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HABILITATION À DIRIGER DES RECHERCHES (PART I)

Summary in English
for the French diploma *Habilitation à diriger des recherches* (HDR)

PUBLIC ECONOMICS OF THE WELFARE
STATE

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To Céline, Timothée and Juliette,

Acknowledgments

In this short English summary, I would like add a few words for those not able to read the more lengthy acknowledgments in the French version.

After the completion of my PhD, I have benefited immensely from my work at the Institute for Fiscal Studies (IFS) in London. I have enjoyed working in this top scientific environment with a clear policy focus, discovering like Voltaire before me, the British tradition of checks and balances, the strength of the democratic debate, and the way IFS contributes to those. I have also been lucky to work with Richard Blundell, whose scientific greatness is only equalled by his relax and friendly approach to research. I have enjoyed working with Guy Laroque, whose scientific rigor and sharpness has each time made great impression upon me. May I thank here all my co-authors from these British years who have helped me make progress on analysis of public policies: Stuart Adam, James Banks, Monica Costa Dias, Rowena Crawford, Richard Disney, Carl Emmerson, Paul Johnson, Cormac O’Dea, Barra Roantree and Gemma Tetlow.

I would like also to thank warmly Andrea Weber for having accepted to judge this work. I have already benefited from her pertinent discussion on earlier version of some of my work, and I am very proud to have her included in this HDR jury.

This English summary is a (very) short summary of the French version of the “document de synthèse”. It mainly presents an outline of what the longer version.

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Introduction

Unlike some economic purist of today, I admit to more than only a scientific motivation; intelligent and civilized conduct of government and the delineation of its responsibilities are at the heart of democracy. (...) Intelligent conduct of government requires an understanding of the economic relations involved; and the economist, by aiding in this understanding, may hope to contribute to a better society. This is why the field of public finance has seemed of particular interest to me; and this why my interest in the field has been motivated by a search for the good society, no less than by scientific curiosity.

The Theory of Public Finance. A Study in Public Economy

Richard A. MUSGRAVE

This introduction motivates my research within the field of applied public economics, and defends the idea that there is value in applying the tools of the field to the welfare state, in both its tax and benefit component and its social insurance one.

The field of public economics

In this section I review the recent evolution of the field of public economics, stressing the influence of prominent economists, like Richard Musgrave and Anthony Atkinson (Musgrave, 1959; Atkinson and Stiglitz, 1980), have had on my own motivation for engaging in this field. I describe how the field has evolved from a mostly theoretical field to a mostly empirical one,

through the *credibility revolution* (Angrist and Pischke, 2010), and some of its unease in the profession, highlighted by the creation of the *Journal of Public Economic Theory*¹.

I then describe how the opposition between reduced form and structural approaches (Angrist and Krueger, 1999; Rosenzweig and Wolpin, 2000; Heckman and Vytlacil, 2005) has been perhaps more influential than the opposition between theory and empirics, and how the particular approach developed in public economics, the sufficient statistics approach, has made the field a convenient middle ground, where theory and empirical analysis have been maintained alive, side by side.

Welfare state as object of study

I discuss in this section the major analyses of the welfare state in legal studies, sociology, political sciences and history, and remark that contributions by economists have been limited at most: among the 72 contributors of the *Oxford Handbook of the Welfare State* (Castles, Leibfried, Lewis, Obinger and Pierson, eds, 2010), at best two economists can be named, and the economic analyses remain limited. Why is that the case?

Public economics of the welfare state

Three reasons can be put forward for the lack of a public economics of the welfare state: first, there has been a tradition of mistrust of the welfare state from the part of economists, whose voice have often highlighted the cost of the welfare state rather than the benefits, as regretted by Anthony Atkinson in his book *The Economic Consequences of Rolling Back the Welfare State* (1999). I argue that this line of argument, often a strong criticism of economics by other disciplines is misguided. The objectives of public economics is “*to illuminate the relationship between objectives and conclusions*” (Atkinson et Stiglitz, 1980) and not to replace the democratic debates about the objectives of policy.

Second, the importance of studies concentrated on the case of the US and the UK, with

¹The editorial piece launching the review stated: “Unfortunately, the very success of applied and especially empirical public economics has tended to push more theoretical work to the periphery of the field” (Conley and Wooders, 1999).

a focus on tax and benefit system, rather than social insurance or universal social security system, has tilted the field towards these types of welfare state, at the expense of the larger share of public spending in Continental Europe dedicated to social insurance mechanisms.

