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THE ECONOMICS OF JOB PROTECTION AND EMERGING CAPITAL LABOUR RELATIONS

FROM THE PERSPECTIVE OF "REGULATION THEORY"

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A B S T R A C T

The issue about job preservation is analysed according to previous historical analysis and comparative studies along the "régulation approach". First it is argued that the very success of the fordist capital relations and the related institutionnal changes after WWII brought midler recessions and therefore strongly mitigated the need for downwards employment adjustments. But the unfolding of the structural crisis of this growth regime has led to a significant shift of firms and government strategies : all along the Eighties, they have been promoting labour mobility and various forms of social deregulation. Nevertheless, in the early Nineties, these defensive strategies seem to be overcome by the implementation of a follower to fordism, in order to solve its previous inbalances and contradictions. Within these new principles, employment stability can be a strength not a drawback. Both modern microeconomics of the capital labour relations and more conventional macroeconomics modelling seem to confirm that optimum flexibility does not mean maximum flexibility and pure market mechanisms. Furthermore, various institutionnal settings can cope with the challenge of these new post fordist principles. Some national trajectories, fairly or very efficient from a macroeconomic point of view, are coherent with a high degree of firms or State public concern for job stability. Pure laisser-faire strategies does not seem to open very promising prospects, since they inhibit technical change and strengthen labour market segmentation and social unequalities.

L'ANALYSE ECONOMIQUE DES REGLEMENTATIONS DE L'EMPLOI FACE AUX CHANGEMENTS DU RAPPORT SALARIAL
Robert BOYER

R E S U M E

La question des règlements préservant l'emploi est replacée par rapport à des recherches antérieures en terme de régulation, qu'elles soient historiques de longue période ou internationales et comparatives pour la période contemporaine. Il est d'abord suggéré que l'ensemble des formes institutionnelles constituées après 1945, en particulier le rapport salarial fordiste, a favorisé une atténuation des cycles, donc une réduction des besoins d'ajustements en baisse des effectifs. Mais l'entrée dans une crise structurelle de ce régime de croissance a fait resurgir la nécessité de ces ajustements en baisse de l'emploi. D'où une série de retours sur les législations publiques et les conventions collectives qui codifiaient un contrat de travail à durée indéterminée. Cependant, au début des années quatre-vingt-dix, ces stratégies de flexibilisation défensive semblent dépassées par l'émergence de nouveaux principes alternatifs au fordisme, selon lesquels un minimum de stabilité de l'emploi est la condition de l'adhésion des salariés à l'impératif de compétitivité. Au demeurant, ces mêmes principes prennent des configurations contrastées selon les pays, donnant lieu aussi bien au toyotisme qu'au volvoisme. Dans un second temps, les développements récents de la théorie microéconomique, ainsi que certains modèles macroéconomiques sont utilisés pour montrer que la flexibilité optimale de l'emploi ne correspond pas à des ajustements instantanés. Au contraire, toute une série de facteurs, indépendamment même des règlementations publiques, implique une relative inertie des ajustements de l'emploi (coût de formation de la main-d'oeuvre qualifiée, obtention de la loyauté des salariés, importance des effets d'apprentissage au sein de la firme,...). Enfin, une série d'estimations statistiques en coupe internationale suggère que la protection de l'emploi a certes un effet de segmentation des marchés du travail (opposition insider/outsider) mais qu'elle peut avoir pour conséquence bénéfique de stimuler la productivité comme l'innovation de produits.

J.E.L. CLASSIFICATION SYSTEM : 620 - 820 - 822 - 823 - 825 - 830
KEY WORDS : Labour flexibility, Labour mobility, Job protection regulation, Capital-Labour relations, Employment function, Induced technical change, Industrial relations.
MOTS CLES : Flexibilité du travail, mobilité du travail, règlementation du contrat de travail, rapport salarial, fonctions d'emploi, théorie du changement technique induit, relations du travail.

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I - INTRODUCTION : AN HISTORICAL AND INTERNATIONAL COMPARATIVE APPROACH

Many observers have compared European and American performances in terms of job creation. A common view is that excessive social regulation have prevented an adaptation of jobs in number and quality, to the changing pattern of world competitiveness and technological advances. In the early Eighties, wage rigidity has been put at the forefront of many international comparative studies. Both inflation and unemployment rates were supposed to be closely related to an index measuring nominal or real wage rigidity. All over the period, many reforms have been undertaken in order to soften previous legislation, whereas job preservation was more and more prefered to wage increases by workers.

Nevertheless, the debate has now shifted towards new topics. Job creation is again taking place in Europe and wage moderation has been obtained in most European countries, if not in all. Consequently, the role of workers protection and the impact of general education and training are now considered as the key factors in labour market dynamics. This paper chooses to relate these various issues to a broader question : what are the tranformations occuring into the capital labour relations inherited from WWII ? Basically, a long run historical and international comparative approach will locate the role of the so-called fordist compromise into the whole growth regime which used to characterise most industrialised countries. This approach points out the leading institutional factors governing the viability of any job preservation regulation, studies their transformations during the last two decades and finally outlines some new principles which are shaping work organisation, wage formation, skills. Some consequences for employment adjustments are then derived.

The reasoning will follow five steps. First, it will be argued that a form of partial *job preservation was roughly coherent* with milder and milder business cycles from the Fifties to the Sixties (§ II). But the very success of the new institutional forms elaborated after 1945, which launched the *fordist growth regime*, has led to major and converging inbalances during the Seventies. Consequently, after a period of reinforcement of job protection (at least in countries like France), the strengthening of competition and international pressures have called for a *reversal in previous social regulations*. The search for job flexibility was and still is part of this general strategy (§ III). Nevertheless, in the early Nineties, the debate upon flexibility has turned into another one : what are the key features of the genuine capital labour relation, able to overcome the fordist structural crisis ? They have tentatively been labelled toyotism or volvoism, according to two contrasted variants. Therefore, job preservation has to be coherent with these *new principles* and no more with the older ones (§ IV).

Given this general framework, the rest of the paper is more analytical. On one side the *new microeconomic theories* about the wage labour relations suggest that even without public regulations, the maximum flexibility in employment adjustments is generally not optimum. On the other side, most *macroeconometric analyses* conclude that the long run impact of job deregulation upon employment trends, is generally small, sometimes positive, sometimes negative (§ V). Finally, it is argued that employment flexibility is only a small part of any global strategy which would try to implement the new principles about labour management. Furthermore, many and contrasted institutional settings might cope with such an objective. Not only job preservation deregulation *is not* a fatality, but it does

not seem to be the most efficient strategy in the long run in order to overcome the new forms of competition (§ VI).

II - SOME DEGREE OF JOB PRESERVATION WAS VIABLE WITHIN THE FORDIST CAPITAL RELATIONS

Let us define our method : it might be crucial to locate the role of employment adjustments and the related public regulations within the general configuration for the capital labour relation (CLR) inherited from the second world war. In retrospect and consequently, the contemporary debate about deregulation will become clearer.

1. POST WORLD WAR II : AN UNPRECEDENTED CONFIGURATION.

In the early Nineties, the main features of the Fordist capital labour relation (FCLR) are easier to characterize. Just by contrast with the Eighties, the roaring Sixties have been built upon four major founding principles (Table 1).

° A *deepening in labour division.*

This has been a distinctive feature of post WWII era. On one side, a clear distinction between consumption and execution, production and sales, marketing and finance and so on...allows an unprecedented technical and social division of tasks, within the original land of Fordism, i.e. the manufacturing sector, but in all the related tertiary sectors. Within the plant, specialized equipment are designed in order to embody the larger technical knowledge possible, the assembly tasks requiring a very low grade of education and skilling. Basically, the Fordist principle of mass production of very standardized good sets the pace in industrial organization.

This is the modern method for reaping *increasing returns to scale* in Adam SMITH tradition, given the technical opportunities and the social compromise of the post WWII era. Therefore, labour productivity experiences an unprecedented rate of growth, in most OECD countries, with the exception of US, for which a large continuity prevails over a century (A. MADDISON (1982)). During the 1969-1973 last fordist boom, even United Kingdom exhibits very high productivity and growth rates (Table 1, item 1). But this achievement has a cost : in most countries, capital deepening is such as to propel a decline in the output capital ratio (A. GLYN (1988)).

° A *compromise about productivity sharing.*

This principle is guiding wage formation, at odds with previous competitive mechanisms according which labour scarcity and general price level were the major factors for real wage dynamics. First, the pressure by unions and workers in order to get an indexation with respect to consumer prices is actually taken into account, either by explicit clauses within collective agreements, or by the formation of expectations about an inflation which is now a permanent feature of fordist growth (J.P. BENASSY, R. BOYER, R.M. GELPI (1979)). Conceptually, wage is no more a pure market variable since it incorporates a minimum standard of

FIGURE 1 : THE FORDIST HYPOTHESIS IN A NUTSHELL

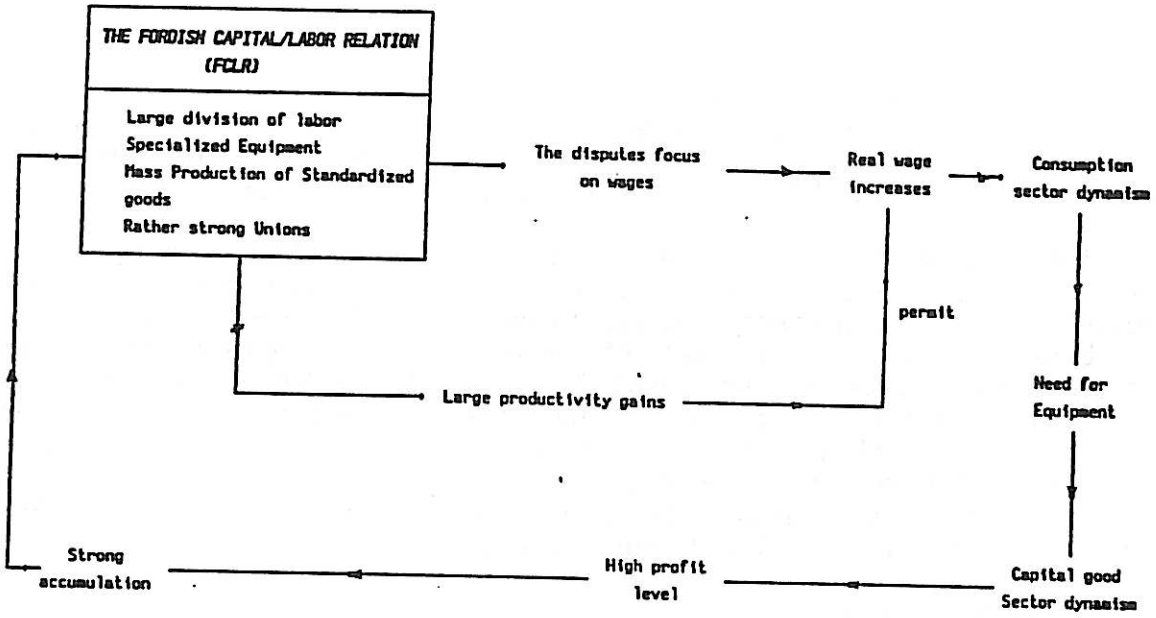


TABLE 1 : THE NATIONAL VARIANTS FOR FORDIST COMPROMISE : A TENTATIVE TYPOLOGY FOR THE GOLDEN AGE

COUNTRIES / COMPONENTS OF CAPITAL LABOR RELATION	FRANCE	JAPAN	SWEDEN	UNITED STATES	WEST-GERMANY
1. ORGANIZATION OF THE WORK PROCESS	Gap between conception and execution	More decentralized & solidaristic than in US	Genuine exceptions to Fordism	Typically Fordist	Professional & craft markets more than Fordism
2. STRATIFICATION OF SKILLS	Large & institutionnalized	Moderate	Moderate	High	Moderate
3. LABOUR MOBILITY	Low	Average	Average/ High	High	Average
4. WAGE FORMATION (i) Indexing with respect to . Price	Complete if not permitted	Complete	World more than consumer prices	Partial and/or slow	Slow and partial (forbidden)
. Productivity	Implicit	Explicit via bonuses	In the export sector	Implicit but existing	Rather strong
(ii) Influence of unemployment	Moderate	Surprisingly high	Significant	Average	Apparently low
(iii) Indirect wage and welfare (as proportion of direct wage)	High	Very low	High	Low	Average
5. LIFE STYLE AND CONSUMPTION NORMS	Closing gap	Fast closing gap	Modern with large welfare	Largely "commoditized"	Rapid Modernization
GLOBAL FEATURES OF FORDISM	STATE PUSHED	HYBRID FORDISM	DEMOCRATIC FORDISM	GENUINE FORDISM	FLEX-FORDISM

Sources for filling the rows of Figure 2 :
Lines 1 and 2 : Mainly M. CAMPINOS-DUBERNET and GRANDO J.M. (1988), M. AOKI (1988), B. STRAH (1988), OECD "Structural Adjustments and Economic Performance".
Line 3 : OECD (1986) "Flexibility and labor markets", p. 63, Table II.3 for 1971, or p. 66, Table II.4.
Line 4 : id. p. 17, Table 1.2.
(i) and (ii) For the indexing with respect to productivity P. PORET (1986) Table 7, p. 24. For some countries J.H. CHAN-LEE & Alii (1987), p. 151, Table 6.
(iii) J.H. CHAN-LEE, D.T. COE, M. PRYWES (1987), Table 1, p. 144.
Line 5 : L. LEVY-GARBOUA (1982).

living for each category of worker and not only the less paid. Second and still more, this wage is then varied according to the general advances in productivity. During the golden years, most government officials –even the most conservative– called this *sharing the dividend of progress*.

The miracle is precisely that this broad vision of the world did inspired actual wage policies by firms (Table 1, item 2). With uneven lags, quite all countries exhibit a perfect long run indexation with respect to consumer prices, and this was far from a fact of nature : in the Nineteenth century the corresponding elasticity was about 0.1 - 0.2 (R. BOYER (1979)). Productivity sharing is a little more complex to investigate. The best evidence relies upon the noticeable constancy of distributive share (corrected from the shift towards salaried activities) in the medium run. In the short run, econometric studies seem to confirm this productivity sharing, either instantaneous (Germany, Japan) or over a multiperiod labour contract (US, probably France).

° *Connective bargaining*.

This institutional setting is creating strong complementarities in the evolutions which start from the leading highly unionized sectors and progressively spread to more atomistic sectors and finally to the public civil servants (M. PIORE (1988), B. CORIAT (1988)). The innovation with respect to the previous century or even the interwar period is far reaching. Labor struggles used to create *wage differentials* between skills, sectors or regions (remember General Theory, Chapter 18 argument) ; within Fordist Capital Labor Relations (FCLR), successful wage demands are setting the pace for *average nominal wage* increases. Three mechanisms at least contribute to this spreading : the rather large centralization of collective bargaining usually negociated at the sector or even the national economy levels, the voluntary mobility of workers moving towards best paid jobs and finally minimum wage policy by governments when it exists.

Most indexes for wage dispersion confirm *the large stability of wage differentials* under Fordism (Table 1, item 3), a feature which will even resist to contemporary crisis (OECD (1985), Chapter 5). Nevertheless within this new historical configuration, some national specificities come out : the conventional opposition between primary and secondary jobs (P. DOERINGER, M. PIORE (1971)), and remaining competitive wage formation legacy explain why in United States wage differentials do play a role even during the fordist golden years. With some minor exceptions, more homogeneity prevails for OECD countries, whereas wage differentials in absolute and relative terms are kept fairly low in social democratic countries.

° *A keynesian and Welfare State*.

Fourth pilar of FCLR, the basic social compromise and new conceptions about the role of the State induce and legitimate an impressive redistribution of income via *the Keynesian and welfare State*. Interpersonal and intergenerational solidarities which used operate through family ties, have now to be fulfilled by more collective and horizontal institutions. The welfare system is therefore a key component of this new deal between citizens and the State. The recognition of social wage, general access to health, basic education, the provision of pension funds for the poorer, of unemployment benefits during cyclical down-turn explain the surge of redistribution mechanisms by the State or by agreements between unions and firms holders.

TWO FACTORS FOR A SMOOTHING OF EMPLOYMENT ADJUSTMENTS

TABLE 2 : THE POST WORLD WAR DEPRESSIONS ARE MILDER AND SHORTER

An indirect evidence for a move towards a stabilized system

AVERAGE DURATION, DEPTH, AND DIFFUSION OF THIRTEEN CONTRACTIONS, UNITED STATES 1920-1982

Line	Statistic	Great Depression (1)	Two Major Depressions (2)	Six Severe Recessions (3)	Four Mild Recessions (4)
1	Average duration (months)	43	16	12	10
	Percentage decline:				
2	Real GNP	−32.6	−13.4	− 3.3	− 1.7
3	Industrial production	−53.4	−32.4	−13.1	− 7.8
4	Nonfarm employment	−31.6	−10.6	− 3.8	− 1.7
	Unemployment rate:				
5	Total increase (% points)	21.7	9.6	3.8	2.3
	Nonfarm employment:				
6	Percent of industries contracting	100	97	88	77

Note: The contractions of 8/1929-3/1933 is referred to as the Great Depression; the contractions of 1/1920-7/1921 and 5/1937-6/1938 as the major depressions. The dates of the six severe recessions are 5/1923-7/1924, 11/1948-10/1949, 7/1953-5/1954, 8/1957-4/1958, 11/1973-3/1975, and 7/1981-11/1982. The dates of the four mild recessions are 10/1926-11/1927, 4/1960-2/1961, 12/1969-11/1970, and 1/1980-7/1980.

Source: Zarnowitz V. (1985), p. 528.

TABLE 3 : A SIGNIFICANT DECLINE IN EMPLOYMENT ADJUSTMENT SPEED

	FRANCE	UNITED KINGDOM	UNITED STATES
During the Thirties	0,70	0,87	0,76
During the Seventies	0,24	0,22	0,55

A COMPARISON OF THE TWO RECESSIONS 1930 and 1975

Estimates for the parameter λ in the following equation :

$$N_t = (1 - \lambda) N_{t-1} + \lambda N_t^* \qquad 0 \leqslant \lambda \leqslant 1$$ Adjustment speed

With N_t = effective employment N_t^* = efficient employment

Source : R. BOYER, J. MISTRAL (1978) *Accumulation, Inflation, Crises*, PUF, p. 198.

Again, this introduces a far reaching innovation in the CLR and the regulation mode as well. On one side, the disciplinary role of firings and unemployment becomes less evident (with possible adverse impact upon labour intensity), whereas real wage increases are now more stable, smoothing the cycle. On the other side, the variety of public entitlements induce built-in stabilizers, given the tax and welfare financing systems. Nevertheless, this Keynesian-Beveridge State is unequaly developed among advanced capitalist countries (Table 1, item 4). Just before the oil shock, the share of collective redistribution was the higher in social democratic countries such as Sweden, Austria. EEC countries were experiencing a similar redistribution, even if generally lower for example in Italy. The lowest size for welfare is observed for United States and still more Japan, where family solidarity and private pension funds constitute alternative to public welfare.

2. A WEAKENING OF RECESSIONS ALLOWS SOME EMPLOYMENT STABILITY.

° *Business cycles are milder.*

Previous historical and statistical studies (J.P. BENASSY, R. BOYER, R.M. GELPI (1979)) have shown that these institutional changes have promoted a progressive shift from one set of dynamic adjustments to another, i.e. from competitive to monopolist "régulation". In this new configuration, the fordist compromise upon productivity sharing allows some kind of synchronisation between production and effective demand ; therefore, are avoided the major discrepancies which used to characterise the interwar period, which led to the 1929 structural crisis. This is the first and the major factor for milder business cycles after WWII, closely related to new rules for wage formation. Another one is related to the increased share of public spending and fiscal redistribution. Still more, the success of keynesian principles promotes countercyclical policies, in order to smooth the remaining cyclical fluctuations.

Statistical evidences do confirm this smoothing of conventional business cycle after WWII. Major depressions turn into mild recessions (Table 2). Therefore, some specialists were induced to think that the business cycle had become obsolete during the early Seventies. As a direct consequence, downward employment adjustments had a lesser extend and frequency than during the Twenties or Thirties. In a sense, quite independently of any public regulation, employment flows had become smoother. It was a silent and unnoticed form of job preservation. As far as growth is buoyant and rather stable and predictible, there used to be no need for general employment reduction, therefore no perception of any built-in rigidity.

° A *structural inertia in employment.*

A series of other factors specific to employment decisions and institutional settings still more reinforce the stability of jobs. First in mature manufacturing sectors, mechanisation leads to high capital/output ratios, which provide *a built-in rigidity* within the production process itself. Second, and this factor is closely related to social and technical division of labour associated to fordism, the share of indirect labour with respect to direct labour has been increasing. Consequently, it is less and less possible to

TABLE 4 : EMPLOYMENT MOBILITY IS ONLY ONE FORM OF FLEXIBILITY

	Organisation of production	Hierarchy of skills	Mobility of workers	Formation of wages	Social security coverage
Definitions:	Adjustability of equipment to variable demand in terms of volume and composition	Adaptability of workers to a variety of tasks, whether complex or not	Possibility of varying employment and hours of work according to the local or overall situation	Sensitivity of wages to the situation of the enterprises and the labour market	Elimination of tax and social transfer provisions having an unfavourable effect on employment
Components:	Multipurpose equipment Immediate responsiveness of the chain of production and optimum management of production flows Adaptation of the product to consumer demands and to instantaneous demand	Range of technical or general training Rotation of posts within a work unit Relative proximity of production and supervisory tasks Absence of barriers between supervisory and operational staff	Absence of any major constraint deriving from labour law Fluidity of inter-regional migration (housing, etc.) Non-existence of rights peculiar to a specific enterprise (social benefits, retirement) Responsiveness of employment to wage differentials	At the macro level: – average wage a reflection of unemployment, productivity and terms of trade – no restrictive minimum wage At the micro level: – constant review in the light of local circumstances – weakening of wage parity argument	No compulsory contributions that increase the cost of labour for enterprises Suppression of social and fiscal thresholds Reduction in social security contributions payable by the enterprises Private insurance/ collective coverage option
Keynote:	Flexible factory	Proudhonian worker	On-hire workers	Worker participation wage	Two-tier wage system
References:	Kundig (1984) Besson (1983) Coriat (1983)	Archier (1984) Piore and Sabel (1981, 1984) Schumacher (1977)	Gattaz (1984, 1985) Gilder (1985)	Weitzman (1984) General Motors (1985)	Harris and Seldon (1979)

Source : R. BOYER (1987) "Labour flexibilities : many forms, uncertain effects", *Labour and Society*, Vol. 12, n° 1, January, p. 107-129, (p. 108 et 112).

vary continuously total employment since overhead costs are now very important : the other side of the coin about dynamic increasing returns to scale is a significant rigidity in varying the volume of labour and equipment. Third, the ongoing success of rapid and stable growth affects firms'expectations formation : why to adjust downwards the employment level since the post WWII recession become milder and milder ? The *expectations* that recessions will be short and very limited brings another source for employment stability. Finally, the new principles about keynesian countercyclical policies still reinforce the belief in the stability of long term growth.

