inspection. Similarly, the much higher rate of layoff refusal from the to Labor Inspection for unionized employees may indicate a greater propensity of employers to wish to get rid off them in a manner contrary to law. In this sense, the highest rejection rate of the Labor Inspection for unionized employees is an indication of their greater exposure.

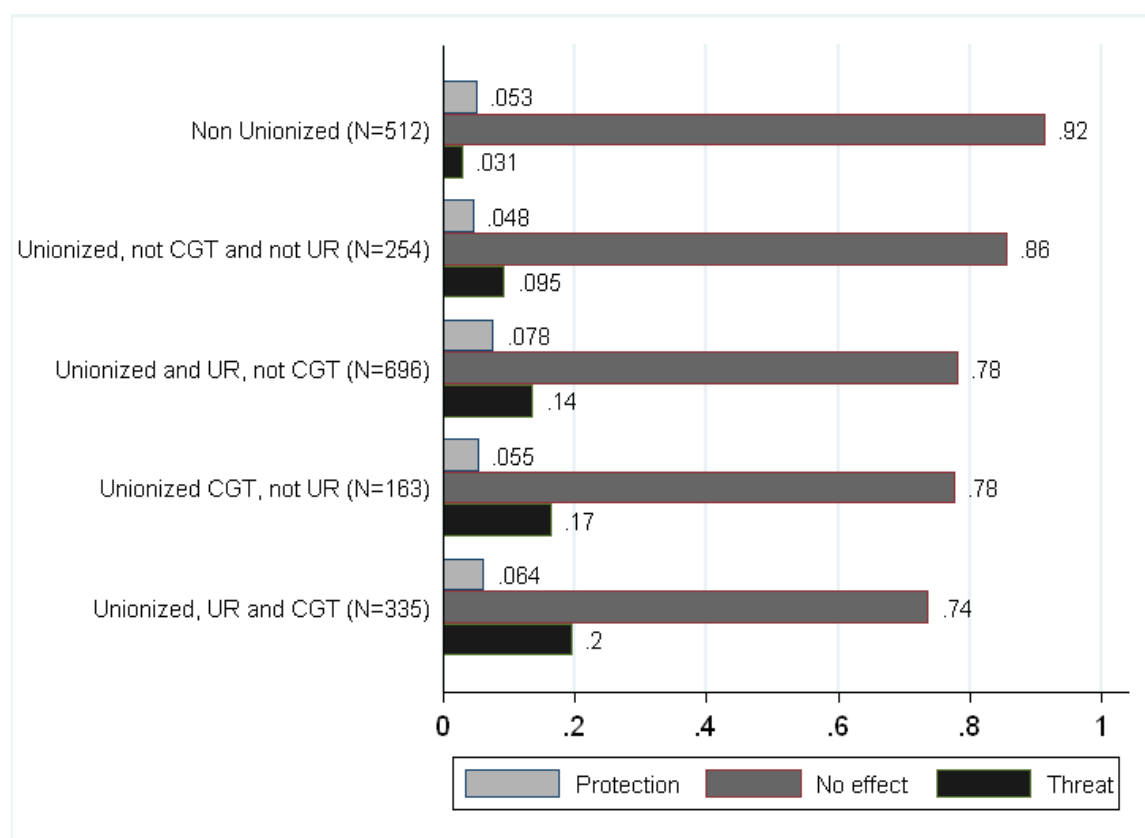
	1997	1998	2003	2004
Union members:	76%	78%	81.6%	75.7%
Non union members:	89%	90%	88.4%	87.6%

5. The previous stylized facts are confirmed by the opinion of representatives concerning the impact of their position on their job security

I use the additional survey on union representatives to provide some results on their opinion concerning the impact that their role of representative has had on their job security. The present analysis is conducted similarly to what was done in subsection 4 to analyze the opinion of the representatives concerning their career.

Two main observations emerge from Figure 2.16. First, most representatives believe that their role of representative is neither a protective nor a threat to their jobs. This result is consistent with the idea that the protection against layoff which benefits to representatives is only moderate. Second, union representatives feel more often than the other representatives that their position of representative is a threat to their jobs: they are 9.4% in this case among non delegates, 14% among delegates and 19% among those who are affiliated to the CGT union. Again, employees' opinions seem consistent with the statistics provided by the Dares.

Figure 2.16: *The opinion of the different types of representatives of the workforce about the impact of their participation in workers' organization on their job security (from the representatives' interviews in REPONSE04)*



Lecture: “UR” means Union Representative. 92% of the 512 representatives in the sample who are not union members declare that the fact to be a representative has no effect on their job security. 20% of the union representatives who are members of the CGT union think that their position has a negative effect on their career.

Source: REPONSE survey. Representatives of the workforce part.

Note: The surveyed representatives of the workforce come from the main workers' organization in the establishment. As a consequence, they cannot be considered as statistically representative of all the representatives of the workforce in the economy.

In order to better control for some of the potential factors that could drive the stylized facts emerging from figure 2.16, I estimate the observable determinants of the representatives' opinions concerning their job security using a series of ordered logit models that allow me to control for the effect of all the relevant observable characteristics available in the data. The control variables used in these models are strictly equivalent to the ones used in table 2.9. The estimates are presented in Table 2.12.

The previous stylized facts are globally confirmed: union members declare more often than non union members that their position of representative has a negative effect on their job security. This is even more the case if they are affiliated to the CGT union. However, the opinion of union representatives is similar to that of representatives that are union members without being a union representative. The second column gives the marginal effect (at the mean) of these variables on the probability that a representative declares that his position has a negative impact on his career. The latter probability is 3% higher for union members than for non union members and 6% higher for union members affiliated to the CGT union than for non union members. It also appears that the probability to declare a negative impact on the career increases by almost 0.17 percent per additional year of seniority as a representative within the establishment. Finally, the probability that a representative declares a negative impact of his position on his job security increases with establishment size. All these results are robust to the inclusion of additional controls (see models 2 and 3) ⁴¹.

⁴¹The reader interested in additional keys concerning the construction of table 2.12 and the interpretation of its results should look at the discussion going with table 2.9.

Table 2.12: *When do representatives think that their participation in a workers' organization has had a negative impact on their job security? Estimation from a series of ordered logit regression (REPONSE04)*

<i>Dep. var.: representatives' opinion concerning the impact of their position on their job security (variable taking values -1 for a positive impact, 0 for no impact and 1 for a negative impact)</i>				
	(1: estimate)	(1: marginal effect)	(2)	(3)
<i>Individual characteristics (ref.: non unionized male manager with at least some college education)</i>				
Union member	0.335* (0.20)	0.0303* (0.02)	0.335* (0.20)	0.355* (0.21)
Union Representative	0.0444 (0.15)	0.00427 (0.01)	0.0672 (0.15)	0.0420 (0.16)
Member of CGT union	0.369** (0.15)	0.0381** (0.02)	0.404*** (0.15)	0.355** (0.15)
Seniority as a representative within the workplace	0.0180** (0.01)	0.00173** (0.00)		0.0593** (0.02)
Seniority as a representative				-0.0334 (0.02)
Tenure			0.00453 (0.01)	-0.0182 (0.01)
age	-0.000854 (0.01)	-8.21e-05 (0.00)	0.00626 (0.01)	0.00528 (0.01)
woman	0.0358 (0.15)	0.00347 (0.01)	0.0298 (0.15)	0.0319 (0.15)
Non-qualified blue-collar	0.00899 (0.30)	0.000868 (0.03)	0.0414 (0.30)	0.0121 (0.32)
Qualified blue-collar	0.191 (0.21)	0.0190 (0.02)	0.212 (0.21)	0.140 (0.24)
Clerk	-0.0143 (0.22)	-0.00137 (0.02)	0.0157 (0.22)	-0.0209 (0.24)
Intermediate occupation	-0.0383 (0.19)	-0.00365 (0.02)	-0.0130 (0.19)	-0.0170 (0.20)
Manager/Supervisor	REF	ref	REF	REF
No education at all				0.260 (0.22)
Vocational training				0.0691 (0.19)
High school				-0.222 (0.20)
More than high school				REF
<i>Establishment characteristics: (ref: more than 500 workers)</i>				
20-50 Workers	-0.244 (0.22)	-0.0220 (0.02)	-0.285 (0.22)	-0.202 (0.22)
51-100 Workers	-0.355 (0.22)	-0.0309* (0.02)	-0.377* (0.22)	-0.316 (0.22)
101-200 Workers	-0.220 (0.18)	-0.0202 (0.02)	-0.234 (0.18)	-0.197 (0.18)
201-500 Workers	-0.426** (0.19)	-0.0367** (0.01)	-0.440** (0.19)	-0.387** (0.19)
industries and regions dummies	yes		yes	yes
Observations	1936		1934	1914

Notes: All estimates include 16 indicators for industries and 10 indicators for regions. The dependent variable takes values -1, 0 and 1 and is ordered from being a representative having a positive impact to a negative impact on the job security. The second column present the marginal effect (at the mean) on the probability to declare that being a representative has a negative impact on the career for the covariates included in model (1).

*: significant at the 10% level. **: significant at the 5% level. ***: significant at the 1% level.

2.5.2 Legal proceedings for anti-union discrimination

In parallel with the so far complete absence of data (and then studies) on how union representatives are treated, there are many anecdotal evidence of “anti-union discrimination”. Legal proceedings for anti-union discrimination are indeed frequently initiated by union representatives. The CGT union has won legal proceedings in more than one hundred firms. 169 militants have received financial compensation from Peugeot, more than 700 from Renault and 230 from Airbus. In 2004, negotiations were completed in large groups including Dassault, EDF, EADS, or SNPE Tracma. Others were in progress at Thales and Valeo. Finally, about sixty cases were under way before courts in 2004 (Semaine sociale Lamy, November 15, 2004, no. 1190) ⁴².

This contrasts with the situation of discrimination between men and women. The wage differential between men and women is well known and measured, and is closely followed by statisticians and researchers worldwide. Many studies allow attesting that women remain paid about 15% less than men in France. This good knowledge of the wage gap between men and women has certainly provided the basis for the development on March 23th, 2006, of the law on gender diversity and on professional equality between men and women. The law followed the inter-professional agreement dated March 1st, 2004. It imposed the social partners to negotiate each year to define and program actions to suppress the gender wage gap before December 31st, 2010, as part of the annual negotiations on salaries both at the branch and at the firm level. In parallel with this good statistical knowledge and with the subsequent legislative progress, there are paradoxically relatively few cases of gender discrimination trial.

This section quickly presents the genesis and functioning of legal actions for anti-union discrimination, and the junctions possible, in terms of law, between anti-union

⁴²The press, including *Le Monde* and *Libération*, regularly reports on trials for anti-union discrimination. See for example the articles available online at the site of *Libération* :

- a good article on the positions of the various actors concerned: <http://www.liberation.fr/economie/0101408350-discrimination-syndicale-les-entreprises-se-rachetent-une-conduite>
- on Peugeot: <http://www.liberation.fr/economie/0101254978-peugeot-regularise-ses-syndiques-promotions-salaires-les-militants-ne-seront-plus-penalises>
- on Michelin: <http://www.liberation.fr/economie/0101470508-discrimination-syndicale-michelin-relaxe>
- on Nestlé: <http://www.liberation.fr/economie/0101593171-le-syndicaliste-qui-valait-608-000-euros>

discrimination and men / women discrimination.

Genesis of legal actions for anti-union discrimination

The first collective legal battle against union discrimination took place in the late 1990's at Peugeot in Sochaux. It is the result of an individual combat, that of François Clerc, a CGT militant particularly determined. In 1994, the CGT union representatives in Peugeot began to collect their payroll and comparing their career to the career of their non-unionized or non representative colleagues. They brought their case to the industrial tribunal of Paris in December 1995. The tribunal made a favorable decision, as well as the Court of Appeal of Paris in June 1996. After two more years of failed negotiations and judicial adventures, compensation for discriminated representatives were finally negotiated in spring 1998 with the new management of the group (Jean-Martin Folz), who is more conscious of social dialogue.

Legal action as a mean to defend its interests is not obvious at all to a union, especially a union like the CGT, whose anarcho-union trend is enshrined in its constitution. The judiciary milieu is perceived as a middle or upper-class one. Using the legal instrument means using the instrument of the class opponents. The method itself, its slowness, its inertia, the principle of the rule of *res judicata* do not fit in the tradition of spontaneous revolutionary action originally advocated by the CGT. Last point, which is perhaps the most interesting one: career sacrifice is seen by activists as a normal situation. On the one hand because they are perfectly used to this situation and have never really seen the possibility of a different situation. Moreover, because the militants are attached to their martyr situation and seem inclined to be satisfied with a position of victims that they are not ready to give up (Beaud and Pialoux, 1999). They would have the culture of sacrifice. About an indemnity agreement, Fred Dijoud, the CFDT activist quoted by Liberation explains: "Some friends have refused to benefit from the agreement. They feel they were aware of the risks of their commitment to the union." Besides a CGT member also argues that "being discriminated is the proof that we are not bribed by the management".

For all these reasons, the legal battle led by François Clerc and his fellow militants of the CGT Peugeot Sochaux has initially received no support from the union

confederation, who was originally opposed. More than 10 years later, attitudes have changed a bit: François Clerc is now permanent headquarters of the CGT (at the metallurgy confederation) where he is helping grassroots militants in their efforts to lodge an appeal for anti-union discrimination. However, the use of the legal tool remains a source of divisions at the CGT and is still far from unanimous⁴³.

Functioning of legal actions for anti-union discrimination

First approximative, the method used by union representatives to prove that they are the subject of discrimination is now well established. They start collecting for each potentially discriminated unionized worker what they call a "panel of comparisons", by finding career evolution of employees who joined the company along with them and were equally qualified. To do this, they use the single register of workforce which contains the age, seniority, gender, employment and qualification of each employee, as well as the preparatory document to wage negotiations which contains the average wages. Once a folder containing facts is well established, union representatives solicit the Labor Inspection who carries out, on its side, comparisons of career curves from more comprehensive data (unlike union representatives Labor Inspection has access to the individual salary of all employees). When the Labor Inspection reaches the same conclusions as the representatives (which is almost always the case), they alert the management that they are able to establish the existence of an anti-union discrimination. If the management is willing to discuss negotiations are open. If not (in most cases), representatives lodge an appeal, civil or criminal.

From a statistical point of view, trade unionists try to show the judges that the careers of some of them stop exactly when they take a trade union office, while most of their colleagues continue to progress. This method (the "Clerc method") has gradually established itself and has been recognized by courts as a valid method to indicate a presumption of discrimination ⁴⁴. The "method Clerc" provides an easy

⁴³A sociography of representations associated with the function of a union representative is far beyond the scope of this thesis. Such a study as well as a work on the evolution of attitudes towards union discrimination trials could offer a particularly fertile ground for those wishing to understand the recent changes in trade unionism in France

⁴⁴Here again, the study of the appropriation of statistical tools in the legal field is beyond the scope of this thesis, but seems to offer a promising subject for study.

way to calculate the damages: it is a simple calculation of the integral over time of wage differences between the militant (from the date on which he took its mandate) and the average salary of his colleagues who arrived in the company at the same time and equally qualified. The former professional worker François Clerc explains: we trace the evolution curve of the militant wage, the wage evolution curve of employees of its panel of comparisons and the amount of damages is equal to the area of the triangle between the two curves.

The principle of the presumption of innocence is enshrined in the Declaration of the Rights of Man and the Citizen of 1789 and it is therefore constitutional in France. One of its immediate consequences is that the burden of proof rests on the prosecution. For discrimination at work, demonstrating a difference in treatment (through comparisons of career profiles) cannot constitute evidence of discrimination. The difference in treatment between different employees may in fact reflect a difference in competence. Furthermore, individual measures for employees, even right to subjective assessment, are essential prerogatives of the employer. Thus, an employee who is suing his employer for discrimination must both be able to show that there is a difference in treatment between him and his colleagues and that this difference does not reflect his lower skill level. This second point is very complex in practice to prove as the “competence” or “productivity” of an employee is essentially impossible to measure. The prosecution can work around this difficulty if the employer did not offer training to the potentially discriminated employee. Indeed, employers have a duty to provide re-skilling training to employees whose skills become outmoded or obsolete. Thus, an employer who did not offer vocational training to an employee during his career should not be able to argue that the employee is less paid because he is less competent. However, such situations seem to remain difficult to demonstrate in practice.

Article L1134-1 of the Labor Code introduced by the Act of November 16th, 2001, now regulates the unilateral power to employers in the execution of the work relationship and seems to have fundamentally changed the legal proceedings relating to discrimination at work. Article L1134-1 sets up what is commonly called the

“shifting of the burden of proof” (*“aménagement de la charge de la preuve”*) or even the “reversal burden of proof” (*“renversement de la charge de la preuve”*) in civil proceedings. It defines (section 4) that the allegation of proof relies on the employee while the burden of proof is now up to the employer: “In case of dispute on the application of the preceding paragraphs, the employee concerned (...) presents facts suggesting the existence of a direct or indirect discrimination. In view of this, the defendant has to prove that his decision is justified by objective factors unrelated to any discrimination. The judge gives his conviction after ordering, if necessary, all investigative measures he considers to be necessary” (translation by the author).

Since then, the procedure seems relatively well mapped for potentially discriminated employees. They start establishing a file and carrying out career comparisons between potentially discriminated employees and their colleagues. Then, they solicit the Labor Inspection for confirmation of their claims and try to open negotiations with their employer. If they fail, they can initiate a civil or criminal proceeding for anti-union discrimination. The reversal of the burden of proof introduced by the Act of November 16th, 2001, for civil proceedings seems to greatly facilitate their work and give them a good view of the potential outcome of the trial. The many successes appear to attest it⁴⁵.

2.6 Conclusion

The theoretical examination of the interaction between union representatives and employers has underlined that an accurate modeling of intra-firm bargaining should take into account two crucial specificities of such a bargaining. First, the union representative is both bargaining with the employer and under her authority as a salaried worker. It implies that the employer has some idiosyncratic power on the representative situation that she may use. Second, the representative’s individual incentives are not automatically aligned on his coworkers’. A careful modeling of the potential agency problems within the union are thus necessary in order to be able to

⁴⁵In 2008, a law reducing to five years the duration of the limitation period for a large number of civil proceedings has almost closed union discrimination trials. This was finally not the case. See legal appendix for more details.

make accurate predictions on the possible outcomes of the bargaining.

The empirical part of this chapter has shown that union members in France are slightly less paid than their non-unionized coworkers. When this wage gap is broken apart between union representatives, who bargain for all the employees in their workplace with the employer, and the workers who are only unionized, a clear pattern appears: only unionized workers earn as much or even slightly more than non-unionized ones whereas union representatives are paid 8 to 11% less, even in specifications that control for workplaces fixed effects.

A non-cooperative game probably takes place between employers and union representatives, which leads the employer to discriminate against the representatives. Such an exclusive interaction which does not comprise the other workers is made easier by the French legal context in which union representatives are not democratic representatives of their coworkers (they are not elected). Empirical results reinforce the idea that a non-cooperative game takes place: the most penalized union representatives are precisely those from the least cooperative union and those with the longest tenure.

To my knowledge, this research is the first on union representatives. It has the virtue to reveal an unknown important statistical fact that concern many workers: in France, even if unionization rates are low, there are still more than 1 million unionized workers in the private sector and, in 2004, probably more than 100,000 of them are union representatives⁴⁶. The other types of representatives of the workforce may also have, at least in some extent, lower wages than the workers who are not a representative.

But the phenomenon does not concern only the representatives. Every worker is affected by within firm collective representation or bargaining. Beyond being a possible case of discrimination against some workers, the potential wage penalty for representatives can also imply an absence of collective bargaining in some cases or a dysfonctionning collective representation in some other cases. Before discussing the possible interpretations of the wage penalty for union representatives, this research indeed indicates a potential disfonctionning of the French system of industrial rela-

⁴⁶According to my own estimations made using the REPONSE survey in 2004 .

tions: whatever the reason is, it does not look normal that the within-firm negotiators get wages that are 10% lower than the wages of the workers for whom they bargain.

Finally, union representatives are not observable directly in the data and their potential number (128) is relatively small. Further research on this topic and direct data collection on union representatives would be necessary in order to get more precise estimates of the exact value of the wage differential between union representatives and the workers they represent. Such data should be available soon. Indeed, when the scientific committee in charge of the 2011 REPONSE survey met for the last time during the spring 2010, I already had first results on the union representatives' wages and I could convince them to include a direct question on union representatives in the workers part of the next survey. In the 2011 REPONSE survey which should be available in January 2012, workers will thus be asked both if they are a union member and a representative of the workforce. With these two pieces of information, a deeper empirical analysis will be made possible. The new data should also allow to test more sophisticated theoretical predictions and to link far more closely theory and evidence than this study currently does. As a consequence, our current understanding of the negotiations between union representatives and employers could be greatly improved. This looks like a promising research avenue that can potentially have implications going far beyond the single field of industrial relations. We are still far from there, but a better understanding of the ins and outs of within firm bargaining should make it possible to provide solutions to improve the workers' bargaining power – either directly through solutions given to unions and workers, or through the design of adequate public policies. This in turn can have implications on overall inequalities. Fiscal policies seem politically difficult to implement in order to put an end of the recent increase in income inequalities (see Piketty, 2001 and Landais, 2007 for France). In this context, solving the main dysfonctionning of our industrial relation system(s) in order to increase the bargaining power of workers appears as a more direct and natural solution.

2.7 Mathematical appendix: Proof of propositions 1 and 2.

The term $e_{ij} = UR_{ij} - p_j U_{ij}$ can be seen as a measurement error: the difference between the fact and the probability to be a union representative. By construction, this term verifies 2 properties enonced in the following lemmas:

Lemma 1: $\mathbb{E}[e_{ij}] = 0$

Proof: We have $\mathbb{E}[e_{ij}|U_{ij} = 0] = 0$ (because non-unionized workers cannot be union representatives) and $\mathbb{E}[e_{ij}|U_{ij} = 1] = P(UR_{ij} = 1)(1 - p_j) + P(UR_{ij} = 0)(-p_j) = p_j * (1 - p_j) + (1 - p_j) * (-p_j) = 0$. This implies Lemma 1.