Third, often economists have had to simplify too much the institutional designs of welfare state policies, at the point of making their analysis irrelevant: e.g., by forgetting tax-benefit linkage, or conditionality of some benefits, one can miss greatly the impact and purpose of these schemes. I argue that great progress has been made in the field, to provide analysis well grounded on the details of institutional design, including the social insurance mechanism (Baily, 1978; Chetty, 2006; Gruber, 1997).

My own research aims to fill, modestly, this gap, by providing analysis of the welfare state policies, including its social insurance, contributory approach, so common in Continental Europe.

Exploiting administrative data

Another important point of my research has been the exploitation of administrative data. I stress how this is changing the type of empirical work which can be realised, and the issue of better access to these data. I also mention my own contribution in helping legal changes in France for a better access to administrative data for scientific research (Bozio et Geoffard, 2017).

Chapter 1

Economics of pensions

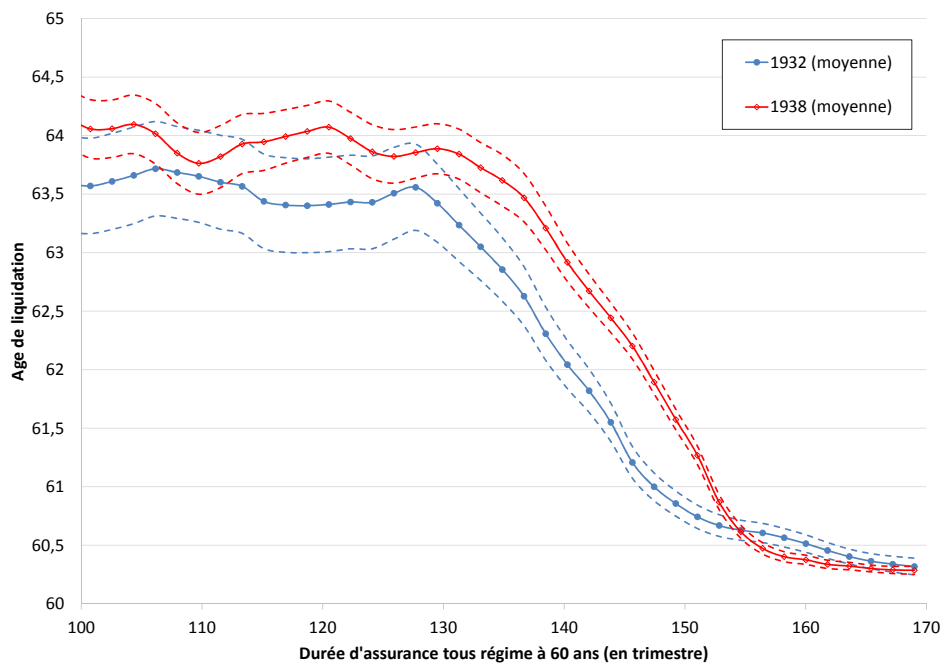
1.1 Impact evaluation of the 1993 French pension reform

One of the first article after my PhD thesis has been to use a methodology closed to what I developed in my PhD to a new set of administrative data. The objectives were to exploit the 1993 French pension reform which increased the contribution length to gain full rate pension from 37.5 years to 40 years. The article was published in French in the peer-reviewed journal *Économie et Statistique* (Bozio, 2011).

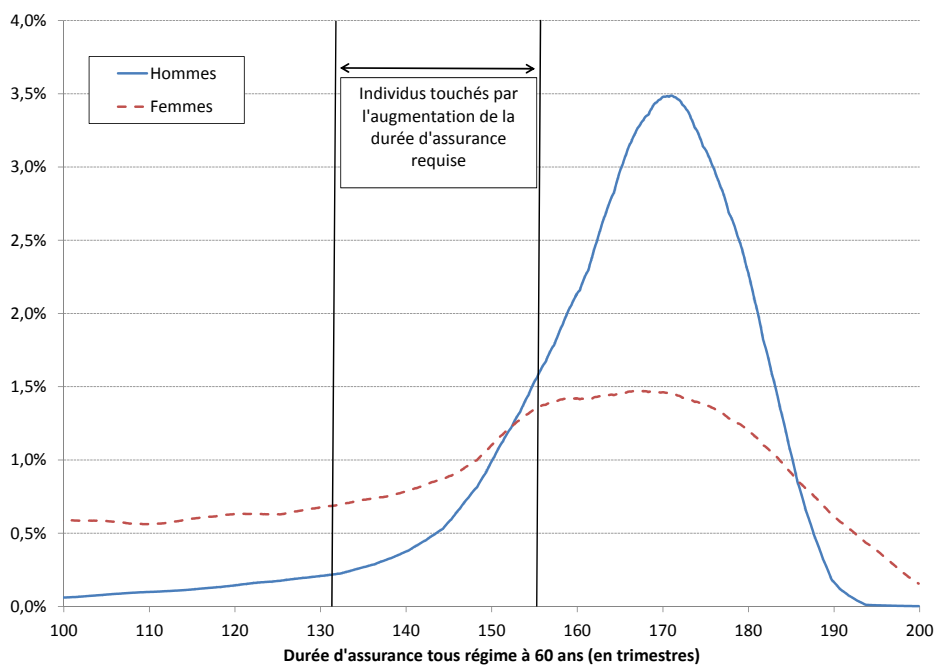
The figures below highlight the identification strategy, which exploited the differential impact of the reform by year of birth and contribution length at age 60: only individuals in recent birth cohorts and with contribution length between 130 and 160 quarters of contribution have been affected.