As a direct consequence, large firms, specially in Europe and Japan, implement job tenure schemes which become functional within the fordist regime. They provide workers commitment, a form of social armistice, and allow to capture learning by doing effects within the firm. This may explain why the inherent fordist rigidity and the loss of external flexibility did not show up before the breaking-down of the international order and the emerging unbalances within the American manufacturing. Still more, from a macro point of view, a slowing down in employment adjustments adds to the global stability of the fordist regime (R. BOYER, J. MISTRAL (1978)). Some crude statistical estimates confirm this reduction in *employment adjustment speed* (Table 3). It has been shown that this structural change, linked to technological and institutional transformations, might have contributed, at least partially, to prevent the first oil shock to trigger a cumulative depression. This could be an explanation of the major differences with respect to 1929 dramatic episode (R. BOYER (1982)).

Therefore, contrary to the conventional belief which has been ruling during the early Eighties, a form of job tenure, often mitigated by labour segmentation and external mobility within the secondary sector, might have had a positive impact upon growth, welfare (by a dampening of business cycle) and correlatively upon the stability of the political and social compromise, which was at the heart of the fordist era. But precisely this was not granted for eternity : the very success of this unprecedented regime has been unwinding the roots of a genuine structural crisis. Whithin this new context, labour flexibility is now at the core of political debates and firms strategies.

III - PRESSURES UPON JOB PRESERVATION : THE OUTCOME OF THE FORDIST BREAKING DOWN

Given the previous functional complementarity between a significant employment inertia and fordist growth, let us first investigate the underlying and the structural factors which might explain its demise and then derive from this analysis some insights about the labour flexibility issue.

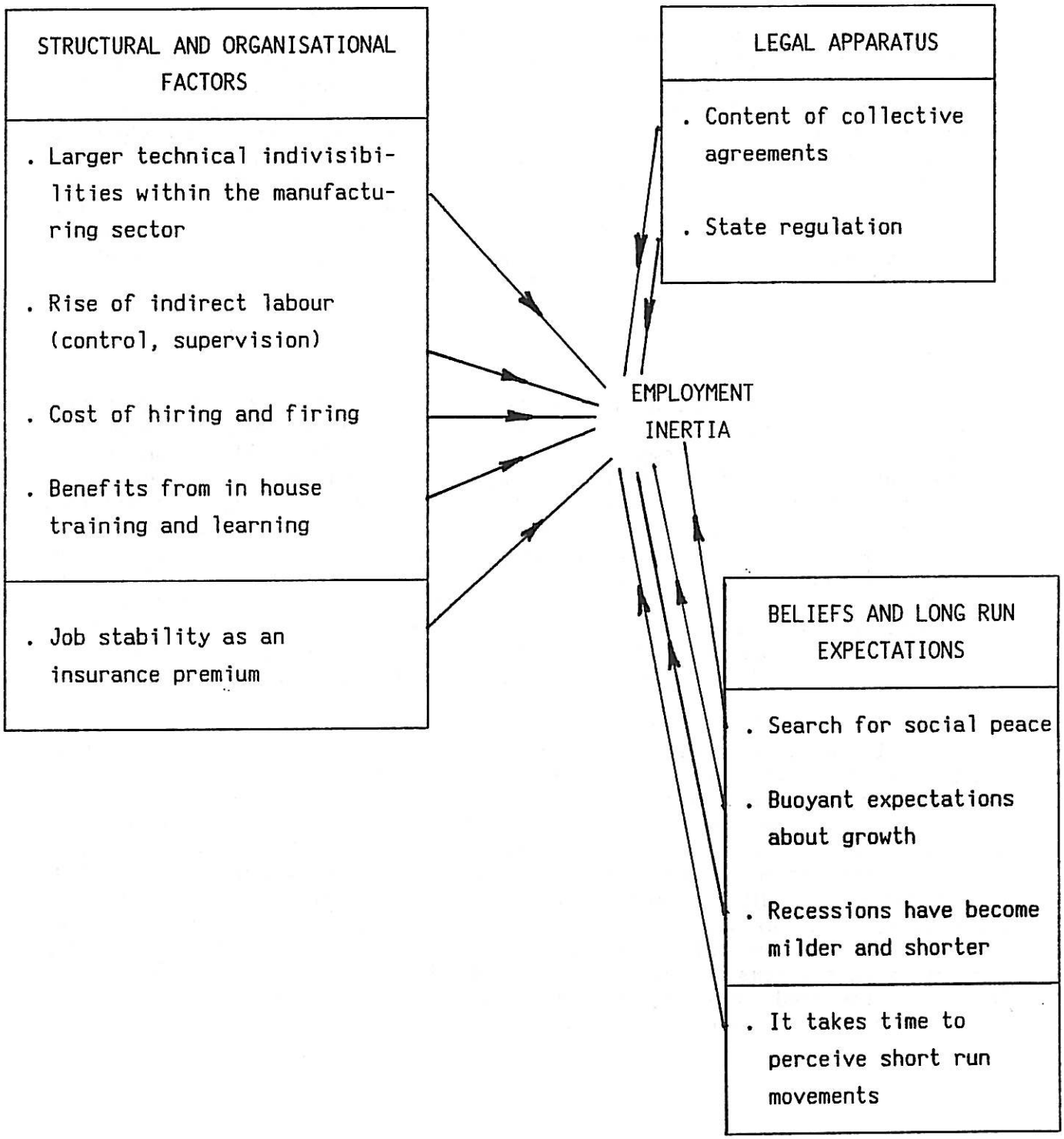
1. THE ROOTS OF A STRUCTURAL CRISIS OF THE GROWTH REGIME.

° A *social malaise.*

Nevertheless, a series of tensions have progressively been emerging within this organizational model. One of the first evidence took place at the end of the Sixties when low skilled blue collar workers of the car industry rebelled

F I G U R E 2 : THE MULTIPLICITY OF FACTORS GOVERNING SOME INERTIA IN EMPLOYMENT ADJUSTMENTS

JOB PROTECTION IS ONLY ONE OUT OF MANY



against the boring character of assembly-line tasks. Wild or organized strikes did challenge the fordist methods, which in some countries like Italy led to a new law giving some power to workers and unions in controlling labour organization and the intensity of work. Similarly in France, the same demand were converted into wage increases after the huge strikes in May 1968. In the US, the fordist malaise took a more hidden form via a rise in absenteeism and turnover, a lower quality of product and finally a productivity slowdown. *Social unrest against taylorism and fordism*, even if rather limited, was the first warning about the limit of this model.

More deeply, *better educated new generations* tend to reject the basic fordist axioms according to which work is only related to physical and mechanical abilities, with little initiative or intellectual creativity. Consequently, most OECD countries experienced rising difficulties in recruiting workers which would accept the more boring manufacturing tasks : since migration from agriculture to industry slowed down, most European countries had to rely upon migrant workers. They tend to represent an increasing proportion in the manufacturing and the building industries employment. A second root of fordist crisis lays precisely in this discrepancy between the deskilling tendancy of scientific management and rising expectations of young generations about the quality and initiative of work (TARENTELLI (1973)).

° *Productivity and rigidity problems.*

But this creeping social crisis is complemented by very strong strains affecting the core economic mechanisms of post WWII growth. As a consequence of workers'dissatisfaction, firms tried to push ahead further with mechanisation. At the end of the Sixties and early Seventies, one observes a rising capital output ratio which did not convert itself into more productivity. *The puzzling decline of apparent as well as total productivity increases* for the US economy and many manufacturing industries, well before the first oil shock is an indirect but significant evidence of post WWII productive organization crisis. Nevertheless, the productivity slowdown occurs only in the Seventies for most OECD countries with the exception of the United States. This is another evidence for the specificities of national trajectories, the hybridation of American methods with national institutions, cultures and specialization.

With the 1974-75 recession another limit becomes apparent : the productivity undergoes the more severe slowdown or even decline in the most typical fordist industries. Given the large indivisibilities associated with assembly lines —or even continuous processes—, labour can no more be varied continuously, whereas low capacity utilisation implies a slowing down of total productivity. But in the medium run, the employment level has, somehow, to be adapted to its optimal level given the volume of demand and the underlying trends in productivity. Here comes a new but basic complaint about fordist organization: its *excessive rigidity* facing unexpected variations of demand. But the previous historical analysis (section I) suggest that the rigidity problem is more *a consequence than a cause of the crisis* (R.J. FLANAGAN (1988)). Therefore, the need for a significant revision in engineering principles come to the surface (M. PIORE and C. SABEL (1984)).

° *Product quality and world competition.*

The large inertia of mass production concerns *quality and versatility of the product offered*, and not only the quantity of standardized goods. In consumer durable goods, for example for the cars, when the market turns from prime users to largely renewal of demands, the quality and the differentiation of products appears to be a key argument in this new competition era : in a buyers'market, consumers become more choosy and very sensitive to the quality, not only cosmetic but linked to servicing, durability, user costs and so on... Again, the very large lag between the perception of a new demand, the conception of alternative products and then their production at low cost impairs the adaptability of fordist organization. The required mobility is *mainly internal* and obtained by the polyvalence of skills, the good knowledge of managerial routines. Nevertheless, subcontracting and short term labour contracts are simultaneously used in order to get *an external flexibility*. Managers and academics then rediscover that within the conventional product-process matrix, craft production and diversified quality production become economically efficient and rational in such a context.

World wide competition simultaneously and progressively destabilized the fordist oligopolistic competition, which used to operate upon each national market. From the mid-Sixties till the Eighties, external trade has developed faster than home market, potentially breaking down the very smooth and peaceful competition. Since production capacities are generally under utilized, price wars take place, during which the speed in reacting to market opportunities plays a key role. The fordist methods are then outperformed by more flexible hybrids, such as those operating in West Germany, Italy, Sweden and Japan. Simultaneously, the fordist macroeconomic virtuous circle is challenged by export led strategies and the rising uncertainties about the world financial and trade system. Consequently, the need for downwards adjustment of employment becomes stronger for less competitive firms, sectors and economies.

° *Far reaching innovations.*

Another destabilization root is related to the progressive *exhaustion of the very cluster of innovations* which had launched the fordist dynamics. One observes a decline in the efficiency of R & D expenditures for mature industries such as mechanical engineering, chemistry, aerospace (PATEL and SOETE (1987), OECD (1987)). But symmetrically, sunrise industries explode and partially replace older ones : R & D in electronics and software is booming and converted into a generation of new products and processes. All these innovations seem to delineate a possible shift in paradigmatic organization, due to the potential impact of information technologies (FREEMAN (1989), SUNDQVIST's report for OECD (1988)). Somehow, employment flows have to follow these new patterns, in employment contracts, volume and skills composition too.

These innovations might have far reaching consequences about the fate of fordist methods and products. On one side, the large assembly-line used to suffer from imbalances between the various tasks and from very significant costs and lags associated with the retooling of equipment due to model change. Numerical controlled machines, robots, integration of various equipments via an electronic network, the easiness of reconfiguring electronic equipments then introduce significant *technical flexibilities*. The same equipment can now be

used to manufacture different products belonging to the same general type. This is a way to fight against one of the adverse trend typical to fordism : the decline in the output capital ratio (R.U. AYRES (1985), R. BOYER and B. CORIAT (1986)). On the product side, the versatility of equipments and/or of workers allows faster reactions in the qualitative shifts in the final and intermediate demand. This gives a premium to more flexible organizations in the new context of more acute international competition. Again labour flexibility internal and qualitative (polyvalent workers) outperforms external and qualitative flexibilities (layoffs and dismissals).

Even if very important, information technology is not the only factor which explains the *general search for flexibility*. Technical flexibility is only one out of a whole spectrum of *flexibility strategies* (Table 4). For example, multiskilled workers can in some cases replace heavy mechanization or even informatisation, not to speak of more traditional flexibilities. Varying the hours worked, reducing employment, adjusting wages to economic environment, are alternative tools, which combine themselves into quite distinctive national management styles.

2. MOBILITY AND FLEXIBILITY STRATEGIES : ON TOP OF THE AGENDA FOR FIRMS AND GOVERNMENTS

Let us focus more specifically upon mobility of workers and employment deregulation. In fact, most of the features of the Seventies and Eighties do enhance strong pressures upon previous arrangements, whatever formalized by law or by collective agreements. Therefore it is not at all surprising if most countries experience significant, if not drastic, revision of their conceptions about mobility.

° *The fordist rigidity revealed.*

The labour mobility from one sector to another, from region to region used to be the easier, the faster and the more predictible growth. If on the contrary, after the two oil shocks, production becomes sluggish and uncertain, then some drastic job reductions have to take place, in excess with normal retirements and voluntary mobility. Correlatively, a stiffening of international competition makes labour saving as a key objective in firms management. Consequently, one observes large job destructions in mature industries, for most OECD countries. In this very context, comes out the *rigidity issue* : firms, governments and specialists realised then that, when needed, downwards flexibility was hard to implement. Quite logically, the heyday of the flexibility debate precisely took place in the early Eighties, when the world economy was quasi stagnating and induced purely defensive strategies. Again, this is an indirect evidence about the fact that labour rigidity was the manifestation and the consequence of the structural crisis of fordism and not necessarily its origin and basic factor.

Nevertheless, these adjustments in employment where initially thought as purely transitory. As time elapses, everybody perceives that far reaching structural transformations are affecting work organization, skill requisites, spatial distribution of labour, as well as the relative size of various sectors. Generally, advanced capitalist countries experience some forms of desindustrialisation, since a continuously rising share of employment goes into service activities. Even if these sectors are quite heterogeneous, they

generally exhibit weak unions, smaller firms and therefore a higher mobility than manufacturing. Within manufacturing itself, sunrise activities do not necessarily compensate the job destructions occurring within old and mature industries. Job mobility takes therefore a new significance with respet to the roaring Sixties : it is the means for converting one configuration of industrial economies into another, largely original.

Both, short run macroeconomic evolutions and long run transformations become far more unpredictible than during the fordist era. The conventional business cycle is so transformed, that firms undergo major difficulties in forecasting demand, inflation, interest and exchange rates. Still more, the large strategic errors made after the first oil shock push the managers to be more and more cautious in any decision affecting long run variables. As far as job tenure was implicitely the ideal to be followed, the legacy of the Sixties diffuses the view that labour had become a quasi fixed factor. When demand becomes uncertain in volume and composition, firms logically react by restricting access to primary labour markets to core competences and knowledges (A. ZYLBERBERG (1982)). Consequently, atypical employment contracts spread all across OECD countries : part time, limited duration contracts, State subsidized employment, and so on.... These new forms provide flexibility and reversibility: the Eighties experience a return to the ideal of secondary markets (R. BOYER (1988)). Similarly, subcontracting and short term employment contracts are appealing for the firms and sectors undergoing rapid and sometimes uncertain technical change. When long term views are blurred by radical uncertainty, firms'rational behaviour is to prefer liquidity to productive investment (M. AMENDOLA, J.L. GAFFARD (1989)), secondary jobs to jobs tenure.

° *Far reaching structural change.*

At the end of the Seventies, *the massive surge in unemployment* in Europe and in North America raises again the major question about the status of labour markets. The apparent unability of previous keynesian policies to counteract unemployment gives again some credibility to more classical views, about the self regulating properties of markets in absence of any public regulation and monopoly power. Here comes the apparently unescapable evidence : if labour markets were totally flexible, mass and long run unemployment would be ruled out. This view is first applied to wage formation (OECD (1986)), the rigidity of which would impede the adjustment to productivity evolution. But during a second phase, the institutional obstacles to hiring and firing are blamed as the direct culprit, specially for European employment (R.J. FLANAGAN (1988), R. LAYARD, L. CALMFORS (1987)). Of course in the early Nineties, a more balanced view now prevails, but five years ago most analysts and governments used to consider mass unemploymenet as a direct proof for excessive labour rigidity, concerning both wage formation and employment regulations.

Effective *deregulation policies* of the early Eighties on the product and financial markets have made labour flexibility more necessary than ever. On one side, import penetration of most domestic markets and correlatively the generalization of agressive export strategies call for faster and usually larger adjustments in employment by skills, sectors, regions and so on.... On the other side, unprecedented high real interest rates trigger much more active management policies from firms, who are eager to see any legal constraint to be removed, specially upon labour markets. Simultaneously, unions undergo a steady and strong decline in most if not all OECD countries. Since a decade, the initiative

has shifted from workers and unions to managers. Again this is a key factor in explaining the implementation of social deregulation. Remember the French case : on July 1986, a conservative governement has to concede to impatient and vocal managers a significant flexibilization of hiring and firing procedures.

All these factors converge towards a significant revision in labour legislation and the content of collective agreement. Indeed, atypical labour contracts represent the majority of total job creation during the last Fifteen years (OECD (1988)). Nolens volens, implicitly or explicitly, by negociation or by a drastic shift in the bargaining power, many forms of job deregulation have taken place in Europe and North America...with a significant and important exception for Scandinavian and Social-democratic countries (R. ROWTHORN (1990)). This defines an important caveat to previous analyses : they are relevant for North America and European Community but not necessarily for Asia and Japan, Sweden, Finland and Austria. Previous researches have shown the existence of contrasted national trajectories (R. BOYER (1990)). For the time being, let us return to our main argument : what have been the consequences of job deregulation ? Before coming back to this key issue (Section V), a more basic question will be investigated : do more flexible employment contracts provide better results for firms and national economies ?

3. EMPLOYMENT FLEXIBILITY : UNCERTAIN IMPACTS UPON UNEMPLOYMENT LEVELS.

° *Labour rigidity : cause or consequence of unemployment ?*

From a theoretical point of view, keynesian macroeconomic theory was precisely built in reaction to the common view according to which the employment and wage levels are set by the regulating mechanisms characterizing the labour market, in the same manner as any other good by price and quantity adjustments. General Theory has rather convincingly argued that such an extrapolation from micro to macroeconomics might be invalid. Imagine for example that financial markets, in conjonction with open market policies, govern interest rate formation and long term views about the profitability of productive investment. In an effective demand model, the level of employment will be set according to the interaction of the product and financial markets, without any role to the labour market itself. Remember General Theory arguments : if mass unemployment is the result of insuffisant effective demand, wage flexibility will not have any automatic role in reequilibrating the labour market (O. FAVEREAU (1989), R. BOYER (1988)).

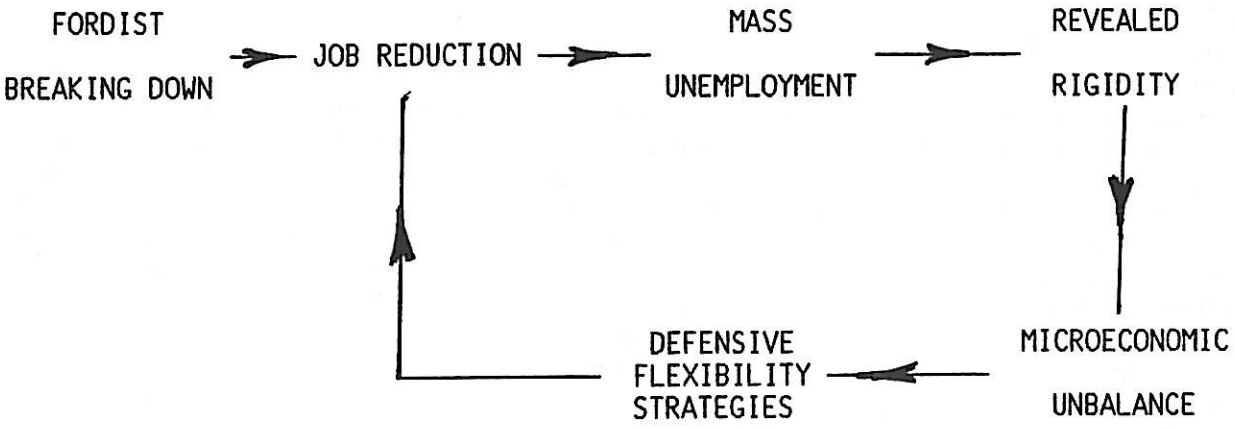
Mutatis mutandis the same reasons might explain why apparent employment rigidity might be only a *consequence* of macroeconomic unbalances, sometimes exacerbating them, but not necessarily their causes. Incidentally, the modern disequilibrium theory (J.P. BENASSY (1982)) and the related econometric estimates, suggest that in France for example most of the unemployment observed is keynesian, i.e. linked to an insuffisant effective demand ; whereas on the contrary, productivity or terms of trade adverse shocks would imply only transitory classical unemployment, associated to an excessive wage with respect to marginal productivity. In other words, the keynesian message is not necessary obsolete, and might explain more stylized facts than alternative neo-classical or classical models which rely only on competitive supply : an assessment about the impact of 1992 seems to largely confirm this view (R. BOYER (1990)). The respective chronologies about labour flexibility and the general orientations

D I A G R A M 1 : THREE CONCEPTIONS ABOUT LABOUR RIGIDITY

The conventional neo-classical view :

The keynesian vision :

A "régulation" interpretation :



of macroeconomic policy manifest close interactions and similarities. In the early in Eighties, restrictive fiscal policy and rationalisation of public expenditures, as well as major international unbalances have probably been the main determinants of the unemployment surge in Europe (J.P. FITOUSSI, J. LE CACHEUX (1989). The initial emphasis upon wage rigidity is now attributed some significant but limited role in the persistance of this European disease (L. SCHULTZ Ed. (1988)). During the second half of the Eighties, the buoyant American boom, prolonged by the softening of monetary policy after the December 1987 Wall Street crash, has alleviated unemployment problems, even in Europe, and consequently shifted the previous emphasis from defensive flexibility (lower wage, easier firings) to a more offensive conception. For example now some OECD reports (1989) insist upon skill requirements, general education, as major component for labour flexibility.

