

THEORIES OF FIRM RESTRUCTURING

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Introduction

To determine the firm is in relation with the definition of object of analysis in economics. For German economists of 19 century Amonn A., Liefmann R., Heimann E. Strigl R. and Russian, their followers Kondratiev N., Struve P. the object was what can be approximately called in English the 'unitary economy'. The last is social phenomenon and to analyse it signifies to study some circle of human relations (Kondratiev (1931)). The 'unitary economy' is not necessarily individual holding. The unitary will be peasant family economy, indicated Kondratiev, as well as the Ford enterprise or the American steel corporation. In the last two unities many thousand acting persons are join, having between them many complex economic and social relations. The firm is one of 'unitary economies'. As institution the firm is incrementally specified by the set of cultural rules, customs and laws which constrain action. 'Economic institutions don't arise suddenly, don't grow during a night, they don't parvenus without kith or kin, without ancestors or traditions. Their beginnings have usually their-own history', wrote Russian economist Levin (1917).

Virtually all aspects of the economy like Russian, of the industry, of the firms have changed over the last ten years. It was the case in twenties of our century and also in seventies of 19-th century. But, in a sense some large firms survive since the early period of industrialisation. Is it due to irreversibility of investment ? Did they change the nature: labour structure, structure of financial capital, forms of remuneration? For which insight or/and national historical reasons ? What may learn us the history of firms about the transformations, the policy concerns and what the future may hold? We emphasize that overall, but historically determined, economic efficiency guides the transformations concerning the production, the social role and the governance of firms.

In the first part of the paper I present briefly institutional and historical approaches to firm analysis and than the history of Russian firm since 19 century in more details.

The firm is also an organization and as such it is typified by objectives, preferences, or projects. In this context it is important to survey several models, considering that modelling is a reliable way to examine the logic, consistency and robustness of the arguments of firm organisation. An effort to establish the restructuring problems on the basis of plurality, that is to assume the existence of several ways of managing the transformations, implies taking into account different theoretical approaches. The relevance of each of them depends upon hypotheses on the particularities of firms in CEE. In this area the main efforts were devoted to building static models for comparative analysis of the rules of early management (through central planning) and of expected new market behaviour, represented by competitive equilibrium models. Some clever devices were introduced in the main modelling practice often without modification of known methodologies. On the other hand, the recent advancement in the theory of corporate organisation and finance, whose purpose is not the restructuring in formerly centrally planned economies, provides some methodological suggestions for modelling new phenomenon.

As the restructuring and the transformation of CEE economies constitute essentially a dynamic process, efforts were made to introduce explicitly dynamic models. For example, general equilibrium non-linear modelling is a recent field in economics; its utilisation can be recognised, even if the social and economic aspects of transitions don't appear clearly yet. This is probably due to conceptual problems related to restructuring because the notion itself is not yet precise. When the technological restructuring is considered, the endogenous growth model can be used for such a purpose. Ownership diversification, modifications of the balance sheet of enterprises or general institutional restructuring could be introduced as shocks, but on which structure? Probabilistic models are, for the present, of little use, because previous data are not available, and even if they were, there would be breakpoints in qualitative and quantitative dynamics of most fundamentals. It is consequently natural to presume that real progress in the area of dynamic models will be hard to achieve. Nevertheless, a modelling that would synthesise some logical approach with inductive econometrics would be a magnificent tool for policy analysis in unstable situations. It seems that the implications of it for methodology and for forecasting improvements of economic transformations are vast. This puzzle leads certainly to admitting the impossibility of exhaustive reading of firm theories. The topic is currently undergoing rapid development; the number of publications are increasing.

With regard to the behaviour of enterprises, the models deal with two realms. The first one is the analysis of a firm's insiders incentives, whereas outsiders are viewed as parts of a passive environment. Those models are mainly concerned with the consequences of central planning collapse. In the second realm, the insider develops his positions in response to outsiders such as consumers (demanders), labour force (suppliers), lenders (saving suppliers), and other firms (inputs and outputs). Those models attempt to specify different stages of market development.

In this second part of the paper I begin with the description of several models and I conclude with an analysis of the pertinence of these approaches to explain the economic performance in CEE countries. I classify selected in the literature models according to two principles, on one hand the interest they reflect on the impact of institutional reforms on firm restructuring; on the other hand the interest for internal restructuring as spontaneous mechanism of resolving economic problems.

I. Firms through economic history

I.1. Methodologies of studies

To assess later the effects of different forces in modification of nature and efficiency of firm, we examine some approaches within economic history for the study of institutions. In economics since the end of 19 century it became usual to think all economic phenomenon exclusively in categories proper to capitalism. The theories are formulated only in application to the society based on wage-earning and having the maximisation of revenue for objective. A Russian researcher in the history of sciences, T.Raïnov (1927) in "Nature of Economic Equilibrium" was probably the first to indicate that economists took a wrong turn in the 19-th century by imitating physics in its definition of equilibrium. Chosen as a metaphor at the beginning, the physical equilibrium notion became (with Jevons, Marshall, Pareto, Edgeworth) in neoclassical economics an analogy. Consequently the law of energy conservation was 'transformed' into the law of utility conservation. New-classical approach in the study of economic history examine principally the extent to which a specific institution, the market - seen as mechanism of quasi physical equilibration of exchange - governed in the past. An unresolved question is why some societies, but not others developed market

economy ? (North (1977)). Why in some societies more than in others trusts, moral constraints, expressed in the form of an informal code of ethics, are introduced to define the behaviours in conducting the transaction? (Fukuyama (1995)).

Chayanov in 1924 write a paper about the theoretical problems of non-capitalist economic systems. He highlights that Russian (Chines, Indian, ..) society is characterised by completely special motives of economic activity and by special notion of effectiveness. The economic science needs to think the past from economic point of view; and for each 'unitary' type of economy a specific system reflecting its particularity has to be elaborated. For example, in the conditions of economic system in kind, the exigences of demand system of each unitary productive activity, being at the same time the system of consumption, determine utterly and completely the human economic life. The last, in this case, has a qualitative character : each necessity must be satisfied into own economic unity and the product of needed quality must be realised in kind form. In such system the question about relative effectiveness of different costs (what is more profitable to cultivate hemp or reserve the meadow for haymaking ?) could not exist, because the final goods are not substitutable and have not any common measure. The notions of profitability, of economy effort, and of specific 'laws' constraining social life in rural economy in kind are different in principal from adopted in economic theory, - wrote Chayanov. The difficulty on the way of incremental theoretical analysis lays in absence of 'pure culture'. The economic systems co-exist and form very complex conglomerates.