Figure 1.1: Impact of increased contribution length.

(a) Claiming age according to contribution length at age 60.



(b) Distribution of contribution length at age 60 by sex



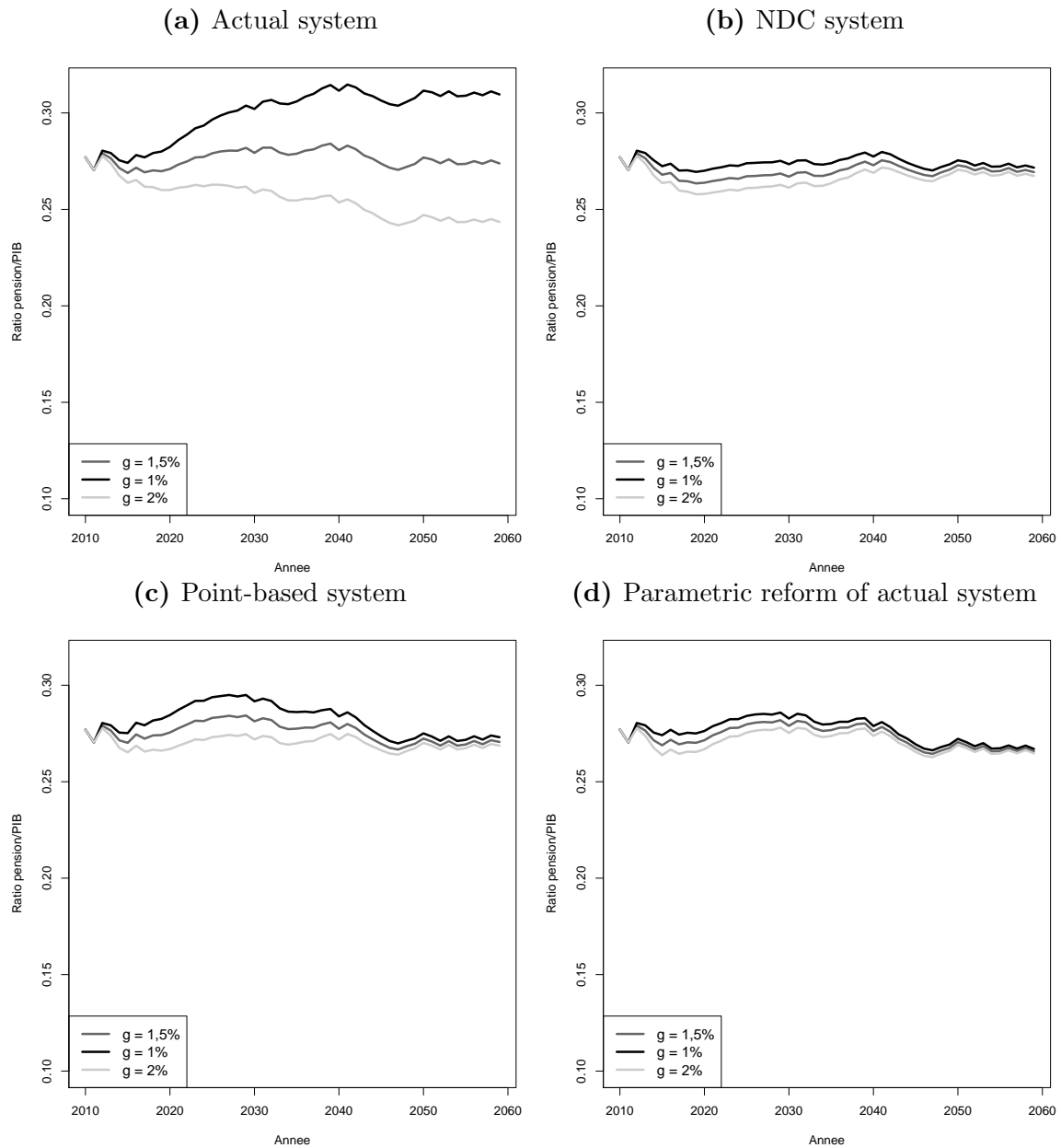
Sources: Bozio (2011), graphiques I et II, pp. 9-10. Données EIR 2001 et 2004.