To sum up, the neo-classical causality is replaced by a keynesian one. Both causality can be reconciled within a synthetic diagramme which distinguishes between initiating factors on one side, propagative mechanisms on the other (Diagram 1). The roots of the crisis would be mainly macroeconomic, whereas job rigidity would belong to the second category.

° A *built-in employment rigidity, not the only outcome of regulation.*

From a methodological standpoint, one has to consider whether public regulations about hiring and firing are the main factors for employment rigidity. The "régulation" approach researches propose a balanced view (Figure 2). At least, three features of the fordist regime imply a significant inertia into employment adjustments, specially downwards :

. Many *structural and organisational features* are responsible for such a novelty with respect to competitive capitalism. Firstly, fordism is built upon static and dynamic increasing returns to scale, which imply strong indivisibilities for most manufacturing sectors (the assembly line of the car industry, steel making, electricity power, heavy chemical plants, petro-chemical industry,...). The putty-clay character of most equipments is associated with the rise of indirect labour with respect to typical blue collar work. Consequently, when the firms face a severe recession it is no more possible to vary continuously and proportionally workers and equipments : the past good productivity performances have now a clear cost, i.e. a large inertia in adjusting to unexpected disturbances. Thirdly, a significant part of a plant efficiency derives from in house training and learning of technicians, engineers and professionals, which might be specific to each job and/or firm : therefore the firm is more reluctant to dismiss these workers, and lay-offs become a current method. Simultaneously, these training and hiring costs logically induce any rational firm to dampen employment evolutions with respect to demand variations. The so called *productivity cycle* is the normal outcome of such an inertia...quite independently of any legal constraint put upon firms. Finally, for some large fordist firms, an implicit job tenure defines an efficient incentive for extracting loyalty and commitment from workers. Similarly, implicit contract theory could be extended to the case where the insurance premium given to workers bears upon employment and no more upon nominal wage independance with respect to uncertainty. Again this is a rational behaviour, quite apart from any union demand or public authority regulation.

T A B L E 5 : FROM INSTITUTIONNAL TO PERCEIVED CONSTRAINTS UPON EMPLOYMENT ADJUSTMENTS

COUNTRIES	THE INSTITUTIONNAL SETTING	SEVERITIES OF THE OBSTACLES TO TERMINATION OF EMPLOYMENT IL	PERCEPTION BY FIRMS (%)		
			LAY-OFF RESTRICTIONS LR	HIRING RESTRICTIONS HR	GLOBAL G
BELGIUM	Public regulation	**	74	63	75
DENMARK	Few constraints	*			
IRELAND	Public regulation	**	35	47	68
ITALY	Strong constraint by regulation and collective agreement	***	88	63	83
FRANCE	Public regulation until 1986	***	48	53	81
GERMANY	Law in job security	***	63	74	56
GREECE	Government authorisation	**	76	50	67
NETHERLAND	" "	***	47	32	51
PORTUGAL	" "	***			
SPAIN	" "	***			
UNITED KINGDOM	Lighest regulation	0	28	27	26
AVERAGE ECC	Law for collective reduncancies				60
JAPAN	Limited regulation	*			
SWEDEN	Significant regulation	**			
UNITED STATES	No law ; possible, but limited, job security by collective bargaining	*			
FINLAND	Public regulation	**			
NORWAY	" "	**			
CANADA	Few laws	*			
AUSTRIA	Public regulation	**			

Sources : M. EMERSON (1988) "Regulation and deregulation of the labour market", *European Economic Review*, 32, p. 778-792.

. *Beliefs and long run expectations* similarly shape firms behaviour facing disturbances emanating from the international economy, the financial sector, economic policies and so on.... For example, all over the Sixties and early Seventies, most politicians and experts used to consider that the French society could not resist to more than half a million of unemployed...because *social peace* would be at stake. Of course, these views have been drastically revised, but they played a role in smoothing the surge of unemployment in France, at odds with what was observed in United States, United Kingdom or Germany. Similarly, optimist expectations about the sustainability of a fast growth track used to reduce lay-offs and dismissals during mild recession, for they were interpreted as purely transitory. On the contrary, when during the Seventies, macroeconomic evolutions become erratic, flexible and reversible strategies will be preferred to more efficient but largely irreversible ones. Finally at a more micro level, it takes time to firms to diagnose the entry into a recession or a depression : this lag between information, decision and effective behaviour which used to govern investment decisions, partially apply to hiring. Again, all these mechanisms are rather independent from any *direct* public intervention about job preservations.

. The constraints imposed by *State regulations and collective agreements* still reinforce these structural and institutional factors. Nevertheless, note that job preservation legislation is mainly important in Europe, not that much in North America or in Japan (Table 5)...whereas the previous factors are quite general. Similarly, the law does not impede employment variations but put requisites, delays and/or extra costs to firing. At the opposite, in order to fight against long term and young people unemployment, many OECD governments have subsidized the firms who accepted to hire these categories of workers. This is a countervailing mechanism with respect to job security regulations. Finally, another set of partial job security or lay-off regulation is provided by collective agreements. If they are negociated within a stable environment, intuition and optimal contract theory suggest that the final agreement will mutually benefit to workers and managers. The standard American procedure about lay-offs used to belong to this category, at least until the Eighties. But if the environment drastically changes, then, the previous arrangements might be seen as rigidities at least by managers. In some instances, too sophisticated firing rules can still worsen the initial financial problems of the firm. Nevertheless, they are not generally at the core of these difficulties, often linked to foreign competition, the poor quality of products, an insufficient product and process innovations and many other mismanagement.

° *Contrasted national trajectories.*

From a purely logical point of view, the legal apparatus cannot be blamed as the only responsible for large employment inertia : the very institutional, technological and economic bases of fordism imply such a rigidity when the economy faces severe or unexpected recessions. A set of *international comparisons* (Tables 5 and 6) seem to support this provisional conclusion. Roughly speaking, various national cases exhibit strong opposition between mild and severe job preservation regulation.

. *Italy* might represent the prototype for a highly regulated labour market, at least until the mid Eighties. Not only the public regulations are the more severe, but they are clearly perceived by the firms as a major obstacle to

T A B L E 6 : FROM EFFECTIVE LABOR MOBILITY TO UNEMPLOYMENT AND ECONOMIC PERFORMANCE

COUNTRIES	AVERAGE NEW RECRUITS AND SEPARATIONS (%) NR	UNSTABILITY INDEX (% OF JOB LESS THAN 2 YEARS) IS	STANDARDIZED UNEMPLOYMENT RATE (1988) (%) U	SHARE OF LONG DURATION UNEMPLOYMENT (%) LD	ACTIVE EMPLOYMENT MEASURES (% OF GDP) AC
BELGIUM		18	10,2	45,5	1,27
DENMARK		27	8,6	29,6	1,13
IRELAND		22	16,7	65,8	1,48
ITALY	11	13	11,8	55,0	0,67
FRANCE	14	18	10,1	45,5	0,74
GERMANY	25	19	6,2	48,1	0,95
GREECE			7,7	45,8	0,43
NETHERLAND		28	9,5	55,6	1,12
PORTUGAL			6,0	56,6	0,50
SPAIN			19,1	61,9	0,65
UNITED KINGDOM	20	24	8,3	45,2	0,80
AVERAGE EEC	18	19			
JAPAN	18	19	2,5	20,2	0,19
SWEDEN	18		1,6	8,2	1,96
UNITED STATES	40	39	5,4	8,1	0,26
FINLAND	35		4,5	19,0	0,88
NORWAY			3,2	5,0	0,51
CANADA			7,7	9,4	0,58
AUSTRIA			3,6	10,8	0,31

Sources : Two first columns : M. EMERSON "Regulation and deregulation of the labour market", *European Economic Review*, 32, p. 781, 782.
Three other columns : OECD "The role of indicators in structural surveillance", Working Papers n° 72, January 1990, p. 90, 94.

employment variations (Table 5). This implies sluggish movements in new recruits and separations, whereas the stability ratio of employment is the highest of the whole sample (Table 6). Consequently, the standardised unemployment rate is one of the larger in OECD after Ireland and Spain. Simultaneously, the share of long run duration unemployment is really impressive with respect to North America and social-democratic countries. More institutionally oriented investigations (MIRE (1989)) confirm this statistical analysis : productive decentralization, subcontracting and drastic reorganisation of firms allowed by C.I.G. have aimed at relaxing the labour mobility constraints imposed after 1968-1969 (E. WOLLEB (1988)).

. On the contrary *United States* belongs to the opposed category : soft or non-existent public regulations provide many degrees of freedom to firms, which imply the highest unstability ratio of OECD countries (Table 6). Consequently, labour market adjustments are very active, which explains why only short duration unemployment prevails. Finally the unemployment rate reaches again its previous long run level at the end of the Eighties, contrary to the persisting and long term unemployment which prevails for most EEC countries. Significantly enough, active public policies are very small indeed, which suggest that they might be complementary with highly institutionalised labour rules (compare US with Sweden).

. Nevertheless, *United Kingdom* apparently contradicts this too crude opposition between employment flexibility and low unemployment on one side, rigidity and mass-unemployment on the other. As far as public regulations are concerned, they seem fairly light in this country (Table 5) and English firms do not perceive any strong institutional obstacle to fast variations in their employment. Surprisingly enough, long run unemployment and average unemployment rates belong to the average of the European countries, not to that of North America or Scandinavian countries. The correlation between employment flexibility and low unemployment is clearly contradicted. May be other rigidities upon skills, job rules or wage explain the British case.

. Small *social democratic countries* provide other exceptions : the public regulations are significant, whereas mobility is collectively organized and/or negociated by unions. Nevertheless, long run unemployment and total unemployment are the lowest within all OECD countries (Table 6). Here comes an important teaching : by themselves, institutions governing the capital labour relations are not necessarily rigid ; they do appear so when their precise setting is unadequate with respect to technological trends, external competition and macroeconomic dynamics. Efficient labour market institutions (and macroeconomic policies) can be designed and resist even to a severe world structural crisis. Although now challenged, the *Swedish model* is not without merit. The relatively less satisfactory performances of *Austria* would suggest that active employment policies are central for such a process to be efficient (compare their relative efforts on Table 6).

° *An indirect and partial impact of job stability upon unemployment.*

A more systematic *cross national statistical analysis* provides a confirmation of this analysis (Table 7). On one side, one finds not any *close and direct* relationship between the unemployment rate and the share of long duration unemployment and any index of institutional constraints and perceived obstacles to employment adjustments. Nevertheless, on the other side, a closer

T A B L E 7 : THE RELATIONS BETWEEN JOB REGULATIONS, EMPLOYMENT MOBILITY AND UNEMPLOYMENT

CROSS CORRELATION MATRIX (R-SQUARED) BETWEEN KEY VARIABLES

VARIABLES / VARIABLES	INSTITUTION RIGIDITIES	PERCEPTIONS			MOBILITY MEASURES OR MEANS			PERFORMANCE	
		LAY-OFFS	HIRING	GLOBAL	LABOUR FLOWS	UNSTABILITY	ACTIVE POLICY	UNEMPLOYMENT	LONG DURATION
INSTITUTION RIGIDITIES (AL)	1	0,24	0,32	**0,46**	0,10	0,20	0,01	0,09	0,25
PERCEPTIONS									
Lay-Offs (LR)		1	**0,49**	**0,42**	0,17	**0,46**	0,17	0,04	0,04
Hiring (HR)			1	**0,40**	0,01	0,15	0,07	0,01	0,01
Global (G)				1	**0,44**	0,20	0,25	0,16	**0,34**
MOBILITY MEASURING OR MEANS									
Labour flows(NR)					1	**0,87**	0,13	0,28	**0,34**
Unstability (IS)						1	0,03	0,07	**0,31**
Active Policy(AC)							1	0,03	0,17
PERFORMANCE									
Unemployment (U)								1	**0,59**
Long Duration(LD)									1

Sources : Regression analysis starting from international comparisons and variables in tables 5 and 6.

Note : Given the unequal availability of data, the correlation coefficients (R^2) correspond to a variable number of observations. This entails the comparability of the results.
The coefficient with a square correspond to significant correlations

look confirms some indirect and mediated influence (Figure 4) :

. The qualitative analysis about the *legal and institutional system* is not without link with the perception by the firms of obstacles to mobility, whatever the index choosen (hiring, lay-off or global).

. The *representations of firms* across European countries are associated with effective mobility measures, such as the importance of recruits and separations and job unstability, captured by the share of workers who belong to the firm since less than two years.

. At a third level, one notes a simultaneity between employment stability and important long run unemployment, whereas frequent recruitments or separations reduce long run unemployment.

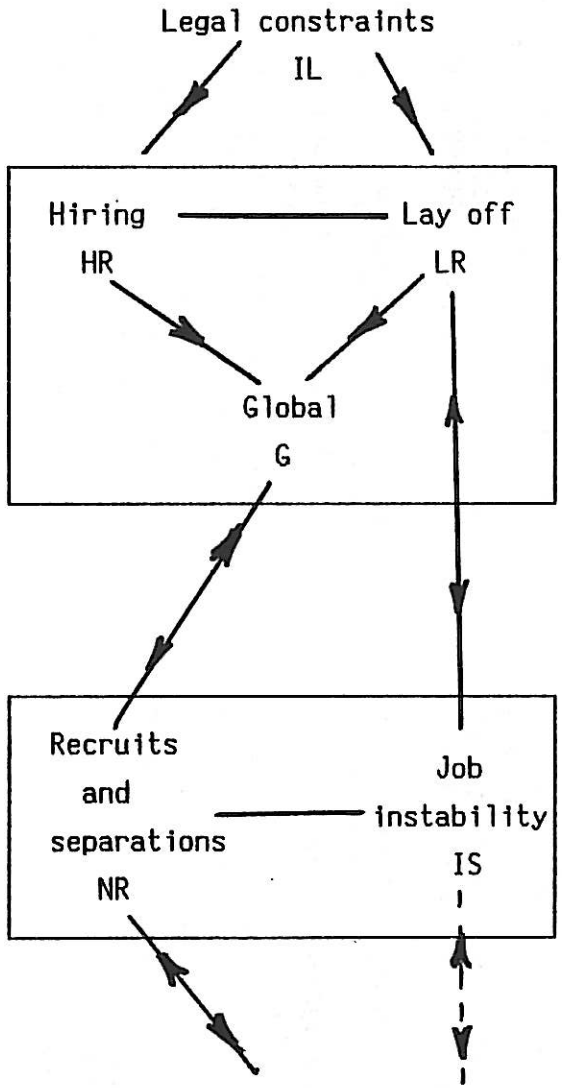
. Finally, the closest relation comes out between the global unemployment rate and the share of long run unemployment. Nevertheless, causality is an open question. Either, job protection hinders hiring and job creation, which furthers unemployment, which tends to perpetuate itself. Or, on the contrary, a large unemployment rate triggers cautious behaviours from workers, who become reluctant to quit and find another job. The unemployed therefore experience difficulties in getting any job, and the mechanism is propagating again, according to a vicious circle. But long duration unemployment would be a consequence not a cause.

To conclude, let us insist upon the shakiness of the corresponding results. Firstly, the statistical indexes are partial, unperfect and not available for all OECD countries, which leads to a lot of caveats in interpreting partial correlations in Table 7 and figure 4. Secondly, if the notion of national trajectory is valid, no general model would be operating at a cross national comparative level. Job mobility might depend from very different factors in United States and Germany, in United Kingdom and Italy (R.J. FLANAGAN (1988)). With all these caveats, emerges the following provisional hints. Roughly speaking, constraints upon mobility might play some role in long duration and average unemployment, but the exact mix between its role as an initiating factor or as a pure propagating device is an open question. In order to overcome this uncertainty two other analyses will now be provided. What should be the place of job tenure in the possible followers to the fordist regime (Section IV) ? Is it possible to build more analytical micro and macro models in order to capture the contradictory effects of labour mobility upon employment and economic stability (Section V) ?

IV - NEW PRINCIPLES FOR CAPITAL LABOUR RELATIONS CALL FOR NEW JOB REGULATIONS

Remember that an implicit and partial job tenure, which was coherent with the fordist growth regime, has been challenged during the last two decades. Many institutional technological and financial changes have taken place since the first oil shock. Therefore, in conformity with the historical approach typical of regulation theory, the basic question is now the following: is a new regime in labour management emerging and if so, what would be the new role of labour mobility?

F I G U R E 4 : A WEAK AND MEDIATED INFLUENCE



Statistical fit

$G = 36,7 + 12,3 \times IL \qquad R^2 = 0,46$

$(2,7) \quad (2,3)$

$LD = 5,6 - 1,1 \times NR \qquad R^2 = 0,34$

$(3,6) \quad (1,7)$

$U = 2,0 + 0,16 \times LD \qquad R^2 = 0,59$

$1,4 \quad (4,8)$

1. A PHASE OF PURELY DEFENSIVE FLEXIBILITY SEEMS TO BE OVER.

All along the Seventies and Eighties, managers, engineers and academics have been experimenting with a trial and error process. Business fads have emerged, generated enthusiasm, and when implemented have generally delivered poor or disappointing results. Nowadays, it seems not too daring to think that some converging views have emerged, as far as management is concerned. Of course, management practices are still rather different accross industrialised countries: the comparison of the five national studies specially conceived to enlighten the report presented to the OECD Helsinki Conference exhibits very distinct effective strategies in US and Japan, in France and West Germany, the Swedish model being largely original. A brief summary of the central message will now be provided : a possible follower to fordism can now be delineated and given a fairly coherent theoretical basis.

Initially, firms, sectors and nations have explored rather conservative strategies at the margin of fordism. Some have exported conventional fordist methods to new geographical areas (for example, credit and direct investment to Latin American countries in the Seventies). Others have kept previous management devices, but implemented defensive flexibility, for example lowering wages in order to preserve obsolete fordist jobs or new tertiary jobs. Still others are using the opportunities raised by new information technologies in order to keep alive fordist principles (strong division of conception and execution, strengthening of monitoring over labour, control of labour intensity by new computerized machine tools). Finally, the rise of the service sectors and the deepening of labour market segmentation have been widely used in order to compensate the crisis within the manufacturing fordist sectors (R. BOYER (1988)).

Nevertheless, international comparisons (Ph. SCHMITTER and al. (1989)) suggest that these four strategies do not necessarily solve the crisis of the previous management model, even if they can help in passing from one regime to another. Comparing, for example, US and Japan, the rather defensive strategy adopted in North America, along very traditional fordist principles seems to have delivered poorer results than has the more innovative management style worked out by the Japanese managers. Similarly, the very sluggish adaptation of the British manufacturing industry has given a lot of opportunities to Japanese direct investments in some key sectors such as the car and the consumer electronics. The rather defensive strategy used by English managers has been outperformed by the quite and surprisingly successful introduction of new and different principles.

The same result seems to emerge from a systematic statistical analysis of firms trajectories during the Seventies and the Eighties. In the case of France, It has been convincingly shown that sticking to old taylorist principles of deskilling has usually led to very disappointing results (Ph. CHOFFEL, Ph. CUNEO and F. KRAMARZ (1988)). First small or medium size firms with high technical knowledge and sufficient workers'skills have succeeded in getting access to new external markets, which have replaced the national one. Second, between large firms, only those which have mitigated or abandoned the deskilling of blue collar workers, inherent to fordism, have succeeded in limiting job destruction. On the contrary, a large majority of firms still following their previous taylorist strategies has incurred serious troubles. Consequently, within the same country, alternative strategies have provided better performances.

JOB TENURES AND REGULATIONS HAVE TO BE RECONSIDERED WITHIN THE EMERGING MANAGEMENT MODEL.

T A B L E 8 : FROM FORDISM TO A NEW MODEL : A SYNOPTIC PRESENTATION

FORDIST PRINCIPLES	THE CHALLENGES OF THE 70's AND 80's	THE PRINCIPLES OF A NEW MODEL
F1 : Rationalisation of labour is the main target, mechanisation is the means	C1 : Under-utilisation of equipment, large inventories of work in process	P1 : Global optimisation of the whole productive flows
F2 : First design and then manufacture and organize work process	C2 : Lags and large costs in passing from innovation to effective production	P2 : Tentative full integration of research, development and production
F3 : Indirect and mediated links with consumers via marketing studies and strategies	C3 : Loosing touch with choosy consumers, failures in launching new products	P3 : Close and long lasting ties between producers and users, capture learning by using effects
F4 : Low cost for standardised products is the first objective, quality the second one	C4 : Ex-post quality controls cannot prevent a rising defect rate, consumers more selective about quality	P4 : High quality at reasonable costs, via a zero defect objective at each stage of the production process
F5 : Mass production for stable and rising demands, batch production for unstable demands	C5 : Even mass consumers demand become uncertain : the fordist production process appears as rigid	P5 : Insert the market demand into the production process, in order to get fast responses
F6 : Centralisation of most decisions about production in a special division of a large firm	C6 : Sluggish and unadequate reaction of head quarters to global and local shocks	P6 : Decentralization as far as possible of production decisions within smaller and less hierarchical units
F7 : Vertical integration, mitigated by circles of subcontractors	C7 : Given radical innovations, even large firms can no more master the whole techniques needed for their core business	P7 : Net working (and joint ventures), as a method for reaping both specialisation and coordination gains
F8 : Facing cyclical demand, subcontractors are used as stabilizing device, in order to preserve large firms'employment	C8 : During the 70's, bankrupcies and/or loss of competence of subcontractors, now confronted with international competition	P8 : Long run and cooperative subcontracting as far as possible, in order to promote joint technical innovations
F9 : Divide and specialize at most productive tasks, main source of productivity increases	C9 : Excessive labour division might turn counterproductive : rising control and monitoring costs ; built-in rigidity	P9 : To recompose production, maintenance, quality control and some management tasks might be more efficient, technically and economically
F10: Minimize the required general education and on the job training of productive tasks, according to the BABBAGE's and TAYLOR's principles	C10: New techical opportunities (IT), more competition and uncertain demands challenge most of the previous very specialized tasks	P10: A new alliance between a minimal general education and effective on the job training, in order to maximize individual and collective competence
F11: Hierarchical control and purely financial incentives to manufacture an implicit consent to poor job content	C11: Young generations,better educated and with different expectations, reject authoritarian management styles. Too much control becomes counterproductive	P11: Human ressources policies have to spur workers'competence and commitment and work out positive support for firms strategy
F12: Adversarial industrial relations converge towards wage demands ; collective agreement codify a provisional armistice	C12: Firms employment might be hurt by the lack of cooperation and an exclusive concern for wage A contrario, concession bargaining does not necessarily provide any advantage for wage-earners	P12: An explicit and long term compromise between managers and wage earners is needed to reap a general support to this model : commitment versus good working conditions and/or job tenures and/or a fair sharing of modernisation dividends

Source : R. BOYER (1989) "New Directions in management practices..."