In response to those difficulties the economics proposes two types of developments. On one hand it produces notable specificity in comparison with mechanical approach by introduction of individual or collective knowledge, expectations, rationality, preference and so on...for schematic analysis of individual behaviour, the reasons of group formation or the emergence of rules intrinsic to a group. The equilibriums of Pareto, Cournot, Nash or Walras represent here the ideas of stability and equity. Disequilibrium is a source of action, or recomposition and fundamentally of crisis in institutions. The branch of history - historical institutional analysis - is the game theoretical conceptualisation of institutions as equilibria, the use of inductive micro analysis, and the use of strategic models adapted to specific historical contexts (Greif (1995)).

On the other hand, the authors investigated the societal specificities of behaviour. Some time it is done roughly. So, in the historical studies of comparative analyses is not rare to find the idea of standard development of some countries as equilibrium path and

development of other countries as deviation from standard or 'backwardness'. Gerschenkron (1952) suggested, for example, that British type of industrialisation, based on individual entrepreneurial decisions, was the norm in relation to which German and French types, with initiative of the banks, were economically backward. The Russian type, with the state as agent of industrialisation at the place of banks, represented a further stage of backwardness. More nuance argumentations prevail, but leading idea is the same in historical studies of diversity of countries development in XX century, where United States fordist type of economy is view as equilibrium path. The new institutional economic history (Greif (1995)) - try to mitigate the consequences of such schematisation and to explain how culture and ethical behavioral norms (as genes in living organism) enforced by the state can produce poor or rich economic performance, how they can emerge and persist. David (1994), who introduced the notion of path dependence, emphasizes in his historical and economic studies conventions, information channels as parts of organisation capital and their complementaries and precedents. As indicates North (1991) the contrasting histories of countries development reflect the differing opportunity sets of the actors in each case.

I.2. Russian firm : historical aspect

a) Heritage of 19 century

The next section focuses on the relationship between institutions and the behaviour of the successive states in Russia and interprets the firm changes on the basis of the social goals, property rights, cultural traditions and historical contexts. Some stages in firm transformation can be detected as well as incremental evolution of institutions.

According to Tugan-Baranovsky (1898) point of view the volitional introduction by state of large firms in Russia played a very important role in economic development because these firms were the only school capable to assure the formation of labour force for industrial rudiments. Indeed, at that early period of industrialisation the firms refused to decrease the production during the crisis for not to dispatch the workers. The entrepreneurs that financed the peasants training to factory work discipline did not pine for searching new labour force at the upsurge and organised the training once more.

The large enterprises were not necessarily the capitalist ones, in Marxist sense, because the working class did not exist and the serfs were working there. This manpower isn't

originated from handicraftsmen as it was in West European countries, but from low skilled population, which could be sold to merchants for industrial work according to the 1721 law.

Two types of firms existed: 'patrimonial', belonging to nobles, and 'possessed' ('possessionnie'), receiving allocations and subsidies (land, buildings, workers...) from government. The 'patrimonial' firms are less analysed in economic literature than 'possessed' ones. It was known that they were organised on two shift work, during two months the workers were occupied on hay-mowing, often the salaries were not paid. The 'possessed' factories make work the state peasants (serfs), vagabonds and convicts. The serfs appertain not to landowner, but to factory. Juridically the entrepreneur (often the owner of factory) could not devise the firm, sell the peasants separately to factory, change the nature and the volume of production. It is the government that decides these parameters of firm. The entrepreneur could not no more utilise the workers for other tasks than to work in factory, and 'sufficient' wage should be paid for them. The worker of 'possessed' firms had guarantee to conserve his job, and his wage was secured.

The ministry of Finances, which was the manager of 'possessed' enterprises, plays the role of defender of entrepreneurs' interests. It searches to reinforce the flexibility of factories management rules and their autonomy of the state tutelage. It considers that entrepreneurs may have the possibility to decide the wages reduction, if they allow to distribute the assignats. In June of 1840 the probate of state council proposes the progressive extinction of possessed firms and their passage into the ownership by entrepreneurs - managers, but it wasn't applied and even wasn't published.

By contrast the Ministry of Internal Affairs defends the interests of nobles (agrarian class). It is guided by political and police considerations. To avoid the collisions and interference with public security this Ministry elaborates the precise rules for firms. Especially after the revolutionary movements of 1848 in Europe, the laws within its competence are oriented to preserve the workers labour conditions. In 1811 already the minister of Internal affaire carry out the law fixing at 12 hours the working day, except Saturday, when it is of 6 hours. The women and children are not obliged to work. The wages should be aligned on the wages of 'free' workers (under contract). For the silk factory of Kupavin in 1803 it was indicated that wages had to be corrected every ten years and had to take into account the prices evolution of bread and other goods of workers consumption. The rules of Iaroslavl stipulated for existence of doctor and hospital attached to the firm. Haxthausen considered ("Studien über die inneren Zustände Russlands", 1852) that the

nominal wage and especially the real wage was higher in Russia than in other countries, for example in Germany. In 1859 the 'Project of rules for the factories and the mills of St. Petersburg' was published. It was elaborated by a commission with the participation of the entrepreneurs. The majority of St. Petersburg entrepreneurs were opposed to night work, because the night work was unhealthy, it was difficult to supervise the work, the workers had concentration problems, the goods produced in the night were of less quality, the lighting and the heating increased the costs, the probability of the fire raised. The Moscow firms were less performative and their labour costs were lower, therefore they were asking for work time extending. Hence, the emancipation of the serfs opened the way to the creation of an unrestrained exploitation which replaced in 1886 by the first in Russia precise regulation of employment relations. The forms of working contract are solidified in many points and became independent on negotiations between employer and worker. The state inspector determines the firm inside labour regulation.