1.2 Microsimulation of pension reform options

Another contribution to pension economics has rested on microsimulation techniques to estimate the impact of various reform options in the case of France, like the switch to an NDC system or point-based system. The article was published in French in the peer-review journal *Revue économique* (Blanchet, Bozio and Rabaté, 2016).

The figures highlight the main results, i.e., the current system is highly unstable with regard to long-term growth projections, and either structural reforms can reduce this feature. The main reasons behind these results is the change of indexation to wage growth and the switch to automatic balancing mechanism based on demographic changes.

Figure 1.2: Simulations of structural reform on pension spending as a share of GDP according to various long-term growth assumptions.



Sources: Blanchet, Bozio et Rabaté (2016), graphiques 2, 8 et 12. Modèle PENSIPP 0.0; séries de carrière de Destinie (Insee).

1.3 Cross-country comparative studies

My work on pensions has turned to cross-country analyses when I participated to the NBER International Social Security project in waves VI, VII and VIII, in both the British and French teams.

In wave VI, I contributed to the volume *Social Security Programs and Retirement Around the World. The Relationship to Youth Employment* (Gruber and Wise, eds, 2010) with a chapter on the UK (Banks, Blundell, Bozio and Emmerson, 2010) and France (Ben Salem, Blanchet, Bozio and Roger, 2010).

In wave VII, I contributed to the volume *Social Security Programs and Retirement Around the World. Historical Trends in Mortality and Health, Employment, and Disability Insurance Participation and Reforms* (Wise, ed, 2012), and wave VIII is dedicated to the U-shaped pattern of labour force participation of older workers (Wise, forthcoming).

1.4 Savings' behaviour along the life cycle

I have contributed to merging data from National insurance record in the UK to *English Longitudinal Study of Ageing* (ELSA) survey. Using these data I could construct measures of lifetime earnings and compare them with wealth at older ages and changes in wealth across time. This research programme was carried out at IFS jointly with Carl Emmerson, Cormac O'Dea and Gemma Tetlow.

The first paper, published in *Oxford Economic Papers* in 2017 (Bozio, Emmerson, O'Dea and Tetlow, 2017a), provides an analysis of how wealth to lifetime earnings ratios change with permanent income levels. We uncover a small positive gradient, whereby richer households exhibit higher ratios of wealth to lifetime earnings, suggesting that “the rich save more” assumption might hold some truth, using UK data.

In another paper, joint with Guy Laroque and Cormac O'Dea, published in *Journal of Population Economics* in 2017, we exploit the panel element of ELSA to uncover the distribution of the discount rate exploiting the Euler equation and the change in consumption levels that we can back-up from changes in income and wealth levels.