2. THE TWELVE PRINCIPLES FOR AN ALTERNATIVE TO FORDISM.

When compiling a series of researches, elabourated by specialists of management, technical change, industrial relations, political scientists comparing governance modes, one gets the impression that some common principles have now emerged (R. BOYER (1990)). As far as ideas and theoretical conceptions are concerned, some common views and striking convergences prevail about the main features of what should be an ideal model. Twelve principles can be elabourated into a possibly coherent new management style, able to cope with the new features of the world economy in the Nineties (Table 8).

° *Global optimization and a continuous integration of innovations within production.*

Global optimization of productive flows (P1), which was a traditional objective of scientific management, was progressively somehow forgotten by actual fordist management practices. Heavy mechanisation and large inventories were conceived as methods for counterbalancing workers' lack of discipline and possible disruption due to strikes. Consequently, during the Sixties in the car industry, for example, very costly and specialized equipment were quite under-utilized, initiating a decline in the productivity of capital. The new management model takes into full account that the full optimization of the whole productivity flows has to deal symmetrically with labour, intermediate products and equipments. In other words, if taylorism was fighting against workers laziness and under-utilization, the new system fights against equipement under-utilization and excessive inventories, due to idle working process. The Just in Time has precisely this objective, very much in line indeed with original scientific management strategies. Total factor productivity including the rotation speed of circulating capital has replaced labour productivity as a major index for technical efficiency.

Fully integrated research, development and production organization (P2) is the second major principle. In typical fordist mass production, the sequence was clearly oriented from design, then production and ultimately to marketing. The division in charge of conceiving the new products did not really integrate any clear vision about the methods for manufacturing them, nor do they imagine the needs and the demands to be satisfied. Consequently, the lag between design and mass production of a new model used to be around six-seven years for the car industry. Simultaneously, the product could turn out to be a failure if in between the market trends had reversed (for example from large cars to fuel efficient ones). Moreover, in the Seventies and Eighties, the versatility of demand has shown the process of design and innovation in conventional fordist organization to be very sluggish. Therefore it is not really surprising if management theory now stresses the need for a fuller integration between these three stages. The sequential relation between design and manufacturing is replaced by pooled or reciprocal coordinating mechanisms. All the national studies point out many experiments of plant integration in which microelectronics allows closed and fast connection between design, production programmation, quality control, planning : this is for example the case for German capital good industry (L. PRIES, R. TRINCZEK (1989)). In Japan, the management style seems to rely more upon engineers and technicians mobility from research and development department to the production site, back and fourth (S. WATANABE (1989)).

° *High quality and versatility at reasonable cost.*

Closer relationship between producers and users (P3) introduces a third break-through with respect to typical fordism. Previously, the marketing division was trying to find out how to launch and sell the product elabourated by the production department, itself inspired by scientific organization principles. Therefore, the adequacy of new products to consumers needs was an ex post and sometimes costly process. Now the more successful firms seem to have elabourated a two-way flow of communications between people conceiving new products and the users themselves. This is specially so for sophisticated equipment goods, as well as for consumer durables. Again, the Japanese firms give a good example of a better integration of the R & D department, production department and marketing division. It has been suggested that such a strategy reduces the risk of failures in the car industry for example, since a sample of potential consumer have helped in designing the final product. In industry such as the computers, a large source of innovation comes from the needs and proposal of final user, for example in software. In this sector, as in the machine tool industry (S. WATANABE (1989)), the closeness and the cumulativeness of the links between final users and designer enhances massive effects due to learning by doing (. Von HIPPEL (1988), B.A. LUNDWALL (1989)).

High quality at reasonable cost (P4) can now be reached within the new management system. In the past, mass production of cheap but low quality good was complemented by craft and customized production of top quality luxery goods. In the old system, a clear trade off had to be made between low cost and high quality. This feature turned out to be quite detrimental to many fordist industries. In the car manufacturing for example, when the buoyant market of new buyers shifted into a mere replacement demand, more sophisticated consumers became aware of quality and turned to be much more choosy than previously. Typical american mass producers were consequently challenged by Japanese, German and Swedish models which used to integrate a larger concern for servicing, durability, fuel efficiency and so on. But traditionally high quality was associated with small or medium size runs. The electronization of equipment goods, in particular the computerization of design and manufacturing, has provided both a lower cost (since the change from one model can take only few minutes and no more a whole day, or week) and greater precision in metal cutting, melting, assembling. The TOYOTA system therefore provides, via a fragile/lean system in contrast to the robust/buffered typical fordist production, both higher productivity and better quality.

Insert the market demand into the production process (P5) defines another new principle. Again, within fordist methods, production capacities of the large firms were set in order to satisfy the lower demand given the cyclical pattern which characterized the Sixties. By definition, the ideal was to immune the assembly-line from any perturbation from the environment. Subcontractors or second rank producers were precisely given the role to cope with uncertainty and variability (M. PIORE and C. SABEL (1984)). This arrangement broke down when even mass consumer demand becomes uncertain, in volume and composition. Given a significant internationalisation of markets, the demand could now be satisfied by imported goods providing much more diversity. Here comes the well known problem about the *technical rigidity* inherent to conventional fordism. This new context initiated a genuine adaptation of scientific management : given the new flexibility allowed by electronized machine tools, production can be now decided according to the effective orders, and no more for building inventories of goods

to be sold afterword. Consequently, even fluctuating demand can be meet by flexible automated production and symmetrically, small or medium size firms can master a segment of the market. Therefore, the traditional division between large and smaller firms is blurred : both of them have to cope with more variability of demand.

° *Networking, cooperation, decentralisation : new productivity sources.*

More decentralization of production decisions and lower size of plants (P6) is the direct consequences of previous principles. During the golden Sixties, labour management could be centralized within a specialized department, each plant being given a limited autonomy in order to implement the sophisticated rules associated to internal labour markets. Now, the variety of local and sectoral situations call for a larger autonomy of each plant. Even more, one observes on a large scale, a trials and errors process, in order to find out new principles for workers' commitment and pay. Theoretical models have clearly shown that when demand is uncertain and shifting from one product to another, then decentralization might be more efficient than complete centralization (M. AOKI (1988)). Given the new context of the Eighties and Nineties, the same objectives of scientific management would now be fulfilled by a quite different internal organization of the large firm : the J firm (the Japanese model) would replace the Fordist or American firm, and its division by vertical departments, only integrated at the summit of the hierarchy. Simultaneously, international comparative data exhibit a decline in average plant size which can be used, a possible evidence for the progressive implementation of this sixth principle.

Networking and joint ventures (P7) define a seventh feature. During the Sixties, vertical integration, eventually mitigated by circles of subcontracting, was the usual way to reap dynamic increasing returns to scale associated with R & D expenditures, high fixed investment costs and learning by doing. The configuration has progressively evolved under the pressures of the rising instability and the stiffening of competition during the Seventies and Eighties. First, even large firms are no more necessarily able to master the whole set of techniques needed in order to be efficient for their core business. For example, combining information processing and telecommunication completely shifted the boundaries between these two industries, inducing some struggles and then new joint ventures in order to get the control of the more crucial innovations. Simultaneously, a large uncertainty prevails as concern the main feature of the emerging new socio-technical system. Even in mature industries such as car manufacturing, the electronisation of final and equipment goods call for genuine competence, to be brought into the enterprises via joint ventures, or networking in order to get the benefit from future innovations. Therefore, networking might be the code word of the Eighties. With various configurations, this seems to be the emerging organizational structure of the more dynamic part of the Italian economy, as well as most of the Japanese manufacturing sectors. Even multinational firms are evolving from a centralized hub towards an integrated networks : every unit, what ever its specialization, has potential linkage with any other unit belonging to the same firm. From a more theoretical point of view, networking is the contemporary method *for reaping both specialization and coordination gains.*

Long run and cooperative subcontracting (P8) is another consequence of the same trends, according which institutionalizing complementarities between firms might enhance their joint productivity. In the fordist era, subcontracting was

used by large firms in order to cope with fluctuations in demand, and/or in order to keep oligopolistic pricing practices. During the last two decades, this has led to numerous banckruptcies of subcontractors and therefore a loss of know-how, since large firms giving orders were aiming at reducing their own unit costs. In the US, for example, the adverse evolution of machine tools producers seem to have been the consequence of arms length relations between producers and users, large and small firms (M.L. DERTOUZOS, R.K. LESTER and R.M. SOLOW (1989)). A similar evolution took place in France : a harsh and short sighted subcontracting policy from large car manufacturers has finally led to a loss of competence and expertise from small and medium size firms (D. LEBORGNE, J. LAFONT and L. LIPIETZ (1982)). Quite on the contrary, now the need for competent and innovative subcontractors is widely recognized and a new model is emerging : the key reference is again the Japanese organization for subcontracting. The larger firm commits itself to multi-year contracting and help the subcontractors'modernization and their buying of modern electronic equipments. Some international comparative studies suggest that this long run and cooperative strategy brings better results than the short run minded and cost minimizing fordist strategies (D. LEBORGNE (1987)).

° A *new compromise : polyvalence, and commitment against job stability.*

Less labour division within the firm (P9) is similarly a key feature emerging from both the limits of fordism and the new opportunities opened up by information technologies. This might be, if confirmed by subsequent evolutions, a major change in long run trend of scientific management, if not a total novelty. Contrary to the conventional taylorist methods, now managers realize that a larger scope for the tasks allocated to each worker can benefit productivity. Production work is therefore combined with initiative in management at the shop floor level, for example in maintenance, repair, inventories and orders. Therefore, quality is improved, break downs are more easily diagnosed and repaired, where some shop floor level management is now done by skilled workers and not by outside controllers or special maintenance workers. Global productivity, which is larger as the result of better utilization of human abilities, is the best response to uncertainty and a major source of innovations. Consequently, one observes in many OECD countries a redefinition of the hierarchy of skills towards a reduction of the layers of middle management.

On the job training and general education are experiencing a new alliance (P10). The fordist system used to oppose on one side highly skilled technicians, engineers and managers with a high degree of general education, to a larger fraction of the labour force, mainly trained on the job, and with poor general education standards. The shift of manufacturing tasks from purely physical to preeminently intellectual and control activities call for a fluent literacy and numeracy, including for typical blue collar workers. Similarly in a tertiary sector, the computarization calls for fairly good abilities to master abstraction, routines and procedures...which use to be the logical outcome of a successful general education system. A converging set of evidence suggests that this balance is now shifting towards the need of a higher level of general education, for the larger part of blue and white collar workers. A larger polyvalence calls for initiative, commitment, and a problem solving orientation, including blue collar workers in assembly-line. Simultaneously, the performance of firms is more and more related to adequate behaviour and initiatives in order to bring an efficient decentralisation/centralisation of

management and production. Therefore, learning by doing, learning by communicating with other workers or departments becomes a key factor.

Consequently, *Skills have to be enhanced, as a source of commitment, competence and productivity* (P11). Again, during the fordist era, the taylorist principles were implying that the engineers should conceive equipments and plants organization in order to minimize the skill content, by permanently downgrading the competence needed from blue workers. In the Eighties, the limits of these strategies have clearly been perceived by the managers. Therefore, a new motto, more than a business fad, is emerging : the quality and commitment of workers are an essential component of the competitive edge of the firm, sector or nation. This new principle is clearly at odds with the previous trends in labour management, and has tremendous consequences for labour markets, education, training and retraining. Maximize skills and then extract from them the maximum knowhow and competence, might be one of the genuine feature of the J (or Japanese) Model investigated by AOKI (1988). Convincing analyses suggest that the Japanese job tenure in large firms is not only a legacy of Confucian or paternalistic values but a rational strategy given the important learning-by-doing effects and the importance of the support to the firm by the employees (K. KOIKE (1987)).

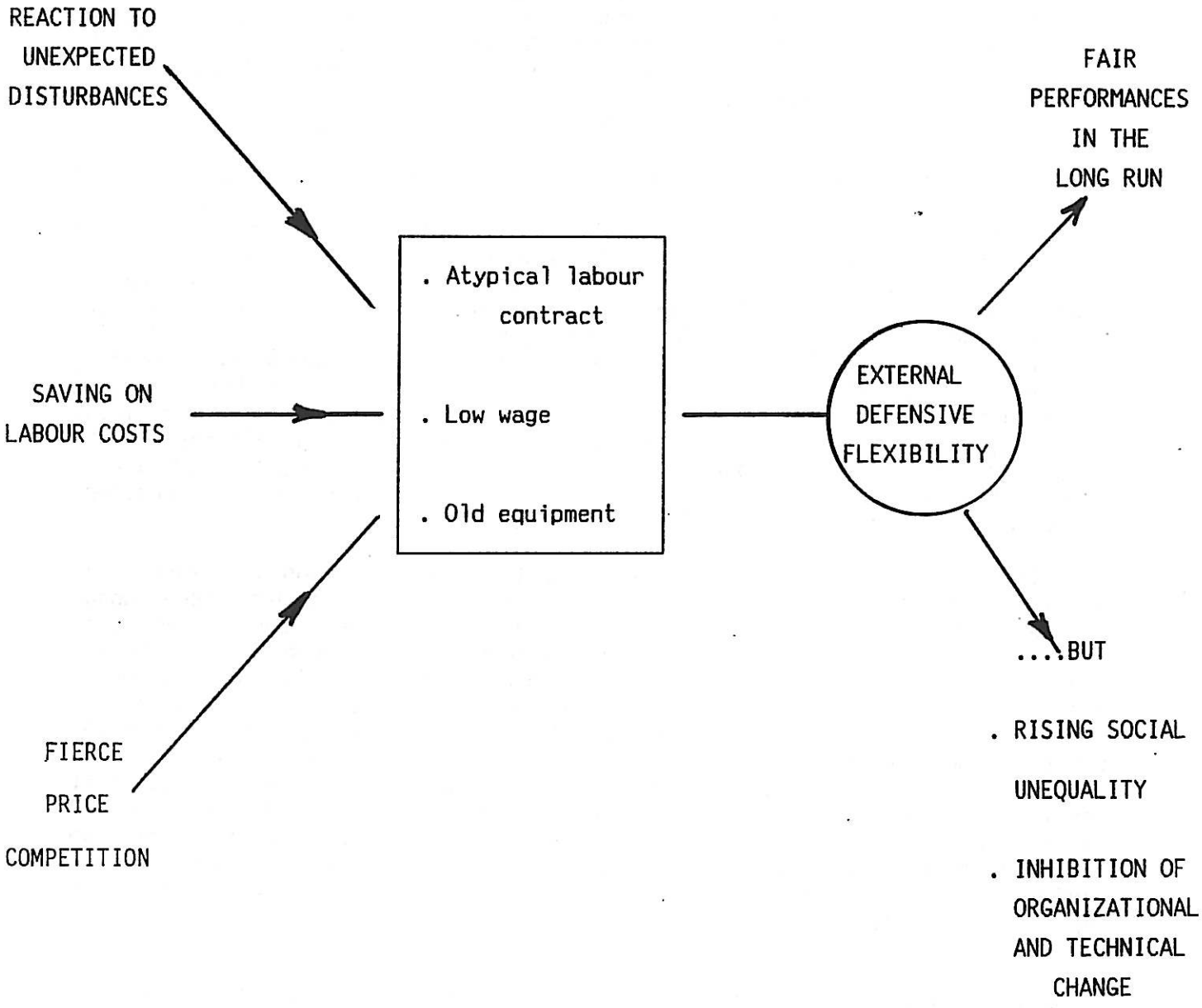
More commitment means some advantages for wage-earners : good wages and/or longer job tenure (P12). No doubt that this new model implies much more commitment from workers, as well as a broader scope for the tasks fulfilled by every one. This benefit cannot be obtained by the firm without an explicit advantage for wage earners. The theoretical analysis of Japanese firms by M. AOKI suggests that *a principle of dynamic surplus sharing* is needed in order to induce workers' consent. It can be fulfilled either by an explicit or a quasi job security, or by a wage formation rewarding individual commitment and linked to firm, sectoral or national achievements. Main OECD countries exhibit various mixes for these two kinds of benefits. In the long run, this is a quite important topic indeed for the viability of such a new management style, since one cannot imagine well educated, strongly committed workers being under-paid and frequently laid off at cyclical down-turns. Such a new compromise is not so easy to negotiate for countries in which adversarial industrial relations are a long tradition. The opportunities of a purely defensive strategy are not without appeal, specially when unions are disoriented and declining in memberships and initiatives. Nevertheless, most experts in US now realize how essential such a new compromise is : commitment versus a kind of employment stability. In contrast, German and Swedish cases suggest that strong unions and a continuous process of negotiation might enhance the diffusion of new technologies. It was a key message from the SUNDQVIST report (OECD (1988)).

3. THE JOB TENURE IDEAL : AN ESSENTIAL INGREDIENT FOR THE NEW MANAGEMENT MODEL.

The question about the place of job preservation and stability within this post-fordist regime has now to be more completely discussed. Of course, issue is specially difficult to delineate, since the diffusion of this regime is rather recent. Nevertheless, a casual use of some comparative studies and theoretical models suggest the following five hypotheses or preliminary results.

TWO STYLES IN LABOUR MANAGEMENT

F I G U R E 5 : LOW SKILLS. SHORT RUN DURATION. IF LABOUR CONTRACT. HIGH EXTERNAL MOBILITY AND LOW PAYS.



° *Job unstability might hinder the viability of the new management style.*

Facing the recurring disturbances and the uncertainties about economic evolutions and policies, it has been rational for firms to highly value flexible labour contracts i.e. with short duration employment and easily revised wage. The stiffening of international competition, deregulation policies have triggered efforts in order to curb down labour costs. No doubt that the freedom in adjusting unemployment levels did contribute to *static efficiency* i.e. the optimal reaction to varying demands and relative prices. This kind of flexibility might explain why the employment share of large firms decline to the benefit of small or medium size enterprises, in almost every OECD country. If long run optimum management were to result from a series of short sighted decisions, employment flexibility would be the ideal to be pursued.

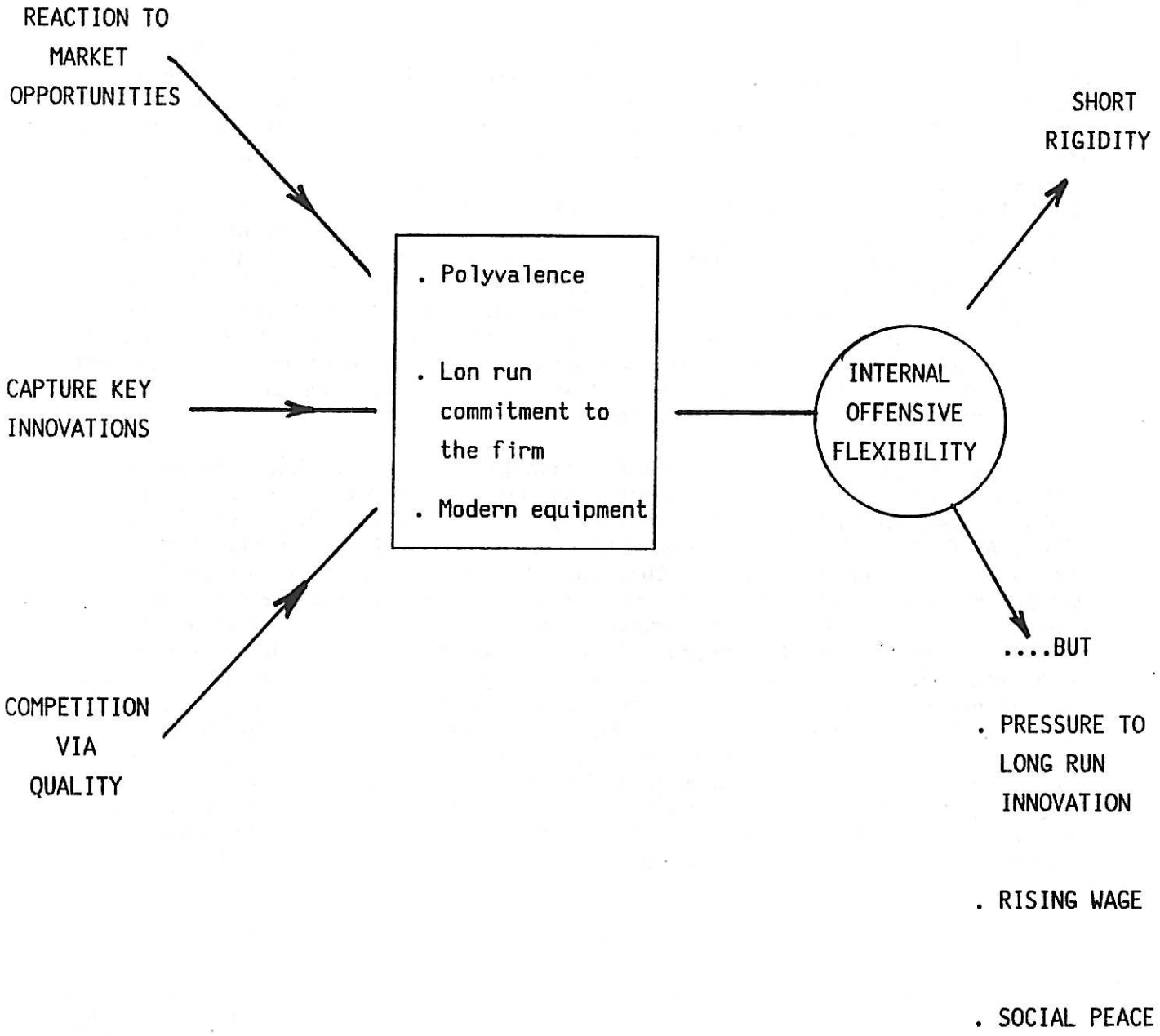
Nevertheless, the long range effects of this strategy might be to inhibit or still more contradict the implementation of toyotism or volvoism, as followers to fordism (Figure 5). In fact, employment unsecurity might hurt most of the twelwe founding principles exhibited by Table 4. How to reach high quality standards, if sophisticated equipments are run by temporary workers, who cannot capture the learning effects associated with sophisticated modern productive organization (Principle P4) ? Of course, global optimisation (P1) and swift reactions to demand (P5) can be obtained by firing and hiring workers according to the level of inventories, demands, and profitability. But then managers should not ask to workers to be loyal and committed to the success of the firms, they only temporalily work for. Similarly, in house training policies will be largely wasteful and irrational if due to high turn-over, newly trained workers have to find another job and/or are sytematically fired when comes a recession. Therefore, principles P9, P10, P11 collapse all together.