Taking countryside and town together, small industrial output was estimated at about 25 per cent of total industrial output in 1913. There were almost four million of small producers registered in several fields (Malle (1985)). The small firms were dominant in wood industry, cloth, haberdashery and flour milling. Lenin (1899) write that in 1894 one-tenth of factories employed three-quarters of the total labour force and produced seven-tenths of total industrial output. The large firms were much more numerous in Russia than in Germany. They were as numerous as the small firms.

The joint-stock companies, begin their development at the second half of 19 century, very timidly at first, with about twenty creation a year, many tens a year from 1869 to 1895, and more then hundred the last years of the century (Tugan-Baranovsky, p.261). The big banks of St.Petersburg and Moscow presented an important source of finances for the constitution of industrial tissue. Their principal activity consisted in financing the firms by supplying them the liquidities in forme of credits under caution of their shares.

Between 1906 and 1914 industrialisation proceeded slowly (Carr (1969)). The state financing declined and the banks replaced the state as dispensers of long-term credit to firms. The private foreign capital is largely introduced. During the First World War the industry was oriented to making the arms and equipment for army. Losing touch with the market, the industry received the means of production from government in payment of its output; the value of output was fixed by the contracts with the Treasury. The inflation on one hand and

the need to produce for army at any price, on the other hand, obliged the government to pay the difference between the current price and contracted price. Such payments became regular during the civil war (1918-1920) and took the form of subsidies for industry. The initial framework for the state organisation of economy, since 1915, was 'chief committees' (glavki), which were the characteristic agencies of war communism. Till 1918 the pre-revolutionary banking system existed. After that the industry is financed by the state budget. But money (liquid) state financing was viewed as provisory and had to disappear, because the national economy had to pass from the goods distribution into the product distribution, as far as theoretically the money had to withdraw as means of value and means of exchange. In general the industry from 1918 till 1922 was showing a loss, the costs of production were too big. And if the industry continued to cover the budget deficit, it was due to the capitals that were transmitted to firms after their nationalisation.

b) Development of the firm theory during the NEP

The elaboration of 10 April 1923 decree 'About industrial enterprises functioning on the commercial principals (trusts)' and the discussion which followed its publication were very interesting for firm theory. It was the period of reevaluation of all industrial firms and amalgamations in order to determine the rational forms of management.

The trusts became the special form of state governance of industry. The radical directors were favourable for firms economic autonomy and against the trusts' form of governance. The moderate ones were approving trusts and firms amalgamation on contractual ground. All of them considered the existing organisation as too bureaucratic and inefficient. They had feeling that enterprises had to be exposed to the market, which would present 'high-powered incentives' (Williamson (1985) expression) in comparison with the administrative hierarchical process of transactions.

The frontiers of state control were delimited by utilisation of fixed capital and circulating capital. The state was the exclusive owner of fixed capital: means and implements of production. The first arose problem concerned the distinguishing between fixed and circulating capital of each firm and trust. It was admitted that as the state administration was not competent in resolving of such problems and the tribunals were charged of this task. The composition of capital was not without importance for trust, because its rights were different according to different parts of capital. The rights concerning the circulating capital were the

rights of use, of control and of disposal (selling and loaning). The rights concerning the fixe capital were restrained and allow its use and control. The trusts were granted of the capital with no fixe term of its use, it was not a loan, that's why the state did not perceived the interest on the capital, but participated in their profits. When the trust received the order to produce for the state needs and if the state payments were not sufficient for covering the costs and the average profit, the Treasury was charged of defrayment. The lasts were not the subsidies, no loans. The structure of trust capital was especially important for the third persons, because the proceeding against the trust for recovery of debt could be addressed only on the circulating capital. Consequently, the creditors could not impose a penalty on the fixe capital of the trust. The last point was contested by many economists, highlighting that it reduces considerably the credit capacity of trusts. As for the state, its interest was related to 'real' fixe capital, that was all equipments of nationalised firms. Apprehending the loss of its exclusivity, the state extracted all those products from the market. The 'fictive' or financial capital (securities, shares,...), that circulates, grows or decreases independently of production process, was suppressed also in Russia. It signifies that financial market didn't exist during the NEP. And money expression of fixe capital was used only in computability.

The trusts inherited the efficient enterprises, but being idle also. Circulating means were not sufficient in comparison with fixe capital, and they were often non-liquid. The most difficult problem was the determination of statued capital of trust, the quality and the quantity of enterprises that had to compose it. The special commission of concentration was created for the task of evaluation of efficient enterprises. It was recognised that the management of two kind of trusts: profitable and unprofitable, but necessary for development, had to be different. That's why military, education and health enterprises were exclude from the sphere of commercial principles management.

The insight structure of firms, the relations between factories and trust, was willed to their-own appreciation. It was nor more a slender problem, because it was related to the rights of directors or managers. One of the points of view consisted in considering the relations between factories and heard trust on contractual principle. Trust in this case would be the finance and commercial union, which enter into a contract with enterprises by passing them the orders, by receiving the output and realising it. The factories could be the real firms and their trust could be some kind of financial complementary centre.

The trust could be (and that was the second point of view, defended by Ginzburg (1923) and Kaktyn' (1922)) positioned between the production unities and the market. In such configuration the similar or substitutable producers appear on the market. The indivisible circulating capital of trust can transit from one to another factories without appropriation of it by each. The general transaction costs could be reduced and the deeper specialisation of the factories could be attained. The director of factory is in this case a responsible employee but not entrepreneur, because the financial governance is a trust prerogative. The profits and the losses are calculated for all unities together and the 'individual' factory economic results are only the values of calculations and of statistical estimations. The factory receives the inputs from the trust, realises its orders and leaves the output to trust, but without the contracts. The factory director has its personal hiring contract, and he realises the trust resolutions. He has not the rights to change the quantities and the qualities of production (as it was the case of the 'possessed' firms entrepreneurs in 18-19 century).