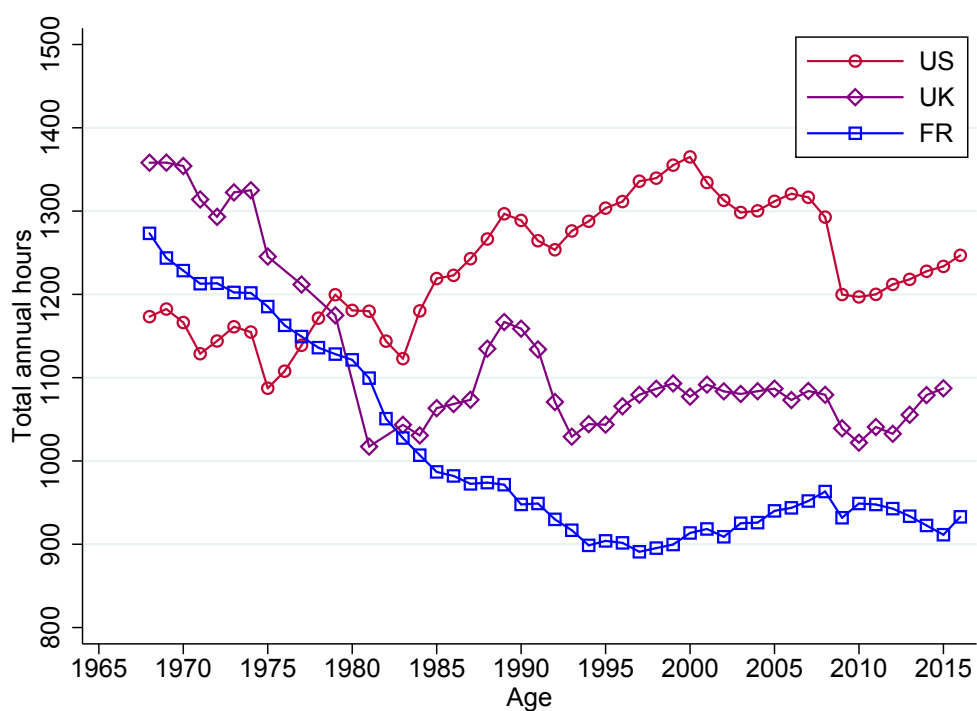
Chapter 2

Economics of the tax and benefits system

2.1 Cross-country approach: from macro to micro

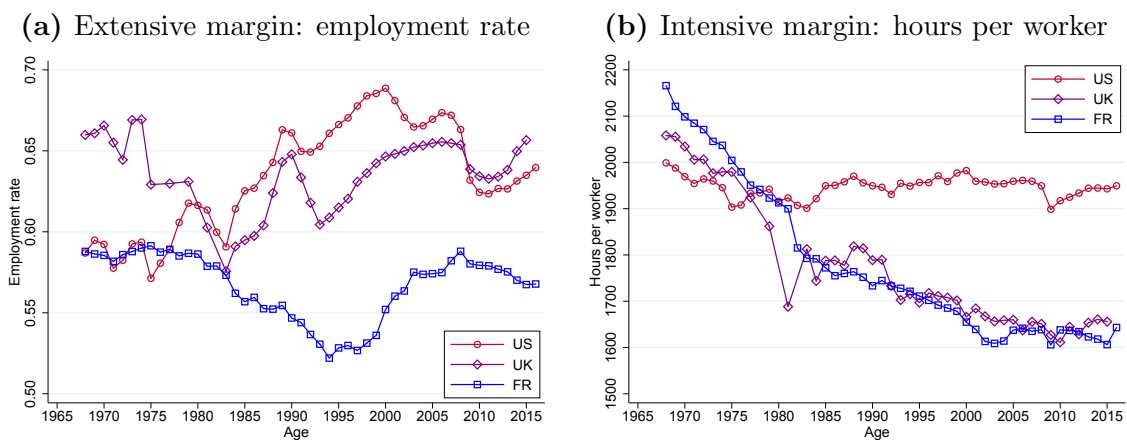
With Richard Blundell and Guy Laroque, we have exploited labour force surveys at the individual level in order to provide a micro approach to the contentious debate of macroeconomists on the macro level of labour supply elasticity. The project has conducted to a number of publications, including one in the *American Economic Review* (Blundell, Bozio and Laroque, 2011b), another lengthier one in *Fiscal Studies* (Blundell, Bozio and Laroque, 2013), and a methodological contribution (Blundell, Bozio and Laroque, 2011a). The empirical work has exploited 132 surveys of the French *Enquête Emploi*, Family expenditure survey (FES), Labour Force Survey (LFS) and Current Population Survey (CPS).

Figure 2.1: Evolution of hours worked per person.