Lemma 2: $Cov(p_j U_{ij}, e_{ij}) = 0$

Proof: First, $Cov(p_j U_{ij}, e_{ij}) = \mathbb{E}[(p_j U_{ij} - \mathbb{E}[p_j U_{ij}])(e_{ij} - \mathbb{E}[e_{ij}])] = \mathbb{E}[p_j U_{ij} e_{ij}]$. Next, we have:

$$\begin{aligned} \mathbb{E}[p_j U_{ij} e_{ij} | U_{ij} = 0] &= 0 \\ \mathbb{E}[p_j U_{ij} e_{ij} | U_{ij} = 1] &= \mathbb{E}[\mathbb{E}[p_j e_{ij} | UR_{ij} = 1] P(UR_{ij} = 1) \\ &\quad + \mathbb{E}[p_j e_{ij} | UR_{ij} = 0] P(UR_{ij} = 0) | U_{ij} = 1] \\ &= \mathbb{E}[p_j (1 - p_j) * p_j - p_j (-p_j) * (1 - p_j)] \\ &= 0 \end{aligned}$$

Consequently, $Cov(p_j U_{ij}, e_{ij}) = 0$ ⁴⁷.

Noticing that $UO_{ij} = U_{ij} - UR_{ij} = (1 - p_j) * U_{ij} - e_{ij}$ and plugging $p_j U_{ij}$ and $(1 - p_j) U_{ij}$ in equation 2.3. We get:

$$\ln(w_{ij}) = \alpha_1(p_j * U_{ij}) + \alpha_2((1 - p_j) * U_{ij}) + \beta X_i + \eta_j + u_{ij} + (\alpha_1 - \alpha_2)e_{ij}.$$

$\mathbb{E}[u_{ij} | p_j U_{ij}] = \mathbb{E}[u_{ij} | UR_{ij} - e_{ij}] = 0$ because we have assumed that $\mathbb{E}[u_{ij} | UR_{ij}] = 0$ and supposed that u_{ij} and e_{ij} are not correlated. $\mathbb{E}[e_{ij} | p_j U_{ij}] = 0$ also follows from Lemmas 1 and 2.

Denoting $v_{ij} = u_{ij} + (\alpha_1 - \alpha_2)e_{ij}$ the residual in the econometric equation above, we

⁴⁷Note that e_{ij} should not be seen as a classical measurement error. Indeed, the classical error in variable assumption that econometricians would have in mind when dealing with measurement errors would be $Cov(UR_{ij}, e_j) = 0$, that is, the measurement error is not correlated with the true value of the considered variable. This assumption is obviously wrong here since $\mathbb{E}[e_{ij} | UR_{ij} = 0] < 0$ and $\mathbb{E}[e_{ij} | UR_{ij} = 1] > 0$.

finally have $\mathbb{E}[v_{ij}|p_j U_{ij}] = 0$, which is a sufficient condition to prove that the OLS estimation of 2.4 provides consistent estimates of α_1 and α_2 .⁴⁸

Also, if u_{ij} is uncorrelated with e_{ij} , we immediately have that $\sigma_v^2 = \sigma_u^2 + (\alpha_1 - \alpha_2)^2 \sigma_e^2$.

QED.

⁴⁸Note that the estimates of β and η_j could be biased if $\mathbb{E}[v_{ij}|X_i, \eta_j] \neq 0$. That will occur if $\mathbb{E}[e_{ij}|X_i, \eta_j] \neq 0$. The measurement error e_{ij} actually plays the role of an omitted variable: not having it in the regression biases the estimation for the variables that are correlated with it. As, by construction $p_j U_{ij}$ is not correlated with e_{ij} , it follows that the estimates of α_1 and α_2 are unbiased.

2.8 Legal appendix: recent developments and extension of proceedings to men/women discrimination

Legal action has been much more developed in terms of anti-union discrimination than in matters of gender discrimination, even though discrimination between men and women is much better known and studied and probably a little more statistically significant. One possible explanation for this phenomenon is the progressive involvement of union organizations in legal proceedings. Using the legal tool seems actually very difficult for a single employee who does not benefit from the support of a large organization with its own legal unit and financial resources.

The methods used in the case of anti-union discrimination and the relatively consistent associated jurisprudence begin to be applied to cases of men / women discrimination. The case of Marie-Guyty Niel, trader at BNP-Paribas and a graduate from HEC, is an emblematic case. First, because it is Francois Clerc himself, and on his behalf part of the CGT, who helped Ms. Niel to build her case for discrimination and who pleaded in her favor as an expert at the hearing to the High Authority against Discrimination and for Equality (HALDE). By a decree of May 5th, 2010, the Court of Appeal of Paris has condemned BNP-Paribas to pay nearly 200,000€ of compensation to Ms. Niel for all damages suffered. It is not without irony that the CGT, the union historically in favor of workers, was found to be associated with the defense of a trader, whose annual gross salary still exceeds 50,000€ in 2006 i.e. more than the salary earned by 99.9 % of workers (based on exhaustive data from the ESS2002 survey).

Beyond its symbolic force, the case of Mrs. Niel illustrates how the legal advances obtained concerning mostly union discrimination have gradually extended to the much wider field of gender discrimination. As stated in the newspaper *Liberation*, Ms. Emmanuelle Boussard-Verrecchia, Ms. Niel's lawyer in the case of discrimination at BNP Paribas : "What frightens employers is that after cases of unionized discriminated workers come those of women, which are many more numerous".

A final legal rebound seems to indicate that the increase in trials about discrimina-

tion at work, notably in civil proceedings, is beginning to cause concern. In November 2007, Senator Jean-Jacques Hyst (UMP) has proposed an law to reduce to five years (instead of thirty years now), the duration of the prescription for civil proceedings. The law as it was originally proposed, would have completely changed the situation of discrimination in the workplace. Indeed, discrimination is slow to appear because it takes the form of non-wage increase and not of immediate decrease. Therefore long time series are needed to determine the wage differential treatment. Also, the compensation asked by the complainant relates to long periods, while the new law would have only permitted compensation over five years, greatly limiting the financial risk for companies that are discriminating.

The law was actually voted on June 17th, 2008. But the original text relating to discrimination was amended in the last minute. Thus, Article L. 1134-5 which stated in its original form that “The time limit for proceedings to get reparation of the damage suffered from discrimination is five years starting from discrimination” was ultimately edited as follows: “The time limit for proceedings to get reparation of the damage suffered from discrimination is five years starting from the revelation of the discrimination”. The apparently in extremis addition of the expression revelation seems to completely eliminate the risks mentioned above. Indeed, the new law, as it is finally formulated, simply requires employees who have built a case that reveals evidence of discrimination (by comparisons of career paths) to go to court within five years after building the case. The new provision is therefore very little compelling and the “legal structure” which had been previously built by employee parties was finally saved.

Deuxième partie

CAPITALISME FAMILIAL ET CONDITIONS D'EMPLOI

La seconde partie de cette thèse étudie les différences entre entreprises familiales et non familiales du point de vue de leur gestion de la main d'œuvre. Les entreprises familiales y sont définies comme les entreprises dont la propriété n'est pas totalement *diversifiée*, c'est à dire les entreprises dont une part importante est détenue par un nombre restreint d'individus. Ces individus sont typiquement le fondateur de l'entreprise, les membres de sa famille ou ses descendants.

Une caractéristique notable des entreprises familiales est leur forte capacité à éviter la présence syndicale. Les syndicats sont présents dans seulement un quart des établissements appartenant à une entreprise familiale alors qu'ils sont par ailleurs présents dans la moitié des établissements qui n'appartiennent pas à une entreprise familiale⁴⁹. Bien sûr, la taille en moyenne plus petite des entreprises familiales explique en partie cet écart. Cependant, même en contrôlant pour les différences de taille (5 groupes différents), de région (10 régions différentes) ou de secteur d'activité (323 secteurs différents), on observe toujours que les établissements d'entreprises familiales ont une probabilité de l'ordre de 15% inférieure d'avoir des syndicats⁵⁰. L'étude des entreprises familiales proposée dans cette seconde partie s'apparente donc en partie à l'étude des entreprises *sans* syndicats. En ce sens, elle complète l'étude de la négociation et des entreprises avec syndicats proposée dans la première partie.

Mais pourquoi n'y a-t-il pas de syndicats dans les entreprises familiales ? L'explication traditionnellement proposée est qu'elles ont un avantage comparatif pour mettre en place des pratiques managériales dites *paternalistes*. Comme expliqué en introduction, l'idée du paternalisme est d'établir une communauté de travail dans laquelle les intérêts des travailleurs et des dirigeants sont inextricablement liés. De la même manière qu'un père avec ses enfants, l'employeur paternaliste se veut bon avec ses salariés mais il fait figure d'autorité. S'opposer à ses décisions ou négocier dans ses conditions est l'équivalent d'un parricide (voir Philippon, 2004).

Cependant, lorsque nous tentons de contrôler également pour les différences de

⁴⁹Statistiques pondérées produites par l'auteur pour l'année 2004 à partir de l'enquête REPONSE (pondérations au niveau des établissements fournies par la Dares).

⁵⁰Résultats obtenus par l'auteur à partir de l'enquête REPONSE04. Ces résultats sont statistiquement très significatifs (p-value inférieure à un millième), robustes à l'utilisation de jeux de contrôles alternatifs et à l'utilisation de différents modèles statistiques (linéaire, probit, logit).

pratiques managériales entre entreprises familiales et non familiales, l'écart de présence syndicale entre les deux types d'entreprises demeure pratiquement inchangé. Comment l'expliquer ? Il se peut que les mesures des pratiques managériales que nous utilisons soient mal adaptées pour capturer ce qui fait l'essence du paternalisme. Mais il est également possible que les pratiques managériales paternalistes ne suffisent pas à expliquer l'écart massif de présence syndicale entre entreprises familiales et non familiales. Plus précisément, l'explication, telle qu'elle est traditionnellement formulée, est probablement trop globale pour permettre de comprendre exactement les mécanismes par lesquels les entreprises familiales parviennent à éviter les syndicats.

A partir des travaux proposés dans la première partie de cette thèse, il est possible de suggérer une nouvelle théorie qui vient préciser et compléter l'explication traditionnelle. D'abord, dans le cas français, comprendre la présence syndicale revient largement à comprendre la décision *individuelle* de devenir délégué syndical. En effet, il ne peut y avoir de syndicat en l'absence de salariés volontaires pour être délégués syndicaux. Le modèle théorique du chapitre 2 a montré que les employeurs pouvaient avoir intérêt à discriminer les délégués syndicaux pour éviter la présence syndicale. La partie empirique du même chapitre montre qu'une telle discrimination a probablement lieu. Dans ce contexte, l'importance du préjudice ou de la discrimination que subirait un salarié qui deviendrait délégué peut expliquer l'absence de délégués syndicaux et donc de syndicats dans certaines entreprises. Retranscrit dans le cas qui nous concerne, cela signifie que si les entreprises familiales sont davantage à même de discriminer les délégués, il est alors logique qu'elles parviennent mieux à éviter les syndicats.

Il reste à comprendre pourquoi les entreprises familiales seraient mieux à même de discriminer les délégués. Dans le modèle proposé dans le chapitre 2, la discrimination prend la forme de la suppression du contrat implicite qui existe traditionnellement entre salariés et employeurs. Ce choix de modélisation est fondé par les éléments suivants : (i) on observe effectivement empiriquement un contrat implicite entre employeurs et salariés (*i.a.* Abraham and Farber, 1987 ; Topel, 1991) et ce contrat peut avoir pour objectif de résoudre des problèmes d'agence dans l'entreprise (Harris and

Holmstrom, 1982), (ii) il n'est pas possible d'abaisser immédiatement le salaire d'un employé qui devient délégué syndical et la discrimination ne peut apparaître que sur le long terme par une différence d'avancement du délégué par rapport aux autres salariés. Le contrat implicite classique en économie du travail peut donc être facilement amendé afin d'être (*implicitement*) conditionnel de ne pas devenir délégué syndical. Et l'on peut imaginer que ce nouvel élément implicite du contrat est d'autant plus fort dans les entreprises familiales : pour reprendre la métaphore habituelle, on comprend qu'un salarié osant remettre en question l'autorité paternelle de l'employeur en venant négocier puisse s'exposer à une sévère punition.

Mais l'argument peut également être formulé sans invoquer la métaphore un peu trop rhétorique de la figure paternelle⁵¹. Les entreprises familiales sont connues pour avoir des horizons temporels plus longs (Anderson and Reeb, 2003) et elles devraient pouvoir par conséquent s'engager plus facilement sur des contrats implicites avec leurs salariés. Si les contrats implicites sont effectivement plus forts dans les entreprises familiales, le salarié qui rompt le contrat en devenant délégué syndical dans ces entreprises perd donc davantage. Des contrats implicites plus importants dans les entreprises familiales peuvent donc impliquer une discrimination potentielle plus forte pour les salariés devenant délégués, ce qui expliquerait alors qu'il y ait moins de délégués dans ces entreprises.

Les données semblent supporter au moins partiellement cette explication : avec la technique développée dans le chapitre 2, on peut mesurer que la pénalité salariale pour les délégués est plutôt plus forte dans les entreprises familiales⁵². Bien sûr il y a des problèmes de sélection : si la décision de devenir délégué dépend de la pénalité potentielle, nous observons alors davantage de délégués là où la pénalité potentielle est faible et ces écarts entre entreprises familiales et non familiales doivent donc par conséquent être interprétés avec précaution. Plutôt que de mesurer la discrimination induite sur les délégués, on pourrait alors vouloir mesurer directement les contrats

⁵¹Nous considérons cette métaphore trop rhétorique parce qu'elle mène à une explication imagée et par conséquent vague et imprécise. Cette explication ne spécifie pas clairement comment sont mises en place les stratégies et comment sont prises les décisions des différentes parties prenantes.

⁵²Résultats obtenus via des spécifications identiques à celles proposées dans le chapitre 2. Les écarts entre entreprises familiales et non familiales de pénalité salariale pour les délégués sont importants dans les spécifications qui ne contrôlent que par le diplôme, l'âge (linéaire et au carré) et le sexe des salariés (qu'elles incluent des effets fixes par établissement ou non).

implicites offerts par les entreprises familiales. C'est ce que le chapitre 3 présenté dans cette partie se propose de faire. Le travail réalisé se veut cependant plus général et il dépasse le cadre strict d'une étude des relations professionnelles. Nous essayons de comprendre les types de contrats implicites qui existent ainsi que leur contenu. Plus précisément, le chapitre 3 montre que les entreprises familiales son en mesure d'offrir une meilleure protection de l'emploi mais que celle-ci est compensée par de moins bons salaires. Nous étudions également en quelle mesure les salariés répondent à ces différences de situation. En particulier, nous montrons que les meilleurs salariés (et probablement aussi les plus carriéristes) vont davantage travailler dans les entreprises non familiales.

Chapitre 3

Working in family firms : less paid but more secure ?

The work presented in this chapter was realized in collaboration with Andrea Bassanini, Eve Caroli and Antoine Reberioux.

3.1 Introduction

Firm heterogeneity has attracted much interest in recent years. There is growing evidence that, even within narrowly-defined industries, firms are persistently heterogeneous in several respects, including productivity, employment dynamics and wages, and that this is partly explained by firm specific attributes (see e.g. Syverson, 2011, Davis et al., 2006, Abowd et al., 1999b). One key characteristic of the firm is corporate ownership, with the two most common types of ownership being family firms and firms with no dominant owner. The literature on family firms has traditionally focused on corporate performance, trying to assess whether family firms are efficient¹ or whether they give rise to private benefits of control (see e.g. Bertrand and Schoar, 2006).

¹ The empirical evidence on this point is far from being clear cut. Some papers find that family firms out-perform widely-held firms (Anderson and Reeb, 2003; Villalonga and Amit, 2006; Sraer and Thesmar, 2007; Fahlentz, 2009). In contrast, other studies provide evidence that family firms under-perform (Claessens et al, 2000; Morck et al, 2000; Cronqvist and Nilsson, 2003; Bloom and Van Reenen, 2007) in particular when control is passed on to the descendants (Perez-Gonzalez, 2006; Bennedsen et al, 2007; Villalonga and Amit, 2010).

The consequences of firm ownership for employee compensation have been much less researched so far. The existing literature focuses almost exclusively on pay, and more specifically on CEO and managerial pay, with most papers suggesting that top executives earn less in family firms than in non family ones – see Gomez-Mejia et al. (2003), Bach and Serrano-Velarde (2009) and Bandiera et al. (2010). In contrast, the pay level of non-managerial workers has been largely neglected. Moreover, employee compensation cannot be reduced simply to pay. It has been shown that workers are concerned by job insecurity – and, in particular, by the risk of job loss (see Valletta, 2000, Nickell et al., 2002 and Clark and Postel-Vinay, 2009) – and that they are ready to trade-off lower wages against less churning by their employer (Böckerman *et al.* 2011). The literature in finance suggests that families have longer time horizons than non-family shareholders so that they can more credibly commit to implicit contracts (Anderson and Reeb, 2003). As a consequence, family firms would have a comparative advantage at establishing long-term employment relations, thereby offering greater job security to their employees (Stavrou et al., 2006).

In this chapter, we study compensation packages in family and non-family firms. We focus on wages and job security of both managerial and non-managerial workers. We find that family ownership is associated with lower wages and greater job security and that this partly reflects compensating wage differentials. Nevertheless, we also find evidence that the family/non-family wage gap is partly due to assortative matching, with high-ability workers sorting into high-paying non-family firms and low-ability workers ending up in family firms.

We build a unique dataset by matching individual and establishment-level data on firm ownership, company accounts, establishment characteristics, worker flows and employees' social security records including wages. Looking at evidence on family firms in country-regionplaceFrance is interesting since they account for a large share of national employment. Our dataset contains a cross-section of about 2,000 establishments in 2004 – of which a vast majority are not listed on the stock market – and longitudinal information on a subset of establishments and workers. Using these data, we estimate Mincerian wage equations augmented by family ownership. Controlling for standard workers' characteristics and establishment observed and un-

observed heterogeneity, we find that gross hourly wages are about 5% lower in family firms than in non-family companies. We find that part of this wage gap is due to differences in unobserved characteristics of workers across family and non-family firms. When a family firm becomes non-family owned, low-ability workers tend to leave, while leavers tend to be high-ability workers when the transition takes place in the opposite direction. We interpret this observation as evidence of assortative matching. However, we also find that company wage policies change when ownership changes, so that workers staying in the same firm enjoy on average a 3% pay increase when a family firm becomes non-family owned and suffer a similar pay drop when the ownership transition occurs the other way round.

These changes in pay are mirrored by changes in job security. Using quarterly data on hirings and separations, we first show that a switch from family to non-family ownership is associated with a substantial increase in the dismissal rate (and vice versa). We also investigate whether family firms rely less on dismissals than non-family firms when they downsize, and find that this is actually the case. This is crucial for incumbent workers: if employed in a family firm, they face a lower risk of job loss when the firm is hit by a negative shock and has to destroy jobs. When this occurs, family firms appear to reduce hirings more and increase dismissals less than non-family firms, in order to accommodate the required staffing changes. These results are confirmed by subjective data: the risk of dismissal perceived by workers is significantly lower in family firms than in non-family ones.

The fact that family firms offer lower wages and greater job security suggests that a compensating wage differential mechanism may be at play. We find that this is actually the case for workers who stay in the same establishment when firm ownership changes: half of the wage increase they benefit from when a family firm becomes non-family owned appears to be a compensation for the rise in the risk of dismissal associated with that ownership transition.

The work presented in this chapter is one of the very few investigating non-managerial pay in family firms. The only other paper we are aware of is Sraer and Thesmar (2007). On a repeated cross-section of French listed firms over 1994-2000, they estimate firm-level wage equations. Controlling for the workforce's occupational

structure, they find a wage penalty of about 4.5% in family firms run by heir CEOs as compared to widely-held companies. Our work shows that a similar family/non-family wage gap is also found when including non-listed companies. This is a key point since non-listed firms typically represent a very large share of employment. Moreover it allows us to have greater over-time variation in ownership status in our sample: listed companies are often large holdings which rarely change ownership whereas non-listed firms include subsidiaries which may be sold by one holding to another one, leading to a larger amount of ownership changes between family and non-family holders. This allows us to improve on Sraer and Thesmar (2007) on a second dimension, namely the control for unobserved heterogeneity across establishments and workers. In such a way, we can distinguish between assortative matching and the direct effect of family ownership in determining the pay level of individual employees.

Our research also contributes to a second strand of literature which focuses on job security in family firms. So far, most papers have tackled this issue only indirectly. Stavrou et al. (2006) and Block (2010) investigate the relationship between corporate ownership and downsizing. Both papers find that family ownership is associated with smaller employment reductions conditional to downsizing. The key problem in interpreting these results is that a given amount of job destruction can result from either voluntary quits or hiring reductions or dismissals, and that only dismissals affect job security of incumbent workers. Sraer and Thesmar (2007) study the covariation of firm employment changes and industry-level shocks. They find that employment growth at the firm level is less sensitive to industry-level shocks in family firms than in non-family ones.² However, this result does not provide an unambiguous proof that workers' job security is greater in family firms insofar as the literature on job and worker flows (e.g. Davis et al., 1997, 2006) shows that idiosyncratic shocks at the establishment level are far more important than industry shocks in determining establishment-level employment adjustment. We improve on these papers by directly focusing on the risk of job loss for incumbent workers. As far as we know, our work is the first one to show that family firms display lower rates of dismissals. Consistent

² In addition, D'Aurizio and Romano (2011) show that employment adjustments following a business-cycle downturn are more concentrated in subsidiaries (with respect to headquarters) in family firms than in non-family ones.

with this evidence, we also find that workers in family firms perceive a lower risk of job loss. This set of results, we argue, provides direct evidence of greater job security in family firms.

Finally, as far as we know, our research is also the first showing direct evidence suggesting that compensating wage differentials account for a substantial part of the inverse relationship between the family/non-family gaps in wages and job security.

The layout of the rest of the chapter is as follows. Section 2 presents the empirical strategy. Section 3 describes the dataset and presents summary statistics. Section 4 reports results on the relation between family ownership, wages and job security. Section 5 concludes.