The third point of view about the nature of trust proposed to transform them into joint-stock companies. But the fear of 'creeping' denationalization prevailed in government mind, and no the individuals', no the cooperatives' capitals could not participate in trusts' capital formation. The constitution of fixe capital, according to the legislation, became very strenuous task. The assignation of real estate from one to another enterprise was locked to many formalities, and the trusts' credit possibilities were reduced. The Treasury was not responsible for trusts' losses and the lasts had to be covered by the real estate. It was not clear if trusts entered in state budget separately or as a whole. Ginzburg (1923) proposed that industrial firms' produce only financial plan (against budget estimate) in order to leave them the flexibility in credit, in velocity and in adaptation to overall economic situation.

c) Transition to planned system

The planning was a main form of state economic policy since 1919 (plan GOELRO). At the beginning the incompatibility between the principles of the firms autonomy and the principles of planning was only dimly perceived. At the end of 1929 the syndicates, that were the state form of trade governance, became the institutions of industrial state policy. The trusts forfeited their self-financing rights, so were the enterprises composing them. The credit reform of 1930 followed the industrial reorganisation. It consisted in introduction of planned distribution at the place of commercial exchange between state enterprises and the financing

of enterprises according to plan objectives at the place of the credit. This reform excluded the commercial credit, the redistribution of capital out of planning, and the distinction between owned assets and liabilities.

The development of the centrally planned economy reinforced the dividing line between the productive and transactional activities. The principle was introduced to strip productive units of most of their transactional functions, and to attribute these functions to specialised administration organisms. Output targets were elaborated by Gosplan with the industrial breakdown for individual enterprises being made by the ministries, that indicated the type and the volume of output. The state committee of supply provided each enterprise with the raw materials. It redistributed also output among enterprises and retail trade outlets at prices set by state committee on pricing. Such specialised form of transaction with planning was considered as more efficient (from transactional cost point of view) than the market decentralised system.

d) Social aspects of firms

The collective labour organisation was important tradition that influenced the post revolutionary discussion about scientific work organisation and firm nature. Vitke (1925) was convinced that the essence of organisational task consisted in creating of favourable social and psychological atmosphere in working collectives, in creating so called 'beehive heart'. Dobrinin (1926) elaborated the 'organisational model' of firm management. After a deep analysis of the advantage and the weakness of linear and functional (advocated by Meilman (1926)) structures, he proposed the staff structure which conserve the unity of governing body and the competent group of persons wishes.

Work organisation knew its rich episode. The state, representing the working class interests favoured the scientific consideration of different aspects of labour. Into the firms the workers were introduced in all the management levels, but these experience was limited in time. The unified management eclipsed quickly the workers participation, and bureaucracy incurred.

In 1923 the special funds were created in each trust for amelioration of workers life and the trusts were obliged to expend for this objective the share of profits only from these reserves. The social protection of workers and their family by the firms became the principal

form of labour 'force' formation, avoiding the workers' control, and taking over the sanitary protection of Russian factories of 19s century.

e) Evolution since 1985

Contemporary Russian firm is first and foremost a big industrial conglomeration founded on the existed before the crises enterprises and even the whole industrial sectors. Irreversibility of investments in fascicule capital of those firms, some time its technological performance, in some other cases the export orientation of production, favour the resistance of firms to changing the quantity or the quality of production after the central planning collapse. How changes the nature of this big firm ? The structure of the labour force stay approximately the same, probably because the workers - job matching was sufficiently modern because polyvalent. The observable tendency attest the progressive hollowing out of high skilled employees, who create their own firms. The workers nominal revenue was always in connection with firm rentability. It continues now, when the salaries are decreasing dramatically or are not pay in full or in right time. The social, research and teaching activities set up from firm. But the principal changes concern the financial capital structure. The workers' collectives are the main owners, but the banks and the state also. The last controls about 30% of capital. The reasons of firm underlined restructuring are: the collapse of centrally planning, the privatization policy and the private interests of a group of persons that became the 'representatives of power' in Russia.

The big Russian firm springs up in 18 century under aegis of the Peter the first state and operating for the state needs, experienced different epochs. It was privately owned in 19 century even if it used the state serf labour. It was for a short time owned by banks and foreign capital at the beginning of 20 century. Though trust framework, it was subordinated to the state from the First World War till the end of the New Economic Policy. During this market period the incomplete contract between state and firm was 'thriving'. Searching to escape the negative aspects of such incomplete control, the state introduced the central planning, that existed till 1990s. The imperfection of planning mechanism, from informational point of view amongst others, permits the firms relative flexibility, but wasn't conducive to their efficiency. Contemporary firms are industrial and financial holdings, dominating the economy and operating on the world market, are new eloquent examples of

the theoretical conclusion that it is not the capital ownership that provide the control of firm profits, but the managers control of profits' flows them self.

The economic liberalization furthered the rapid increase of small firms' segment. The small firm draw in the highly skilled specialists, who, by their part-time employment in firms and in research institutes feverous the knowledge capacity development. The small firms operating in research and industrial sectors are buying the foreign high technology and use innovative forms of management, in this they became the school of new relations. The remuneration is there in relation with profitability and with risk allocation.

II. Modelling of firm restructuring

II.1. Analyses of corporate transformations related to institutional reforms

a). Models used in analyses of centrally planned economy

Models for planning in centralised economies supposed that the centre specifies and realises the objectives concerning production and consumption for all agents. Conceptually the management of such an economy, at least in the short run, looks like the management of a large firm. In both cases the aim is to elaborate a detailed program of behaviour for each participant of the system, so as to achieve the best result following given objectives and under fixed prices and wages. In a long run dynamic perspective planning was related to working up an optimal growth trajectory. The considerable effort involved in modelling for planning is not applicable in restructuring problematic, because this phase of restructuring coincides with decentralisation.