Similarly, any long run compromise between managers and wage-earners is devoid of any meaning, if workers do not benefit from any long term labour contract, at least implicitly. Of course, higher wage could compensate employment unstability, at least from a theoretical standpoint. But quite all empirical studies suggest on the contrary that high unstability and low wages are closely linked for secondary jobs, whereas the primary sector has the two opposite features. Consequently, a complete freedom in hiring and firing might put the firms, the sectors or the nations along the wrong track, as far as the new industrial organization is concerned. Some comparative researches suggest that the more flexible the labour market, the more severe fordist nostalgia (R. BOYER (1989)). On the contrary, a conventional or legal constraint upon employment can induce much more innovative strategies : why not to convert this employment rigidity into an advantage and look for high internal flexibility ? Remember the Japanese "flexible rigidities" R. DORE (1987).

° *Job tenure or employment inertia : an inducement to organizational flexibility.*

Basically, the new management model looks for a global optimization in the use of human resources, equipments, raw materials and information. These are mainly internal issues which can not be solved by pure market transactions : they call for a strong cooperation climate between engineers and specialists of marketing, foremen and blue collar workers, banking and finance, stock holders and managers.... Within the capital labour relation, a minimum stability in the employment contract is a prerequisite to the adhesion to this new model.

F I G U R E 6 : POLYVALENT WORKERS. LEARNING BY DOING VIA JOB TENURE. INTERNAL MOBILITY



Consequently, some short term redundant workers and financial losses can be incurred if an unexpected and severe recession makes a part of the labour forces redundant. But this institutionalized rigidity maintains the morale and the incentive among wage earners, in such a manner that the long term trajectory might turn to be quite original (Figure 6).

The cumulative competence associated with learning by doing, learning by using new equipments, learning by exchanging within the firm fosters high quality of products (P4), large versatility from one job to another (P9), a strong aptitude to respond to technical innovations and market opportunities. The toyotist or volvoist models need more informational exchanges, sophisticated control procedures and equipments, as new sources of productivity, which can only be reaped by a high stability of core workers. Of course, subcontracting can be used to dampen the fluctuations of demand, but even in that case, the Italian or Japanese systems suggest that it might be efficient in the long run to codify stable relationships between large firms and the network of subcontractors. *Job termination is the last ressort measure*, not the first one in this new model : varying bonuses, wages, hours, shifting workers fron one job to another, launching new products or new processes usually provide sufficient capacities of adaptation...as far as recessions do not transform themselves into cumulative depression.

This shift in organizational paradigm is not without precedent. A retrospect of the US car manufacturing over one century suggests that job stability was an initial objective for Henry FORD himself (D. R. RAFF (1988), R. BOYER, A. ORLEAN (1990)). The assembly line for the Ford T initially generated an explosion in labour turn-over : this was the origin of the famous five dollars a day policy. During the interwar, competition shifted from price competition to product differentiation : the annual model changes promoted by General Motor precisely reorganized the assembly line in order to cope with this new objective (D.A. HOUNDSHELL (1988)). Broadly speaking, high wages and on-going product innovations were two means for promoting a minimum employment stability, which was considered as benefitial both to workers and managers. Simultaneously, a complete network of subcontractors, highly linked with GM was organized. In a sense, the J or the S model are the modern and contemporary followers of this key objective, constantly pursued by Scientific Management. Employment stability is far from being contradictory with this long history of industrial organization and technology. But then how to respond to short run quantitative disturbances ?

° *Actual economies are mixing job tenure and forms of labour mobility.*

Many historical investigations suggest that leading industrial models do not cover the whole spectrum of activities and firms : in the long run various organizational forms coexist and usually provide rather close economic performances. For example, even if the fordist era had been exhibiting a clear tendency towards an homogeneisation of capital labour relation, the opposition between primary and secondary jobs still existed and had a functional role in coping with fluctuations and uncertainty (R. BOYER (1981)). Probably the same disparity will prevail within the full development of the toyotist/sonyist model.

For simplicity sake, let us define two configurations for the capital labour relation and its response to flexibility :

IN ACTUAL ECONOMIES, BOTH FORMS ARE COMBINED, EVEN WITHIN THE SAME FIRM.

T A B L E 9 : THE FRENCH EXAMPLE

CHARACTERISTICS	OFFENSIVE FLEXIBILITY	DEFENSIVE FLEXIBILITY
Professionals	3 %	15 %
Technicians	9 %	33 %
White Collars	44 %	41 %
Workers	42 %	10 %
TOTAL	100 %	100 %
Men	53 %	45 %
Women	47 %	55 %
TOTAL	100 %	100 %
Age 15 to 24 Years	42 %	4 %
25 to 39 "	38 %	58 %
40 to 49 "	11 %	23 %
50 to 59 "	7 %	15 %
more than 60 Years	2 %	1 %
TOTAL	100 %	100 %
Number of employed	1.500.000	850.000

Source : Jennifer BUE "Les differentes formes de flexibilités", Travail et Emploi, n° 3, 1989, p. 35.

. *Secondary jobs* are usually characterized by short duration employment, atypical labour contracts, strong hierarchical control, and conventional equipments? Rather low wages are higly sensitive to external economic evolutions and labour market unbalances. This can be labelled *defensive flexibility*.

. *Primary jobs* benefit from long duration employment, conventional labour contracts, significant work autonomy and modern equipments, whereas wages result from a job carreer and institutionalized internal routines linking income to individual and collective performances. This relates to an *offensive flexibility* (R. BOYER (1988)).

A French statistical survey (J. BUE (1989)) allows to estimate the relative size of these two categories (Table 9). Professionnals and technicians, women more than men, workers between 25 and 39 years are the main beneficiary of offensive flexibility including some degree of job stability. On the contrary, young workers under 24 years and blue collars usually get only short run labour contracts and therefore suffer from large employment unstability. Seemingly, only one third of the labour force benefits from an offensive flexibility, i.e. a minority.

The basic issue is then the following : which of the two configurations determines the overall evolution for average wage, total employment and average productivity ? During the Sixties, the primary sector, formalizing a fordist compromise was clearly leading : wage increases were diffusing from leading sectors to the rest of the economy ; since quasi full employment used to prevail, the secondary sector was benefiting from similar increases. The very macroeconomic stability tended to promote an implicit job security, even in the secondary sector, but of course less complete within large fordist firms belonging to the primary sector. Nowadays under the pressure of mass long run unemployment, the mechanisms might be partially reversed : the fear of losing good job in the primary sector is levelling off wage demands. Similarly, the large employment security of some insiders is balanced by a very high turn-over affecting outsiders upon the secondary market. One unintended effect of a general and unadequate job protection could therefore be to foster *labour segmentation* and to sharpe social unequalities among wage earners.

° A *large variety of adjustments upon tasks, hours or wages can cope with job stability*.

Conventionally, the employment stability can be summarized by the adjustment speed term within an econometric equation which links effective employment to its past level and efficient employment (Table 10). It takes three years in France, two and a half in Italy to adjust manufacturing employment whereas American and German manufacturing only needs one year do to so. This hierarchy *does not fit* with the institutional obstacles to job variations : in spite of the absence of any strong legislation, the British industry is the slowest. Similarly, Germany and US are rather close from an econometric point of view in spite of a highly regulated system in one case, a largely free and decentralized system in the other. Again comes out a loose connection between labour laws and the precise features of the "régulation" mode.

T A B L E 1 0 : EMPLOYMENT FLEXIBILITY AS EXHIBITED BY ECONOMETRIC STUDIES

A. THE TRADE OFF BETWEEN EMPLOYMENT AND HOURS (MANUFACTURING SECTORS).

COUNTRIES	EMPLOYMENT		HOURS		INSTITUTIONNAL OBSTACLES TO EMPLOYMENT VARIATIONS	PERCEPTION OF RIGIDITY BY FIRMS
	ADJUSTMENT SPEED (δ)	AVERAGE LAG (d)	ADJUSTMENT SPEED (δ)	AVERAGE LAG (d)		
ITALY	0,28	2,57	0,65	0,54	***	83
FRANCE	0,24	3,17	0,57	0,75	***	81
GERMANY	0,43	1,33	0,65	0,54	***	56
UNITED KINGDOM	0,20	4,00	0,40	1,50	0	26
UNITED STATES	0,49	1,04	0,67	0,49	*	n.0

Source : Columns (1) to (4) extracted from Guy MAURAU, Joel OUDINET "Précarité et flexibilité : un essai de comparaison des industries européennes, Note de l'IRES, n° 18, 4ème trimestre 1988, p. 8.

If N_t^* is the optimum employment, the effective level N_t is set according to

$$\frac{N_t}{N_{t-1}} = \left(\frac{N_t^*}{N_{t-1}}\right)^{\delta}$$

δ = Adjustment speed

$d = \frac{1-\delta}{\delta}$ Average lag for adjusting effective to optimal employment.

T A B L E 1 1 : LARGER FLEXIBILITY WITHIN THE SHELTERED SECTORS

	MANUFACTURING				SHELTERED SECTORS			
	SHORT RUN ELASTICITY	AVERAGE LAG OF EMPLOYMENT (Years)	SHARE EMPLOYMENT/ HOURS	ELASTICITY W.r.TO RELATIVE COSTS	SHORT RUN ELASTICITY	AVERAGE LAG OF EMPLOYMENT (Years)	SHARE EMPLOYMENT/ HOURS	ELASTICITY W.r.TO RELATIVE COSTS
ITALY	0,26	8,3	41 %	0,4	0,43	6,6	31 %	0,1
FRANCE	0,28	3,8	74 %	-	0,31	2,2	100 %	-
GERMANY	0,58	1,6	66 %	-	0,52	2,1	62 %	0,2
UNITED KINGDOM	0,32	2,6	87 %	0,20	0,43	1,3	100 %	-
UNITED STATES	0,75	0,7	71 %	0,15	0,54	1,2	84 %	0,35
JAPAN	0,13	19	38 %	0,7	0,55	0,5	70 %	-

Source : Equipe MIMOSA "Mimosa, une modélisation de l'économie mondiale", *Observations et Diagnostics Economiques*, Revue de l'OFCE, Janvier 1990, n° 30, p. 151.

. Still more for a given average lag, the same ex-post *flexibility in total hours* worked can be reached by varying work week duration, according to the level of demand and inventories. It is striking to observe a strong convergence in the estimates for average lag when adjusting total hours (Table 10). The only exception is about United Kingdom where sophisticated job rules seem to put severe constraints upon this flexibility mechanism. In passing note the sharp contrast with the perception of rigidity by firms : the British system usually considered as the more flexible might well be the most rigid...as far as econometric studies could reveal such a property !

. *Wage flexibility* is another method for preventing fast employment adjustments. Theoretical models argue that an adequate wage formula (basic wage plus a profit sharing) would warrant a stable full employment (M.L. WEITZMAN (1985)). The Japanese large firms is often assumed to be the perfect example of such a complementarity between job tenure and wage flexibility. Most econometric studies confirm indeed that the employment adjustment lags in the Japanese manufacturing sector are considerable compared to US even if some econometric problems are pending (Table 11). Finally, the sectors sheltered from foreign competition, such as conventional services to households, might exhibit an opposite property: employment is adjusted to the on going unemployment rate, according to a compensating mechanism with respect to the manufacturing industries.

Here come again strong national specificities which do not seem to vanish during the Eighties. This strong exception to the common view about the convergence of industrial relations and management deserves some explanations.

° A *whole spectrum of institutional arrangements can provide job security.*

Nowadays, a genuine theory of the firm has emerged from quite contrasted traditions (D. TEECE (1989), M. AOKI (1988), O. FAVEREAU (1989), HARVARD BUSINESS REVIEW, OECD (1988)). Basically, the enterprise would be the locus of a collective process of learning by doing, which would convert external innovations into new opportunities, in order to build or preserve some monopoly power. The viability of any firm would be up to the sophistication of such a process. Nevertheless, the effective implementation of this model is quite contrasted according to the national traditions, culture and institutional settings. A previous research has given a detailled account for such a diversity (R. BOYER (1989)). Let us limit this short description to the job security issue (Table 12).

. *United States* are the traditional land of large external stability (see previous Table 6). Nevertheless, many experts have since a decade recognized that this might lead to a loss of expertise, and should be corrected by an explicit accord between labour and capital (BUSINESS WEEK (1980)). Even the car industry which recurrently uses lay-offs has experimented some new compromises based on a severe selection of the more efficient workers, providing them with a form of job stability and good wages : the SATURN project had precisely this objective. In spite of this innovation, defensive flexibility still constitute the dominant strategy : lay-offs, geographic mobility of capital and manpower and more generally a widening wage differentials and an increasing heterogeneity in labour contracts (S. ROSENBERG (1989)) do prolonge the past American model of *decentralized defensive flexibility*.

T A B L E 12 : ADJUSTING TO VARIABILITY AND INNOVATION : FOUR FLEXIBILITY MODELS

MODELS / FEATURES	DECENTRALIZED DEFENSIVE	DECENTRALIZED OFFENSIVE	SOCIAL-DEMOCRAT OFFENSIVE	HYBRID
INSTITUTIONNAL SETTING	. Very decentralized bargaining . Declining unions . External and market oriented mobility . Short run and adversarial strategies	. Compromise within large firms . Weak unions . Important internal mobility . Long run and cooperative behavior	. Highly centralized collective bargaining . Strong and unified unions . Internal and collectively organized mobility . Founding social democratic compromise	. Intermediate decentralization (sectors) . Divided and declining unions . Obstacles to internal mobility, unvoluntary external mobility . Adversarial industrial relations
ADJUSTMENT VARIABLES	. Lay-offs and employment adjustment . Regional mobility . Wage dispersion and average over 2-3 years . Plant closing	. Shift from job to job within the firm . Retraining and polyvalence . Bonus wage highly sensitive . Product innovation	. Retraining inside or outside the firm . Subsidized job creation . Average wage variability . Dynamic innovation	. Mainly dismissals, limited inside retraining . Unemployment benefits and subsidies to reconversion . Relative wage rigidity . Rationalisation biais
EMPLOYMENT MANAGEMENT	. Few job tenure . High turnover . Deepening of labour market segmentation	. Ideal of long run employment . Low turnover . Dual labour market but spill over effects from large firms	. Homogeneity of labour contracts . Collectively organized mobility . Active employment policy . Full-employment commitment	. Ideal of job stability but multiplication of exceptions to standard contracts . Low turn over . Few active employment policies . Increasing heterogeneity of labour contracts
EXAMPLES	UNITED STATES CANADA	JAPAN	SWEDEN AUSTRIA	FRANCE ITALY

. *Japan* shares with United States some features, such as the role of large firms, an important decentralization of collective bargaining and rather weak and declining unions. Nevertheless, this country seems to explore a more *offensive flexibility*. The internal mobility of workers from one task to another, the permanent retraining within the firm and the flexibility allowed by profit sharing make dismissals a last ressort measure, usually undertaken after more than two years of bad economic performances (K. KOIKE (1987)). Paradoxically enough, small or medium sized firms do not dismiss more frequently than the large ones : this an indirect evidence about the impact of job tenure ideal within the whole economy. Simultaneously, a large flexibility in hours worked allows fast reactions to unexpected variations in demand or relative prices. In the long run, building the competence of core workers and continuously launching new products and new processes are the best warrant for life time employment.

. *Sweden and to some extent Austria* give a second configuration for *offensive flexibility*. Contrary to the two previous cases, a strong and unique union is bargaining at a centralized level over wages, employment, social welfare, job subsidies and so on.... Such an integration and centralization of the quasi totality of the capital labour nexus leads to genuine adjustments. First, job creation is the main objective of active manpower policies, and not that much the relief of unemployment as most EEC countries do. Second, retraining and mobility are organized by collective agreements between unions, firms and State officials. Third, in the long run, the dynamism in process and product innovations is considered as the best method for providing secure and well paid jobs. Finally, the commitment to full-employment puts strong incentives to the adoption of such an *offensive flexibility*.

. *France and Italy* and most OECD countries are following an *hybrid model*, intermediate between social democratic flexibility and decentralized defensive strategies. Generally, unions are stronger than in US, but weaker or more divided than in Sweden or Austria. Similarly, the level of bargaining is intermediate between a totally decentralized system and higly centralized one. Welfare policies have privileged unemployment benefits, and not than much an active job creation objective, even if new trends emerge since the mid Eighties. Consequently, the adjustments take place by a new segmentation of labour markets : a significant employment stability in large firms is compensated by a high unstability for young workers, alternating unemployment and short duration activity periods. Generally, European firms have reacted to the structural crisis by drastically rationalizing their production processes, since they traditionally experience some difficulties in launching successfully new products.

Is there an optimal form of flexibility which would minimize the unemployment rate and average duration of unemployment spells ? Looking back at Table 6 suggests that the same quasi return to full-employment has been obtained both by the decentralized offensive strategies (Japan) and the social democratic configuration (Sweden and to a minor extent Austria). The decentralized defensive flexibility in the US style provides a return to standard unemployment rates, even if it sharpens social unequalities and delivers poor productivity and competitiveness performances. The worst case corresponds to the hybrid European model : of course, social unequalities are lower, but long duration and young unemployment is still a challenge for the Nineties (B. ROWTHORN (1990)).

WHAT HAVE JOB DEREGULATION POLICIES DELIVERED ?

A TYPICAL DEREGULATION

The 3rd July law 1986 abolishes the administrative authorization upon dismissals concerning less than 10 wage earners. On 1st January 1987, another law is passed and removes any administrative supervision upon dismissals, whatever their sizes.

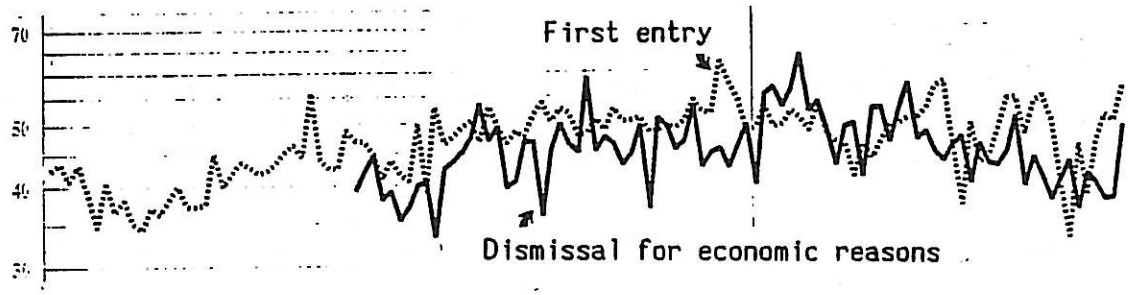
As the related statistical serie of authorized dismissals no more exists, a direct assessment of these laws is not easy.

A SHORT RUN EFFECT, WHICH SEEMS TO VANISH IN THE LONG RUN.

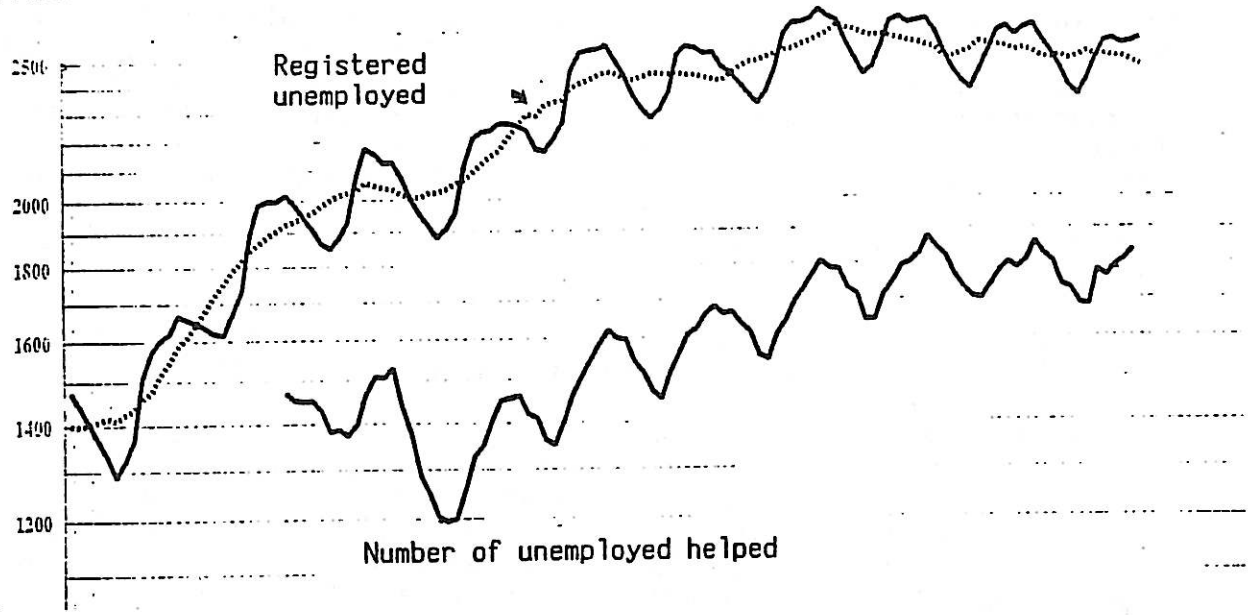
Indirect methods (see INSEE "Rapport sur les Comptes de la Nation" C. 142-143, Tome I, p. 130-131), suggest that dismissals have climbed up by 40.000 in the second semester 1986. Nevertheless, this seems to have been a short run adjustment : four years later, one perceived no rupture in the patterns of unemployment and job creations.