3.2 Empirical specification

3.2.1 Wage equations

In the first part of this article, we estimate the relationship between family ownership and wages. In order to do so, we start from a standard wage equation (see Mincer, 1974), augmented with family ownership:

$$\log w_{ij} = \gamma F_j + X_i \alpha + Z_j \beta + \varepsilon_{ij} \quad (3.1)$$

where w_{ij} is the gross hourly wage of worker i employed in establishment j estimated for the year 2004 – the year for which we have ownership data for most establishments – F_j is a dummy variable equal to 1 if the firm to which the establishment belongs is family-owned and 0 otherwise, X_i is a vector of individual characteristics including occupation, age and tenure. We also control for a set of establishment and firm-level characteristics (Z_j) including, among others, a large set of industry and regional dummies. Finally, ε_{ij} is an error term.³

³ Our dataset is representative of the population of establishments in the French private sector. All individual regressions in this chapter are therefore weighted by the inverse of the number of observations of each establishment, in order to give the same weight to each establishment. By avoiding that our results be driven by larger firms and plants, this also maintains comparability with establishment-level equations, such as those on separations (see below). In addition, as the source of variation of ownership status is at the level of firms, errors are assumed to be correlated within firms.

One issue with this simple cross-section model is that estimates may be flawed by unobserved heterogeneity across establishments. For a subset of establishments, we have ownership status in 1998 and 2004. In order to control for heterogeneity in unobservable time-invariant characteristics, we re-estimate equation (3.1) on the pooled sample covering both available years, including a time dummy and establishment fixed effects. However, in this specification, the effect of F is identified by transitions between ownership statuses, which is potentially endogenous because firms changing ownership status might be different from other firms and these differences might be correlated with wage changes. We do not have a valid instrument for the change in F . However if firms changing ownership were on average different from others, we would expect this to be reflected in some differences in pre-change characteristics (such as firm age as well as level and growth of profitability, productivity, wages or size). Therefore, in order to validate our identification strategy, we check that ΔF is uncorrelated with pre-change firm characteristics.⁴

A natural explanation of why wages may differ across family and non-family firms is that workers may be different in both types of companies. If, for any reason, workers with specific (unobservable) characteristics tend to match with family (resp. non-family) firms, the pattern of wages that we observe may be partly due to this assortative matching mechanism. In order to investigate this issue, we estimate the following equations:

$$\log w_{ij,1998} = X_{i,1998}\alpha + \beta Leaver_{ij} + \delta \Delta F_j * Leaver_{ij} + \mu_j + \varepsilon_{ij} \quad (3.2)$$

$$\log w_{ij,2004} = X_{i,2004}\alpha' + \beta' Arriver_{ij} + \delta' \Delta F_j * Arriver_{ij} + \mu'_j + \varepsilon_{ij} \quad (3.3)$$

where ΔF_j is the change in ownership over the period (namely family ownership in 2004 minus family ownership in 1998). $Leaver_{ij}$ is a dummy variable taking value 1 if the worker was in establishment j in 1998 while she was not any longer in 2004, and 0 otherwise. Similarly, $Arriver_{ij}$ is a dummy variable taking value 1 if the worker was not in establishment j in 1998 but was there in 2004 and 0 otherwise.⁵ In

⁴ We also check that the coefficient of F does not depend on the direction of the ownership transition (see Section 3 below).

⁵ Let us underline that in the vast majority of cases we do not have information on the type of

this set-up, any estimate of d and/or δ' significantly different from 0 suggests that workers with specific unobservable characteristics correlated with the wage level leave (or join) family firms when they become non-family (or vice versa), hence providing an indication of assortative matching between workers and firms. More precisely, provided that the coefficient d does not depend on the direction of the transition, $d > 0$ indicates that the difference in 1998 wage levels between leavers and stayers is greater in non-family firms becoming family-owned (and smaller in family-firms becoming non-family-owned) than in firms remaining in the same ownership status, which we use as a sort of control group. The same holds for δ' as regards the difference in 2004 wage levels between arrivers and stayers.

Beside differences in the observed and unobserved characteristics of their workforce, a potential gap in wages between family and non-family firms may also occur because the same worker is paid differently in firms with different ownership statuses, to the extent that they do not apply the same wage policy. In order to estimate this effect, controlling also for time-invariant unobserved heterogeneity across workers, we estimate the following long-difference equation on the sub-sample of workers who do not change establishment over the period:

$$\Delta \log w_{ij} = \gamma \Delta F_j + \Delta X_i \alpha + \Delta Z_j \beta + u_{ij} \quad (3.4)$$

where $\Delta \log w_{ij}$ denotes the change in the gross hourly wage of worker i continuously employed in establishment j between 1998 and 2004. ΔF_j is the change in ownership over the period, ΔX_i and ΔZ_j are two sets of time-varying individual and establishment controls, respectively, and u is the error term. Of course, correctly estimating equation (3.4) requires taking into account the potential selection of workers into firms.

ownership (either family or non-family) of the firm the worker goes to when she leaves establishment j or where she comes from when arriving at establishment j . This is due to the fact that those firms do not belong to the REPONSE dataset which provides us with the information on ownership – see Section 2.

3.2.2 Job security

As a second step, we investigate whether family firms offer a specific compensation package including more job security. We first estimate the relationship between family ownership and different types of separation rates. In our data, separation rates are available for each quarter over 1997-2007 whereas family ownership, establishment and firm-level controls are available for most establishments only for the year 2004⁶. Some types of separations, including dismissals, fluctuate quite a lot over time and are 0 in a number of quarters. This is why we average them over a rather long period of time roughly corresponding to an entire cycle (2001-2007) centred on the year for which we have ownership status for most establishments. The model we estimate is then the following:

$$S_j^a = \gamma F_j + Z_j \beta + \varepsilon_{jt} \quad (3.5)$$

where S_j^a is the average separation rate of type a (dismissal, voluntary quit, retirement, end of trial period and end of fixed-term contract), in establishment j over 2001-2007, F_j is our dummy variable indicating family ownership and Z_j is a vector of establishment and firm-level controls.⁷ As we try to establish some statements concerning job security, our main interest is on dismissal rates. Nevertheless, it is important to look also at other types of separations in order to make sure that a lower level of one type of separation is not compensated by a higher level of another type.

Here again, our results could be driven by unobserved heterogeneity across establishments. In order to overcome this problem, we re-estimate equation (3.5) in long differences on the subsample of establishments for which we have ownership data both in 1998 and 2004. In order to do so in a meaningful way, we re-compute average separation rates over shorter periods (3 years) centred on years for which we have ownership status. In practice, we estimate:

$$\Delta S_j^a = \gamma \Delta F_j + \Delta Z_j \beta + u_j \quad (3.6)$$

⁶ And, for a subsample of establishments, for 1998.

⁷ We also conduct robustness checks on a shorter time period around the year for which ownership information is available (2003-2005).

where ΔS_j^a is the change in the separation rate of type a in establishment j between 1997-1999 and 2003-2005, ΔF_j is the change in ownership over the period and ΔZ_j denotes time-varying establishment controls.

A particularly important issue for the job security of incumbent workers is the behaviour of their employer when a negative shock forces her to destroy jobs. In such case, there is clearly a greater risk that the positions of incumbent workers be suppressed independently of the effort they pay in their job. So, we estimate whether, when family firms are hit by a negative shock and downsize, they rely more or less on dismissals than non-family firms do under the same circumstances. We do so by looking at the sensitivity of establishment-level dismissals to establishment-level job creation and destruction and testing whether this sensitivity differs between family and non-family firms. However, other establishment-level characteristics are likely to affect this sensitivity (notably establishment age) and we need to control for them in our estimates. Our model is the following:

$$DR_{jt} = \alpha_{1j}JCR_{jt} + \alpha_{2j}JDR_{jt} + D_t + \mu_j + \varepsilon_{jt} \quad (3.7)$$

where DR_{jt} is the dismissal rate in establishment j at quarter t , JCR_{jt} (resp. JDR_{jt}) is the job creation (resp. destruction) rate, D_t is a time dummy and μ_j is an establishment fixed effect, which allows us to take into account that dismissal rates are persistently different across establishments.⁸ The coefficients of JCR_{jt} (resp. JDR_{jt}) are assumed to vary across establishments according to the following model:

$$\begin{aligned} \alpha_{1j} &= \alpha_1 + \gamma_1 F_j + Z_j \beta_1 \\ \alpha_{2j} &= \alpha_2 + \gamma_2 F_j + Z_j \beta_2 \end{aligned} \quad (3.8)$$

where F_j and Z_j are defined as for equation (3.5) and refer to 2004. Plugging equation (3.8) into equation (3.7) yields the final regression that we estimate:

⁸ Here again, we take a relatively large time window (2001-2007), centred on the year for which we have ownership status for most establishments (2004).

$$\begin{aligned}
DR_{jt} = & \alpha_1 JCR_{jt} + \alpha_2 JDR_{jt} + \gamma_1 (F_j * JCR_{jt}) + \gamma_2 (F_j * JDR_{jt}) \\
& + (Z_j * JCR_{jt})\beta_1 + (Z_j * JDR_{jt})\beta_2 + D_t + \mu_j + \varepsilon_{jt}
\end{aligned} \tag{3.9}$$

A negative coefficient on the $(JDR_{jt} * F_j)$ interaction term would suggest that family firms rely less on dismissals than non-family firms when they downsize. However, when firms are hit by a negative shock and have to downsize, the frontier between dismissals and quits may be somewhat blurred, insofar as firms may put pressure on workers so that they quit, either directly or by cutting their wage and worsening their working conditions. As a consequence, we also want to check that the estimated pattern for dismissals is not compensated by an opposite one for quits. In order to do so, we re-estimate the model of equation (3.9) using quits as a dependent variable. If family firms rely less on dismissals when hit by a negative shock, it must be the case that they make the necessary adjustment by compressing hiring. We check this by re-running our estimates with hiring as a dependent variable, as well.

Finally, another key aspect of job security as part of a compensation package is whether workers in family firms effectively feel that they have a smaller risk of losing their job. For the year 2004 and a subset of workers, we dispose of data on self-reported perceptions of the future risk of job loss. For those workers, we estimate the cross-sectional relationship between family ownership and the perceived risk of dismissal. The basic specification is equivalent to equation (3.1):

$$RD_{ij} = \gamma F_j + X_i \alpha + Z_j \beta + \varepsilon_{ij} \tag{3.10}$$

where RD_{ij} is the risk of dismissal perceived by worker i employed in establishment j .

3.3 The data

The data we use come from several data sources as it is necessary to combine information on wages, firm ownership, worker flows, employees' characteristics, as

well as a wide array of firms' and/or establishments' characteristics.

The first data source that we use is the 2004 wave of the REPOSE survey (RElations PrOfessionnelles et NégociationS d'Entreprise, which was also conducted in France in 1992 and 1998). To our knowledge, it is one of the very few databases that include information on ownership status of companies that are both listed and not listed on the stock market. In 2004, a representative sample of 2,930 establishments with at least 20 employees was surveyed. Questions about firm ownership, the use of information and communication technologies (ICT) and innovative managerial practices, as well as establishment characteristics were asked to one top manager per establishment. Regarding firm ownership, the manager is asked: "What is the type of the main category of shareholder of the firm?" According to the answer, we group firms into two main categories: those with family ownership (the main shareholder is either a family or an individual) and those with non-family ownership (i.e. for which ownership is either dispersed or private equity or which are joint-ventures). Other categories are charities, associations and governmental organisations operating in the business sector, as well as firms owned by their own workers, by the government or by other types of shareholders. We define a dummy variable which takes value 1 if the firm is owned by a family or an individual and 0 otherwise. We will call it "family ownership" or "family firm" hereafter. With this definition of family ownership, family firms account for 58.2% of the total number of firms in our sample. Our definition of family ownership is very close to that of Bloom and Van Reenen (2007) for whom a firm is family owned if the top manager who is interviewed reports that the largest shareholder is either the founder or family members who are second generation or beyond. Using this definition, they find a proportion of family firms in France of 56%, out of which 26% are founder-owned and 30% are owned by second generation (or beyond) family members. Both Bloom and Van Reenen's and our sample include non-listed along with listed companies. By contrast, Sraer and Thesmar (2007), who only focus on a restricted sample of French listed firms, use a different definition of family ownership: a firm is family-owned if the family or a member has more than 20% of the voting rights. This definition of family firms on the basis of ultimate ownership is frequent in the literature on listed companies – see Faccio and Lang

(2002). However, data on ultimate ownership are not available in a reliable form for non-listed companies whatever the country – see for example Bianco et al. (2009) for country-regionplaceItaly. This is why we rely on the information on the main type of shareholder provided by the top manager interviewed in the REPONSE survey⁹.

To the extent that we are interested in the contrast in compensation packages between family firms on the one hand and widely-held, private equity or joint-venture companies on the other hand, we exclude other types of firms from the sample, thus bringing our sample down to 2,133 establishments.¹⁰

The manager survey in REPONSE also provides information on the use of information and communication technologies (ICT) and innovative managerial practices. Managers are asked what proportion of the employees use computers, the Internet or the Intranet. For each of these new technologies, the answer is coded from 0 to 4 with 0 corresponding to "nobody", 1 to "less than 5%", 2 to "5-19%", 3 to "20 to 49%" and 4 to "50% and more". Our ICT variable is defined as the sum of the answers over the three types of technologies. It thus captures the intensity of use of ICT at the establishment level and varies between 0 and 12. We standardise it to 0 mean and 1 standard deviation. As regards innovative managerial practices, we build a summary index along the lines suggested by Bloom and Van Reenen (2007). In the REPONSE survey we have information on the proportion of workers involved in performance dialogue (expression groups, shopfloor meetings, quality circles), the number of devices designed to stimulate workers' participation (firm project, seminars, firm newspaper, open day, suggestion box, satisfaction survey), whether workers are autonomous in handling tasks and whether their work is defined in terms of goal to reach rather than in terms of precise actions. Managers are also asked the number of areas in which quantitative targets exist (financial return, budget, cost, quality, growth, security), whether there exist a training scheme, individual or collective wage incentive schemes (both for managers and non-managers), evaluations of individual workers and whether the assessment of employees' performance has any impact on

⁹ Let us underline that, despite the difference in the definition of ownership and the period of analysis, out of the 65 firms which are common to Sraer and Thesmar's and our datasets, the answer about ownership is identical for 54 firms (i.e. 82% of the total).

¹⁰ In this sample the proportion of establishments belonging to a family firm is 51% – see table 3.1.

wages or promotions. We build one variable out of the answer given for each item – see the Data Appendix for more details. Our summary index is then defined as the weighted sum of each of these variables so that they equally contribute to the overall index¹¹. One interesting point is that family firms appear to be much less innovative than non-family ones both in terms of ICT and in terms of managerial practices (see table 3.1).

¹¹ Here again, we standardise the index to 0 mean and 1 standard deviation.

Table 3.1: *Means of variables in cross section (2004), establishment level*

<i>Variables</i>	Whole sample (2133 obs.)		Establishments belonging to family firms (1087 obs.)		Establishments belonging to non family firms (1046 obs.)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Family firms	0.510	0.500	1.000	0.000	0.000	0.000
ICT use (standardized index)	0	1	-0.277	0.991	0.289	0.926
Management practices (standardized index)	0	1	-0.312	1.044	0.305	0.851
Establishment size (total employees)	340.2	608.7	244.7	487.8	439.4	699.5
Establishment age:						
less than 5 years	0.035	0.185	0.030	0.169	0.041	0.199
5 to 9 years	0.072	0.259	0.068	0.252	0.076	0.265
10 to 19 years	0.218	0.413	0.233	0.423	0.203	0.402
20 to 49 years	0.425	0.495	0.448	0.498	0.402	0.490
50 years or more	0.249	0.433	0.220	0.415	0.279	0.449
Presence of union representative	0.648	0.478	0.495	0.500	0.807	0.395
Listed firms or belonging to a listed group	0.431	0.495	0.200	0.400	0.674	0.469
Productivity (in K€ per worker)	59.49	50.23	49.75	29.44	70.43	64.49

Finally, the REPOSE manager dataset provides information on establishment size, age, the presence of a union representative in the establishment and whether or not it is (or it belongs to a group which is) listed on the stock market. As can be seen from table 3.1, establishments in family firms are, on average, smaller than in non-family ones, they are less likely to belong to a firm that is listed on the stock market and union representatives are much less frequent than in non-family firms.

Information on labour productivity (defined as valued added per worker at the firm level) comes from the DIANE database which contains publicly-available company accounts¹². As shown in table 3.1, labour productivity is substantially lower in family firms as compared to non-family ones. We also draw from DIANE information on profitability and firm age.

The REPOSE and DIANE datasets have been matched with Social Security records (Déclarations Annuelles de Données Sociales, DADS). These contain information on gross hourly wages (constructed as gross annual wages divided by the number of hours worked), gender, age, occupation, working full time or part-time, and a rough measure of job tenure¹³ for nearly all workers in the French private sector. Matching the DADS files with REPOSE and DIANE leaves us with 511,320 employees working in 1,995 establishments of whom 35% are employed in family-owned establishments and 65% in non-family establishments. Such a design generates linked employer-employee information, which allows us to study individual compensation taking into account both firm and worker heterogeneity on observable characteristics. As usually done with the DADS and to eliminate implausible values of hourly wages due to misreporting of either annual wages or hours worked, we drop the lowest and highest percentile of the hourly wage distribution¹⁴. We also exclude CEOs and top executives. As evidenced in Appendix Table 3.2, in 2004, family establishments paid on average lower wages, employed more women and fewer highly-skilled workers (managers and technicians) than non-family establishments. In contrast, average

¹² It is provided by Bureau van Dijk, a private consulting company, and it is the French source file for the more famous Amadeus database.

¹³ We know whether workers have tenure less than one year, between one and two years, or more than two years.

¹⁴ See Abowd et al (1999b). Our results are nonetheless robust to the inclusion of these extreme hourly wages.

age and tenure as well as part-time work were very similar in both types of firms. Information about individual workers is also provided by the REPONSE survey. In 2004, for each establishment, on average 4 workers answered a written questionnaire. They were randomly drawn out of the group of workers with more than 15 months of tenure. They were asked questions about their job, and in particular the risk they perceive of losing it in the next 12 months. Using this information, we build a variable capturing the perceived risk of dismissal which takes values 1 to 4 when the risk is perceived as being respectively "zero", "low", "high" and "very high".

Table 3.2: *Means of variables in cross section (2004), individual level*

<i>Variables</i>	Whole sample (511,230 obs.)		Establishments belonging to family firms (178,989 obs.)		Establishments belonging to non family firms (332,241 obs.)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Gross hourly wage (€)	17.22	8.180	15.57	7.667	18.11	8.304
Female	0.312	0.463	0.358	0.479	0.287	0.452
Occupation						
Manager	0.177	0.382	0.134	0.340	0.201	0.401
Supervisor or technician	0.251	0.434	0.210	0.408	0.273	0.446
Clerk	0.173	0.378	0.260	0.439	0.126	0.332
Blue collar	0.399	0.490	0.398	0.489	0.400	0.490
Full time worker	0.929	0.257	0.919	0.272	0.934	0.248
Age	39.44	10.09	38.58	10.09	39.90	10.07
Tenure						
Less than 1 year	0.099	0.299	0.119	0.324	0.089	0.284
1 to 2 years	0.164	0.370	0.159	0.365	0.166	0.373
More than two years	0.737	0.440	0.722	0.448	0.745	0.436

The REPONSE survey has a panel subsample which provides information on establishments in 1998 and 2004 by means of the manager questionnaire. It contains 481 establishments for which we have data on family ownership at both dates. We match it with the DADS panel for which we have yearly data from 1994 to 2006. This panel covers $1/12^{th}$ of all workers in 2004 and $1/24^{th}$ in 1998 and enables us to follow workers from one year to the next. In 1998, 4,713 workers from the DADS panel are employed in one of the REPONSE establishments. About 2/3rds of these workers still were in the same establishment in 2004 whereas $1/3^{rd}$ had left – usually to establishments outside the REPONSE panel. The information available in the DADS panel is similar to the DADS cross section except for job tenure which is more detailed (so that we are able to code it into 8 categories instead of 3). Changes in family ownership are captured through a variable defined as family ownership in 2004 minus family ownership in 1998. This variable may thus take values 0 (no change in ownership), +1 (family-owned in 2004 while it was not in 1998) and -1 (family-owned in 1998 while not anymore in 2004). On average, it is equal to 0.017 in our sample. But the proportion of firms changing ownership whatever the direction is much higher: 17% over the period, with about half of the changes taking place in each direction – see table 3.3 for more descriptive statistics on changes in individual and establishment characteristics.

The last source that we use is the DMMO/ EMMO database. In principle, the DMMO (Données sur les Mouvements de Main-d'Oeuvre) has exhaustive quarterly data on gross worker flows (hirings and separations, excluding temporary workers) for establishments with 50 employees or more. The data is broken down by type of flow. The EMMO (Enquête sur les Mouvements de Main-d'Oeuvre) has identical information on a representative sample of establishments with less than 50 employees. We match the DMMO and EMMO datasets with REPONSE 2004 and we are left with 1,803 establishments reporting information both on job and worker flows and on ownership. We use the DMMO-EMMO data to compute indicators of job security and, more specifically, of hiring and separation rates at the establishment level. In order to do that, we drop all movements corresponding to job spells shorter than one month. These indeed correspond to very short trial periods or temporary

Table 3.3: Means of changes in variables, 1998-2004

<i>Variables</i>	Mean	Std. Dev.
Individual-level data		
Change in log hourly gross wage	0.168	0.174
Change in occupation		
Manager	0.026	0.184
Technicians and supervisor	0.016	0.363
Clerk	-0.004	0.228
Blue-collar	-0.038	0.302
Change in full time work	-0.030	0.218
Establishment-level data		
Family owned 2004 - family owned 1998	0.017	0.416
Change in ICT	0.436	0.720
Change in management practices	0.775	0.810
Change in being listed	0.028	0.412
Change in union representatives	0.050	0.331
Change in size	8.372	133.2
Change in log productivity	0.100	0.355

contracts which have little to do with job security for core workers¹⁵. We also exclude movements due to transfers between two establishments of the same firm. Our data allows us to build hiring and separation rates for each quarter over 2001-2007.¹⁶ As standard in the gross worker flow literature (Davis et al, 2006), the hiring rate is defined as the ratio of all hires during a given quarter to the average employment level of that quarter¹⁷ and the separation rate as the sum of all types of separations¹⁸ divided by average employment. In order to go deeper into the types of separations, we define dismissal rates, quit rates, retirement rates, rates of end of trial periods and rates of end of fixed-term contracts as the ratio of the corresponding type of movement during the quarter to the average employment of the quarter. Following the gross job flow literature (Davis et al., 1997), we also define the job creation rate as the net growth rate of employment in the establishment between the beginning

¹⁵ Our results are nonetheless robust to the inclusion of these very short job spells.