One other problematic that was largely treated in economic literature on socialist economy was repressed inflation or generation of an excess demand. Usually disequilibrium models are used to formalise this phenomenon of persistent shortages when two market coexist : state - controlled and free (black, shadow) (Kornai (1984), Sah (1987), Polterovich (1993), Entov (1994), Charemza (1990), Goldfeld - Quandt (1990), Barro - Grossman (1974), Stahl - Alexeev (1985), Charemza - Quandt (1982)). It continues to be interesting to treat theoretically this considered as specific problem of centrally planned economies. Such models are certainly concerned with the markets of public goods as health care pricing and financing. But the phenomenon cannot be grasped sharply in goods market of CEE, the problem is

shifting from inadequate goods supply to deficient demand and open inflation, traditional for economics. Besides, the studies on repressed inflation have been oriented on description of consumer behaviour, but our task is to display corporate restructuring models.

b) Prices' liberalisation

One of the first government act to provoke firms' restructuring was prices liberalisation, and some models preceded and prescribed this political act.

Calvo and Frenkel (1991) choose a model describing the early stage of transformation, expecting an imminent liberalisation. In their article, a market economy is associated with external openness of a country. A peculiar accent is put on the assets market, but the purpose is to study the macroeconomic and income distributional consequences of a price reform, using an equilibrium model. The authors analyse the price increase, reflecting the "true" production cost revealable by liberalisation, and the consequences for two markets : of foreign assets and domestic goods. In one of two examples they assume indexation of wages. The demand for tradable goods and the changes in the holdings of foreign exchange are functions only of the modification in the real exchange rate. The authors show that along the path to a new steady state the exchange rate rises, foreign currency holdings fall and the domestic currency value remains unchanged. Wage independence is assumed in another example. It follows that the rise of prices lowers post-reform real wages and consequently the demand for tradable goods. The accumulation of foreign assets may increase. The policy consists in finding the possibility to get the real exchange rate decrease in order to contend the volume of demand. The model is for illustration purposes, and does not seek to be useful for empirical study on firms level. It depicts some possible post-reform economic situations under some simple hypotheses. An excessive simplification in this model is to consider the surplus of supply of domestic goods in CEE as marketable on world markets. The expectation functions are not introduced in the model, therefore the modifications are examined as exogenous shocks.

A non-linear model of heavy and light industries evolution after price liberalisation has been considered by Gouriéroux - Gousseva - Peaucelle (1994). It is assumed that unemployment does not exist and wages are price-linked. The aim is to see, using a simple equilibrium model, if in a market economy, oriented to satisfy the demand, it is possible to maintain simultaneously an input-producing sector and "social advantages" in the long run.

The simulation displays that for the long run survival of heavy industry, it is not realistic to maintain full employment and wages indexation. But it is conceivable that heavy industry, if its importance is big enough at the beginning, delays its decline and even continues, for a relatively long period, to increase (its outputs and prices) in comparison with other (output producing) sectors. The impacts of wages' cost on inflation and on economic fundamentals were not introduced in this model.

Movshovich (1995) proposes a general equilibrium model explaining how the monopolistic behaviour of firms set off the production decline and inflation after prices' liberalisation in newly decentralised economy.

c) Privatisation

Other ideas relate rapid and successful restructuring with privatisation (Polterovich (1995)). The link between competitiveness and private ownership of enterprises is an old question involved in economic theory, but the unanimity is not yet achieved. In the recent literature we find arguments in favour of market socialism that does not necessitate firm privatisation. For this school of economists, the problems of socialist countries were not the poorly motivated workers and managers, but the lack of markets. A public firm, like a private one, in a market economy, operates on output, labour, and inter-enterprise markets. But it is usually advanced that a non-privatised firm could not attend capital market and the state, its real owner, operates on this market (Bénard (1989)). Such system is conceivable, but it may be convenient for short and middle run equilibrium, when only current decisions about the affectation of goods and labour can be taken. Firms can't manage by themselves saving, investment, development, contraction or liquidation of activity, because these decisions need access to the capital market. Thus was Lange's (1936/37) model, which did not study the set of implementable investments. Lange considered that the investments were too important to be left to myopic behaviour of private firm owners since they are too sensitive to risk. But on the other hand, the capital market creation in CEE may be judicious because it allows the rhythm of restructuring to be less dependent of political successors (Bénard (1990)).

Ortuno-Ortin - Roemer - Silvester (1990) offer an interesting comparative analysis of private and public ownership economies. Their model is a two period model. In the first period private firms producing a multiple output makes investments using the production of one input producing firm. In the next period they have some increase of productivity, and

Walrasian equilibrium level of investment can be estimated for each output producing firm. In public ownership economy, the state chooses the investment level for firms, and in general does not reach a Pareto optimal allocation. The authors study the existence of constrained equilibrium (because the investments are imposed) for different situations, corresponding to economic policies through prices or interest rate, control through instruments (quantities) or taxes (parameters). All firms maximise profits, public firms share their profits in accordance with political principles, i.e. profit shares are exogenous, outputs and labour are allocated through markets, and state balances its budget. The evaluation of various policies is performed in terms of investment vectors, so restructuring of firm in this paper is associated to flows of productive investments. Different economic policies are compared:

1) the so called Walrasian constrained mechanism, when the state imposes a lower bound on investment of each firm, but a firm chooses the complementary investment;

2) the exactly Walrasian constrained mechanism, when the state decides on the level of investments;

3) the so called Lange mechanism, when the state determines the level of interest rate;

4) the pro-investment Lange mechanism, when the interest rate proposed by the state is below the market level;

5) direct investment mechanism.

The Lange mechanism (3) is more powerful than the exactly Walrasian constrained one (2), and the pro-investment Lange mechanism (4) is more powerful than the Walrasian constrained one (1). Those results are obtained under the assumption that the state can tax profits at rates higher than 100%. Furthermore, Lange mechanisms give more flexibility, and their modelisation provides more endogenous links between investment, income, or taxes. Direct investment mechanism (5) in general case is more powerful than pro-investment Lange one (4). Intended for analysis of investments capabilities of public firms in decentralised economy, this model uses comparative studies to appreciate the best degree of state intervention in firm capital management, when capital market is weak or even absent. The best allocation of investment, all things being equal, is achieved by direct investment, followed by the policy consisting in establishing the interest rate under market level that give to the firms the possibility to determine their volumes; followed by the policy consisting in determination for firms their investment level.