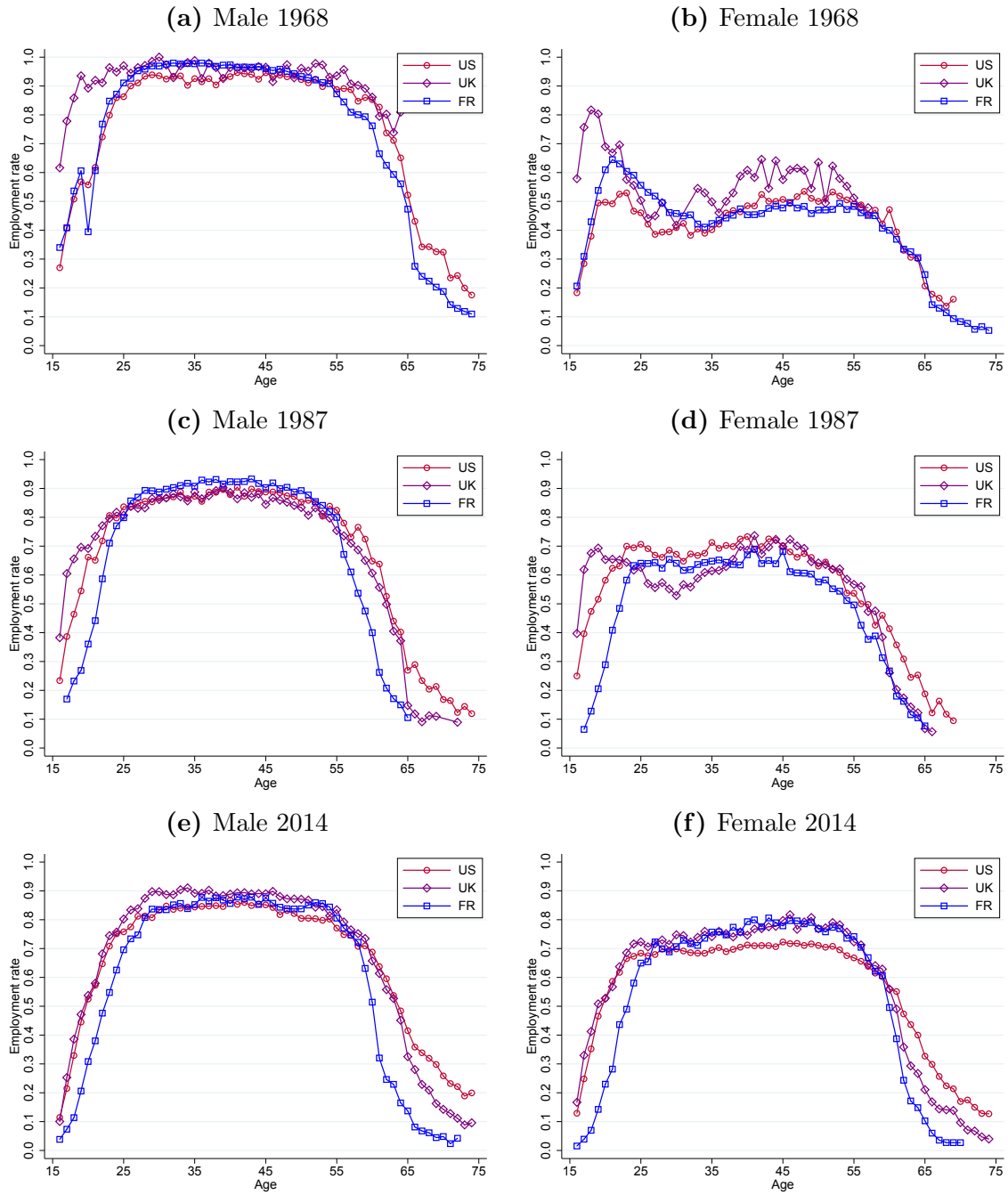
Sources: Updated series from Blundell et al. (2013); Enquête Emploi, FES, LFS and CPS.

Figure 2.2: Extensive and intensive margins of labour supply.



Sources: Updated series from Blundell et al. (2013); Enquête Emploi, FES, LFS and CPS.

Figure 2.3: Employment rate by age.



Sources: Updated series from Blundell et al. (2013); Enquête Emploi, FES, LFS and CPS.

These results, for instance those of Figure 2.3, have been reproduced in many other publications like The Mirrlees Review (Mirrlees, Adam, Besley, Blundell, Bond, Chote, Gammie, Johnson, Myles and Poterba, 2011, p. 48-52), or the *Handbook of Economics of Population Aging* (Piggott and Woodland, 2016, p. 476-477).

2.2 Estimating the impact of the tax and benefit system on hours worked

Among other contributions to the measurement of the impact of tax and benefit systems on labour supply, I highlight here the most recent contribution joint with Magali Beffy, Richard Blundell, Guy Laroque and Maxime To, aiming to estimate a labour supply model with restrictions on hours choice. The article is forthcoming in *Journal of Econometrics* (Beffy, Blundell, Bozio, Laroque and To, 2016; Beffy, Blundell, Bozio, Laroque and To, forthcoming).