¹⁶ 2001-2007 is our main sample. We also have data going back to 1997, which allows us to construct quarterly separation rates for two other sub-periods: 1997-1999 and 2003-2005 on which we estimate our long difference specification – see Section 1.

¹⁷ The average employment level of the quarter is defined as half of the sum of the employment levels at the beginning and the end of the quarter (see e.g. Davis et al., 2006).

¹⁸ In the original data, separations are classified as due to dismissals, quits, retirement and early retirement, end of trial periods, end of fixed-term contracts or other temporary contracts, military service, injuries, death or separations for unknown reason.

and the end of the quarter when it is positive¹⁹. Symmetrically, the job destruction rate is the absolute value of the net growth rate of employment when it is negative²⁰.

Table 3.4 presents descriptive statistics of worker and job flows.

¹⁹ Job creation rate: $JCR = \max(0, \Delta E / \hat{E})$ where E is the level of employment in the establishment, and \hat{E} is its average.

²⁰ Job destruction rate: $JDR = \max(0, \Delta E / \hat{E})$.

Table 3.4: *Average of quarterly gross job and worker flows in percentage of employment, establishment level, 2001-2007*

<i>Variables (in %)</i>	Whole sample (1,803 obs.)		Establishments belonging to family firms (858 obs.)		Establishments belonging to non family firms (945 obs.)	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Job creation rate	1.83	2.79	2.29	3.53	1.41	1.78
Job destruction rate	1.81	3.02	1.93	3.18	1.70	2.86
Hiring rate	4.48	6.48	5.82	7.39	3.27	5.23
Separation rate	4.49	6.36	5.47	6.85	3.60	5.74
By reason of separation:						
Dismissal	0.54	0.87	0.53	0.79	0.55	0.94
Quit	1.08	1.77	1.37	1.99	0.81	1.50
Retirement	0.18	0.26	0.16	0.23	0.19	0.28
End of trial period	0.16	0.80	0.20	0.85	0.12	0.75
End of fixed-term contract	2.16	4.35	2.84	5.08	1.55	3.44

3.4 Results

3.4.1 Wages in family firms

3.4.1.1 Family firms pay lower wages

Estimates from cross-sectional individual wage equations suggest that average gross hourly wages are lower in family than in non-family firms (see Table 1). The simple bivariate correlation between family ownership and wages – see column (3.1) – indicates that wages are about 20% lower in family firms than in non family ones. Not surprisingly, the family wage penalty is much smaller when we include standard establishment controls – establishment size and age, presence of a union representative, being listed on the stock market, 10 regional and 2-digit industry dummies – and workforce characteristics (i.e. occupation, gender, age, job tenure and part-time/full-time status). Nonetheless, when including all these controls, the wage gap between family and non-family firms still amounts to about 4%, and is significant at the 1% level – see column (3.2). This suggests that this wage gap cannot be entirely explained by the fact that family businesses are overrepresented in specific industries, employ a larger share of unskilled workers and are less unionised – see Sraer and Thesmar (2007), Mueller and Philippon (2011) and our descriptive statistics in table 3.1. Interestingly, all our results also hold if we exclude all managers from the sample, suggesting that the wage gap we detect is not limited to managerial occupations – see Appendix Table 3.6.

One could be concerned that these results might be driven by the fact that family firms employ family members who benefit from non-wage earnings and are, in turn, paid lower wages. If this were the case, our results would be driven by small establishments, since family members are unlikely to represent a large fraction of the workforce in large firms. In order to check that our results are robust to the elimination of smaller establishments, we re-run our regressions on establishments with more than 50 workers. Our findings are virtually unchanged, thus suggesting that earnings of family members do not account for a major part of the family/non-family wage gap that we find.

Bloom and Van Reenen (2007) find that family firms are less innovative – and

Table 3.5: *Family firms and wages in 2004*

	<i>Dependent variable: Log of gross hourly Wage</i>			
	(1)	(2)	(3)	(4)
Family firm	-0.198*** (0.012)	-0.042*** (0.008)	-0.024*** (0.008)	-0.029*** (0.007)
Observations	511,23	502,452	417,071	402,862
R-squared	0.064	0.631	0.626	0.638
Workers' controls	no	yes	yes	yes
Establishments' controls	no	yes	yes	yes
Controls for ICT and Manag. Pract.	no	no	yes	no
Control for log productivity	no	no	no	yes

Notes: (1) Dependent variable: log of individual gross hourly wage. Family firm takes value 1 if the establishment is part of a firm which is family-owned and 0 otherwise. (2) Robust standard errors, clustered on firms, in parentheses. (3) Workers' controls include: age (8 classes), tenure (3 classes), occupation (4 groups: manager, technician or supervisor, clerk, blue-collar), gender and a dummy variable for working full time. (4) Establishment controls include: establishment size (6 classes), age (5 classes), region, presence of union representative, being listed on the stock market and industry dummies (at 2-digits of the NACE, Rev.1, classification). (5) ICT and Management Practices are the intensity of use of information and communication technologies and of innovative managerial practices, respectively. Log productivity is the log of value added per worker. (6) *** p<0.01, ** p<0.05, * p<0.1.

Table 3.6: *Family firms and wages in 2004 - Non-managerial workers only*

	<i>Dependent variable: Log of gross hourly Wage</i>			
	(1)	(2)	(3)	(4)
Family firm	-0.152*** (0.010)	-0.038*** (0.008)	-0.021** (0.009)	-0.026*** (0.008)
Observations	420,492	414,827	348,648	340,16
R-squared	0.061	0.467	0.465	0.487
Workers' controls	no	yes	yes	yes
Establishments' controls	no	yes	yes	yes
Controls for ICT and Manag. Pract.	no	no	yes	no
Control for log productivity	no	no	no	yes

Notes: (1) Dependent variable: log gross hourly wage of non managers. Family firm takes value 1 if the establishment is part of a firm which is family-owned and 0 otherwise. (2) Robust standard errors, clustered on firms, in parentheses. (3) Workers' controls include: age (8 classes), tenure (3 classes), occupation (4 groups: manager, technician or supervisor, clerk, blue-collar), gender and a dummy variable for working full time. (4) Establishment controls include: establishment size (6 classes), age (5 classes), region, presence of union representative, being listed on the stock market and industry dummies (at 2-digits of the NACE, Rev.1, classification). (5) ICT and Management Practices are the intensity of use of information and communication technologies and of innovative managerial practices, respectively. Log productivity is the log of value added per worker. (6) *** p<0.01, ** p<0.05, * p<0.1.

hence less productive – than non-family ones. We find similar evidence in our data using indicators constructed in the same way as theirs (see Section 2).²¹ When controlling for intensity of ICT use and innovative managerial practices in the wage regression, the coefficient on family firms decreases to 2.3% but remains significant at the 1% level (Table 3.5, Column 3). Not surprisingly, similar results hold if we control directly for firm-level labour productivity (Table 3.5, Column 4).²²

Table 3.7: *Family Firms, ICT and Management Practices in 2004*

<i>Dependent variable</i>	ICT	Management Practices
	(1)	(2)
Family firm	-0.177*** (0.041)	-0.220*** (0.051)
Observations	1938	1565
R-squared	0.517	0.394
Workers' characteristics	yes	yes
Establishments' controls	yes	yes

Notes: (1) Dependent variables are either the intensity of the use of information and communication technologies (ICT) or the intensity of use of innovative managerial practices (Management Practices). Family firm takes value 1 if the establishment is part of a firm which is family-owned and 0 otherwise. (2) Robust standard errors, clustered on firms, in parentheses. (3) Workers' characteristics include: the proportion of women, the proportion of workers below 40 years old and the proportion of employees in 4 occupational groups (managers, technicians and supervisors, clerks, blue-collars). (4) Establishment controls include: establishment size (6 classes), age (5 classes), region, presence of union representative, being listed on the stock market and industry dummies corresponding to the 2-digit NACE (Rev.1) classification. (5) *** p<0.01, ** p<0.05, * p<0.1.

Results in Table 3.5 could also be driven by other sources of heterogeneity across firms that we are unable to observe directly. In Table 3.9 we use the REPOSE and DADS panels to investigate this issue and re-estimate our wage equation on

²¹ Even controlling for workforce characteristics and standard establishment controls, family-owned establishments have on average lower indicators of ICT use and innovative managerial practices than establishments whose ownership is mainly widely held, private equity or joint ventures. As a consequence family firms are less productive, and the productivity gap becomes insignificant when we control for ICT and managerial practices – see Tables 3.7 and 3.8. This is consistent with evidence in the literature emphasising that ICT and managerial practices are important determinants of firm productivity (see e.g., Black and Lynch, 2001).

²² The comparison of Columns 3 and 4 suggests that controlling for ICT and managerial practices is equivalent to control for firm-level productivity, consistent with the fact that the productivity gap between family and non-family firms disappears once ICT and managerial practices are included. In the remainder of the chapter we show results controlling for the latter indicators but all results are qualitatively similar if we control for productivity.

Table 3.8: *ICT, Management Practices and productivity in 2004*

	<i>Dependent variables: log Productivity</i>		
	(1)	(2)	(3)
Family firm	-0.070*** (0.026)		-0.041 (0.029)
ICT		0.098*** (0.017)	0.096*** (0.017)
Management Practices		0.053*** (0.017)	0.051*** (0.017)
Observations	1594	1297	1297
R-squared	0.417	0.410	0.411
workers' controls	yes	yes	yes
establishment' controls	yes	yes	yes

Notes: (1) Each column presents the results of a separate regression where the dependent variable is the log of value-added per worker measured at the firm level. Family firm takes value 1 if the establishment is part of a firm which is family-owned and 0 otherwise. ICT and Management Practices are the intensity of use of information and communication technologies and of innovative managerial practices, respectively. (2) Robust standard errors, clustered on firms, in parentheses. (3) Workers' characteristics include: the proportion of women, the proportion of workers below 40 years old and the proportion of employees in 4 occupational groups (managers, technicians and supervisors, clerks, blue-collar). (4) Establishment controls include: establishment size (6 classes), age (5 classes), region, presence of union representative, being listed on the stock market and industry dummies corresponding to the 2-digit NACE (Rev.1) classification. (5) *** p<0.01, ** p<0.05, * p<0.1.

the subsample of establishments (and employees), for which we have ownership data in both 1998 and 2004. We include establishment fixed effects to control for time-invariant unobserved heterogeneity. The results from this exercise point to a larger wage gap than in the simple cross-section without fixed effects (Table 3.9, Column 1). When family firms change to non-family ownership (i.e. the family firm indicator shifts from 1 to 0), our results show that their average wages grow by 4.9% and this pay increase is significant at the 1% level. Moreover, this result does not appear to be due to specificities of the pooled sample that we use. If we re-estimate our baseline equation on this sample without fixed effects, we find a wage gap quite close to that found in the larger cross-sectional sample for 2004 (see Table 3.10).²³

As our results are identified through changes in family ownership, we might ask whether the direction of the transition matters: are changes from family to non-family ownership associated with an increase in wages as large as the decrease in wages observed when a non-family firm is sold to a family? We can investigate this issue by including an interaction between the family firm indicator and a time-invariant dummy that takes value 1 in both years if the firm was family-owned in 1998 and 0 otherwise. The coefficient of this interaction term turns out to be close to 0 and insignificant (Table 3.9, Column 2), suggesting that the effect of changes in family ownership is symmetric.²⁴

Perhaps more important, we also worry that changes in family ownership may be endogenous, which can be problematic because we do not dispose of a suitable instrument. In particular, we expect specific shocks and/or different stages in the firm's lifecycle to be correlated with the probability of changing main shareholder.

²³ This suggests that there are unobserved establishment-level characteristics that are positively correlated with family ownership and wages. One possible candidate is the fact that family firms are able to more credibly commit to long-term relationships, which facilitates investments in match-specific capital. In turn, higher match-specific capital is partially reflected in wages. Insofar as this capital takes time to build and is not immediately destroyed when a change of ownership status occurs, it can be considered to be approximately time-invariant in our pooled sample. Consistent with this hypothesis, we find that wage-tenure profiles are more upward-sloped in family than in non-family firms: if we estimate equation (1) separately on the samples of family and non-family firms, controlling for the full set of other covariates considered in Table 3.5, in family firms employees with job tenure greater than 20 years earn on average 16% more than those with less than one year as compared to only 7% more in non-family firms.

²⁴ This interaction term takes the same values in 1998 and 2004 except when the firm was non-family owned in 2004 and family owned in 1998. Once added to the specification, its coefficient thus identifies the difference between the effect of changes from non-family to family-ownership and that of changes from family to non-family ownership.

Table 3.9: *Family firms, ICT, management practices and wages - Establishment fixed effects, 1998-2004.*

	<i>Dependent variables: Log Wage</i>	
	(1)	(2)
Family firm	-0.049*** (0.014)	-0.047*** (0.015)
Family firm*Family firm in 1998		-0.004 (0.032)
Observations	8,812	8,812
R-squared	0.784	0.784
Workers' controls	yes	yes
Controls for ICT and Management Pract.	yes	yes
Other time-varying establishment controls	yes	yes
Time dummy	yes	yes
Establishment fixed-effects	yes	yes

Notes: (1) Dependent variable: log gross hourly wage. Family firm takes value 1 if the establishment is part of a firm which is family-owned and 0 otherwise. Family firm in 1998 takes value 1 if the establishment was part of a firm which is family-owned in 1998. (2) Robust standard errors, clustered on firms by years, in parentheses. (3) ICT and Management Practices are the intensity of use of information and communication technologies and of innovative managerial practices, respectively. All regressions include two dummy variables that take the value 1 if ICT (resp. management practices) is missing (4) Workers' controls include: age (8 classes), tenure (8 classes), occupation (4 groups: manager, technician or supervisor, clerk, blue-collar), gender and a dummy variable for working full time. (5) Other time-varying establishment controls include: establishment size (6 classes), presence of union representative and being listed on the stock market. (6) *** p<0.01, ** p<0.05, * p<0.1.

Table 3.10: *Family firms and wages - Without establishment fixed effects, 1998 and 2004.*

	<i>Dependent variables: Log Wage</i> (1)
Family firm	-0.027* (0.015)
Observations	8,800
R-squared	0.687
Workers' controls	yes
Establishment controls	yes
Controls for ICT and Management Practices	yes
Time dummy	yes
Establishment fixed-effects	no

Notes: (1) Dependent variable: log gross hourly wage. Family firm takes value 1 if the establishment is part of a firm which is family-owned and 0 otherwise. (2) Robust standard errors, clustered on firms, in parentheses. (3) ICT and Management Practices are the intensity of use of information and communication technologies and of innovative managerial practices, respectively. All regressions include two dummy variables that take the value 1 if ICT (resp. management practices) is missing. (4) Workers' controls include: age (8 classes), tenure (8 classes), occupation (4 groups: manager, technician or supervisor, clerk, blue-collar), gender and a dummy variable for working full time. (5) Establishment controls include: establishment size (6 classes), age (5 classes), region, presence of union representative, being listed on the stock market and industry dummies corresponding to the 2-digit NACE (Rev.1) classification. (6) *** p<0.01, ** p<0.05, * p<0.1.

We worry that some unobserved factors associated to these shocks or lifecycle stages might determine the correlation between changes in family ownership and changes in wages that we observe in Table 3.9. However, in order to bias our results, these unobserved factors should affect differently changes in ownership status depending on the direction of the transition (from family to non-family and vice versa). If this were to occur, we would expect that a number of key firm characteristics, which are likely to be correlated with these shocks or stages in the firm's life cycle (such as firm age and pre-change levels and growth of profitability, productivity, size, and wages), should differ systematically according to the direction of the transition and therefore be correlated with changes in family ownership.²⁵ We do not find any such evidence (see Table 3.11).^{26,27} Although we need to be very cautious in interpreting our results, this finding is reassuring and suggests that the timing of specific shocks, by affecting in the same way transitions from family to non-family firms and vice versa, is unlikely to bias the coefficient of the family firm indicator in Table 3.9.

²⁵ We make here the assumption that unobserved factors affecting ownership changes are reflected in some key observable characteristics of the firm. Although debatable, this assumption is typically made in difference-in-difference estimations when balancing tests between treatment and comparison groups are used to validate the identification strategy (see for example the discussion in Altonji et al., 2005).

²⁶ We obtain similar results to those presented in Table 3.11 if we restrict the sample by excluding firms not changing ownership.

²⁷ By contrast, as expected, we find that firms changing main shareholder (whatever its type) between 1998 and 2004 differ from other firms on a number of characteristics. More precisely, we do not dispose of information on all changes of main shareholder but we can construct a variable that takes value 1 every time the main shareholder changes type (in practice, change in main-shareholder type is equal to the absolute value of change in family ownership). Correlating this variable with several firm and establishment characteristics, we find that firms changing main shareholder type between 1998 and 2004 were on average significantly younger than other firms (results available from the authors upon request). In addition, they also had on average 18% greater employment growth in 1994-1998. However, insofar as in our sample there are an almost equal number of transitions from family to non-family ownership and vice versa, changes in main-shareholder type and changes in family ownership are uncorrelated. Therefore, establishing that firms changing main-shareholder type have specific characteristics has no implication for the correlation between changes in the family ownership indicator and these firm characteristics.

Table 3.11: *Change in family ownership and firm pre-change characteristics - Point estimates and standard errors on $\Delta(\text{Family firm})$.*

<i>A) Dependent variable, in 1998 level</i>	ROE (1)	ROCE (2)	Log Productivity (3)	Log Size (4)	Log Wage (5)	Log Firm Age (6)
$\Delta(\text{Family firm})$ between 1998 and 2004	0.003 (0.031)	-0.022 (0.024)	-0.007 (0.048)	0.082 (0.164)	0.008 (0.028)	0.073 (0.129)
<i>B) Dependent variable, between 1994 and 1998</i>	ΔROE (1)	ΔROCE (2)	$\Delta(\text{Log Productivity})$ (3)	$\Delta(\text{Log Size})$ (4)	$\Delta(\text{Log Wage})$ (5)	$\Delta(\text{Log Firm Age})$ (6)
$\Delta(\text{Family firm})$ between 1998 and 2004	0.055 (0.125)	-0.005 (0.026)	0.025 (0.036)	0.048 (0.131)	0.017 (0.022)	- -

Notes: (1) Dependent variables are in levels in 1998 in the top panel and in difference between 1994 and 1998 in the bottom panel. (2) Robust standard errors, clustered on firms, in parentheses. (3) ROE (Return On Equity) is the percentage ratio of net profits to equity, ROCE (Return on Capital Employed) is the percentage ratio of earnings before interest and taxes (EBIT) to capital employed, log Productivity is the log of value added per worker, log Size is the log of the number of employees, log Wage is the log of the gross annual wage and log Firm Age is the log of firm age; all these variables are defined at the firm level. (4) All equations with a dependent variable in levels include the following establishment-level controls - intensity in ICT and management practices, region, presence of union representative, being family-owned, being listed on the stock market and industry dummies corresponding to the 2-digit NACE (Rev.1) classification. No control is included in equations with a dependent variable in changes. (5) *** $p < 0.01$.

Overall, our results suggest that changes in family ownership generate changes in average wages of about 5% and that this effect is symmetric whatever the direction of the change. At this point, an important question is whether this change in average wages is due to the fact that workers in family and non-family firms have different unobservable characteristics, or whether it is due to a change in the firm wage policy such that the same workers are paid in a different way in family and non-family firms.

3.4.1.2 Assortative matching vs changes in stayers' wages

A natural explanation of the change in average wages following a change in family ownership – that we find in Table 3.9 – is that workers are different in family and non-family firms. Although the specification in Table 3.9 controls for observable workers' characteristics, workers may differ with respect to unobservables. Given that non-family firms tend to be more innovative and more productive than family firms – see Tables 3.7 and 3.8 – they may attract more dynamic workers. If this is the case, part of the wage difference estimated in Table 3.9 may be due to an assortative matching mechanism rather than to the "true" impact of a change in wage policy brought about by the change in family ownership.

In order to investigate this issue we estimate whether workers who left a firm that changed family ownership between 1998 and 2004 had different wages from stayers' before the change took place (i.e. in 1998) – see equation (3.2). Symmetrically, we also estimate whether workers who arrive in a firm that changed ownership have different wage levels as of 2004 as compared to workers who have been continuously employed in the establishment between 1998 and 2004 – see equation (3.3). Results in Table 3.12 col (1) suggest that leavers are actually different from stayers: when a firm changes from non-family to family ownership ($\Delta(\text{Family firm}) = 1$), the difference in 1998 wages between workers who leave the firm and those who eventually stay turn out to be, on average, 6.5% higher than in firms not changing ownership. Similarly, the opposite occurs when a firm changes ownership from family to non-family. This result supports the idea that workers in non-family firms (resp. family firms) are "high-wage" (resp. "low-wage") individuals – after controlling for observable characteristics – and that assortative matching is taking place, with a number of these workers

leaving the firm when it switches from non-family to family (resp. from family to non-family) ownership.²⁸ In contrast, we do not find any evidence of selection on arrivers: as shown in Table 3.12 col (2), the wage difference between arrivers and stayers is virtually identical whether firms change family ownership or not. This result is consistent with assortative matching to the extent that once poorly matched workers have left following the change in ownership, stayers are presumably properly matched and hence have no reason to be different from newly hired workers who have been chosen because they match the firm's needs (and/or characteristics).