Diversification of investment portfolios increasing in importance in CEE makes that the analysis of state control of firm finances became less stimulating in actual stage of transformation. But it might be interesting to develop the study of corporate restructuring in connection with a long run equilibrium of capital allocation with interest rate adjustment, as classical economists did, attaching lesser to juncture (Duménil and Lévy (1993)) . The capital allocation occurs through the creation, activity and disappearance of firms.

Liberal economists are favourable to capital market emergence, and from their point of view capital markets can't exist without firm privatisation. The controversy lies, for them, only in how to carry privatisation and in what order to privatise. The model of Yan Chen (1996) is an example of analysis of alternative politics of privatisation by the government. One type of government has for objective to maximise through privatisation a surplus state budget. The constraint introduced in the model is in relation with the probability to government to survive carrying through such policy. Another type of government, has for objective function the maximisation of consumer welfare, subject to a balanced state budget. The two-period model with the same number of firms in each period study the modifications of the firms status that is the decision of their privatisation by government. The wage and cost function of firms are exogenously given. Comparative static results indicate that the both type of governments will choose to privatise first the firms with the least market power and the largest subsidy from the state. The second type of government will choose this way if the marginal costs of production in the private sectors are not too high with respect to the marginal utilities.

On the list of the problems inherited by centrally planned economy one finds the workers incentive problems and weakness of incentive management mechanisms. Often the authors postulate the greater efficiency of private firms and study directly the speed of privatisation (Laban and Wolf (1993), Aghion and Blanchard (1994), Boycko, Shleifer and Vishny (1996), Castanheira and Roland (1996)).

For Boycko and alii firms restructuring is synonym of labour flexibility in the sense of its general reduction in employment and in wage level. Contrary to Chens' model the representative manager is introduced in the model, and the firms' employment is decided as a result of bargaining between him and the politician. The manager (shareholders) owns a fraction of the firms' profits and the rest of profits is own by the politician (Treasury). The

politician prefers higher labour spending since it is a source of its political stability. But spending more on labour reduces the value of its (Treasury's) share of profits of the firm. As for manager objective function, it is given by his share of profits. The pivotal parameter is who controls labour spending. The authors introduce an interesting definition of privatisation, containing two conditions, one of which is decentralisation of decisions, that they call the turnover of control from spending politicians to managers, another condition is a reduction of the cash-flow ownership by the Treasury and the increase of cash-flow ownership of managers and outside shareholders. The model shows how managers with control rights choose to reduce employment even when they lose subsidies from the politician.

Laban and Wolf (1993) analyse a special case when private sector is represented by foreign capital that provides higher productivity and higher wages. Their equilibrium model of comparative static searches to determine the taxation which would be attractive for foreign capital.

Consumption - saving decision in the economy determines, in the paper by Castanheira and Roland (1996), the speed of replacement of state-owned capital by privatised or by new private capital. The general equilibrium model is used to compare the welfare optimum trajectory with one generated by the policy based on an excess rate of closure of state-owned firms. It is shown that speed of transformation (privatisation) may be slow down in this case due to income effect on new capital creation, but accelerated in its part of capital replacement.

Aghion and Blanchard (see also Chadha - Coricelli (1994)) propose an elegant model of privatisation as an instrument of labour transformation too. They assume that productivity is high in private sector and wages are high also, so the movement from state firms to private ones is manifest. The speed of transition is estimated as a differential in state employment decreases. The authors construct a normative equilibrium model of government behaviour maximising the present discounted value of output. It is assumed that unemployment is important and that the government searches to keep it low. For this task the government combines the taxes and unemployment benefits mechanisms. Such a policy implies that higher unemployment decreases job creation into private sector, since the private firms' revenues are sharply taxed for financing unemployment benefits. The equilibrium is defined through the equality between the increasing rate of unemployment and the increasing rate of job creation into private sector. Finally, in the paper the optimal level of unemployment is compared with the unemployment level of equilibrium. It appears that the unemployment

level of equilibrium is higher than the optimal one. And as it is too high, some policies have to be taken to lower it.

Despite the originality of those models, we suggest some criticisms. They concern the main assumptions. The restructuring is associated with a transition of labour from state owned firms to private ones. It is not clear why, without innovations, the productivity will become higher in the privatised sector, or why the incentive to work for a capitalist (shareholders) is higher than the incentive to work for the state (state controlled firms). If the private sector corresponds to the collective ownership of firms, it is usually the case, but it does not explain why the transition of labour to the private collective sector implies a phase of unemployment and the associated increase of state unemployment benefits. The private sector is likely considered by Aghion and Blanchard as small business, but it seems unrealistic to suggest that the large state industrial complexes existing in all ex-socialist countries may be simply replaced by small private firms.

In this sense the Cohen (1995) model in which job-to-job mobility is analysed in place of job-unemployment-job in private firm appear more interesting stylised approach of restructuring. It is not the question of privatisation as "universally recognised" process toward the firms' efficiency, but the transition from declining sectors to new innovative that is put. The process may occur without experiencing discontinuous break in unemployment and without necessity to subsidise the old firms and tax the economy inefficiently. In the model the relative wages are stable even in declining firms, because in the expanding firms free entry moderate the eventual picking up the wage; and in declining ones job-to-job mobility changes both the opportunity set of workers, which is improved, and time-horizon of firms, which is deteriorated. The wages in the declining firms stay independent from labour market disequilibrium.

II.2. Insiders motivations for restructuring

a) Modification of the firm's objectives

We now look for another aspect of the transformation process related to the change of management objective when central planning exists no more. Such an analysis may be performed through an optimisation model of the firm with a mixed objective function, combining the ratio of profit and the ratio of value added to engaged capital (Gourieroux -

Gousseva - Peaucelle (1994)). The first ratio reflects the capitalist management criterion, the second one corresponds to the labour-managed firm criterion. (Scholars have analysed firm organisational forms in which workers play a prominent role in management: Vanek (1970,1971), Jones - Svejnar (1982), Bonin - Putterman (1987), Ellerman (1990), Weisskopf (1992)). During a transition period by definition the firms pass from one extreme objective function to an other. The possibility to reveal the underlying objectives using data on firms' accounts is also described in this paper.