F I G U R E 7 : THE FRENCH EXPERIENCE ALLOWS A CAUTIOUS ASSESSMENT

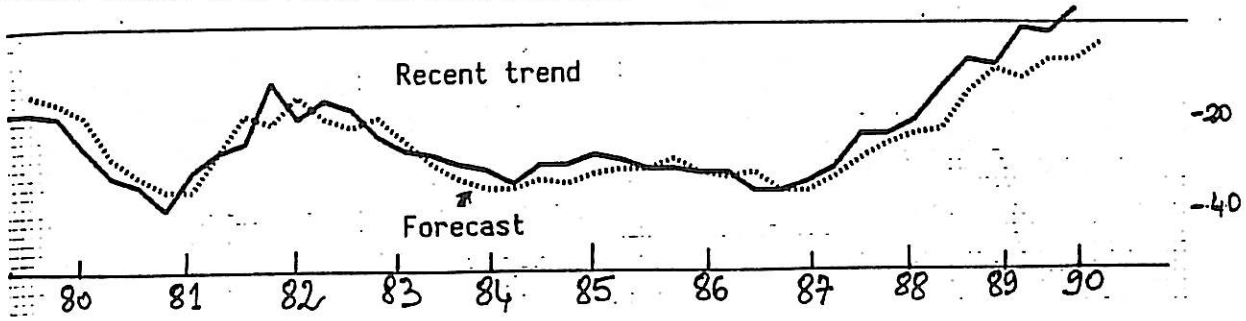
AN IMMEDIATE SURGE IN UNEMPLOYMENT DUE TO DISMISSAL.....



.....BUT NO CLEAR RUPTURE INTO TOTAL EMPLOYMENT.



A POSSIBLE IMPACT UPON FIRMS'EXPECTATIONS ABOUT EMPLOYMENT....



In a sense, one could imagine *a U-shaped relationships between job security and unemployment* : at the both extremes strong incentives propell the economy towards quasi full-employment ; but in a mixed system, unemployment can persist in the long run and even destabilize the past homogeneous labour legislation. Mutatis mutandis, one finds a parallel with the influence of degree of decentralization upon macroeconomic performances (OCDE (1990), L. CALMSFORS, J. DRIFFILL (1988), R. BOYER, S. BOWLES (1990)).

A central conclusion therefore emerges : *job security per se would not induce unemployment, but only its unadequate institutional forms or their uncompatibility with the prevailing "régulation" modes would have such a negative impact.*

V - THE ECONOMICS OF WORKERS'PROTECTION : SOME PRELIMINARY INSIGHTS.

The previous findings have provided the institutional and economic background necessary for a more analytical approach. A brief survey of some basic models about job tenure, employment adjustment speed will now be provided. As far as possible, some empirical data will be brought into the debate. Six provisional results are proposed for discussion and further investigations.

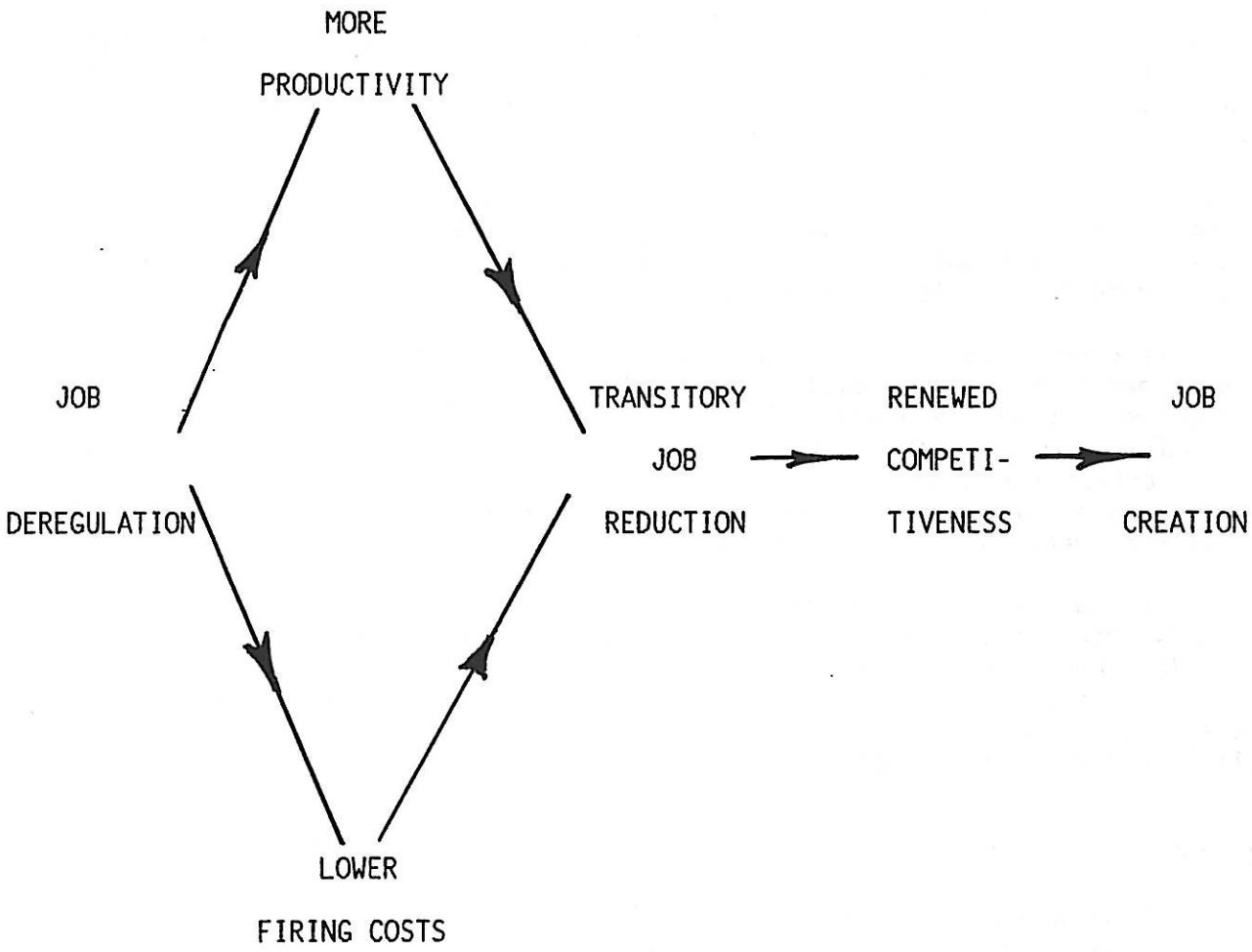
1. THE FRENCH JOB DEREGULATION HAS SEEMINGLY LED TO MINOR RESULTS.

Since the early Eighties, French managers had been complaining about the excessive State interventions into dismissal procedures : they had to be approved by "Inspection du Travail", a branch belonging to the Employment and Social Affair Ministery. The conservative governments elected on 1986, decided to satisfy these very vocal demands from the business association (CNPF). Very crude and unconvincing surveys suggested that this job deregulation would create around 400.000 jobs. In retrospect, this seems to have been a large overstatement. It might be interesting to give a short summary of the statistical analyses made ex post in order to assess the effective impact of the 3rd July 1986 and 1st January 1987 laws which abolished the administrative authorisation upon dismissals (Figure 7).

The short run impact was clear enough, even if more moderate than expected : dismissals seem to have accelerated by 40.000 by reference to previous regularities pointed out by econometric studies, but the overmaning was quickly reduced. Note that this represents less than 0,2 % of total employment, i.e. a quite *minor, but negative*, impact. This might explain why this episod nouwadays seems totally forgotten, since many other measures about training, subsidies to firms, short duration contracts, have continuously affected the French labour market. It is therefore difficult to disentangle this complex set of public interventions. Ironically enough, the deregulation laws have interrupted the gathering of statistical series upon dismissals by firms, which makes direct econometric studies now impossible.

Nevertheless the *long run effects* were apparently *minor too, if existing*. The cyclical pattern of the number of people getting unemployed for dismissal (Figure 7) was only transitory altered, whereas its decline after 1987 was induced by the economic recovery and consequently job creations. It would be excessive to

D I A G R A M 2 : THE DREAM OF JOB DEREGULATION



attribute all these jobs to the sole deregulation laws. Significantly enough, the most recent assessements in French labour policies don't even mention them (INSEE (1989)). Still more the improvement in employment outlook seems to have outpaced the expectations by firms, even if they were rather optimistic. It has been shown elsewhere, that the recovery of the world economy is the main responsible for such a reversal in French and European job creations, at the cost of some deceleration productivity with respect to past regularities (R. BOYER (1989)). This apparently contradicts the premisses of job deregulation, whivh can be summarized in Diagram 2.

The assessment of the medium term impact calls for an explicit micromodelling of employment behaviour of firms. According to conventional wisdom, the excess of wage cost over productivity is supposed to be the main determinant for hiring decisions. Within this kind of model, job deregulation is reducing severance payments, shortening adjustment lags, hence lowering unit labour costs. The final impact upon employment level is therefore proportional to the long run elasticity with respect to total labour costs (Insert 1 : Table 13). Various simulations exhibit quite moderate impacts :

. On one side, job deregulation has only a *once for all effect* upon the long run employment level. In the absence of dynamic increasing returns to scale, this is a quite conventional result. In the long run, the employment variations are set according to technical change and demand trends.

. On the other side, the positive impact is finally *smaller than expected* by the proponents of job deregulation. In the most favourable case, the gains in employment would be around 2 %, the central estimate around 0,5 %. For the French manufacturing sectors, in the absence of any significant real wage elasticity, the effect would be nil. This does not necessarily contradict the previous statistical analyses ; after a transitory acceleration of dismissals, their pattern recovers their previous dynamics (Figure 7).

Of course, this finding does not pretend to any generality, since it may be largely specific to French or European economies. If price elasticities are quite high in Japan, they are not significant in Germany and in France, and the results vary for the manufacturing sectors and the sheltered services (Table 11). Nevertheless, it is coherent with the cross national statistical analysis (Cf. III.3) and with other approaches to be now presented.

2. THE MICROECONOMICS OF JOB REGULATION : OPTIMUM RATHER THAN MAXIMUM FLEXIBILITY.

From a more theoretical point of view, let us now address to the central issue : should totally rational firms adjust instantaneously their employment and hours to orders, demands and relative prices ? The standard neo-classical model without any adjustment costs, with perfect information and the assimilation of labour with its services, unambigously answers positively. But if any of the three previous hypotheses is removed, then exists an *optimum reaction lag which is positive*. Consequently even in the absence of any public regulation or clause within collective agreements, firms should not adapt instantaneously their activity level. After all, during the nineteenth century and the interwar period, this was precisely the case. The speed of adjustment was significant but not infinite (see previous Table 3). At least three arguments can explain such a spontaneous employment inertia.

INSERT 1

LABOUR DEREGULATION WITHIN A NEO-CLASSICAL APPROACH

1. THE EMPLOYMENT FUNCTION THEORY.

For any individual firm, the level of employment will be set according to the principle of maximisation of profit, under the hypotheses of a totally exogeneous price system –pure and perfect competition– and substituability of the production function :

The program of the firm

$$\begin{cases} \text{Max } p\,Q - w\,N \\ Q \leq F(K,N) \\ p = \bar{p} \quad w = \bar{w} \\ K = \bar{K} \end{cases}$$

=====>

The employment function

$$\begin{cases} (1)\quad N = N(w/p) \qquad N' < 0 \\ \qquad\qquad\qquad\quad N'' > 0 \\ \text{defined by the first order condition :} \\ \dfrac{\partial F}{\partial N} = \dfrac{w}{p} \end{cases}$$

2. THE EMPIRICAL FORMS FOR THE EMPLOYMENT FUNCTION.

In fact, most econometric studies mix this basic relation (1) taking into account substitution effects with the keynesian idea that the level of demand Q_t is the second limiting factor. Expressing all the variables in logarithms ($n_t, q_t, (\dot{w}/p)_t$), and taking account a lag in adjustment, one gets :

$$(2) \qquad n_t = \lambda\, n_{t-1} + (1-\lambda)\left[\alpha \cdot q_t - \beta \cdot \left(\frac{\dot{w}}{p}\right)_t \gamma\right]$$

Therefore, the long run elasticity of employment with respect to demand and real wage are the following :

$$(3) \qquad \frac{\partial n}{\partial q} = \alpha \qquad\qquad (4) \qquad \frac{\partial n}{\partial(\dot{w}/p)} = -\beta$$

To enlight the issue of regulation about job termination, let us decompose real labour cost for the firm into three components.

$$(5) \qquad \left(\frac{w}{p}\right) = \left(\frac{w}{p}\right)_d + \delta \cdot \left[\, d + s \,\right] \times \left(\frac{w}{p}\right)_d = \left(\frac{w}{p}\right)_d \left[1 + \delta(d+s)\right]$$

- direct wage
- Frequency of dismissal
- lag in dismissal due to regulation
- severance payment

3. THE CONSEQUENCES OF JOB PRESERVATION REGULATION REMOVAL.

If one assumes that both the severance payment (s times the direct wage) and the lag due to public authorization are cancelled (d times the direct wage), using (4) and (5) , it is clear that the employment will increase by :

$$(6) \qquad \Delta n = \beta \times \delta \times (d + s)$$

Hence the following summary table can be given :

° *Significant hiring and firing private costs* are to be taken into account when a firm has to make any employment decision, within an uncertain environment. If for example one firm observes a decline in its sales, it is not immediately possible to interpret this as a forthcoming recession : it has to wait for further informations to be sure that this decline was not transitory. In case of a premature and wrong decision, the managers would incur the extra costs associated with hiring and firing procedures. It has been shown both theoretically and empirically that this only factor is sufficient to generate a *productivity cycle* by a delayed adjustment of employment to demand (H.T. SODERSTROM (1972)).

A priori, the average lag would be increasing with the length of in house training and the cost of searching new recruits, and with the uncertainty about macroeconomic environment (for this last influence, see R.J. FLANAGAN (1988)). These two factors could explain why the employment adjustments have been so sluggish after the two oil shocks : on one side, manpower was more skilled than during the Thirties ; on the other, it took time to managers to adjust their previous optimist expectation to the reality of the fordist structural crisis. If this interpretation is correct, a significant part in employment rigidity would derive from the very rational behaviour of private firms, still reinforced by the features of modern capitalism. *Public regulation would add or shift, but not create, job rigidities.*

° According to a second theory, *job security might correspond to a form of insurance to workers*. Implicit contract theory has precisely delivered such a message, and accordingly explains nominal wage rigidities. Since firms can diversify their assets and therefore are less risk adverse than their wage-earners, they would accept a wage level independent of their financial performance, but lower than the walrasian equilibrium wage : the difference would correspond to a kind of insurance granted by rational firms. Therefore, the labour contract would be intertemporal by nature and involve two components: an exchange of labour services against a wage and an insurance against adverse situations (C. AZARIADIS, J. STIGLITZ (1983), R.W. COOPER (1987)).

By a complexification of this basic model, one can imagine that workers may prefer keeping their job against lower wages. By definition of the equilibrium concept used to solve the confrontation between firms and workers, it would be rational for managers to accept such a contract which provide on average over a whole cycle the same profits. From an empirical standpoint, this model capture some of the basic features of modern labour contracts (R. BOYER, B. REYNAUD (1988)). Nevertheless, it implies a choice between the relative stability of wage and unemployment. Such a trade off might be observed by international comparisons : job tenure seems to decrease from Japan, European countries to US and Canada (See previous Table 6). But for a given national economy, this trade off is not always evident : the primary sector exhibits good and rather stable wages with a significant job stability, whereas the opposite configuration prevails for the secondary sector. Again this rigidity might depend upon public regulations unemployment benefit system and collective agreements, since it is not the exclusive outcome of explicit job regulation. It can be mutually interesting for managers and wage-earners to keep employment as stable as possible.

INSERT 1 (FOLLOWS AND END)

TABLE 13 : THE EMPLOYMENT GAINS FROM JOB DEREGULATION : ALTERNATIVE ESTIMATES.

COST OF DISMISSAL δ . (d+s)	HIGH DISMISSAL RATE (δ = 0,2)		LOW DISMISSAL RATE (δ = 0,1)	
β ELASTICITIES	HIGH COST (d+s) = 1/6	LOW COST (d+s) = 1/12	HIGH COST (d+s) = 1/6	LOW COST (d+s) = 1/12
HIGH (0,6)	2 %	1 %	1 %	0,5 %
AVERAGE (0,3)	1 %	0,5 %	0,5 %	0,25 %
NIL (0)	0	0	0	0

Note : (d + s) = 1/6 corresponds to an average two months lag in dismissal or two month severance payment ;
d + s = 1/12 , to one month.

Three major conclusions can be derived :

1. Even in the most favourable case (an employment elasticity around 0,6 is quite high as shown by Table 11), the impact is noticeable, but *not very important* : 2%.

2. This a *once for all increase* in employment. No cumulative bettering of the job creation is set into motion, by the very definition of basic equation (2). In the long run, the employment increases only if growth rate of demand q outrun productivity increases γ : $n = \alpha . q - \gamma$ $n > 0$ if $q > \gamma/\alpha$. Along the steady state, job regulation does not play any more any role.

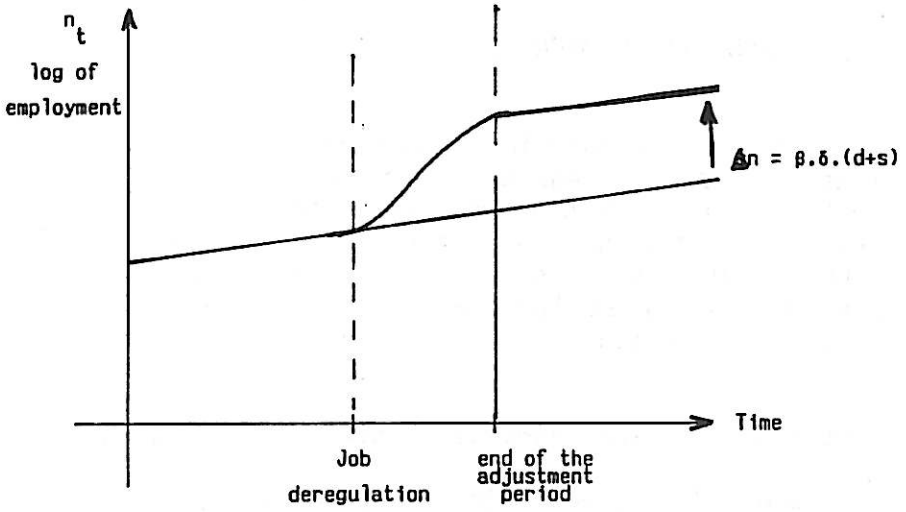


FIGURE 8

3. Since the actual estimates for β deliver estimates between 0,35 (United States) and 0 (France, Italy), the neo-classical impact would be *quite moderate indeed*, around 0,5 % .

Other mechanisms should therefore be considered in order to have a convincing argument for job deregulation : alteration of the long term view of the firms, faster reaction to innovation and market opportunities... Furthermore, remember that in actual economies, the short run impact upon employment is first negative (Firms five redundant workers), before hiring more new workers due to lower expected unit labor costs...provided that the effective demand trends are not affected.

° Finally efficiency wage theories argue that *job security might induce workers'commitment and loyalty*. In fact, the labour cannot be considered as a pure service or commodity : first the disponibility of a labour power is purchased upon the market, second the firm has to extract the maximum effort from a given labour time. To monitor this power relation within the production process, firms usually mix various methods : supervisors and control by automatic equipments, indexing wage to individual and collective productivity...if they can be measured unambiguously. In modern capitalist processes with work teams, assembly and assembly lines, built in complementarities and rigidities make effort difficult to control. For conventional efficiency theory (R. SOLOW (1979)), the payment of a wage in excess of walrasian equilibrium level is the method for stimulating productivity out of the workers. But this framework can easily be extended to job tenure (M. AOKI (1988)). Managers and workers can agree upon a long run compromise : *lower wage and an higher effort level against job security*. The threat of a non cooperative strategy which would destroy this equilibrium is the more unlikely, the more important learning effects within the firm. Consequently, the asset specificity of human resources plays an important role in job tenure (O. WILLIAMSON (1985)). This feature fits with the stylized facts derived from researches about the German system (W. STREECK (1989)), C.F. BUECHTEMAN (1989), R. SCHETTKAT (1989)).

Contrary to old and standard theory of labour markets, modern micro foundations for labour contracts imply *some inertia* in employment adjustments. This derives from *purely rational decisions of managers facing uncertainty, human resources specificity, learning by doing effects, and commitment or loyalty dilemma*. This implicit job security could happen without any regulation or convention about employment protection. Therefore, job deregulation does not remove this component of employment inertia. That would be a possible explanation for the weak consequences of the French 1986-1987 laws.