Table 3.12: *Change in family ownership and wages of leavers, arrivers and stayers.*

<i>Dependent variable</i>	<u>Log Wage 1998</u> (1)	<u>Log Wage 2004</u> (2)
Leaver	0.014 (0.011)	
Leaver*DFamily firm	0.065*** (0.022)	
Arriver		0.026* (0.016)
Arriver*DFamily firm		-0.001 (0.020)
Observations	4,568	4,275
R-squared	0.829	0.832
Establishment fixed effects	yes	yes
Workers' controls	yes	yes

Notes: (1) Dependent variable indicated in the column title. Leaver takes value 1 if the worker separated from the establishment between 1998 and 2004. Arriver takes value 1 if the worker was hired in the establishment between 1998 and 2004. Only workers aged 60 or less in 2004 who joined the DADS panel in 1998 or before are included. Family firm takes value 1 if the establishment was family-owned in 2004 and not in 1998, -1 if it was family-owned in 1998 and not in 2004 and 0 otherwise. (2) Robust standard errors, clustered on firms, in parentheses. (5) Workers' controls include the following groups (except when the group is used to define the dependent variable): age (8 classes), tenure (3 classes), occupation (4 groups: manager, technician or supervisor, clerk, blue-collar), gender and a dummy variable for working full time. (6) *** p<0.01, ** p<0.05, * p<0.1.

So, part of the variation in wages we observe when firms change family ownership is due to a change in the unobservable composition of their workforce. However, a 6.5% wage difference over a population of leavers who represents about 1/3rd of the

²⁸ We check that if the coefficients of the interaction between Leaver and DFamily firm are allowed to depend on the direction of the ownership transition, their difference is statistically insignificant, so that we can claim that the sorting patterns are effectively symmetric.

total workforce (see Section 2) cannot fully account for the overall 5% wage change that we estimate when firms change family ownership. This suggests that some of the workers – those who tend to remain in the firm after a change in ownership – are likely to be paid differently in family and non-family firms because of different firm wage policies.

In order to quantify this effect, we estimate the impact of changes in family ownership on wage growth for workers who have been continuously employed in the same establishment between 1998 and 2004 – see equation (3.4). According to the results in Table 3.13 – Column 1, workers who stay in the same establishment when firm ownership changes do experience a change in their wage: when firms switch from non-family to family ownership ($\Delta(\text{Family firm}) = 1$), stayers' wages go down by about 3.2% and vice versa when family ownership changes in the opposite direction. Yet, given the existence of assortative matching of workers and firms, one could be worried that our sample of stayers is selected at least on some dimensions, which would generate biases in the estimation of equation (3.4). However, while workers leaving firms that change family ownership differ from stayers because of some specific unobserved characteristics correlated with their wage level in 1998 (see Table 3.12), they have no different wage growth either before (1994-1998) or after the ownership change (2004-2006)²⁹ – see Table 3.14, Columns 1 and 2, in the Appendix.³⁰ This suggests that the observed sorting of workers into family and non-family firms is essentially driven by differences in unobserved characteristics that are likely to be time-invariant (such as individual productive ability) and, therefore, will be differenced out when estimating equation (3.4). In other words, we do not expect our estimates in Table 3.13 – Column 1 to be significantly biased because of sample selection. However, we check that this is actually the case by running a couple of robustness checks.

²⁹ 1994 is the first year and 2006 is the last year for which we have access to comparable wage data.

³⁰ Specifications estimated in Table 3.14 - cols (1) and (2) – are based on equation (2) except that the dependent variables and the individual controls are differences over 1994-1998 and 2004-2006.

Table 3.13: *Changes in ownership and wage growth 1998-2004.*

<i>Dependent variable</i>	$\Delta(\text{Log Wage})$			
	All establishments		Establishments that changed ownership between 1998 and 2004	
	(1)	(2)	(3)	(4)
<i>Sample</i>				
DFamily Firm	-0.032** (0.016)	-0.032** (0.016)	-0.034** (0.015)	-0.034** (0.015)
Log Relative wage 1998		-0.012 (0.038)		-0.009 (0.062)
Observations	2,663	2,663	487	487
R-squared	0.099	0.099	0.261	0.261
Changes in ICT and Management Pract.	yes	yes	yes	yes
Changes in workers' controls	yes	yes	yes	yes
Changes in establishments' controls	yes	yes	yes	yes

Notes: (1) Dependent variable: change in log gross hourly wage between 1998 and 2004. Family firm takes value 1 if the establishment was family-owned in 2004 and not in 1998, -1 if it was family-owned in 1998 and not in 2004 and 0 otherwise. (2) Robust standard errors, clustered on firms, in parentheses. (3) Relative wage in 1998 is difference between the log wage of each individual and the average log wage of the establishment, computed in 1998. (4) Changes in ICT and Management Practices respectively denote the change in the intensity of use of information and communication technologies, and in innovative managerial practices. All regressions include two dummy variables that take the value 1 if change in ICT (resp. change in management practices) is missing (5) Changes in workers' controls include change in occupation (defined in 4 groups), change in age (defined in 8 classes), change in tenure (defined in 8 classes) and change in working full time (6) Changes in establishments' controls include change in firm size, change in the presence of union representative, change in stock market listing, all measured between 1998 and 2004. (7) *** p<0.01, ** p<0.05, * p<0.1.

Table 3.14: *Change in family ownership and characteristics of leavers and stayers.*

<i>Dependent variable</i>	Δ Log Wage 1994-1998	Δ Log Wage 2004-2006	Log Age	Female	Manager & Tech.	Full-time	Log Tenure
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Leaver	0.011 (0.012)	0.029** (0.012)	-0.078*** (0.011)	0.001 (0.017)	0.049** (0.022)	0.013 (0.008)	-0.513*** (0.053)
Leaver* Δ Family firm	-0.011 (0.025)	-0.017 (0.017)	-0.007 (0.027)	-0.054 (0.042)	-0.044 (0.048)	0.013 (0.012)	-0.036 (0.140)
Observations	2,477	2,575	4,568	4,568	4,568	4,568	4,188
R-squared	0.566	0.477	0.450	0.564	0.494	0.539	0.598
Estab. fixed effects	yes	yes	yes	yes	yes	yes	yes
Workers' controls	yes	yes	yes	yes	yes	yes	yes

Notes: (1) Dependent variable indicated in the column title. Unless otherwise specified, year is 1998. In Columns 4, 5 and 6 the dependent variable is dichotomous. Leaver takes value 1 if the worker separated from the establishment between 1998 and 2004. Only workers aged 60 or less in 2004 who joined the panel DADS in 1998 or before are included. Family firm takes value 1 if the establishment was family-owned in 2004 and not in 1998, -1 if it was family-owned in 1998 and not in 2004 and 0 otherwise. (2) Robust standard errors, clustered on firms, in parentheses. (3) In Column 1 only those that were in the same establishment in both 1994 and 1998 are included. In Column 2 those staying with the same establishment between 1998 and 2004 but leaving it between 2004 and 2006 are excluded. (4) In Column 2 establishment fixed effects refer to establishments in 1998. (5) Workers' controls include the following groups (except when the group is used to define the dependent variable): age (8 classes), tenure (3 classes), occupation (4 groups: manager, technician or supervisor, clerk, blue-collar), gender and a dummy variable for working full time. When Log Age is the dependent variable, log Tenure is not included and vice versa. Changes in workers' controls over 1994-1998 and 2004-2008 are included in Columns 1 and 2, respectively. (6) *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Given that selection of workers into firms seems to be only driven by unobserved characteristics correlated with 1998 wage levels, we use a proxy-variable approach to further check that selectivity is not driving our results. More specifically, we proxy these unobservables by the relative wage of the individual in 1998 defined as the individual wage divided by the average wage in her establishment computed on all individuals, will they be stayers or leavers in the next period.³¹ Including this variable in the regression leaves our results unchanged – see Table 3.13, Column 2 – thereby supporting the idea that selectivity is not a major concern in our estimates.³²

To the extent that only 17% of firms change ownership in our sample between 1998 and 2004, one could be concerned that the absence of conditional correlation that we find between relative wages in 1998 and subsequent wage growth might be driven by firms that did not change family ownership. In order to control for this, we re-run our estimates on the subsample of establishments that did change family ownership over the period. Results in Table 3.13 – Columns 3 and 4 – suggest that this is not a concern: the estimates are virtually identical to those computed on the whole sample.

Overall, family firms appear to pay lower wages. Part of the wage gap is due to differences in unobserved characteristics of workers across family and non-family firms. But part of it is also due to different wage policies being implemented by these firms, so that the same worker's pay is different in family and non-family companies, at least for those who tend to stay in the firm after a change in ownership. The finding that ownership type is associated with differences in wage policies raises the issue of whether it may also affect other components of the compensation package.

³¹ This procedure appears to be justified by the fact that stayers and leavers do not appear to differ with respect to other characteristics in 1998 (such as age, gender, occupation, job tenure and full-time/part-time status – see Table 3.14, Columns (3) to (7) -, which suggests that the selection pattern is essentially determined by unobservables that are closely associated to the wage level (such as individual ability).

³² An alternative way to deal with the issue of selectivity is the following. Given that “high-wage” workers leave non-family firms when they become family-owned and that “low-wage” workers do so when the change in ownership goes in the opposite direction, one may try to identify a sort of “common support”. By excluding the top and bottom deciles of the relative wage distribution (dated 1998), we define a “restricted” sample of workers. We check that, on this sample, there is no evidence of selection – that is, that the d parameter in equation (2) is not significantly different from zero. We then re-estimate equation (4) on this restricted subsample. Results provided in Table 3.15 show that the coefficient on the *DFamily Firm* variable is not statistically different from the one we find in Table 3.13. Here again, this suggests that selectivity is unlikely to be a major issue in our results.

Table 3.15: *Change in ownership and wage growth of stayers, 1998-2004 - Restricted sample*

<i>Sample</i>	<i>Dependent variable: $\Delta(\text{Log Wage})$</i>	
	All establishments	Establishments that changed ownership between 1998 and 2004
	(1)	(2)
$\Delta(\text{Family Firm})$	-0.046** (0.018)	-0.034* (0.017)
Observations	2,017	373
R-squared	0.151	0.291
changes in ICT and Management Pract.	yes	yes
changes in workers' controls	yes	yes
changes in establishments' controls	yes	yes

Notes: (1) Individuals in the top and bottom decile of the distribution of relative wages in 1998 are excluded from the sample. (2) Dependent variable: change in log gross hourly wage between 1998 and 2004. Family firm takes value 1 if the establishment was family-owned in 2004 and not in 1998, -1 if it was family-owned in 1998 and not in 2004 and 0 otherwise. (3) Robust standard errors, clustered on firms, in parentheses. (4) Changes in ICT and Management Practices respectively denote the change in the intensity of use of information and communication technologies, and in innovative managerial practices. All regressions include two dummy variables that take the value 1 if change in ICT (resp. change in management practices) is missing (5) Changes in workers' controls include change in occupation (defined in 4 groups), change in age (defined in 8 classes), change in tenure (defined in 8 classes) and change in working full time (6) Changes in establishments' controls include change in firm size, change in the presence of union representative, change in stock market listing, all measured between 1998 and 2004. (7) *** p<0.01, ** p<0.05, * p<0.1.

Job security is one of the most important ones.

3.4.2 Job security in family firms

In this section we investigate whether family firms offer greater job security than their non-family counterparts. If so, this would point to a different compensation package offered by family firms characterised by lower wages but greater job security.

3.4.2.1 Average separation rates

A first way to look at job security in family firms is to consider separation rates and, more specifically, rates of dismissals which capture the risk of job loss for permanent workers. We use 2001-2007 averages to avoid that our results be affected by a large number of zeros in the case of certain separations (notably dismissals – see Section 2). Results in Table 3.16 – Column 1 – show that dismissal rates are significantly lower in family firms even after controlling for our basic set of establishment and worker controls, including ICT and managerial practices and 2-digit industry dummies.³³ The difference in dismissal rates between family and non-family firms is estimated to be as large as 0.15 percentage point per quarter, which amounts to a 28% gap between both types of firms (cf. Table 3.4). This suggests that the risk of involuntary job loss is substantially lower in family than in non-family firms. One interesting point is that the low level of dismissals is not compensated for by other types of separations – see Columns 2 to 5: family firms do not display higher levels of quits, retirement, end of trial periods or end of fixed-term contracts.

However, specifications in Table 3.16 do not control for the proportion of permanent workers in the establishment. This may be a problem since external flexibility in family firms might be ensured by temporary contracts. As involuntary separations at the end of a temporary contract are not reported as dismissals in the data³⁴ this may create a bias in our estimates. In principle, given the small share of workers on temporary contracts in our sample, this should not be a major problem.³⁵ Nev-

³³ The DMMO-EMMO files do not report these firm characteristics, which are therefore drawn from the REPONSE survey and thus refer to 2004.

³⁴ They are simply classified as separations due to end of contract.

³⁵ Temporary workers amount, on average, to 5% of the workforce in our sample.

Table 3.16: *Family ownership and average separation rates 2001-2007*

<i>Dependent variable</i>	Dismissals	Quits	Retirement	End-trial period	End-fixed term	All separations
	(1)	(2)	(3)	(4)	(5)	(6)
Family firm	-0.153*** (0.046)	0.055 (0.079)	0.003 (0.017)	0.024 (0.030)	-0.141 (0.260)	-0.348 (0.348)
Observations	1,295	1,295	1,295	1,295	1,295	1,295
R-squared	0.433	0.528	0.468	0.506	0.387	0.462
establishment controls	yes	yes	yes	yes	yes	yes
ICT and Managt Pract	yes	yes	yes	yes	yes	yes
workers' characteristics	yes	yes	yes	yes	yes	yes

Notes: (1) Dependent variable: establishment-level average of quarterly separation rates over 2001-2007, computed for each type of separation (rate of dismissals, rate of quits, etc.) as indicated in column titles. Only establishments with non-missing observations for at least 9 quarters in 2001-2007 are included. Family firm takes value 1 if the establishment is part of a firm which is family-owned in 2004 and 0 otherwise. (2) Robust standard errors, clustered on firms, in parentheses. (3) Establishment controls include: establishment size (6 classes), age (5 classes), region, presence of union representative, being listed on the stock market and industry dummies (at 4-digits of the NACE, Rev.1, classification). (4) ICT and Management Practices are the intensity of use of information and communication technologies and of innovative managerial practices, respectively. (5) Workers' characteristics include: the proportion of women, the proportion of workers below 40 years old and the proportion of employees in 4 occupational groups (managers, technicians and supervisors, clerks, blue-collars). (6) *** p<0.01, ** p<0.05, * p<0.1.

ertheless, in order to deal with this problem, Table 3.17 – Column 1 – re-estimates the dismissal equation controlling for the proportion of permanent workers in the establishment in 2004, drawn from the REPOSE dataset.³⁶ The results are very similar to those in Table 3.16. Family firms still display lower rates of dismissals. Given that our information on firm ownership is for 2004, a further robustness check consists in reducing our sample to dismissals taking place in 2003-2005, i.e. a short period of time centred around the date for which we have information on ownership. Family firms still display lower dismissal rates – see Table 3.17, Column 2.

Of course, time-invariant unobserved heterogeneity across establishments could be driving our results. In order to deal with this issue, we re-estimate our model in long differences between 1998 and 2004 – see Table 3.18. The results are very similar to those in Panel A with changes from non-family to family ownership ($\Delta F = 1$) inducing a reduction in the rate of dismissals. Let us underline that this result is unlikely to be driven by changes in the unobserved composition of the workforce.

³⁶ Information on the share of workers on temporary contracts is neither available in the DMMO-EMMO nor in the DADS datasets. As a consequence, we do not dispose of a time series for this share.

Table 3.17: *Family firms and dismissals: 2001-2007 with control for permanent workers and 2003-2005*

<i>Dependent variable</i>	Dismissal rate 2001-2007 (1)	Dismissal rate 2003-2005 (2)
Family firm	-0.136*** (0.046)	-0.144** (0.062)
% of permanent workers	0.003*** (0.001)	
Observations	1,28	1,09
R-squared	0.431	0.397
establishment controls	yes	yes
controls for ICT and Management Practices	yes	yes
workers' characteristics	yes	yes

Notes: (1) Dependent variable: establishment-level average of quarterly dismissal rates over the periods indicated in column titles. Only establishments with non-missing observations for at least 9 quarters are included. Family firm takes value 1 if the establishment is part of a firm which is family-owned in 2004 and 0 otherwise. (2) Robust standard errors, clustered on firms, in parentheses. (3) Establishment controls include: establishment size (6 classes), age (5 classes), region, presence of union representative, being listed on the stock market and industry dummies corresponding to the 4-digit NACE (Rev.1) classification. (4) ICT and Management Practices are the intensity of use of information and communication technologies and of innovative managerial practices, respectively. (5) Workers' characteristics include: the proportion of women, the proportion of workers below 40 years old and the proportion of employees in 4 occupational groups (managers, technicians and supervisors, clerks, blue-collars). (6) *** p<0.01, ** p<0.05, * p<0.1.

As evidenced in section 3.4.1.2, in the case of a transition from non-family to family ownership, workers who stay in the establishment have worse productive abilities than those who left. This is likely to bias our estimates towards zero, if anything. Finally, as discussed when estimating our wage equation including establishment fixed effects, we do not find any evidence of unobserved factors affecting differently ownership changes depending on the direction of the transition (from family to non-family and vice versa). Observable characteristics of firms are indeed uncorrelated with Δ Family Firm – see Table 3.11 – so that we believe it is unlikely that selectivity be a major driver of our estimates.

Table 3.18: *Changes in family ownership and changes in separations 1998-2004*

<i>Dependent variable</i>	Δ Dismissals	Δ Quits	Δ Retirement	Δ End-trial period	Δ End-fixed term	Δ All separations
	(1)	(2)	(3)	(4)	(5)	(6)
Δ Family Firm	-0.150** (0.076)	-0.109 (0.094)	0.052 (0.047)	-0.016 (0.017)	-0.015 (0.356)	-0.179 (0.422)
Observations	257	257	257	257	257	257
R-squared	0.075	0.059	0.075	0.076	0.049	0.047
Time-varying establishment controls	yes	yes	yes	yes	yes	yes
Change in workers' characteristics	yes	yes	yes	yes	yes	yes

Notes: (1) Dependent variable: change in the establishment-level average of quarterly separation rates over 3-years periods centred on 1998 and 2004, computed for each type of separation (rate of dismissals, rate of quits, etc.) as indicated in column titles. Only establishments with non-missing observations for at least 9 quarters in each 3-year periods are included. Family firm takes value 1 if the establishment was family-owned in 2004 and not in 1998, -1 if it was family-owned in 1998 and not in 2004 and 0 otherwise. (2) Robust standard errors, clustered on firms, in parentheses. (3) time varying establishment controls include change in firm size (defined in 6 classes), change in the presence of union representative, change in listing on the stock market, change in age (defined in 5 classes), change in the use of information and communication technologies, and change the use of innovative managerial practices, all measured between 1998 and 2004. (4) All regressions include two dummy variables that take the value 1 if change in ICT (resp. change in management practices) is missing. (5) Changes in workers' characteristics include changes in the proportion of workers by occupation (defined in 4 groups) and by gender. (6) *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

3.4.2.2 Downsizing through dismissals or hiring reductions?

As a second step, we investigate whether family firms rely less on dismissals than non-family firms do when they downsize. This is indeed a crucial issue for incumbent workers: when a firm downsizes, they have a greater chance to lose their job independently of their effort. Do they face a lower risk of job loss when the firm is hit by a

negative shock, if employed in a family firm? In order to shed light on this point, we regress dismissal rates on job creation and job destruction rates as well as their interaction with family ownership. As evidenced in Table 3.19, job destruction rates are strongly correlated with dismissals, even controlling for establishment heterogeneity in separations through establishment fixed-effects – see Column 1.³⁷ When comparing adjustment patterns in family and non family firms – see Column 2 – family firms appear to rely less than non-family ones on dismissals when employment contracts: the coefficient on the interaction between family ownership and the job destruction rate is negative and significant. A consistent finding emerges when we use the hiring rate as dependent variable. Column 2 in Table 3.20 shows a negative and significant coefficient on the interaction between family ownership and the job destruction rate even in this case. As a consequence, when facing a negative shock, family firms tend to achieve the required staff adjustment by reducing hiring more and by increasing dismissals less than non-family firms do.

One concern about these results is that establishments with different size, age etc., operating in different sectors or with different workers' characteristics could react in a different way to job creation or job destruction which could be confounded with the effect of family ownership. In order to control for this, Columns 3 and 4 of Tables 3.19 and 3.20 progressively include interaction terms between job creation and job destruction on the one hand and these potentially confounding factors on the other hand. Our main result is robust to these changes: family firms consistently appear to rely less on dismissals and to compress hiring more when hit by a negative shock.

3.4.2.3 Subjective data on job security

The fact that family firms offer greater job security is confirmed by subjective data. In Table 3.21, we use the information, available in the employee section of the

³⁷ As regards the adjustment to job creation, the positive coefficient on the JCR variable in Table 3.19 might suggest that dismissals increase with employment expansion – although this effect is substantially smaller for family firms as indicated by the negative coefficients on the interaction between family ownership and job creation. This is consistent with previous evidence for France (see Abowd et al, 1999a). It is probably due to the fact that, when expanding, non-family firms make a lot of experimentation with new recruits which generates many hiring and separations of workers that stay with the firm only for a short period of time (see Jovanovic, 1979, and Pries and Rogerson, 2005).