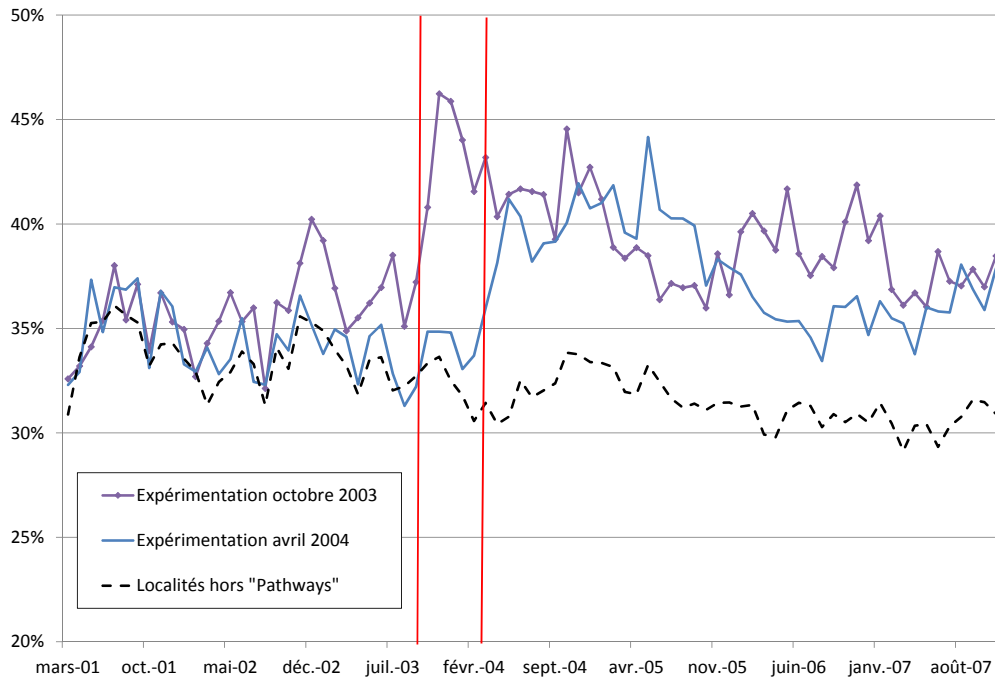
2.3 Estimating the impact of labour market policies on employment

I have also contributed to the analysis of labour market policies on employment, with the estimation of the UK programme *Pathways to Work* aiming to provide help and incentives to return to work to claimants of disability benefits in the UK (Adam, Bozio, Emmerson, Greenberg and Knight, 2008; Adam, Bozio and Emmerson, 2010; Adam, Bozio and Emmerson, 2009).

Graph 2.4 illustrates the main result, i.e., the exit rate out of IB for different local areas affected by the programme.

In a similar vein, I have also conducted an impact analysis of the *New Deal for Young People* (NDYP) programme, joint with Monica Costa Dias and Gerard van den Berg. The contribution is mostly about methodology, suggesting a new method for RDD in the case of duration outcomes. The paper “Policy Discontinuity and Duration Outcomes” is revised

Figure 2.4: Exit rate at 6 months out of IB with *Pathways*.



Sources: Adam et al. (2010).

and resubmit for *Quantitative Economics*.

Chapter 3

Economics of social insurance

Social insurance takes a large place in the French welfare state, which has been built on bismarckian principles, whereby social security contributions fund a large part of the benefits, which have generally some contributory conditions attached.

We have exploited systematically the administrative data provided by employers on earnings subjected to these contributions, and giving rise to pension or unemployment insurance benefits (DADS data). By applying the complex tax and benefit rules of social security contributions to these data, we have been able to recover a very long panel of earnings with net, gross and employer cost. The exploitation of these data has led to a number of studies.

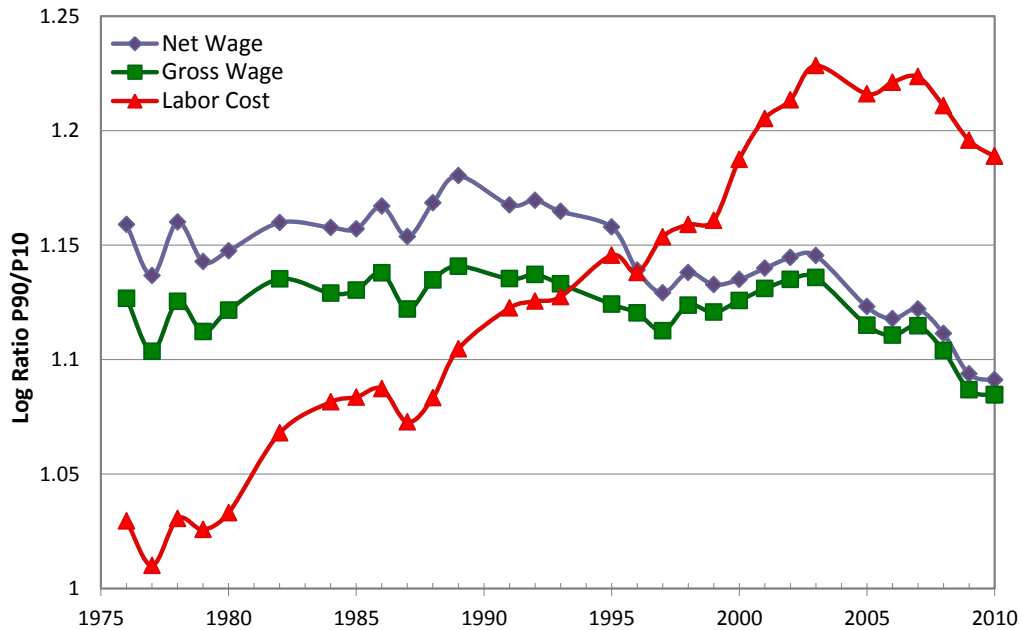
3.1 Incidence of social security contributions and tax-benefit linkage