3. SOME EMPLOYMENT RIGIDITIES BENEFIT TO MACROECONOMIC STABILITY.

Let us now turn to the macroeconomic consequences of micro based or institutionalized employment rigidities. Again common wisdom suggests that the maximum flexibility should be optimum for full-employment and innovation. No doubt that the breaking down of the fordist growth regime has challenged most of its institutional forms (See III.2). Nevertheless, it might be important to question the optimality of maximum flexibility at the macroeconomic level. Three major arguments might support such a conclusion.

° A *teaching from the renewal of classical dynamic macroeconomic theory*.

Recent researches have delivered stimulating models for long run capitalist growth (G. DUMENIL, D. LEVY (1986), (1989)). In a decentralized economy, each individual firms react according to its perceived disequilibria : capacity utilisation of capital, ratio of inventories to sales and possibly overmaning (Insert 2). The related decision emanating from every firm leads to a new macroeconomic equilibrium, characterized by new inbalances for each firm. In this kind of model, consumption of wage-earners and investment in circulating capital are endogenous, contrary to the keynesian tradition. What will be the stationary states and the dynamic behaviour of such an idealized system ?

INSERT 2

MAXIMUM FLEXIBILITY MIGHT LEAD TO ADVERSE MACROECONOMIC PERFORMANCE

1. A GENERAL MACRO MODEL.

Let us follow G. DUMENIL and D. LEVY "Real and financial stability in capitalism", March 31, 1986, and imagine that firms react with one period lag to perceived disequilibria, both capacity utilization of fixed capital (u_t) and the ratio of invventories to output (s_t) . The dynamics of the related economy can be captured by the folowing system :

$$\begin{cases} u_{t+1} = U(u_t, s_t) \\ s_{t+1} = S(u_t, s_t) \end{cases}$$

which is supposed to have at least one stationary equilibrium such that (u*,s*). It can be shown that more than equilibrium exists :

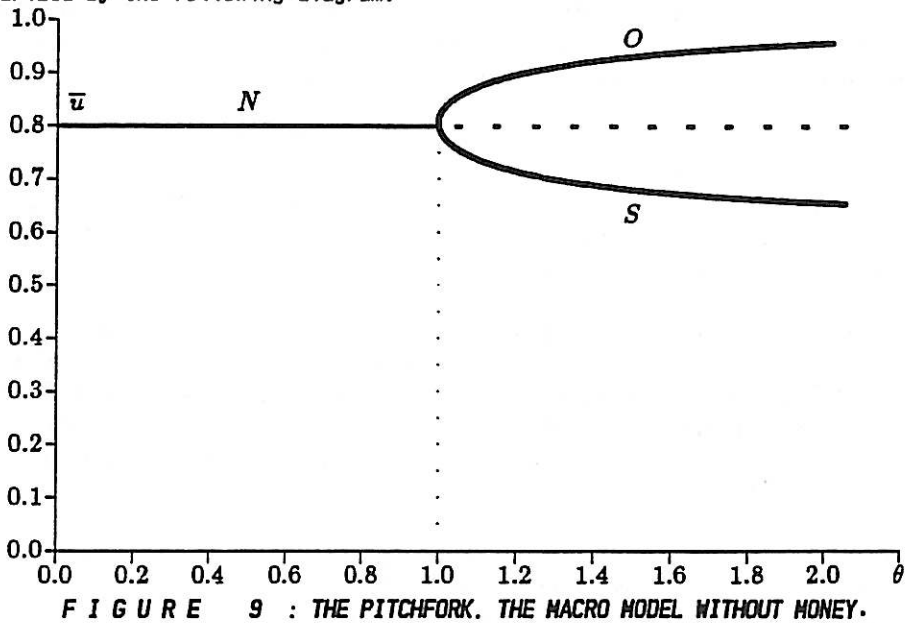
- normal equilibrium : (N)
- Overheating, when capacity utilization is above normal : (O)
- Stagnating growth, or keynesian situation, when capacity utilization is below normal : (K)
- Depression, when the economy collapses towards zero (D).

What is the influence of the speed of reactions to the existence and stability of equilibria ? Consider for example the following parameter ε ,

$$\varepsilon = \partial U / \partial s_t$$

which measures the intensity of reaction to scale up or down their level of capacity utilization in response to the change in their inventories.

This discussion can be summarized by the following diagram.



F I G U R E 9 : THE PITCHFORK. THE MACRO MODEL WITHOUT MONEY.

It follows that for moderate speeds of adjustment a normal equilibrium exists, but that up to a threshold ε^* , only overheating or depression equilibria exits and one is stable. Consequently, from a macropoint of view, the speed of adjustment should be kept moderate. In other words :

Maximum flexibility does not lead to an optimum

Mutatis mutandis, this would probably apply to labour market adjustments.

. Firstly, a multiplicity of equilibria might emerge : the normal equilibrium, an overheating one and a stagnating-keynesian one, whether capacity utilisation is standard, over or under normal. Paradoxically enough, a high speed to perceived disequilibria might trigger the coexistence of these three equilibria. In a sense, the dynamics of the economy is simpler and more easy to control if *adjustment speed is moderate* (figure 9).

. Secondly, some of these equilibria might become *unstable* if adjustment speed is superior to some threshold which itself depends from the whole set of the macroeconomic parameters of the model. For example, the economy can be pushed into a cumulative depression, leading to a complete collapse. An excessive sensitiveness of firms to disequilibria triggers such a global unstability. The adding up of totally rational individual behaviours leads to a macroeconomic break down.

This surprising but convincing result puts a severe caveat upon the motto of the mid Eighties according which it was desirable for governments to push for the maximum flexibility. Since then, many researches already quoted (L. CALMFORS, J. DRIFFIL (1988), OCDE (1988), B. ROWTHORN (1975), R. BOYER, S. BOWLES (1990)) have cast some doubts upon such an extremist view. What has been achieved for wage formation, has probably to be extended and adapted to the issue of job security.

° 1929 : *a rather complete employment flexibility ; but a complete collapse.*

The "régulation" approach historical studies provide an equivalent condition (R. BOYER, J. MISTRAL (1978)). The 1929 crash cannot be attributed to any excessive rigidity, since quite all the markets for products, finance and labour, used to exhibit extremely fast adjustments and very few limiting institutional factors. Econometric analyses upon price and wage formation, as well as employment adjustments, clearly show major differences with respect to the contemporary monopolist "régulation" mode.

. Nominal wage was reacting to the variation in industrial production indexes according to rather competitive mechanisms, even if somehow milder with respect to XIXth century (R. BOYER (1979)). Unions were unable to stop the deflation of wages, whereas public regulations were embryonnic, at odds with neo-classical views upon this period.

. Similarly, prices were highly sensitive to excess capacity and competition, contrary to the large stability in the mark-up price formation which will be typical of the fordist era. Consequently, a cumulative deflation follows the stock market crash since distress sales feed a vicious circle of depression and deflation. Again, cartels and collusive behaviours were unable to stop this decline.

. Employment was adjusted quite quickly to the declining demand and profitability. The comparison with the 1973-1974 is illuminating about the magnitude of the differences between the two capital labour nexus (Table 3). Simultaneously, hours worked were adjusted downwards. Therefore it is hard to point out any severe rigidity, since job security regulations were inexistant.

Nevertheless, adding up these three flexibilities did not stop the cumulative depression, quite on the contrary they seem to have propagated it from the product market to the labour market, from the basic to the industrial system

INSERT 2 (FOLLOWS AND END)

2. A *SPECIFIC MODEL FOR LABOUR MARKET.*

Let us transpose the previous model to employment (N_t) and wage (w_t) adjustments. Suppose a one period lag between the perception of disequilibrium and decision for the on going period :

$$\begin{cases} N_{t+1} = N(N_t , w_t) & (I) \\ w_{t+1} = W(N_t , w_t) & (II) \end{cases}$$

To be more specific, the two relations will be assumed linear

$$\begin{cases} N_{t+1} = \lambda N_t - \sigma w_t + n \\ w_{t+1} = \mu w_t + \theta N_t + w \end{cases}$$

with

$\lambda \in [0,1]$ adjustment speed for employment

$\mu \in [0,1]$ adjustment for wage

σ : elasticity of employment with respect to employment

θ : elasticity of wage with respect to employment

The dynamic system associated

$$\begin{bmatrix} N_{t+1} \\ w_{t+1} \end{bmatrix} = \begin{bmatrix} \lambda & -\sigma \\ \theta & \mu \end{bmatrix} \begin{bmatrix} N_t \\ w_t \end{bmatrix} + \begin{bmatrix} n \\ w \end{bmatrix}$$

can be represented by the following diagram.

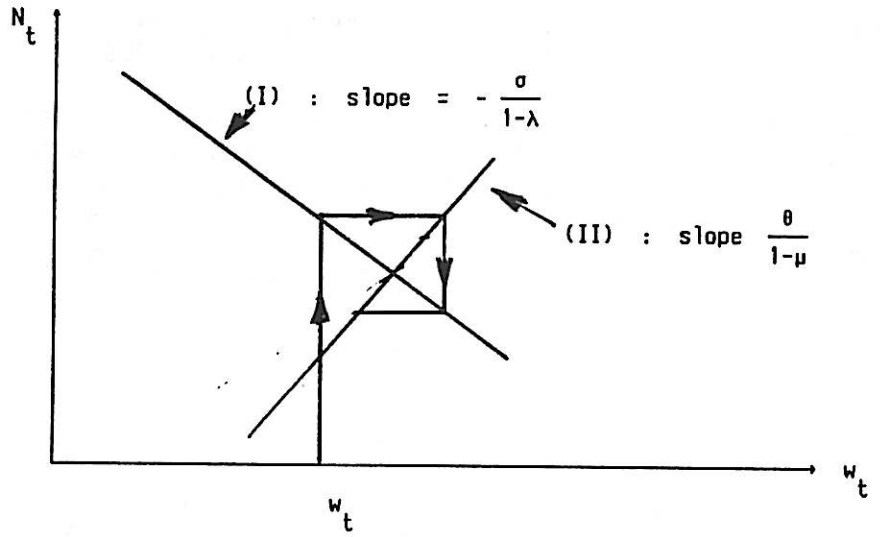


FIGURE 10

The labour market will converge towards the long run equilibrium –here supposed to be unique– only if the adjustment speed $(1 - \lambda)$ $(1 - \mu)$ are sufficient, given the two elasticities σ and θ.

$$(1 - \lambda)(1 - \mu) > \sigma \theta \qquad \text{Stability condition}$$

One derives some important consequences :

- First, high adjustment speed for wage and employment are substitute, as far not any absolute inertia prevails ($\lambda = 1$ or $\mu = 1$) . In the flexibility debate this means that both strategies are not always necessary.
- Second, combining structural reforms about wage flexibility (higher θ) with rapid adjustments of employment ($\lambda \to 0$) might push the economy into an *unstable area.*

In other words, the maximum flexibility strategies might be destabilizing, up a certain threshold.

according to a dramatic spill-over. Few contemporary economists could imagine that the severity of the depression was not linked to excessive rigidities but quite ont the contrary to insufficient safety nets (I. FISHER (1933). A contrario, the simulations of a simple "régulationnist" model suggest that wage indexing, oligopolistic competition and sluggish employment adjustments have prevented 1973 to be the repetition of 1929 (R. BOYER, J. MISTRAL (1978), R. BOYER (1988)).

° *The simultaneity of wage and employment flexibility might have devastating consequences for stability of the labour market.*

That is a possible conclusion deriving from a standard neo-classical model (Insert 1, second part). On one side, the employment level is supposed to vary in accordance to the past level of wage, whereas on the other side, wage reacts with one period lag to the level of employment, here equivalent to unemployment. Again maximum flexibility is not per se stabilizing the labour market :

. Firstly, wage and the employment flexibilities are substitutes and not complementary strategies. This point has clearly been recognized by empirical studies (M. EMERSON (1988), D. METCALF (1987), R. BOYER (1988)), but not that much taken in board by policy recommendations. Most conservative governments have been pushing for *all forms* of defensive flexibility.

. Secondly, combining wage flexibility with rapid employment adjustments might lead to a structural unstability upon the labour market. The argument could be reinforced by a complete keynesian model of effective demand : up to some threshold, any initial unemployment triggers a demand reduction, which by a spill-over effect still exacerbates the initial firings (R. BOYER (1986)).

Both micro and macro modern theories significantly revise the conventional view derived from General Equilibrium Theory. In modern economies with major *uncertainties*, large *indivivisibilities*, important *learning by doing* and *commitement problems*, *some degree of job security might be optimal*. Still more, the related frictions do have a favourable impact of *macroeconomic stability*, as far as there are not too much important. Moderate flexibility seems better than maximum flexibility. Of course, more sophisticated models are needed for totally supporting such a general statement. Let us add two of them.

4. EXTERNAL FLEXIBILITY MIGHT HINDER INNOVATION AND LONG RUN EFFICIENCY.

Capitalist market economies are supposed to be characterized by both static and dynamic efficiency. The first one relates to the short run allocation of scarce resources to competing uses to satisfy unlimited needs. Most of the previous analyses have addressed to this issue. But what about dynamic efficiency i.e. the ability of capitalism to push entrepreneurs to constantly innovate in order to survive, therefore constantly inproving productivity and satisfying new needs ? In other words, does job security spur or hinder technological and organizational innovation ? The abundant literature upon the determinants of technical change intensity suggests a rather optimistic view : job security might stimulate product and process innovation, and therefore benefit to long run growth.

TABLE 14 : MACROECONOMIC PERFORMANCES INDEXES

COUNTRIES	GDP GROWTH (Q)		REAL WAGE (GDP price) (RW)		EMPLOYMENT (N)		PRODUCTIVITY (PR)		EXTERNAL TRADE / GDP (ET)	
	71-80	81-90	71-80	81-90	71-80	81-90	71-80	81-90	71-80	81-90
BELGIUM	3,2	1,9	4,5	0,7	0,3	0,1	2,9	1,8	- 0,1	- 0,2
DENMARK	2,2	1,9	1,6	0,4	0,7	0,7	1,5	1,2	- 2,9	- 3,1
IRELAND	4,5	2,8	4,0	1,1	0,9	- 0,3	3,6	3,1	- 6,3	- 3,8
ITALY	3,1	2,5	3,3	1,6	0,5	0,6	2,6	1,9	- 0,2	- 0,8
FRANCE	3,3	2,1	3,6	0,9	0,4	0,1	2,9	2,0	0,3	- 0,5
GERMANY	2,7	2,1	3,0	0,8	- 0,1	0,2	2,8	1,9	0,7	2,8
GREECE	4,7	1,6	4,4	1,3	0,7	0,9	4,0	0,7	- 1,9	- 3,8
NETHERLAND	2,9	1,8	3,0	0,1	0,2	0,2	2,7	1,6	1,2	2,8
PORTUGAL	4,5	2,7	6,3	0,1	- 0,4	0,1	5,3	2,6	- 3,2	- 3,9
SPAIN	3,5	2,9	4,5	0,5	- 0,6	0,9	4,1	2,0	- 0,8	- 1,0
UNITED KINGDOM	2,0	2,4	1,8	1,9	0,2	0,4	1,8	2,0	- 0,6	- 0,8
AVERAGE EEC	2,9	2,3	3,1	1,1	0,2	0,4	2,7	1,9	0	0,3
JAPAN	4,6	4,1	0,7	2,6	0,7	1,1	3,9	3,0	0,6	2,5
SWEDEN	2,0	2,2			0,9	0,6	1,1	1,4		
UNITED STATES	2,7	3,0	5,1	1,2	2,0	1,9	0,7	1,1	0,2	- 1,9
FINLAND	4,3	3,2			0,3	0,9	4,0	2,3		
NORWAY	4,9	3,3			1,6	1,3	3,3	2,0		
CANADA	4,9	3,4			3,2	2,0	1,7	1,4		
AUSTRIA	4,3	1,7			0,3	0	4,0	1,7		

Sources : Economie Europeenne , Novembre 1989 ; OECD "Economic outlook" December 1989 Statistical Appendix

° *Innovation diffusion and the adjustment dilemma.*

. On one side, if labour was totally immobile by tasks, firms, skills, regions and so on, most of the dynamism associated with innovation would be blocked. By definition, technical change shifts relative opportunities, creates new products, finds new localisations, drastically changes the skill content of mass produced goods. Accordingly, it can be argued that the societies were job rules are very detailled and inflexible, diffusion of new technologies will be more sluggish than in societies with a lot of internal flexibilities. Compare for example the British and German manufacturing sector, or the American and Japanese ones (R. BOYER (1989)).

. On the other side, some neo-schumpeterian applied models exhibit if adjustments are too fast, a less known but apparently serious and opposite danger : the economy might collapse. If technical change is by nature uncertain, firms cannot know the exact distribution of its returns. If they myopically optimize their choice of technique and production, they might go bankrupted if a series of major disturbances manifest the absence of any stationarity of their distribution (H. HEINER (1988)). At the macro level, a fast adoption of the best avalaible technology will first stimulate productivity, competitiveness, hence growth. But the excessive homogeneisation of production techniques makes the economy highly sensitive to any sharp deviation about relative price or sectoral demand : by insufficient productive variety, the output can totally collapse under an adverse disturbance (G. ELIASSON (1989)).

This suggests, once more, that employment adjustments and adoption of new technologies should be gradual ; an instantaneous change —if it were possible— should not be optimal for the firm as well as for the whole economy.

° *Is technical change Schumpeterian or Lebensteinian ?*

This is a major alternative when discussing job mobility. In fact, two broad conceptions seem to govern technical change theorizing :

. Either, the technology can only be altered by the *entry and the bankrupcy of firms*, each of them being characterized by different production sets, which cannot be modified after installation. Similarly in these putty-clay models, the scrapping of obsolete equipments and the renewal of them by up to date equipments, are the only methods available for increasing average productivity. Then, labour mobility is a prerequisite for technical change dynamism. According to this view, productivity increases should be higher in US and Canada than in Japan, France or Germany. A rough comparison between productivity (Table 14), unstability and labour mobility (see previous Table 6) does not confirm this view (Table 15). Nevertheless, this schumpeterian mechanism may have been important during the Seventies and the Eighties, even if combined with other determinants of the technical progress internal to each firm. Productive systems have been drastically transformed by the relative decline of old activities and the rise of new ones, according to a process inherent to any structural crisis.

. Or alternatively, the efficiency of each technique can be continuously increased by incremental innovation, learning by doing and using, or by permanently combining old equipments with new ones. In genuine neo-classical

T A B L E 15 : THE IMPACT OF JOB SECURITY UPON TECHNICAL CHANGE AND LONG RUN GROWTH

A. CORRELATION MATRIX (R) BETWEEN VARIABLES

VARIABLES	1970 - 1980			1980 - 1990		
	GROWTH Q	PRODUC-TIVITY PR	REAL WAGE RW	GROWTH Q	PRODUC-TIVITY PR	REAL WAGE RW
INSTITUTIONNAL CONSTRAINT IL	0,12	0,48	0,40	-0,29	0,14	-0,34
LAY OFFS CONSTRA. LR	0,43	0,59	0,71	-0,11	-0,12	0,26
HIRING CONSTRAINT HR	0,39	0,60	0,69	0,14	0,25	0,23
GLOBAL PERCEPTION G	0,62	0,73	0,85	0,16	0,28	0,19
RECRUITS NR	0,09	-0,17	0,14	0,28	-0,32	-0,32
JOB UNSTABILITY IS	-0,34	-0,72	0,24	0,04	-0,52	-0,25

growth theory (R.M. SOLOW (1956)), each unit factor, either capital or labour, sees its productivity increasing as time elapses. In more sophisticated theories about endogeneous technical change, the cumulative production or the output of the machine good sector governs experience effects, therefore a cumulative productivity increases. Alternatively, X-efficiency theories argue that firms are never on their production frontier but at some distance. This slack depends upon the degree of competition, the profit rate, growth of demand and so on. According to this last conception, job security might trigger product innovation and productivity increases, in order to satisfy the related public regulations, conventions or clauses within collective agreements.

Consequently, labour mobility exerts contradictory influences upon technical change : positive if the neo-schumpeterian mechanism is dominant, negative if a Leibensteinian logic prevails. Only empirical studies can assess which impact finally emerges for a given firm, sector, country and period.

° *Three national trajectories : American, Japanese and European.*

Comparative studies about national systems of innovation (R.R. NELSON (1989), Ch. FREEMAN (1989)) suggest very contrasted organizational forms for governing technical change and diffusing it to the productive system. Basically, three major trajectories are to be distinguished. For each of them, labour unstability or at the opposite job tenure does interact with the intensity and the direction of technical change.

. In *United States*, many federal agencies play a role in subsidising and orienting basic researches and RD, whereas university researches lead to numerous patents in high-tech activities. For average manufacturing, old fordist principles manifest a large inertia, and detailed job rules still reinforce this long run trend. Still more, rather flexible real wage might be a substitute to labour saving innovations. A suggestive long run econometric studies about US manufacturing productivity shows that the quasi stagnation of real wage since fifteen years has levelled off average productivity increases (G. DUMENIL, D. LEVY (1989)). The large job unstability still exacerbates wage flexibility, since a part of experience, specific to each enterprise is lost when workers move too often. In other words, US manufacturing would suffer not from any lack of basic innovations, but from inadequate implementation and diffusion, given *a too flexible labour market*.