Table 3.19: *Sensitivity of dismissal rates to job creation and job destruction*

	<i>Dependent variable: Dismissal rate</i>			
	(1)	(2)	(3)	(4)
Job creation rate	0.021** (0.010)	0.021** (0.011)	0.036*** (0.013)	0.010** (0.005)
Job destruction rate	0.115*** (0.038)	0.122*** (0.040)	0.161*** (0.033)	0.121*** (0.010)
Job creation rate x Family firm		-0.035* (0.019)	-0.060*** (0.022)	-0.020* (0.011)
Job destruction rate x Family firm		-0.152** (0.070)	-0.252*** (0.084)	-0.078** (0.033)
Observations	38,36	38,36	31,236	31,147
R-squared	0.247	0.286	0.455	0.723
establishment fixed effects	yes	yes	yes	yes
time dummies	yes	yes	yes	yes
establishment controls - reduced x JCR/JDR.	no	no	yes	yes
establishment controls - extended x JCR/JDR.	no	no	no	yes
workers' characteristics x JCR/JDR.	no	no	yes	yes

Notes: (1) Each column presents the results of a separate regression. The dependent variable is the quarterly dismissal rate computed, at the establishment level, as the total number of dismissals during a quarter over the average employment level during that quarter. Family firm takes value 1 if the establishment is part of a firm which is family-owned in 2004 and 0 otherwise. (2) Robust standard errors, clustered on firms, in parentheses. (3) Job creation rate (JCR) and Job destruction rate (JDR) are respectively the job creation and job destruction rates in the establishment. The JCR (resp. JDR) is defined as the ratio of the net growth rate of employment between the beginning and the end of a quarter to the average employment level during that quarter, if the former is positive (resp. negative). (4) Establishment controls - reduced include: presence of union representative, being listed on the stock market, the use of information and communication technologies and the intensity of innovative managerial practices. (5) Establishment controls - extended include the previous establishment controls plus establishment size (6 classes), age (5 classes), region and industry dummies (at 2-digits of the NACE, Rev.1, classification). (6) Workers' characteristics include: the proportion of women, the proportion of workers below 40 years old and the proportion of employees in 4 occupational groups (managers, technicians and supervisors, clerks, blue-collarers). (7) *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 3.20: *Sensitivity of hiring rates to job creation and job destruction*

	<i>Dependent variable: Hiring rate</i>			
	(1)	(2)	(3)	(4)
Job creation rate	1.019*** (0.018)	1.016*** (0.014)	1.011*** (0.017)	0.993*** (0.014)
Job destruction rate	-0.235*** (0.036)	-0.223*** (0.030)	-0.155*** (0.029)	-0.236*** (0.020)
Job creation rate x Family firm		-0.042 (0.028)	-0.077** (0.032)	-0.055* (0.031)
Job destruction rate x Family firm		-0.251*** (0.067)	-0.170** (0.082)	-0.175*** (0.050)
Observations	38,36	38,36	31,236	31,147
R-squared	0.751	0.756	0.763	0.784
establishment fixed effects	yes	yes	yes	yes
time dummies	yes	yes	yes	yes
establishment controls - reduced x JCR/JDR.	no	no	yes	yes
establishment controls - extended x JCR/JDR.	no	no	no	yes
workers' characteristics x JCR/JDR.	no	no	yes	yes

Notes: (1) Each column presents the results of a separate regression. The dependent variable is the quarterly hiring rate computed, at the establishment level, as the total number of hires during a quarter over the average employment level during that quarter. Family firm takes value 1 if the establishment is part of a firm which is family-owned in 2004 and 0 otherwise. (2) Robust standard errors, clustered on firms, in parentheses. (3) Job creation rate (JCR) and Job destruction rate (JDR) are respectively the job creation and job destruction rates in the establishment. The JCR (resp. JDR) is defined as the ratio of the net growth rate of employment between the beginning and the end of a quarter to the average employment level during that quarter, if the former is positive (resp. negative). (4) Establishment controls - reduced include: presence of union representative, being listed on the stock market, the use of information and communication technologies and the intensity of innovative managerial practices. (5) Establishment controls - extended include the previous establishment controls plus establishment size (6 classes), age (5 classes), region and industry dummies (at 2-digits of the NACE, Rev.1, classification). (6) Workers' characteristics include: the proportion of women, the proportion of workers below 40 years old and the proportion of employees in 4 occupational groups (managers, technicians and supervisors, clerks, blue-collars). (7) *** p<0.01, ** p<0.05, * p<0.1.

2004 REPOSE survey, on the risk perceived by workers of losing their job in the next 12 months³⁸. More specifically, we regress the perceived risk of dismissal on family ownership using a specification identical to the one elicited for wages – see equation (3.10). As evidenced in Column 1, workers in family firms perceive a lower risk of dismissal even after controlling for establishment and worker characteristics. In order to better control for unobserved heterogeneity across workers, Column 2 adds the individual wage to the previous specification. The results are virtually unchanged: the risk of dismissal perceived by workers remains lower in family firms.

Table 3.21: *Family firms and perceived risk of dismissal in 2004*

Dependent variable:	<i>Risk of dismissal</i>	
	(1)	(2)
Family firm	-0.106** (0.042)	-0.106** (0.042)
Log wage		-0.064 (0.063)
Observations	3,591	3,579
R-squared	0.094	0.096
workers' controls	yes	yes
establishments' controls	yes	yes
control for ICT and management practices	yes	yes

Notes: (1) Each column presents the results of a separate regression, run at the individual worker level, where the dependent variable is the perceived risk of dismissal, evaluated on a 1-4 scale. Family firm takes value 1 if the establishment is part of a firm which is family-owned in 2004 and 0 otherwise. (2) Robust standard errors, clustered on firms, in parentheses. (3) Workers' controls include: age (8 classes), tenure (3 classes), occupation (4 groups: manager, technician or supervisor, clerk, blue-collar), gender and a dummy variable for working full time. (4) Establishment controls include: establishment size (6 classes), age (5 classes), region, presence of union representative, being listed on the stock market and industry dummies. (5) ICT and Management Practices respectively denote the intensity of use of information and communication technologies, and of innovative managerial practices. (6) *** p<0.01, ** p<0.05, * p<0.1.

Overall, our results suggest that family firms do provide more job security to incumbent workers: not only do they have lower average dismissal rates but, when employment goes down, they also reduce hiring more than non-family firms do and consistently, they rely less on dismissals. Workers are aware of this difference in firms'

³⁸ This perceived risk may be "very high", "high", "low" or "zero". From these responses, we construct an indicator which varies between 1 and 4 that we treat as a cardinal variable. Nevertheless, we also estimate ordered probit models where this variable is treated as ordinal only with similar results.

behaviour, with those employed in family firms reporting significantly lower perceived risk of dismissal.

3.4.3 Compensating wage differential

Our results on stayers' wages, on the one hand, and job security, on the other hand, raise the issue of a possible compensation between pay and job security. If workers who stay in an establishment which changes from non-family to family ownership experience a reduction in wages, to what extent can this change in pay be explained by a compensating wage differential mechanism, whereby workers would accept lower wages in exchange for greater job security? Similarly, in the event of a transition from family to non-family ownership, to what extent does the wage increase act as a compensation for reduced job security?

In order to provide evidence on this point, one would estimate:

$$\Delta \log w_{ij} = \gamma \Delta F_j + \delta \Delta D_j + \Delta X_i \alpha + \Delta Z_j \beta + u_{ij} \quad (3.11)$$

in which the variables are the same as in equation (3.4) with ΔD_j denoting the change in the rate of dismissal in establishment j between 1998 and 2004. In this set-up, the prediction associated with compensating wage differential is that $\hat{\delta}$ should be positive and $\hat{\gamma}$ should go down to zero – with $\hat{\cdot}$ indicating estimates. Any increase in the rate of dismissal should indeed be matched by a corresponding increase in log wages. In addition, if changes in stayers' wages are entirely due to changes in dismissals brought about by changes in family ownership, the coefficient on ΔF should be found close to zero when estimating equation (3.11).

One problem is that ΔD is endogenous and OLS estimates of δ are likely to be biased downwards. This is because any negative shock affecting the establishment is likely to induce at the same time an increase in dismissals and a reduction in wages. As a matter of fact, when estimating equation (3.11) on our whole sample, the coefficient on ΔD turns out to be insignificant and very close to zero – see Table 3.22, Column 1 – while that on ΔF remains unchanged. Now, suppose that the firm wage policy changes only when there is a change in family ownership. Then, insofar

as 83% of the establishments in our sample do not change family ownership between 1998 and 2004, the estimate of the coefficient of ΔD would be essentially driven by firms not changing wage policy. As a consequence, it would mainly be determined by the correlation of changes in wages and changes in dismissals with adverse shocks, which would explain its negative sign. Consistent with this interpretation, when we re-estimate the specification on the subsample of establishments that did not change ownership between 1998 and 2004 – Table 3.22, Column 2 – we still obtain a negative estimate for the coefficient of ΔD . By contrast, when estimating equation (3.11) on the subsample of establishments that did change family ownership, we find some evidence of compensating wage differential. In this case, the effects of potential shocks affecting the establishments are dominated by the change in wage and job-security policy brought about by the change in family ownership. An increase in dismissals is then positively associated with a positive change in log wages (at the 10% significance level) and the magnitude of the coefficient on $\Delta(\text{Family Firm})$ is reduced by 44% – from -0.34 in Table 3.13, Column 3, to -0.19 in Table 3.22, Column 3 – and is no longer significant at conventional levels. We interpret this result as suggesting that part of the change in wages experienced by stayers when family ownership changes is due to a compensating wage differential mechanism: following a transition from non-family to family ownership wages tend to go down, but in exchange workers benefit from greater job security. Similarly if a family firm becomes non-family owned, wages go up for stayers partly as a compensation of reduced job security.

Table 3.22: *Family firms and perceived risk of dismissal in 2004*

<i>Sample</i>	<i>Dependent variable: $\Delta(\text{Log Wage})$</i>		
	All Establishments	Establishments that did not change ownership between 1998 and 2004	Establishments that changed ownership between 1998 and 2004
	(1)	(2)	(3)
$\Delta(\text{Family firm})$	-0.036** (0.017)	- -	-0.019 (0.015)
$\Delta(\text{Dismissal rate})$	-0.005 (0.010)	-0.009 (0.010)	0.050* (0.026)
Observations	2575	2095	480
R-squared	0.103	0.127	0.310
changes in ICT and Management Pract.	yes	yes	yes
changes in workers' controls	yes	yes	yes
changes in establishments' controls	yes	yes	yes

Notes: (1) Dependent variable: change in log gross hourly wage between 1998 and 2004. Family firm takes value 1 if the establishment was family-owned in 2004 and not in 1998, -1 if it was family-owned in 1998 and not in 2004 and 0 otherwise. (2) Robust standard errors in parentheses. (3) Dismissal rate is the change in the average quarterly dismissal rate (computed over 3-years periods centred around 1998 and 2004). (4) Changes in ICT and Management Practices respectively denote the change in the intensity of use of information and communication technologies, and in innovative managerial practices. (5) All regressions include two dummy variables that take the value 1 if change in ICT (resp. change in management practices) is missing. (6) Changes in workers' controls include change in occupation (defined in 4 groups), change in age (defined in 8 classes), change in tenure (defined in 8 classes) and change in working full time (7) Changes in establishments' controls include change in firm size, change in the presence of union representative, change in listing on the stock market, all measured between 1998 and 2004. (8) *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

3.5 Discussion

In this chapter, we provide evidence that French family firms offer a specific compensation package to their employees involving lower wages but greater job security. Controlling for individual characteristics and establishment fixed effects, we find that family firms pay their employees about 5% less than non-family firms. This result is identified by changes in family ownership. Given that we do not have an instrument for changes in ownership, one needs to be cautious in interpreting our findings. However, the lack of correlation between the direction of the change in family ownership and pre-change firm characteristics and outcomes suggests that our estimates are unlikely to be seriously flawed by the endogeneity of the timing of ownership changes.

Part of the family/non-family wage gap that we find appears to be due to differences in unobserved characteristics of workers across family and non-family firms. But part of it is also due to different wage policies being implemented by both categories of firms, so that the same worker's pay is different in family and non-family companies. *Ceteris paribus*, family firms also feature a substantially lower dismissal rate than non-family firms, which is robust to controlling for establishment fixed effects. Moreover, when hit by a negative shock that induces employment downsizing, family firms appear to rely less on dismissals and more on hiring contraction than non-family firms in order to achieve the required staff adjustment. These results are confirmed by information on the workers' perception of the risk of dismissal: workers in family firms feel that their job is more secure, even conditional on their wage level. The fact that family firms offer lower wages and greater job security suggests that some compensating wage differential mechanism may be at play. We find evidence of such compensation for workers who stay in the same establishment when firm ownership changes: we estimate that about half of the decrease in their wage is accounted for by a lower risk of dismissal when ownership changes from non-family to family ownership (and vice versa when ownership changes the other way round).

What explains the difference between family and non-family firms in terms of compensation packages? The agency theory provides a first explanation. It indeed states that executive compensation is designed to align the interests of managers with

those of shareholders (Murphy, 1999). As underlined by Jensen and Meckling (1976) the risk of misalignment is larger for firms with dispersed ownership because it is more difficult for shareholders to control managers' actions. In contrast, managers have less discretion as to the actions they take when there are large blockholders. So, in equilibrium, managers' compensation (including wages, premiums and bonuses) should be more performance-related and therefore on average higher in non-family firms, where control is looser. This extends to non-managerial workers as soon as intrinsic motivations, such as aversion to within-firm inequality, are taken into account (see Rebitzer and Taylor, 2011). This may also explain greater job insecurity in non-family firms if firms with dispersed ownership use the threat of dismissal under bad performances as a tool to create more powerful incentives.

An alternative theory consistent with our findings is provided by the literature in finance. This suggests that family firms may have a comparative advantage at credibly committing to long-term relationships, including long-lasting job matches. The main reason for this is that families have long-term horizons³⁹ and are therefore more prone to investment opportunities that are profitable only in the long-run (see e.g. Anderson and Reeb, 2003, Bertrand and Schoar, 2006). As a consequence, family firms may have a comparative advantage at offering job security and may therefore afford to pay lower wages. In addition, our results suggest that they might have a comparative disadvantage at innovation, in particular as regards the use of ICT and innovative managerial practices. This would turn into a comparative advantage of non-family firms at offering attractive pay schemes and hence higher wages in compensation for lower job security – on which they cannot credibly commit.

Whatever the theory elicited to explain our findings, they seem consistent with a multiple equilibrium model, in which family firms are in a low-pay/high-job-security

³⁹ The idea that family firms have longer time horizon might seem at odd with the fact that in our data, changes from family to non-family ownership are as frequent as changes from non-family to family ownership. Let us underline though that this does not imply that family firms change main shareholder as frequently as non-family firms. Firms may indeed change main shareholder either because they switch from family to non-family ownership (or the other way round) or they may change main shareholder while remaining family owned or non-family owned. The REPOSE manager survey also has direct information on all changes in main shareholder for the period 2002-2004. In our sample only 8% of family firms changed main shareholder over this period as compared to 19% for non-family firms. This suggests that family firms change ownership much less frequently than non-family firms which is consistent with the idea that they have a longer time horizon.

equilibrium, while non-family firms are in a high-pay/low-job-security one. Changing ownership is then equivalent to moving from one equilibrium to the other. Why do some workers go away and others stay in the same establishment when this occurs? Those who stay are presumably workers with high moving costs. Once these moving costs are taken into account, they are indifferent between both types of equilibrium to the extent that they are compensated: by higher wages in exchange for lower job security when ownership changes from family to non-family and by greater job security in exchange for lower pay when the transition takes place the other way round.

Other workers leave their establishment when ownership changes. One potential explanation for this might be the existence of a complementarity between ICT and innovative managerial practices on the one hand and high ability on the other. In this case, high-ability workers would leave firms when they become family-owned because family firms would not compensate them properly for the large decrease in wages they would have to suffer if staying, due to the sharp reduction in the intensity of ICT and innovative managerial practices. Symmetrically, low-ability workers would leave family firms when they become non-family either because they get fired or because they are offered wage levels which do not compensate them for the lower degree of job security. However, our data do not quite support this interpretation. When controlling for changes in ICT and managerial practices interacted with *Leaver* in equation (3.2), the coefficients on both interaction terms are insignificant and the point estimate and standard error on $DF*Leaver$ remain unchanged. This suggests that the assortative matching we observe between high (resp. low) ability workers and non-family (resp. family) firms is not driven by their different intensity of use of ICT and innovative managerial practices.

An alternative explanation would then be that workers who leave their establishment when ownership changes have different preferences in terms of wages and/or job security. High-ability workers would leave non-family firms when they become family-owned because they have a relative preference for wages over job security, whereas the opposite holds for low-ability workers leaving family firms when they become non-family owned. Some very preliminary indication of this can be found in

our data. In the worker section of the REPONSE survey, individuals are asked what pushes them to put a lot of themselves into their job. "Wage incentives" and "promotion prospects" are among the possible choices and for each of them workers may answer "yes, a lot", "yes, to some extent", "not really", "not at all". For each item, we group answers into two categories: "yes" and "no". Regressing the wage incentive and promotion prospect indicators on our dummy variable for family ownership and the usual set of individual and establishment-level controls, we find that workers in family firms are significantly less sensitive to wage incentives and to career prospects than workers in non-family firms.⁴⁰ This is consistent with assortative matching taking place on the basis of preferences as evidenced, for top managers, by Bandiera et al. (2010). Our data do not allow us to go further along these lines. However, investigating potential differences in preferences across workers employed in family vs non-family firms appears to be a promising avenue for future research.

⁴⁰ The corresponding point estimates and standard errors are -0.52 (0.018) for wage incentives and -0.42 (0.017) for career prospects. The results are qualitatively similar if controlling for the worker's wage and her exposure to a wage incentive scheme.

3.6 Data Appendix

3.6.1 Sample Definition

The REPONSE dataset covers 2,930 establishments in 2004. We keep only firms being either family owned or for which ownership is dispersed, private-equity or joint-ventures, thereby dropping all associations, charities and governmental organisations operating in the business sector as well as firms owned by their own workers, by the government or by other types of shareholders (e.g. mutual companies). This brings down our sample to 2,133 establishments. For 481 of these establishments we have data on family ownership in 1998 by using the panel subsample of the REPONSE survey.

3.6.1.1 Wage equations

We matched our selection of REPONSE establishments with Social Security records (the DADS dataset). These contain information on gross hourly wages (constructed as gross annual wages divided by the number of hours worked), gender, age, occupation, working full time or part time, and a rough measure of job tenure for nearly all workers in the French private sector. We remove from the DADS dataset CEOs and top executives as well as small jobs, farmers, apprentice, workers under a subsidized contract, employees working at home and employees working less than one month in the year. We also exclude employees working on average less than 6 or more than 10 hours per day or aged less than 21 or more than 59 years. We also drop the lowest and highest percentiles of the hourly wage distribution of the remaining workers and we exclude establishments for which we do not have at least 5 valid observations (17 establishments). These operations are aimed at selecting core workers for whom we have a good measure of the hourly wage. Our final sample contains 511,230 employees working, in 2004, in 1,995 establishments (1,748 firms) being either family owned or having a dispersed ownership.

The panel subsample of the REPONSE survey was matched with the DADS panel on which we performed the same data cleaning as described in the previous paragraph for the cross-section dataset (except for the condition on the number of valid observations per establishment, that is obviously not applied in the case of the

DADS panel). We exclude all establishments for which we do not have at least one valid observation in both 1998 and 2004. After these operations, we are left with 4,713 workers in 1998 and 5,424 workers in 2004 from 417 establishments (410 firms).

3.6.1.2 Job security equations

We matched our selection of REPONSE establishments with the DMMO-EMMO dataset, which contains quarterly data on job and worker flows. Even if filling the DMMO-EMMO questionnaire is compulsory for all establishments with 50 or more employees and one fourth of the establishments with 10 to 49 employees, declarations are often incomplete. As a consequence, for our main sample (2001-2007) and once associations, charities and governmental organisations operating in the business sector as well as firms owned by their own workers, by the government or by other types of shareholders are excluded, the match results in 1,803 establishments that are linked at least once. Similarly, for the panel sample, we matched the panel subsamples of REPONSE 1998 and REPONSE 2004 with, respectively, the 1997-1999 and 2003-2005 waves of the DMMO-EMMO, resulting in 374 establishments that are linked at least once in each subperiod. The DMMO-EMMO database is composed of two datasets, one containing quarterly variables at the establishment level, including net employment growth and total number of movements (hirings plus separations), and another one containing information for each movement (that is, for each hiring or separation event). 13 establishment-by-quarter observations, for which the total number of movements in the two datasets were inconsistent, were also omitted from the sample.

The REPONSE survey contains individual information for a subsample of employees, randomly drawn out of the group of workers with more than 15 months of tenure. For the subjective job security equations, we use a subsample of 4,599 workers in 1,856 establishments, for which data on perceived risk of dismissal and on ownership are available. As always, associations, charities and governmental organisations operating in the business sector as well as firms owned by their own workers, by the government or by other types of shareholders are excluded from this sample.

3.6.2 Main variables

3.6.2.1 Establishment- or firm-level variables

Family ownership: managers are asked: "What is the type of the main category of shareholder of the firm?" Possible answers are family/individual/French or foreign financial company/ French or foreign non-financial company/the State/the workers/others. We define a dummy variable for family ownership which takes value 1 if the main category of shareholder is either a family or an individual and 0 otherwise. The dummy variable for dispersed ownership takes value 1 if the main category of shareholder is either a French or foreign financial or non-financial company and 0 otherwise. Source: REPONSE.

ICT use: managers are asked what proportion of the employees use computers, the Internet or the Intranet. For each of these new technologies, the answer is coded from 0 to 4 with 0 corresponding to "nobody", 1 to "less than 5%", 2 to "5-19%", 3 to "20 to 49%" and 4 to "50% and more". Our ICT variable is defined as the sum of the answers over the three types of technologies. It thus captures the intensity of use of ICT at the establishment level and varies between 0 and 12. We standardise it to 0 mean and 1 standard deviation. Source: REPONSE.