In a comparative analysis of behaviour of equivalent monopolistic firms retaining different objectives, it is established by Gourieroux - Gousseva - Peaucelle (1994), that profit maximisation implies linked evolution of wages and investments, but that the evolution of investments is autonomous when the value added is maximised. Therefore, in the perspective of a transition towards a non-participative economy, it is possible to take progressively into account the labour cost. The prices influence via the evolution of capital helps to reach asymptotically the regime corresponding to profit maximisation.

b) Corporate financing

Recently economists have begun developing studies on the role of the financial aspects on the real sector and especially on firms' values. (The state of art is described for example in Tirole - Rey - Jullien (1994) and Demange - Laroque (1994)). As the financial sector is developing currently in CEE, it is interesting to foresee its impact on required economic restructuring of firms, using existing models. One problem is to know the potential influence of financial structure for developing profitable activity (Harris and Raviv (1991) overlooked the theoretical literature on optimal capital structure), one another is to consider the investment possibilities for modernisation. We consider here the case of new decentralised economies without direct government investments. The firm assets are covered by net worth (shareholders equity) and debt. The debt is seen as a claim below a particular level of the firms' incomes. The shareholders receive any profit, if debt is repaid. Managing the debt capacity is more complex than constituting a net worth through privatisation for instance. Looking only on financial ratios, in the G7 countries' debt represents an average a doubling of firms equity. The firm, as a borrower, has to choose among the lenders: banks, private institutions such as life insurance companies and among the various financial

instruments: issued bonds, short or long credits. It may issue various combinations of short and long-term debt, restrict its possibility of decisions by transferring some control rights to lenders through covenants. It may use its assets or some specific investments as collateral, especially for risky operations, to diminish the risk associated with default or bankruptcy. The possibility given to the lenders to appropriate some firms' assets in distress (caused for example by mismanagement) increases the debt capacity and allows for a diminution of the proposed interest rates. So, credit analysis requires the estimation of the value of the collateral.

The contributions by Shleifer and Vishny (1992), Kiyotaki and Moore (1993), Antonov and Pomansky (1994) and Pospelov (1995) treat this interesting point for firms' financial and economic restructuring by modelling the links between collateral value and investments.

Shleifer and Vishny analyse this problem for industries where assets are specialised and therefore are not redeployable (oil rigs, steel plants have no other uses than their original ones). What could be the prices of non-redeployable assets relative to their value in best use? When firms have trouble with their debt payments, their assets have value only to other firms of the sector. But these firms can have the trouble too if the causes of sellers' distress is industry-wide and they will try to fetch the price. Even if buyers can raise funds, sometimes government regulations might prevent them from purchasing (antitrust policy, for example). It implies that forced liquidation's can have significant private costs to the asset seller, but also social costs, when the assets would not be owned by the best user. In depression periods assets are often sold to a manager who does not belong to the sector and therefore this asset will not be used in an optimal way. Authors prove that an industry might have an optimal debt capacity even when its individual firms do not.

Kiyotaki-Moore article analyses the case of perfectly redeployable assets. They study the productive value of assets and their values as collateral. The latter one depends on the state of the economy. The firms' current debt capacity and investment depends positively on the value of the secured assets in the future (because assets are used as collateral). But new investments in the economy raise the demand for these assets, used in production, and therefore their prices (debt capacity depends negatively on the assets' rental rate). The authors show that multiple equilibria and cycles can exist in those conditions.

The analysis of possibility of efficient credit allocation in transitional economy, characterised by high and increasing interest rate, predominance of short-term credit and high proportion of delayed loans, is presented in the paper by Antonov and Pomansky (1994). Here the debt investments of firm depend on bank policy of credit rationing. The authors specify the production frontier of the bank, that is Pareto optimal set of observations of enterprises projects in the sense of credit maximisation and risk minimisation. The algorithm has been elaborated and used to manage allocation of investment resources.

The similar problem is investigated in Aghion, Blanchard and Carlin (1994) paper. Their model, having for theoretical foundation the adverse selection and moral hazard formalisation, describes a case of bank financing two firms with different efficiency. The conditions are deduced to explain the possible choice between financing only one firm or simultaneously two firms.

The model by Petrov (1990) differs on several features of the models previously described. The major one is that he does not explicitly model the rationality of agents' behaviour. The model construction is based on a direct dynamic specification of the behaviour of relationships. The approach is called systemic analysis of evolutive economy. The model combines mathematical descriptions of technological processes and of control mechanisms, and is written in terms of differential equations. A long-run dynamic describes the life cycle of a firm. One part of the model concerns the behaviour of economic agents during central planning period, another one, their behaviour in a market economy. The aim is to reproduce the modifications or/and persistence during the transition to a market economy. Nine equations are common to two parts and exhibit an idea of partial similarity of those two systems of industrial management. Twenty-eight equations describe the planned economy and may be used for simulation. At some initial date the prices, interest rates and wages take the equilibrium values of the planning model. After that the behaviour is considered to be changed and another system of thirty-three equations describe a market economy. Then the author analyses the dynamics of this new model by means of simulations.

Only one good is produced, consumed and used for investment in Petrov's model. The author is interested in the firms' production capacity, capital and debt. It is assumed that the firm is created by borrowing from a bank. Some periods later the firm is liquidated, either by bankruptcy or may be selling, releasing exceeding profits at that moment. In the planned

economy the state decides the dates of firms' liquidations, as well as their prices, wages and interest rates. The main planning indicators are the GNP and the state consumption rate of growth. Firms' creations are spread over time and investments are a function of planned rate of growth. The household planned consumption is defined as a residual between the production and the whole consumption including the state consumption and the investment. Employment is a function of capacity utilisation and of labour participation. The non realisation of the plan signifies, that the real demand is below the planned consumption.

The bank allocates credits in such a way, that the firm debt would be less than its profit. The firms' net profits compose the state budget. All macroeconomic values are obtained by aggregation on the firms, created at different periods.