The first approach that we have developed, jointly with Thomas Breda and Julien Grenet has been to exploit large changes in employer SSCs, and assess the impact on wages, i.e., the incidence of these contributions. The paper “Tax-benefit linkage and Incidence of Social Security Contribution: Evidence from France” is currently under submission (Bozio, Breda and Grenet, 2017b).

3.2 Redistributive impact of social security contributions

Using the same data we have re-open the case of the skilled biased technological change in the French case. Jointly with Thomas Breda and Malka Guillot, in an article “Taxes and Technological Determinants of Wage Inequalities: France 1976–2010” (Bozio, Breda and Guillot, 2016) we show that the inequalities of labour cost in France have seen a completely different evolution (a large increase) than the inequalities in net earnings often discussed by economists.

Figure 3.1: Earnings inequalities in France (ratio D9 over D1).



Sources: Bozio et al. (2016), panel DADS 2011.

Chapter 4

Other academic contributions

4.1 Students' supervision

This section lists the students that I have supervised. First for the master thesis: **Olivier Meslin (ENSAE, 2012)** “Construction d’un modèle de micro-simulation de la fiscalité indirecte française”; **Quentin Laffeter (ENSAE, 2013)** “Évolution des prélèvements obligatoires en France depuis 2012 : les enseignements d’un modèle de microsimulation”; **Domitille Friguet (APE, 2014)** “La taxation du capital et des revenus du capital en France”; **Laura Khoury (PPD, 2014)** “An assessment of the insurance and redistribution functions of unemployment benefits in France”; **Louise Paul-Delvaux (APE, 2015)** “Marginal return on pension contributions. The case of French pension public schemes”; **Antoine Ferey (APE, 2016)** “Incentives to work and means-tested transfers in France: An optimal taxation approach to a reform of housing benefits”; **Santiago Guarriga (PPD, 2017)** “Cash for Whom? Incidence of a Conditional Cash Transfer in Argentina”, and **Maxime Gravouelle (APE, 2017)** “The Elasticity of Corporate Taxable Income: Evidence from France”.

Second, I have co-supervised some PhD students : **Jonathan Goupille** under the supervision of Thomas Piketty (EHESS, 2016) with a PhD thesis untitled “Essais sur la dynamique des successions et des inégalités en France”; **Simon Rabaté** under the supervision of André Masson and Didier Blanchet (EHESS, 2016) with a PhD thesis untitled “Équilibrer le système de retraite : quelles réformes pour quels objectifs ?”; **Brice Fabre** under the supervision of François Bourguignon (EHESS, 2017) with a PhD thesis untitled “Économie politique

des collectivités locales : trois essais sur les communes françaises”; **Malka Guillot** under the supervision of Thomas Piketty with a PhD thesis untitled “Mesurer les réponses comportementales à la fiscalité”; **Elsa Perdrix** under the supervision of Muriel Roger with a PhD thesis untitled “Allongement des carrières et santé: estimations sur données françaises”; **Emmanuel Chavez** under the supervision of Sylvie Lambert with a PhD thesis untitled “L’impact du développement technologique sur les inégalités du travail aux économies en développement”; and **Nicolas Jannin** under the supervision of Stéphane Gautier with a PhD thesis untitled “Optimalité des taxes sur les transactions en présence de redistribution en nature: application au marché de l’immobilier”.

4.2 Editorial activities

I have been editor of *Fiscal Studies* from 2009 to 2011 and managing editor for two years. *Fiscal Studies* is a journal receiving 200 contributions per year, publishing 20, implying a large editorial work to select and edit the articles.

4.3 Data access

I have contributed directly to the widening access of French administrative data to researchers: first by helping drafting legal changes to allow researchers to access tax data, then similarly for Social security data and finally by presiding, jointly with Pierre-Yves Geoffard to a commission dedicated to identifying the obstacles remaining for data access for research purposes (Bozio and Geoffard, 2017).

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