Innovative managerial practices: our index of innovative managerial practices is the weighted sum of the following 8 composite variables, most of which are directly inspired by Bloom and Van Reenen (2007):

Performance dialogue. Composite variable scoring from 0 to 12. Sum of the 4 items below:

1. Share of employees involved in quality circles: nobody = 0, less than 5% = 1, from 5 to 19% = 2, from 20 to 49% = 3, 50% and more = 4
2. Share of employees involved in shopfloor meetings: nobody = 0, less than 5% = 1, from 5 to 19% = 2, from 20 to 49% = 3, 50% and more = 4
3. Share of employees involved in expression groups: nobody = 0, less than 5% = 1, from 5 to 19% = 2, from 20 to 49% = 3, 50% and more = 4

Workers' participation. Composite variable scoring from 0 to 7. Sum of the 7 items below:

1. firm project: no = 0, yes =1
2. seminars: no = 0, yes =1
3. firm newspaper: no = 0, yes =1
4. open day: no = 0, yes =1
5. suggestion box: no = 0, yes =1
6. satisfaction survey: no = 0, yes =1
7. quality action: no = 0, yes =1

Workers' autonomy. Composite variable scoring from 0 to 2. Sum of the 2 items below:

1. In the event of incidents, workers are encouraged to refer to a supervisor = 0, to solve the problem themselves = 1
2. work is defined : in terms of precise content = 0, in terms of goal to reach = 1

Existence of targets. Composite variable scoring from 0 to 6. Sum of the 6 items below:

Existence of quantitative targets in terms of:

1. financial return: no = 0, yes =1
2. budget balance: no = 0, yes =1
3. labour cost: no = 0, yes =1
4. quality: no = 0, yes =1
5. growth: no = 0, yes =1
6. security: no = 0, yes =1

Managing human capital. Dummy variable that takes value 1 if there exists a training scheme, 0 otherwise

Rewarding high performance for managers. Composite variable scoring from 0 to 3. Sum the 3 items below:

1. Existence of a bonus (premium) based on individual performance: no = 0, yes =1
2. Existence of a bonus (premium) based on collective performance: no = 0, yes =1
3. Existence of stock options schemes: no = 0, yes =1

Rewarding high performance for non-managers. Composite variable scoring from 0 to 3. Same components and scoring as for managers.

Performance review. Composite variable scoring from 0 to 4. Sum of the 2 items below:

1. Individual assessment for managers : no = 0, for some of them = 1, for all = 2
2. Individual assessment for non-managers : no = 0, for some of them = 1, for all = 2

Consequence management. Composite variable scoring from 0 to 4. Sum of the 2 items below:

1. Impact of individual assessment on wages: no assessment or no impact = 0, indirect or long term impact = 1, direct impact = 2
2. Impact of individual assessment on promotions: no assessment or no impact = 0, indirect or long term impact = 1, direct impact = 2

Our summary index of innovative managerial practices is the sum of the above composite variables, each variable being weighted by the inverse of its maximum score. The raw summary index ranges between 0 and 8.4 (with mean 5.3), and is standardised to 0 mean and 1 standard deviation. Source: REPONSE.

Establishment size: number of employees in the establishment. Computed at the end of the year and grouped into 6 categories: less than 50 workers, 50-99 workers, 100-199, 200-499, 500-999 and 1000 workers and above. Source: DADS, when available, and REPONSE otherwise.

Establishment age: grouped into 5 categories: less than 5 years, 5 to 9 years, 10 to 19 years, 20 to 49 years and 50 years or more. Source: REPONSE.

Presence of union representative: dummy variable equal to 1 if there is at least 1 union representative in the establishment. Source: REPONSE.

Percentage of permanent workers: proportion of workers on open-ended contracts. Source: REPONSE.

Regions: 10 macro-regions in which the establishment is located, resulting from aggregation of French administrative regions. We create a dummy variable for each of them. Source: REPONSE.

Industries: detailed NAF codes are available in REPONSE. Using a standard map we aggregate them at the 2-digit level of the NACE rev. 1 classification.

Listed on the stock market: we build a dummy variable equals to 1 if the establishment is part of a firm listed on the stock market or belonging to a listed group. Source: REPONSE.

Productivity: annual value-added per employee in K€, measured at the firm level. Source: DIANE.

Return On Equity (ROE): percentage ratio of net profits to equity, measured at the firm level. For each year, we exclude top and bottom percentiles. Source: DIANE.

Return On Capital Employed (ROCE): percentage ratio of company earnings before interest and taxes (EBIT) to capital employed, measured at the firm level. For each year, we exclude top and bottom percentiles. Source: DIANE.

Firm size: Number of employees in the firm. Source: DIANE.

Average annual wages: ratio of the firm's gross wage bill to total number of

employees, measured at the firm level. Source: DIANE.

Firm age: difference between the current year and the year of incorporation. Source: DIANE.

Job creation rate: ratio of the net growth of employment between the beginning and the end of a quarter to the average employment level during that quarter, if the former is positive, and 0 otherwise. The average employment level during a quarter is computed as half of the sum of the employment levels at the beginning and the end of the quarter. Source: DMMO-EMMO.

Job destruction rate: ratio of the absolute value of net growth of employment between the beginning and the end of a quarter to the average employment level during that quarter, if the former is negative, and 0 otherwise. The average employment level during a quarter is computed as half of the sum of the employment levels at the beginning and the end of the quarter. Source: DMMO-EMMO.

Separation rate: for each type of separation, ratio of all movements during a quarter – excluding those corresponding to job spells equal or shorter than one month and transfers across establishments of the same firm – to the average employment level during that quarter (see above). Correspondingly, the total separation rate is the ratio of all separations – whatever their type – during a quarter to the average employment level during that quarter. Source: DMMO-EMMO.

Hiring rate: ratio of all hires during a quarter to the average employment level of that quarter (see above). This ratio is obtained from the sum of separation and net employment growth rates, exploiting the identity for which net employment growth must be equal to hirings minus separations. Source: DMMO-EMMO.

3.6.2.2 Individual-level variables

All variables come from DADS except when elsewhere specified.

Gross hourly wages include basic wages, and performance and non-performance related premiums and bonuses. They are net of employers and workers' social contributions but gross of income taxes.

Risk of dismissal: Workers are asked: "In the next 12 months, do you feel that the risk that you lose your job is: very high/high/low/zero?" We build a variable equal to 1 if the perceived risk is zero, 2 if it is low, 3 if it is high and 4 if it is very high. Source: REPONSE.

Occupations are grouped into 4 groups: managers, supervisors and technicians, clerks, blue-collarers.

Full time worker: dummy variable taking value 1 if the worker works full time, 0 otherwise.

Age is grouped into 8 categories: 21 to 25 years, 26 to 30 years, 31 to 35 years, 36 to 40 years, 41 to 45 years, 46 to 50 years, 51 to 55 years, 56 to 60 years. Workers aged 20 years or less or more than 60 years are excluded from our sample.

Job tenure is grouped into 3 categories in cross-section equations: 1 year or less, more than 1 to 2 years, more than 2 years. More information is available in the DADS panel. In this case job tenure is grouped into 8 categories: 1 year or less, 1 to 2 years, 2 to 4 years, 4 to 7 years, 7 to 10 years, 10 to 15 years, 15 to 20 years, more than 20 years.

Conclusion générale

L'ambition de cette thèse était de faire progresser notre compréhension des relations professionnelles en France à travers une analyse économique des rôles joués par les syndicats et les entreprises familiales. Si nos études théoriques et empiriques fournissent un certain nombre d'éléments de réponse originaux, elles ne prétendent nullement dresser un bilan global sur ces questions. La principale contribution de ce travail réside moins dans le caractère définitif des réponses apportées que dans la nouveauté du regard porté sur le fonctionnement des relations professionnelles, thème qui est traditionnellement réservé à d'autres disciplines.

Après avoir rappelé les principaux résultats de cette thèse, nous discutons les limites de nos travaux et esquissons les horizons qu'ils invitent à explorer.

Des résultats nombreux et originaux

Que font les syndicats ?

Le premier chapitre de cette thèse indique que le lien entre présence syndicale sur le lieu de travail et salaires est en moyenne faible en France. Pour établir ce résultat, nous estimons une équation de salaire augmentée par la présence syndicale à partir de riches données employeurs-employés. Notre méthodologie est similaire à celle utilisée par les très nombreux travaux sur le sujet réalisés dans d'autres pays. Nous reproduisons notamment une étude de Card et De La Rica (2006) portant sur l'Espagne. Nos résultats indiquent que la prime de salaire liée à la présence syndicale est plus faible en France (de l'ordre de 2 à 3%) que dans la plupart des autres pays développés (de l'ordre de 10% aux Etats-Unis par exemple), quand bien même les syndicats français sont relativement puissants au niveau national et bien représentés

dans les entreprises. Nous expliquons justement cela par le fait qu'il est très facile pour les syndicats français de s'implanter dans les entreprises et de pouvoir y négocier : il leur suffit de trouver un salarié qui accepte de devenir leur délégué syndical. Dans ce contexte, la présence syndicale ne signifie pas nécessairement un fort engagement des salariés dans la négociation, et la présence d'un représentant syndical ne suffit pas à assurer un fort pouvoir de négociation aux salariés.

Cette idée est confirmée par nos résultats suivants : lorsque les salariés d'une entreprise sont fortement syndiqués et qu'un délégué syndical est présent, les salaires sont plus importants, montrant que le délégué syndical a effectivement besoin d'être soutenu pour pouvoir négocier efficacement les salaires. On observe également que plus les rentes potentielles sont importantes dans une entreprise, plus les gains de salaire liés à la présence syndicale augmentent. Cela renforce l'idée que la relation entre présence syndicale et salaires reflète bien l'effet de la négociation salariale. Par ailleurs, lorsqu'on se concentre sur les entreprises françaises à forte part de marché (ou à fortes rentes potentielles), on observe d'une part que les salariés font davantage l'effort de se syndiquer pour soutenir leur syndicat et, d'autre part, que les syndicats obtiennent alors des gains de salaires similaire à ceux trouvés dans les autres pays développés (de l'ordre de 10%). Cela suggère que dans les pays où les barrières institutionnelles à la présence syndicale dans les entreprises sont plus fortes, les syndicats ne font l'effort de s'implanter que lorsque les gains qu'ils peuvent obtenir sont suffisants pour compenser leurs coûts. Le raisonnement peut être retourné pour caractériser la situation française et ces dispositifs institutionnels visant à favoriser la négociation collective à tout prix. Ceux-ci ne suffisent pas nécessairement à assurer une négociation efficace. Pour ce faire, les salariés doivent avoir fait l'effort de s'organiser, et leur entreprise doit par ailleurs avoir les moyens de leur offrir davantage.

Au delà de leur effet moyen sur le niveau des salaires, les syndicats semblent avoir des effets redistributifs : lorsqu'ils sont présents, ils favorisent en priorité les ouvriers et les salariés âgés. De manière cohérente avec ces résultats, l'ancienneté relative des ouvriers et des salariés âgés par rapport aux autres catégories de salariés est plus importante dans les entreprises pourvues de syndicats, suggérant que les meilleurs salaires obtenus par ces salariés (pour un niveau d'ancienneté donné) les rendent plus

fidèles à leur entreprise.

Au delà de leur rôle de négociateurs, les syndicats ont également un effet plus général sur les relations professionnelles et leur contenu. Ils sont notamment susceptibles d'induire une relation "loyale" entre les salariés et leur employeur (au sens d'Hirschman, 1970) et d'extraire la relation de travail d'un cadre purement marchand dans lequel l'insatisfaction s'exprime uniquement par la démission. Les relations marchandes sont en effet caractérisées par des mécanismes binaires (achat/non achat, entrée/sortie, etc.) représentatifs de la position d'un acheteur (resp. d'un agent) face à l'offre d'un vendeur (resp. d'un principal). En se constituant organe naturel d'expression, les syndicats incarnent une troisième voie permettant ainsi aux salariés d'entretenir une relation loyale avec leurs employeurs. Une telle relation est caractérisée par l'assurance pour l'employeur que les salariés ne quitteront pas immédiatement l'entreprise en cas d'insatisfaction, et vice versa, par la possibilité pour les salariés de trouver des compromis avec leur employeur en cas de problème. Lorsqu'une telle relation existe, on s'attend à observer que les salariés restent plus longtemps dans leur entreprise. C'est effectivement ce que nous observons : nos résultats indiquent que les départs volontaires sont plus faibles d'un tiers dans les entreprises avec syndicats que dans les entreprises sans syndicats similaires. Alors qu'environ 3% des salariés des entreprises sans syndicats démissionnent chaque année, ils ne sont que 2% dans les entreprises avec syndicats.

Comment fonctionne la négociation ?

Dans le chapitre 2, nous mettons en évidence ce qui semble être un clair dysfonctionnement de la négociation : à diplôme et expérience égaux, les délégués syndicaux sont rémunérés environ 10% de moins que leurs collègues. Quelle que soit l'explication pour cet écart de salaire, il semble surprenant que les salariés dont le rôle est de négocier les salaires soient nettement moins bien rémunérés que leurs collègues pour qui ils négocient.

Cependant, pourquoi ce résultat, potentiellement sulfureux, n'est-il pas connu depuis plus longtemps ? Et plus généralement, pourquoi aucune étude statistique n'a été menée jusqu'alors sur les écarts de salaires entre délégués et non délégués alors

qu'il existe par ailleurs de très nombreuses études sur la discrimination à l'égard des femmes ou des personnes d'origine étrangère ? La raison principale est certainement l'absence de données : à ce jour, il n'existe pas encore de données directes sur les délégués syndicaux et leurs salaires dans les grandes enquêtes de la statistique publique. Pour mesurer que les délégués sont rémunérés 10% de moins que leurs collègues, nous avons dû adopter une stratégie indirecte reposant sur la probabilité qu'un salarié soit délégué plutôt que sur le fait qu'il le soit effectivement. La probabilité qu'un salarié soit délégué est construite à partir de la proportion de délégués parmi les syndiqués de chaque établissement d'entreprise et les variations d'un établissement à l'autre de cette proportion. Cette nouvelle méthode développée pour mesurer le salaire des délégués constitue probablement la contribution principale du chapitre – voire de la thèse.

Cependant, en tant que chercheurs en sciences sociales, nous ne pouvons nous limiter à un travail purement descriptif. Nous développons donc une explication potentielle pour les moindres salaires des délégués. Cette explication est notamment motivée par certaines caractéristiques de notre système de relations professionnelles. En effet, le syndicalisme de représentativité à la française, avec son faible nombre de syndiqués et ses délégués syndicaux qui négocient pour tous les salariés, se traduit concrètement par des délégués qui sont souvent isolés sur le terrain et négocient pour des salariés qui sont souvent fort peu au courant de leurs prérogatives. La négociation "collective" dans les entreprises prend dès lors naturellement la forme d'une interaction plus spécifique entre quelques délégués syndicaux et l'employeur. Or, on sait très peu de choses sur le fonctionnement de cette négociation. D'un point de vue théorique, les modèles économiques utilisés pour modéliser la négociation syndicale restent généralement pauvres et adoptent une perspective relativement macroéconomique. Le syndicat est souvent considéré comme une boîte noire. Les débats portent sur le contenu de la négociation (salaire, salaire et emploi, conditions de travail) plutôt que sur son fonctionnement. Les incitations et les situations des non syndiqués, des syndiqués et des délégués syndicaux ne sont pourtant pas les mêmes. De nombreuses raisons peuvent pousser un salarié à devenir délégué syndical et rien n'assure a priori que celles-ci sont compatibles avec sa mission de représentant des salariés.

Second point, plus important encore : le délégué syndical est supposé être l'égal de son employeur lorsqu'il négocie avec lui mais il est sous son autorité en tant que salarié. De ce fait, la négociation qu'il mène avec celui-ci n'est pas symétrique et ne peut se modéliser uniquement à l'aide d'une négociation de Nash classique. Le délégué est pris en tension entre deux injonctions paradoxales : d'une part satisfaire ses collègues et son ambition syndicale en négociant activement, et d'autre part satisfaire son employeur et ses ambitions de carrière en ne négociant pas. Si la négociation met nécessairement le délégué dans une telle injonction, on comprend alors pourquoi aussi peu de salariés deviennent effectivement délégués.

Notre contribution afin de mieux comprendre les rouages de la négociation est alors de proposer un modèle théorique qui décrit l'interaction spécifique entre les délégués syndicaux et leur employeur. Dans le modèle, l'employeur dispose d'une marge de manœuvre pour traiter le représentant syndical de façon discrétionnaire. Cette marge de manœuvre est plus importante lorsque les actions du représentant syndical sont peu suivies et surveillées par les autres salariés de l'entreprise, c'est-à-dire lorsqu'il y a peu de salariés syndiqués. En fonction du nombre de syndiqués, deux équilibres de Nash peuvent émerger de l'interaction entre représentant syndical et employeur. Un équilibre "non coopératif" dans lequel le représentant négocie fort pour ses collègues et fait face à un employeur qui le discrimine afin de limiter l'action syndicale (dans le long terme). Un tel équilibre a davantage de chances d'aboutir lorsque les représentants sont bien contrôlés par les autres salariés. À l'inverse, si ces conditions ne sont pas respectées, un équilibre coopératif entre représentant syndical et employeur émerge. Dans ce cas, on observe que le représentant bénéficie de conditions d'emploi plus avantageuses en échange de sa passivité lors des négociations annuelles. Contrairement aux modèles traditionnels qui prennent uniquement en compte la décision des salariés de devenir syndiqués, notre modèle prend également en compte la décision de devenir délégué. Lorsque les fruits potentiels de la négociation ne sont pas suffisants pour compenser la discrimination à l'égard des délégués, aucun salarié ne devient délégué. Dans le modèle, les salariés se syndiquent pour contrôler les actions du délégué et augmenter son pouvoir de négociation. En l'absence de délégué, il n'y a donc pas d'incitation pour les salariés à se syndiquer. On voit alors comment une "trappe" sans

syndicat peut se former : si les rentes dans l'entreprise ne sont pas suffisantes pour compenser la discrimination envers les délégués, il n'y aura ni délégué, ni syndiqué. Il est alors très difficile de sortir de cette situation dans un monde avec discrimination, même lorsque les profits disponibles augmentent. En effet, pour qu'un salarié accepte de devenir délégué, il faut qu'il y ait un seuil minimum de syndiqués qui le soutiennent. Les salariés font alors face à un problème classique de coordination pour atteindre ce seuil, car tant que le seuil n'est pas atteint, il n'y aura pas de délégué et l'action *individuelle* de se syndiquer ne sert à rien. La situation est différente en l'absence de discrimination : dans ce cas, il y aura toujours un délégué (puisque'il n'y a aucun coût à le devenir), et l'action *individuelle* de se syndiquer est toujours utile (pour contrôler et aider le délégué), même pour le premier salarié qui devient syndiqué. Il n'y a donc pas d'effet de seuil, et le taux de syndicalisation peut s'ajuster continûment en fonction des besoins, même en l'absence de coordination entre les salariés.

On comprend alors pourquoi l'employeur peut rationnellement avoir intérêt à discriminer les délégués : cela rend l'émergence des syndicats plus difficile du fait des problèmes classiques de coordination et de passagers clandestins propres à la fourniture de biens publics.

Plusieurs éléments empiriques tendent à réfuter l'idée que les salaires plus faibles des délégués découlent d'un effet de sélection. On observe ainsi que les délégués avec peu d'ancienneté et les syndiqués qui ne sont pas délégués ne sont pas moins bien rémunérés que leurs collègues. Le premier résultat montre que ce ne sont pas des salariés initialement mal payés qui deviennent délégués. Le second indique que, parmi les syndiqués qui forment déjà une population particulière et sélectionnée, le fait d'être délégué change drastiquement la situation salariale. Nous développons ensuite plusieurs tests venant renforcer l'interprétation proposée par le modèle. En premier lieu, ce sont surtout les délégués de la CGT, qui est un syndicat très combatif, qui sont particulièrement mal payés. On voit ainsi très clairement un lien entre l'attitude du syndicat, ses velléités à négocier durement, et le salaire de ses délégués. Le modèle montre ensuite que les délégués vont négocier davantage (et ne pas se faire "acheter") lorsqu'il y a plus de rentes potentielles à négocier et lorsqu'il y a plus de syndiqués derrière eux pour les supporter et les contrôler. Ces prédictions sont également vé-

rifiées empiriquement. Enfin, le modèle indique qu'il y a plus de syndiqués lorsque les rentes potentielles sont plus importantes, et que les gains liés à la présence syndicale sont également plus forts dans ce cas. L'étude proposée dans le premier chapitre confirme que ces prédictions sont vérifiées.

Nous confrontons ensuite notre étude des salaires des délégués à l'opinion des représentants du personnel concernant le rôle qu'a joué leur mandat sur leur carrière. Leurs réponses confirment parfaitement nos résultats : les délégués CGT estiment avoir été davantage pénalisés, la pénalité ressentie augmente avec l'ancienneté comme représentant dans l'établissement de travail, etc.

Nous concluons par une étude de la protection contre le licenciement apportée aux délégués, ainsi que par une description de l'histoire (récente) des procès pour discrimination syndicale et leur fonctionnement. Dans son ensemble, notre étude des délégués syndicaux et de la négociation intra entreprise fait apparaître de nombreux mécanismes ignorés jusqu'ici, ainsi que des résultats nouveaux et originaux sur la situation des délégués syndicaux. Un large faisceau d'évidence vient renforcer nos interprétations.

Les entreprises familiales

Dans la deuxième partie de cette thèse, nous montrons que les entreprises familiales – au sens de possédées par une famille – offrent des salaires plus faibles mais une meilleure protection de l'emploi. D'une certaine manière, on peut considérer qu'elles se situent entre les entreprises non familiales et le service public.

À partir de données couplées sur les employeurs et leurs salariés pour l'année 2004, nous commençons par observer que les salaires sont en moyenne inférieurs de 20% dans les entreprises familiales. Lorsqu'on contrôle pour les différences de taille, de secteur d'activité, de région et d'âge entre les entreprises familiales et non familiales, ainsi que pour les différences de caractéristiques observables de leurs salariés (catégorie socioprofessionnelle, sexe et âge notamment), l'écart de salaire moyen entre les deux types d'entreprises n'est plus que de l'ordre de 5%. Le fait que les entreprises familiales soient moins productives et moins innovantes et le fait qu'elles aient beaucoup moins souvent des syndicats pourraient expliquer cet écart résiduel. Cela n'est cependant

pas le cas : lorsque nous contrôlons pour les différences de présence syndicale, de mode d'organisation, les différences en termes d'adoption de nouvelles technologies ou les différences de productivité, nous trouvons toujours un écart de salaire de l'ordre de 3% entre entreprises familiales et non familiales.