In the market economy, the firm is autonomous. It may borrow from a bank during its life at some level of interest rate, or may decide to reduce its debt. The borrowing level is assumed to be less than its security. The firm decides also on the demand for labour. Expected profit rate is larger than credit rate. The household expenditure is a function of employment and of the wage evolution.

The models were simulated, but the scenarios of evolution had not the aim (in the 1990 version) to be a help for economic policy.

Despite our interest for such modelling, we may indicate some weaknesses of this version of Petrov's models. (A new version of the model exists, but we know only the principles of its construction (Petrov and alii (1995))). The hypotheses concerning the market economy are often unrealistic ones, for example, ones describing credit operations, such as the condition of strict inequality, at each moment, between the rate of profit and the rate of credit . This condition does not take into account the multi-period aspect of loan refunding, and corresponds to a naïve credit demand behaviour, when the firm considers only its next period profit. We note also that the author considers market economy as absolutely flexible, which can realise total break in production for some periods, instantaneous taking on and disengaging of labour,.. these hypotheses which have an important impact on the dynamics, induce an extremely chaotic evolution during the transition.

c) Pricing of new products

Planned systems had its reduced schedule of goods, all sold at fixed prices. Price liberalisation, enterprises autonomy and large world market openness induce now the new

goods explosion. It is interesting to know what is the consumer demand for new products and to analyse their price formation. Firms have to know also the products that are likely to disappear after the introduction of new ones on the market and be prepared for restructuring they supply. To answer such interrogations concerning enterprises production modifications we have to perceive the consumer reactions through their forward behaviour in situations, where the products still do not exist. To establish this link between these two different situations Gourieroux - Gousseva -Peaucelle (1994) considered in their formulation that each good is identified by some underlying characteristics that are essential for determining the demand and than the prices. The idea consists in deducing from the observations on previously existing goods the "implicit" prices of the characteristics, then knowing the characteristics of new goods in inferring their prices. This approach of firm pricing, especially in monopolistic case, has some similarity with the hedonistic indexes literature.

Summarising this section I may say that the papers surveyed here are mainly theoretical ones. They have been chosen to illustrate the relevance of their premises with known specificity of CEE economic problems. The hypotheses respect generally one or another aspect of small country corporate restructuring: openness of markets, direct foreign investment, preponderance of small businesses,.... . Their realism is appreciated a priori without empirical verification, because the econometric tests are difficult to perform. The models differ in their attention to suggest government economic policies to sustain the transformations: expenditure, taxes or monetary instruments. In other words these models give micro-economic foundations for coherent macro-economic policies. In some sense the recent developments of economic theory seem to provide some suitable tools to model the restructuring of ex-centrally planned economies, because incomplete, monopolistic, gradually adjusting markets were analysed. All those imperfections introduced in Walrasian equilibrium method are combined in real CEE economies. The modelling of market imperfections shows various implications for economic policy. It allows to analyse the effects of a policy even if it is not possible to know, especially with non-linear dynamic, whether the effects are good or not. Such ambiguity means that modelling is only one of possible and indispensable approaches of corporate restructuring analysis. It has to be developed jointly with econometric, socio-economic analysis.

Some years after the beginning of transformations in CEE countries it is possible to appreciate the ability of modelling to explain actual economic situation. Indeed, the period from 1985 to 1997 may be considered as a transition of economies from one kind of disequilibrium to another with an additional recession. The initial economic problems were briefly presented in the introduction of this paper. The current ones are characterised by a stagnation or a decrease of output in a large number of sectors, accompanied by unemployment; stagnation of final and especially intermediate consumption's, credit rationing, investment reduction, inflation and firms debts' of low quality. Different types of reasons for such a recession could be advanced:

- 1) mistakes in economic policies of liberal governments;
- 2) the weight of economic history;
- 3) the turbulence due to adaptation to a new regime, that every dynamic simulations reveal;
- 4) finally, some causes specific to these new economies.

The first reasons can't be recognised by modelling; the second one should eventually be stressed by evolutionary modelling, but we have not found any example. As for models presented in previous sections they advise on some origins of recession and they forecasted some features of fourth type.

The models comparing competitive and monopolistic behaviour foreseen that after the collapse of centrally planning, that assessed the volume of production for each firm, the monopolies will reduce their production. For example, in models by Gouriéroux and alii on inventory management and modification of objective function, or by Movshovich on inflation and depression, such situations are analysed.

The employment is very often linked to output through a production function, so the results of simulations indicate their correlated drop. In reality the collective ownership of firms in CEE yields employment evolution largely independent on output (Weisskopf (1992)). This aspect, dampening the effect on unemployment, is not taken into account in the surveyed literature.

The investment weakness is predictable in labour controlled firms. This statement is reflected in the model of objective function modification (Gouriéroux and alii). Indeed, in the case of value added maximisation, that is often the objective of labour owned firms, an evolution of investment independent of economic results can be observed. The Ortuno-Roemer-Silvestre (1990) model demonstrates the advantage of public forms of capital ownership for investment in a market economy. The Shleifer and Vishny (1992) paper sheds

a different light on the problem, relating the firms' investment and credit problems to the distress in their sectors or in the whole economy. The research of optimal level of taxes (Laban and Wolf (1993)) may carry the important foreign investments.

Finally, we may acknowledge that modelling of transitional economies is an arduous task, and therefore any model could not elucidate the complexity of the last ten years' development.

Concluding remarks

The governance of firms is in relation with historical and sociological characteristics of the country. In the paper we develop some arguments to relativize the idea of possible abrupt switching in industrial development after liberalisation of the economy. We analyse the economic relationships between the state and the big firms. We discuss the reasons of planning as a search for minimisation of transaction costs inter and intra firms. The big firms are monopolies in new market economy but they continue to be artels, for example in Russia, since their objective is to save the insiders interests. The high quality of labour force favours the extension of small firms in new immaterial sector of economy.

Several models, elaborated by different authors for the analysis of short term firm restructuring in Central and Eastern Europe are surveyed also. The models presented here are those which reflect the specificity of behaviour since the collapse of central planning. We discuss appropriateness of modelling as an instrument for the analysis of complex restructuring problems in such economies with imperfect markets.

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