Afin de contrôler pour l'hétérogénéité inobservée au niveau des entreprises, nous utilisons des données de panel. Nous montrons que la variation de salaires moyens entre 1998 et 2004 au sein des entreprises qui passent de familiales à non familiales est 5% supérieure à la variation de salaires équivalente pour les entreprises qui n'ont pas changé de type de propriété. Le phénomène est symétrique : les entreprises qui passent de non familiales à familiales entre 1998 et 2004 ont eu des évolutions de salaires moyens inférieures de 5% à celles qui n'ont pas changé de type de propriété. Ces écarts en panel peuvent avoir deux explications : d'une part, il se peut que les entreprises familiales offrent effectivement des salaires inférieurs à des salariés identiques ; d'autre part, il se peut que les changements de propriété induisent des changements de composition de la main d'œuvre tels que les meilleurs salariés s'apparient avec les meilleurs entreprises. Nous décomposons l'effet de chacune de ces explications et montrons qu'environ 3% de l'écart de salaire est dû aux différences de pratiques managériales entre entreprises familiales et non familiales et que les 2% restant sont liés à un changement de composition de la main d'œuvre.

En parallèle des moins bons salaires qu'elles offrent, nous montrons que les entreprises familiales apparaissent mieux à même d'offrir à leurs salariés des contrats implicites de long terme et de les protéger contre les chocs économiques. Les taux de licenciement sont ainsi plus faibles dans les entreprises familiales, y compris lorsqu'on contrôle par les caractéristiques observables des entreprises (sur données transversales en 2004) et pour l'hétérogénéité inobservée au niveau des entreprises (en panel, entre 1998 et 2004). Ces résultats sont confirmés par les déclarations des salariés eux-mêmes qui se sentent plus en sécurité vis à vis du licenciement dans les entreprises familiales en 2004. Lorsqu'elles sont amenées à réduire leur nombre de salariés d'un trimestre au suivant, les entreprises familiales procèdent plus que les autres entreprises par réduction de leur nombre habituel d'embauches et moins par augmentation de leur nombre habituel de licenciements. Les taux de licenciements plus faibles dans les entreprises

familiales semblent donc résulter d'une stratégie des entreprises familiales visant à mieux stabiliser la main d'œuvre et à répondre à leurs besoins d'ajustement via le moins de licenciements possible.

Nous examinons pour terminer les liens éventuels entre les moins bons salaires et la meilleure protection de l'emploi dans les entreprises familiales. Nos résultats suggèrent qu'environ un tiers de la différence de salaire entre entreprises familiales et non familiales peut être directement reliée aux différences de taux de licenciement entre ces deux types d'entreprises. Si les entreprises familiales peuvent se permettre d'offrir de moins bons salaires, c'est donc effectivement en partie parce qu'elles sont en mesure d'offrir une meilleure protection contre le licenciement. Mais ces différences de traitement engendrent logiquement des différences de main d'œuvre : les salariées les moins compétents (ou les moins motivés) vont davantage travailler dans les entreprises familiales et vice versa.

Limites et perspectives

Bien qu'ils apportent un éclairage nouveau sur les relations professionnelles, nos travaux comportent un certain nombre de limites qu'il convient d'examiner pour mieux tracer les perspectives qu'ils tracent pour les recherches futures.

Élargir l'étude des effets du syndicalisme

Notre étude des effets de la présence syndicale se concentre essentiellement sur les aspects salariaux. Les salaires étant à la fois facilement observables et objectivables, leur étude est naturelle pour un économiste du travail. Cependant, les syndicats ne se contentent pas de négocier les salaires. Ils sont également susceptibles d'affecter l'emploi et les conditions de travail. Leur effet sur l'emploi peut être soit direct via la négociation, soit indirect via les ajustements de main d'œuvre effectués par les employeurs suite à la négociation salariale. Dans le second cas, c'est à dire si les syndicats ne se préoccupent pas directement de l'emploi, la négociation salariale peut avoir des conséquences délétères sur le niveau d'activité. De manière plus générale, l'effet potentiel des syndicats sur l'emploi est une question importante qui a d'importantes implications potentielles en termes de politiques publiques..

L'étude des conditions de travail et des modes d'organisation manque également. Les modifications des modes d'organisation allant de pair avec l'émergence des nouvelles technologies de l'information et de la communication (Boltanski et Chiapello, 1999 ; Askenazy, Thesmar, Thoenig, 2006) ont engendré une intensification des rythmes de travail (Askenazy, 2004 ; Askenazy et Caroli, 2010). Les syndicats ont sans doute joué un rôle par rapport à ces dynamiques. Il serait intéressant de voir à la fois dans quelle mesure les syndicats ont tenté de s'opposer au développement des modes d'organisation innovants, et dans quelle mesure ces nouveaux modes d'organisation mis en place par les employeurs ont pu les déstabiliser et causer leur déclin. On peut ensuite se demander si les modes d'organisation sont moins innovants dans les entreprises où les syndicats se sont maintenus, et si ce sont les syndicats eux-mêmes qui ont joué un rôle conservateur en empêchant les changements de pratiques. Les conditions de travail étant fortement liées au mode d'organisation, leur étude va de pair avec celle des modes d'organisation.

Au delà de ce que qu'ils peuvent obtenir par la négociation, les syndicats ont également un effet plus général sur les relations professionnelles et leur contenu. Comme nous l'avons dit, ils sont susceptibles d'induire une relation "loyale" entre les salariés et leur employeur, et d'extraire la relation de travail d'un cadre purement marchand dans lequel l'insatisfaction s'exprime uniquement par la démission. Nos résultats sur les démissions indiquent qu'une telle dynamique est probablement à l'œuvre. Cependant, ni le sens de la causalité, ni les mécanismes exacts via lesquels les syndicats affectent les salaires, ne sont clairement explicités dans le cadre de cette thèse. Nos résultats sur les démissions représentent en ce sens un premier élément de réponse mais non une étude à part entière.

Cet écueil s'applique probablement également à un certain nombre des résultats présentés dans le premier chapitre. Notre étude de la négociation de branche reste avant tout descriptive et mériterait d'être complétée par une étude de la façon dont les salaires réels réagissent aux minima conventionnels (à la manière de Portugal et Cardoso, 2005). De même, l'étude du lien entre présence syndicale et structure des salaires gagnerait à être complétée. Nous reconnaissons ces limites, mais considérons cependant que, dans un domaine où les travaux économétriques restent l'exception

plutôt que la règle, nos résultats offrent d'intéressantes pistes et indiquent les directions à creuser pour des recherches futures.

Améliorer les stratégies d'identification

Dans nos investigations empiriques, nous tentons systématiquement de contrôler le mieux possible pour les caractéristiques observables des salariés et des entreprises présents dans nos données. Nous construisons également dans les deux premiers chapitres des modèles dont nous pouvons tirer des prédictions testables afin de renforcer la validité de nos interprétations. Dans le dernier chapitre, nous exploitons de riches données de panel pour corriger nos estimations d'un certain nombre de biais de sélection.

Cependant, en l'absence de pure source d'exogénéité, nous ne pouvons garantir que nos résultats reflètent des causalités. Dans un effort pour remédier à cette potentielle insuffisance, nous tentons dans le premier chapitre d'exploiter la relation entre présence syndicale et taille des établissements pour évaluer l'effet causal des syndicats sur les salaires à l'aide d'une méthode originale. Si la méthode proposée présente un intérêt qui dépasse largement le champ d'étude de cette thèse, elle mérite encore d'être améliorée, et les résultats qui en découlent doivent à ce stade être considérés avec prudence.

De manière générale, beaucoup reste à inventer en termes de stratégies d'identifications dans le champ des relations professionnelles. Malgré l'absence de "bonnes" stratégies – ou sources d'exogénéité –, nous avons tenté de porter une attention particulière aux biais susceptibles d'affecter nos résultats et nous nous sommes efforcés, autant que possible, de développer des stratégies pour contourner les principales difficultés. Nous espérons que les quelques pistes adoptées ou suggérées dans le cadre de cette thèse pourront être des sources d'inspiration pour des recherches futures.

Conflits et satisfaction au travail

Une contribution importante de cette thèse est d'éclairer un certain nombre de mécanismes propres à la négociation en entreprises, notamment à travers l'étude du rôle joué par les délégués syndicaux. Nous avons cependant complètement ignoré le rôle joué par les grèves et les menaces de grève alors que celles-ci jouent un rôle important pour déterminer le pouvoir de négociation des salariés.

L'analyse des grèves a posé des difficultés à l'analyse économique traditionnelle : comment expliquer, dans le cadre d'un modèle à agents rationnels, qu'une situation apparemment Pareto-dominée pour toutes les parties prenantes puissent exister ? C'est en partie pour éviter les subtiles complications liées à la compréhension des situations de grève (dans le cadre de l'analyse économique) que nous les avons écartées de notre analyse. La prise en compte des grèves et des conflits aurait nécessité une étude à part entière, étude qui dépasse le cadre de cette thèse. Nous ne pouvons cependant qu'encourager des recherches sur le rôle joué par les grèves et les conflits dans les relations professionnelles. Les travaux empiriques sur les grèves et les conflits sont en effet plutôt rares, alors que l'enquête REPONSE, que nous avons exploitée de manière intensive au cours de cette thèse, offre également un outil exceptionnel pour les étudier. Plusieurs questions de recherche peuvent être avancées. Pourquoi et dans quelles circonstances les salariés se mettent-ils en grève ? Les syndicats s'implantent-ils dans les entreprises essentiellement en cas de conflit, c'est à dire, lorsque les salariés ont particulièrement besoin d'un organe représentatif ? Au delà de leur pouvoir naturel de faire la grève qu'ils peuvent avoir à exercer pour des raisons légitimes, les syndicats sont-ils générateurs de conflits additionnels (par exemple parce que leur action est poussée par des préceptes idéologiques qui les incitent à lutter plutôt qu'à discuter) ?

La conflictualité des relations professionnelles constitue le pont qui relie les deux parties de cette thèse. Car si les syndicats peuvent être générateurs de conflictualité, le capitalisme familial est à l'inverse synonyme de relations professionnelles plus apaisées. Les entreprises familiales auraient un avantage comparatif à gérer la conflictualité par le truchement des pratiques managériales paternalistes qu'elles sont naturellement amenées à mettre en place. Présenté de la sorte, l'argument semble largement favorable au capitalisme familial. Cependant, il n'est pas certain que la relation entre capitalisme familial et absence de conflictualité signifie pour autant que les salariés des entreprises familiales sont davantage satisfaits. Le contraire est même possible. D'après Philippon (2004), le capitalisme familial permet certes d'éviter la conflictualité à court terme mais il nuit à long terme à l'épanouissement des salariés, notamment parce qu'il empêche par essence toute possibilité de renouvellement des élites.

Le lien entre conflictualité et satisfaction au travail mérite d'être creusé. Nous avons regardé à partir de l'enquête REPONSE si les salariés des entreprises familiales ou des entreprises dans lesquelles il y a des syndicats estiment davantage que leur travail est reconnu à sa juste valeur. Nos quelques tentatives semblent indiquer qu'il n'y a aucune différence significative selon cette dimension entre les différents types d'entreprise. Il faudrait cependant disposer d'un indicateur direct de satisfaction au travail pour approfondir ces questions, ce que nous n'avons pas à ce stade.

En dehors de sa relation avec les conflits, l'étude de la satisfaction au travail est intéressante *per se*. A l'heure où de plus en plus d'économistes plaident pour une prise en compte plus directe de la satisfaction des individus (voir par exemple Layard, 2006 ou le rapport Fitoussi, Sen et Stiglitz, 2009), les recherches en économie du travail restent encore largement focalisées sur les performances productives des salariés et de leurs entreprises. Dans le cas qui nous concerne, on peut se demander si les effets des syndicats et des entreprises familiales sur les conditions de travail et d'emploi se traduisent par des différences de satisfaction au travail. Les moins bons salaires offerts par les entreprises familiales leur permettent d'afficher une meilleure performance financière malgré leur moindre productivité (Sraer et Thesmar, 2007). Mais qu'en est-il du côté des salariés ? Nous avons montré que les salariés des entreprises familiales bénéficient d'une meilleure protection de l'emploi en contrepartie de leurs moins bons salaires. Mais cette compensation est-elle suffisante ? Pour le savoir, il faudrait examiner la satisfaction des salariés. Cela permettrait également d'éclairer des politiques publiques éventuelles : si les entreprises familiales exhibent de meilleures performances financières et que l'on pouvait montrer par ailleurs que leurs salariés ne sont pas moins satisfaits, nul doute alors qu'il faudrait favoriser leur subsistance (ce que le marché devrait faire normalement). Concernant les syndicats, Bryson *et al.* (2010) montrent que les salariés syndiqués au Royaume-Uni sont moins satisfaits de leur travail mais que cela s'explique par un effet de sélection dans syndicats. On peut se demander si un tel effet de sélection existe en France, et si par ailleurs les syndicats ont également un effet sur la satisfaction au travail.

Perspectives liées à la loi du 20 Août 2008

Inspirée par l'infuent rapport au premier ministre du conseiller d'État Hadas-

Lebel (2006), la loi portant rénovation de la démocratie sociale et réforme du temps de travail du 20 Août 2008 a fortement modifié les modalités de la présence syndicale en entreprise. On peut se demander dans quelle mesure les résultats présentés dans la première partie de cette thèse sont susceptibles d'être modifiés du fait du nouveau contexte légal.

La loi du 20 Août 2008 a induit deux changements principaux concernant la présence syndicale en entreprise. D'abord les délégués syndicaux ne sont plus "désignés" par leur syndicat, mais élus lors des élections professionnelles, au même titre que les autres types de représentants du personnel : ils doivent avoir recueilli au moins 10% des suffrages exprimés au premier tour des élections professionnelles pour être reconnus. Ensuite, un accord collectif n'est désormais valide que (i) s'il est signé par une ou plusieurs organisations syndicales ayant recueilli ensemble au moins 30% des suffrages exprimés aux élections professionnelles, et (ii) s'il ne fait pas l'objet d'opposition de la part d'une ou plusieurs organisations syndicales ayant recueilli la majorité des suffrages exprimés aux élections professionnelles.

Ces nouveaux dispositifs rendent incontestablement la présence syndicale en entreprise plus démocratique. Au regard d'un certain nombre des résultats présentés dans cette thèse, on ne peut que s'en féliciter. Les syndicats semblent en effet plus efficaces lorsqu'ils sont davantage soutenus par les salariés. Lorsqu'ils opèrent avec peu de soutien (*i.e.* peu de salariés syndiqués), leur rôle ne semble pas significatif. Plus exactement, nos résultats suggèrent qu'ils n'obtiennent aucun gains de salaire dans ce cas, alors même que la négociation salariale est à la fois leur principale activité et leur principal objectif⁴¹. Le passage par les urnes est à ce titre un excellent moyen de recueillir le soutien explicite des salariés. Il va rendre les syndicats davantage représentatifs des salariés au niveau local, ce qui ne peut que les aider à retrouver une certaine légitimité et renforcer leur action.

Deuxième point important, le passage par les urnes rend *de facto* l'action des délégués syndicaux publique et soumise à approbation. L'un des travers souligné par notre modèle théorique est la possibilité qu'un délégué syndical se fasse "acheter" par son employeur. Les employeurs ont tout à gagner à "acheter" un délégué syndical

⁴¹Les salaires sont de loin le principal objet des négociations et ils sont le principal objectif des dirigeants syndicaux (Clark et Oswald, 1993).

pour éviter d'entrer dans une négociation qui va lui être coûteuse. En témoigne la caisse noire de plus de cent millions d'Euros de l'Union des Industries et Métiers de la Métallurgie (UIMM) spécifiquement destinée à "fluidifier" le dialogue social. En l'absence d'une surveillance réelle de la part des autres salariés, le représentant syndical dispose d'une marge de manœuvre pour extraire à son propre compte une part des profits de son entreprise. La loi du 20 Août 2008 est susceptible de limiter ce phénomène pour trois raisons. D'abord, en impliquant les salariés au moment des élections, elle devrait améliorer leur contrôle sur l'action de leurs représentants syndicaux. L'élection bénéficiant d'une certaine publicité, elle joue le rôle d'un révélateur d'information. Ensuite, la perspective d'une élection induit pour le délégué la menace d'un arrêt potentiel de son mandat. C'est sans doute l'un des éléments importants de la nouvelle loi : jusqu'alors, un délégué syndical pouvait garder son mandat toute sa vie, et les "carrières" syndicales n'étaient pas rares. Dorénavant, il peut perdre son mandat, et ce d'autant plus que son action n'est pas efficace. On peut donc penser qu'un salarié qui espère rester délégué hésitera à se faire acheter par son employeur. D'autant plus que s'il perd son mandat de délégué, il perd également le pouvoir d'extorsion qu'il avait sur son employeur et son emploi peut même s'en trouver menacé. Le dernier point est lié à la signature des accords collectifs. Dans une entreprise avec plusieurs syndicats, une manière pour un délégué de rendre service à son employeur (en échange de certains avantages) est de signer avec lui un accord vide de contenu. Il met ainsi fin aux négociations et rend l'action des autres syndicats plus compliquée. On peut en effet penser que lorsqu'un accord a déjà été signé, il est difficile pour les syndicats qui le désirent de continuer à négocier. En exigeant que les organisations signataires aient recueilli 30% des suffrages exprimés aux élections professionnelles, la loi du 20 Août 2008 met fin aux possibilités de signature d'accord précoces que nous venons de décrire.

Il faut cependant aussi mentionner les limites de la loi du 20 Août 2008. Si la nouvelle loi rend la présence syndicale en entreprise plus démocratique, elle ne la rend pas pour autant *totale*ment démocratique, au sens où les salariés n'ont pas l'opportunité de décider par les urnes s'ils souhaitent effectivement être représentés par un syndicat. La présence syndicale reste imposée : les salariés peuvent uniquement

choisir, s'il y a plusieurs candidats, lesquels auront le droit de les représenter.

La discrimination syndicale : sujet d'avenir ?

Au-delà de ces apports dans des champs de recherche déjà bien établis, cette thèse a investi un nouvel objet d'étude jusque-là largement ignoré : la discrimination syndicale. À l'aide d'une méthode statistique astucieuse, nous avons pu établir un nouveau fait stylisé : les délégués syndicaux sont payés 10% de moins que leurs collègues. Nous avons ensuite tenté de construire une théorie susceptible d'expliquer cette statistique.

Nous souhaitons conclure cette thèse par une rapide discussion – aussi objective que possible – sur l'avenir potentiel de la discrimination syndicale comme champ de recherche. Force est d'abord de constater que nos recherches font écho à de nombreux procès pour discrimination syndicale, et à de nombreuses avancées juridiques en matière de droit de la non-discrimination. Les méthodes développées pour prouver la discrimination syndicale semblent même s'exporter à d'autres types de discriminations et d'acteurs (Chappe, à venir). La mesure que nous avons pu établir de l'écart salarial entre les délégués et leurs collègues vient appuyer les efforts des juristes et avocats impliqués dans la défense des victimes – présumées ou réelles – de discrimination syndicale.

Cependant, même si cela est fort utile, établir une mesure ne constitue pas en soi un travail de chercheur en sciences sociales. L'apport académique de nos travaux réside davantage dans l'interprétation proposée pour expliquer nos résultats. Nous avons notamment largement plaidé pour une meilleure prise en compte des problèmes d'agence au sein des syndicats, et pour des travaux qui ne se contentent pas d'examiner les déterminants de la *syndicalisation* mais qui regardent également les déterminants de la *représentation syndicale*. L'étude de ces questions nous paraît utile, au delà même de la discrimination potentielle dont seraient victimes les représentants syndicaux. Comme expliqué dans le chapitre 2, les premiers résultats que nous avons obtenus sur les salaires des délégués ont favorisé une avancée importante dans la nouvelle enquête REPONSE de la DARES qui sera disponible pour les chercheurs habilités début 2012 : dans la nouvelle enquête, on demande directement aux salariés interrogés s'ils sont représentants syndicaux alors que dans l'enquête de 2004, on leur demandait seulement s'ils étaient syndiqués. Cette information permettra déjà

d'affiner et de confirmer la mesure du salaire des délégués. Mais elle permettra surtout de mener davantage de tests afin de mieux comprendre le fonctionnement de la négociation d'entreprise. Nous n'en sommes pas encore là mais l'enjeu à terme peut être de taille : mieux comprendre les ressorts de la négociation en entreprise peut permettre de trouver des solutions, par le biais politique ou via les syndicats directement, pour améliorer le pouvoir de négociation des salariés. Dans le contexte actuel de forte hausse des inégalités de revenu (Landais, 2007 ; Piketty, 2001), les solutions fiscales paraissent politiquement difficiles à mettre en œuvre. Augmenter le pouvoir de négociation des salariés en résolvant les principaux dysfonctionnements des instances de négociation collective apparaît alors comme une solution directe et naturelle. C'est pour cette raison que nous pensons que l'étude économique du fonctionnement de la négociation en entreprise (et non uniquement de ses effets) mérite d'être creusée.

On peut finalement se demander si l'étude du rôle spécifique des délégués syndicaux a un intérêt dans d'autres pays ou, au contraire, si nous ne faisons qu'observer les conséquences d'un système de relations professionnelles spécifiquement français. Dans les pays germaniques ou scandinaves par exemple, la négociation se fait davantage au niveau des branches ou au niveau national, et l'étude de la négociation au niveau des entreprises ne présente *a priori* que peu d'intérêt. A l'opposé, les syndicats américains négocient presque exclusivement au niveau des entreprises. En revanche, la présence syndicale est déterminée par une élection à la majorité qui assure au représentant syndical un fort soutien de ces collègues et rend la discrimination difficile et peu utile pour l'employeur. La question de la discrimination syndicale semble en revanche pouvoir se poser dans les pays d'Europe latine (Italie et Espagne essentiellement), et au Royaume-Uni. Ces pays connaissent en effet des systèmes de négociation décentralisés, et la présence syndicale n'y est pas toujours soumise à un processus très démocratique, ce qui incite les employeurs à cibler les quelques salariés prenant de leur fait la charge de la négociation. A court terme, nous espérons pouvoir reproduire notre étude au Royaume-Uni à partir de l'enquête WERS qui est similaire dans sa construction à l'enquête REPONSE, et qui permet de reproduire à l'identique notre stratégie probabiliste d'estimation du salaire des délégués.

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