. In *Japan* basic research was traditionally lagging with respect to American and European Universities. Nevertheless a much more centralized State and a very high concentration in manufacturing and banking have promoted rather coherent innovation policies, which use to aim at acclimating foreign devices to the Japanese style. Similarly it has been argued that, in this country innovation was much more governed by *techné*, i.e. experimenting and learning by doing, than by *epistemé*, i.e. deriving usefull techniques from basic scientific advances (S. MARGLIN (1989)). Given this context, the objective of long run stability of the labour contract, for large firms but for medium sized too (K. KOIKE (1987)), still reinforces the pressure to innovate along two directions. First, Japanese firms invest in human capital and experience in order to get a polyvalent and committed work force : this is a condition for a fast adoption of new technologies (E. MANSFIELD (1988)). Second, the ability to imagine and produce at low costs new products and to transfer workers from one activity to

B. 1970 - 1980 JOB PRESERVATION LEGISLATION ENHANCES PRODUCTIVITY...

(1) PR = 1,6 + 0,64 x IL R^2 = 0,23 (18 Countries)
(2,6) (2,2)

(2) PR = 1,6 + 0,02 x G R^2 = 0,54 (9 European Countries)
(3,5) (2,9)

(3) PR = 0,23 + 0,68 x Q + 0,007 x G R^2 = 0,93 (9 European Countries)
(0,8) (5,8) (1,7)

.....AND REAL WAGE INCREASES

(4) RW = 1,4 + 0,03 x G R^2 = 0,72 (9 European countries)
(3,1) (4,3)

(5) RW = 0,20 + 0,79 x PR + 0,02 x G R^2 = 0,88 (9 European Countries)
(0,4) (2,9) (2,0)

WHEREAS TOO MUCH EMPLOYMENT FLEXIBILITY HINDERS PRODUCTIVITY

(6) PR = 4,7 - 0,09 x IS R^2 = 0,51 (8 OECD Countries)
(6,0) (2,9)

C. 1980 - 1990 A BLURRING OF PREVIOUS RELATIONS

NO MORE CLEAR RELATION WITH PRODUCTIVITY

(7) PR = 1,7 + 0,09 x IL R^2 = 0,02 (18 Countries)
(4,6) (0,5)

(8) PR = 1,43 + 0,007 x G R^2 = 0,08 (9 European Countries)
(2,7) (0,8)

(9) PR = -1,53 + 1,47 x Q + 0,003 x G R^2 = 0,79 (9 European Countries)
(2,1) (4,5) (0,7)

..... OR REAL WAGE INCREASES

(10) RW = 0,76 + 0,004 x G R^2 = 0,04 (9 European countries)
(1,6) (0,5)

(11) RW = 0,58 + 0,12 x PR + 0,003 x G R^2 = 0,05 (9 European Countries)
(0,8) (0,34) (0,4)

...BUT TOO MUCH EMPLOYMENT FLEXIBILITY STILL HINDER PRODUCTIVITY

(12) PR = 3,0 - 0,05 x IS R^2 = 0,27 (8 OECD Countries)
(4,7) (1,7)

Sources : Computations using data extracted from Tables 5, 6, 14.

another, are two other assets related to an implicit job tenure. In a sense, this second trajectory is quite complementary to the American one.

. In *European Community*, most national systems of innovation are intermediate between the North American and the Japanese ones. Basic and applied researches are combined, as well as public and private RD expenditures. Consequently, the specialisation is strong for medium tech products. A significant real wage inertia (See Table 14) has triggered a large variety of rationalisation strategies : labour saving has been a leading objective in investment and innovation decisions, even if a shift seems to have occured after 1979 (R. BOYER (1989)). Simultaneously, more complete job regulations might have reinforced this inducement to productivity. These are originalities with respect to the American trajectory. But contrary to Japan, the ideal of long run labour contract has not so much fostered product innovation and/or exchanges of labour from one activity to another of the same conglomerate. Again, the configuration of the capital labour compromise and public regulation did contribute to the systemic coherence of this socio-economic trajectory.

A cross national statistical analysis seemingly confirms these hypotheses.

° *On average, job flexibility is detrimental to long run productivity.*

A systematic correlation analysis has been run confronting the labour contract variables (Tables 5 and 6) with indexes for long run macroeconomic performances : average growth of GDP during the Seventies and the Eighties, labour productivity and real wage during the same periods (Table 14). Of course, the inherent shakiness of such an analysis has to be pointed out again : difficulties in measuring labour mobility, statistical discrepancies between countries, unequal availability of data introduce numerous bias. Nevertheless, many controversies about labour flexibility use to refer to cross national comparisons. Therefore, the only interest of this crude statistical analysis is to test conventional views and to confront them with more sophisticated analytical models (see previous section 2, 3 and forthcoming 5). Three major but provisional conclusions are to be emphasised (Table 15) :

. *During the Seventies*, institutional and legal constraints upon job termination, as well as perceived constraints by firms upon labour mobility, seem positively correlated with long term productivity increases, but not that much with growth. This means that job stability would foster more labour saving innovations than pure product innovations. This conclusion is not rejected by more sophisticated productivity equations, including increasing returns to scale. *Job security is apparently an inducement to productivity increases.*

. During the same period, *job stability helps the workers to get higher real wage increases*, given the same productivity trends. Therefore, contrary to implicit contract theory or efficiency wage approaches, there is no trade off between good wages and employment stability. The labour segmentation of institutional theory is more coherent with such a finding: for economies in which micro corporatism or strong unions negociate good capital labour accords, average workers can get both better employment opportunities and higher wage increases. This extends to international comparison an argument already made for US : unions would foster both good wages and would stimulate

I N S E R T 3

HIGH AND STABLE GROWTH REMOVES EMPLOYMENT IRREVERSIBILITIES
SOME THEORETICAL RESULTS

1. A THEORETICAL MODEL FOR A FIRM, WHEN EMPLOYMENT IS A QUASI FIXED FACTOR.

Let us transpose investment theory to the issue of labor, if job tenure is the only available contract : once hired, the workers can no more be dismissed ; the firm has to wait for their normal retirement. The survey by O. FAVEREAU (1989) of K. ARROW (1968), D. JORGENSON (1973) contributions lead to the following consequences of irreversibility upon optimal decision by the firm.

$$\left\{\begin{array}{lll} \underset{Q,H,I}{\text{Max}} \displaystyle\int_0^{\infty} e^{-rt}\left[\, p(t)\,Q(t) - w(t)\,H(t) - q(t)\,I(t)\,\right] dt & & \\ Q(t) = F\left[K(t),N(t)\right] & (1) & \text{Production function} \\ \dot{K}(t) = I(t) - \delta\,K(t) & (2) & \text{Stock of capital} \\ \dot{N}(t) = H(t) - \varepsilon.N(t) & (3) & \text{Stock of employment} \\ H(t) \geq 0 & (4) & \text{Hiring cannot be negative} \\ I(t) \geq 0 & (5) & \text{Gross investment is non negative} \end{array}\right.$$

With Q(t) Production, N(t) Total employment, K(t) Stock of capital, H(t) Hiring, I(t) Gross investment, p(t), w(t), q(t) the price of output, wage and investment, r the interest rate, δ the depreciation of capital, ε the retirement rate of worker.

If none of the constraint (4) or (5) are binding, hiring and investment are given by the two first order conditions :

$$H^{*}(t) \quad \text{such that} \quad \frac{w}{p} = \frac{\partial F}{\partial N} \qquad (6) \qquad ; \qquad \left\{\begin{array}{ll} I(t) \quad \text{such that} \quad \dfrac{c}{p} = \dfrac{\partial F}{\partial K} & (7) \\ \text{with} \quad c = q(r+\delta) - \dot{q} & (8) \end{array}\right.$$

Imagine now that only the hiring constraint is binding. Here comes a dual price $\mu(t)$ associated to (4). The optimal policy is therefore changed into :

$$H(t) \quad \text{such that} \quad \frac{\mu(t)}{p(t)} = \frac{\partial F}{\partial N} \qquad (9)$$

Intuitively imagine that the reversible employment $H^{*}(t)$ varies cyclically. Then it is easy to compare with the irreversible optimal solution $H(t)$:

- *During the boom*, the firm will hire less workers due to the expectation of a forthcoming recession which will lower the marginal productivity of workers (compare BC'D with BCD).
- *During the recession*, the firm will employ more workers, expecting the next recovery (compare DC'F with DEF).

technical change (C. MEDOFF, R. FREEMAN (1984)). Alternatively, this positive correlation between high wages and employment stability would confort an insider/outsider theory (A. LINDBECK, . SNOWER (1989)).

. Surprisingly enough, all these relations have vanished during the *Eighties*. Firstly, the institutional constraints do not seem to imply any more pressure in order to improve productivity (Table 15). May be some of these constraints have been partially removed by governments, for example in France since the mid Eighties. But alternatively, the basic uncertainty about the new socio-technical system, either toyotism or volvoism, their implementation difficulties might explain the blurring of most macroeconomic previous relations (R. BOYER, P. PETIT (1989)). Secondly, labour unstability still has a negative impact upon technical change but at a very low significant level. Thirdly, the shift in bargaining power to the benefit of firms might explain why real wage increases become relatively independent from productivity dynamics. The Eighties have indeed been the decade for a massive profit restoration.

To conclude, job tenure or public regulations about employment security, used to interact with technical change according to a positive correlation : by forbiding purely defensive flexibility, these regulations have partially induced the direction and intensity of innovations and technical change diffusion. Nevertheless, the Eighties have experienced the breaking down of this symbiotic alliance. Future will tell if this was a path breaking change or only a transitory disruption and that the new productive model is bound to bring a renewal for the ideal of job security. Let us address to this last issue.

5. A RETURN TO FAST AND STEADY GROWTH WOULD HELP EMPLOYMENT ADJUSTMENTS.

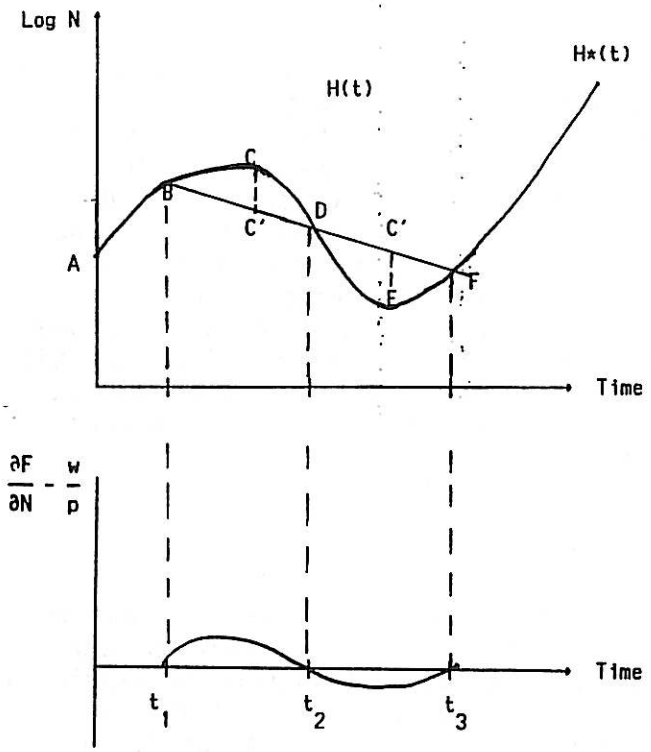
Too often, the analyses about labour flexibility point out the microeconomic consequences of inadequat public regulations, but do not study the feedback from macrodynamics upon perceived and effective mobility : the issue is important indeed for any prospect upon the present decade.

° *The new macroeconomic and institutional context of the Nineties.*

Remember that the heyday of the flexibility debate took place during the mid Eighties, after half a decade of a continuous decline in average growth rate for most European countries. The need for downwards adjustments was the more perceived by firms, the more stagnant aggregate demand had been and the more uncertain the prospects about relative prices, real interest and exchange rates, not to speak for economic policies themselves which hesitate between a vocal and rather ideological adhesion to free market and a hidden and bastard keynesianism (in US at least !). It has been argued (III.3) that labour rigidity was much more a consequence and amplifying factor than the primary cause of structural and long term unemployment.

Conversely, the unexpected and long lasting boom initiated in 1983 and still going in spring 1990 as significantly shifted the debate and actual labour management. Even European countries are creating a rather large amount of new jobs, but inferior to that of the puzzling american job machine. Simultaneously, most managers seem to have softened their previous demands for labour and social deregulation : in France for example this theme has virtually

INSERT 3 (FOLLOWS 2)



F I G U R E 11 :

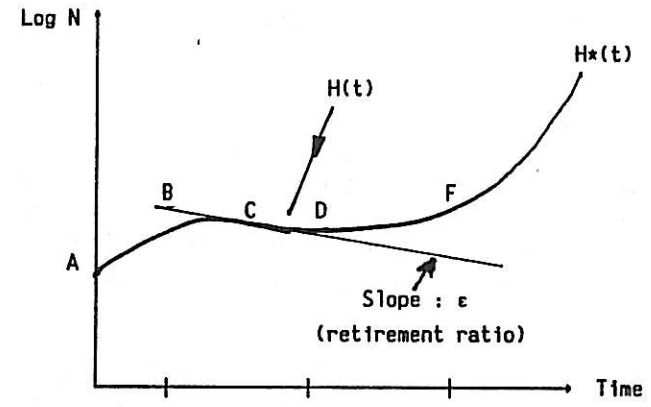
THE EMPLOYMENT IRREVERSIBILITY LEADS TO A SMOOTHING OF HIRINGS

H*(t) : reversible employment

H(t) : with irreversibility in employment contract

2. *AN EXTENSION TO THE MACRO LEVEL*

Therefore, there *always exists a growth pattern for which the irreversibility is no more binding*. It is the case if during the most severe recessions the required decline is inferior to the retirement rate ε .



F I G U R E 12 :

IF RECESSIONS ARE MILD, THE EMPLOYMENT IRREVERSIBILITY POSES NOT ANY PROBLEM

Transposing at the macro level, the related condition is that

$$\left| \min_t \left\{ q_t - p\, r_t \right\} \right| < \varepsilon$$

Employment requirement during the deeper recession

Retirement rate (or more generally attribution rate)

(q_t : Rate of evolution of demand)

$p\, r_t$: Productivity rate)

vanished. Finally, recent surveys point out a new and unexpected risk : the scarcity of skilled workers has a possible barrier to the on going economic boom (OCDE (1989)). In some countries such as United Kingdom, this could explain the nominal wage explosion and the renewed inflationnary pressures. The stability of the long duration unemployment is nevertheless worrying...but does not contradict this general interpretation. Young people who came upon the labour market at the direst period with few employment opportunities could not get into the productive system, therefore have been loosing incentives, expertise and ability to work, in such a manner that long run unemployment seems to reproduce itself according to a vicious circle. The firms assume that long duration unemployed are less efficient than the employed, which exacerbate their competence gap, therefore their durable exclusion from jobs. Both theoretical and empirical arguments might support this view.

° *Optimal growth with labour as a quasi-fixed factor.*

Conventional investment theory (J. JORGENSON (1967)) used to assume a complete flexibility of equipment in deriving the optimal strategy for capital formation of an individual firm. But this relied implicitly upon the existence of a second hand equipment goods market. If it does not, here comes an irreversibility constraint, due to the fact that net capital cannot be reduced more than its normal replacement rate. The same framework can be extended to labour : in modern economies, *labour had become a quasi fixed factor* (I. OI (1962)), (Insert 3). This means that in an economy where a complete labour tenure is implemented, the only method for reducing total unemployment is by normal retirement. The capital and labour problems would then become equivalent.

This line of analysis has been followed by S. NICKELL (1974), (1979)) and provides suggesting hints :

. First, *the optimal pattern of employment hiring is altered*, in accordance with conventional intuition. Imagine a roughly cyclical macroeconomic evolution. As the boom proceeds, firms will be more cautious since they expect it to come to an end ; conversely during a recession, employment will be kept at higher levels than if spot labour contracts were the rule (Figure 11). This is coherent with the stylized facts from US business cycle since a century (See previous Table 2).

. The second conclusion is somehow trivial but important for the job tenure debate. There always exists *an average long run growth rate for which the labour rigidity is no more binding* (Figure 12, Insert 3). Basically, if OECD countries could again reach a 5 % - 6 % growth rate for GNP, rather probably most of the complaints about excessive labour rigidity would vanish. The issue would still be easier if economic fluctuations became again more predictible than during the Seventies and Eighties.

No doubt that the functionning of the labour market is closely connected with the features of growth regime.

° *Labour mobility increases with job opportunities.*

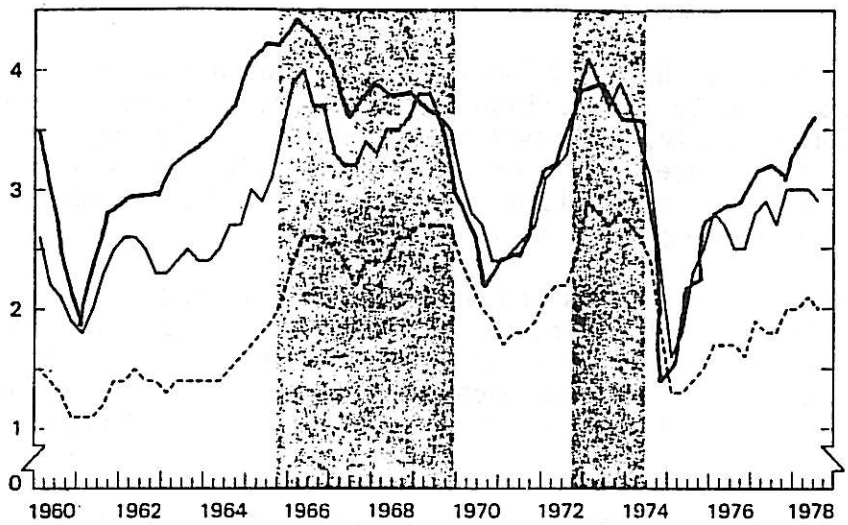
The previous theoretical model can now be made a little more complex. In fact workers are leaving a firm for a lot of reasons : voluntary quits when

INSERT 4

LABOUR MOBILITY IS ENDOGENEOUS TO MACROECONOMIC EVOLUTIONS
SOME EMPIRICAL EVIDENCES

1. LABOUR MOBILITY, SPECIALLY QUIT RATES ARE INCREASING WITH JOB OPPORTUNITIES AND GROWTH

F I G U R E 13 : UNITED STATES : A CLEAR PROCYCLICAL PATTERN



Source : Economic Report to the President (January 1979)

T A B L E 16 : RECENT TRENDS FOR FRANCE (%)

FIRMS LARGER THAN 500	1984	1985	1986	1987	1988
Hiring rate	10,9	11,6	12,1	12,9	15,2
Separation rate	13,9	15,5	16,1	17,2	17,6
Global growth rate	1,3	1,9	2,3	2,9	3,4

Source : H. BERTRAND (1989), p. 104 and French National Accounts.

2. LABOUR TURNOVER IS AN ENDOGENEOUS VARIABLE WHICH

. **DECREASES WITH FIRMS'SIZE AND IS PROCYCLICAL**

T A B L E 17 : FRANCE

	1984	1985	1986	1987	1988
50 to 199					
Entry Rate	26,8	28,9	30,7	32,9	36,8
Quit Rate	28,4	30,1	31,4	33,2	35,8
200 to 499					
Entry Rate	21,8	23,0	24,8	26,2	29,1
Quit Rate	24,2	25,2	27,0	28,8	29,8
> 500					
Entry Rate	10,9	11,6	12,1	12,9	15,2
Quit Rate	13,9	15,5	16,1	17,2	17,6

Source : H. BERTRAND (1990).

attracted by better offers, early or standard retirement, lay-offs, dismissals. The first component is decided by workers in conformity with alternative wages, job vacancies, quality of the carreer. All these variables are highly sensitive to macroeconomic fluctuations. American and French statistics confirm this hypothesis (Insert 4):

. *In United States*, both hiring and quit rates are strongly procyclical with production capacity utilisation (Figure 13), therefore indirectly with GDP growth. Consequently, if growth knew a renewal, voluntary mobility would again represent the larger part of workers mobility. A contrario, if a severe recession were to take place, dismissals would climb up...and again labour rigidity would emerge as a major problem.

. *In France*, turn-over rates had been drastically reduced during the Seventies and early Eighties. The decline in job creations was the main responsible for this decrease in voluntary mobility. A contrario, the renewal of significant growth rate after 1986 has mechanically induced an important rise in these turn-over rates. The relative rise is the larger, the bigger firms'size (Table 17).

Clearly the turn-over rate is a highly endogeneous variable, and not a purely institutional and conventional fixed one.

° *Contradictory factors shape voluntary job mobility.*

A recent international survey (H. BERTRAND (1989)) points out three main determinants for this variable :

. *The size of firms* is negatively correlated with turn-over rates (Table 17). Even if they vary procyclically, their hierarchy is rather stable : roughly speaking firms employing between 50 to 199 workers exhibit a turn over twice as large as firms over 500 workers. During the last two decades, larger firms have been replaced by smaller ones in quite all OECD countries, whatever the sector, the region, the skill...Therefore, this would imply a larger average rate for the same elementary mechanism for labour mobility with each broad category. Consequently, the contemporary economies would now be and remain more flexible than during the post WWII era, which support part of M. PIORE and C. SABEL (1986) thesis.

. *The skills composition* exerts a definite role upon voluntary mobility (Table 19). All data for European countries seem to confirm the behaviour observed for France. In conformity with capital investment theory when the training is important and specific, the firms will be reluctant to dismiss or lay-off highly valuable workers, essential to the firm efficiency and adaptability. If blue collar workers without any previous training have a high turn-over (14 % for 1988) at the opposite, technicians are quasi immobile : their turn-over rate is only 2,5 %. If the toyotism-volvoism model is to diffuse all accross industrialized countries, it will call for more trained workers. Everything being equal this would reduce average turn over, even if for each category of skill hiring and firing continue to obey to the same behavioural equations.

. Finally, at least in France, but may be in other countries such as UK, *limited duration labour contracts* have now been so much developed that they offer large degrees of freedom for possible downwards adjustment (Table 18). The new

INSERT 4 (FOLLOWS 2)

. LIMITED DURATION CONTRACTS HAVE PLAYED A MAJOR ROLE.

T A B L E 18

YEAR AND PLANT SIZE	ENTRY RATE	LIMITED DURATION CONTRACT	INTERIM	TRANSFOR MATION	NOT DECLARED	QUIT RATE	DISMIS-SALS	TRANSFOR MATION	OTHER
1984									
50 to 199	26,8	16,5	7,2	1,2	1,8	28,9	6,9	1,5	20,5
200 to 499	21,8	14,0	5,5	1,2	1,1	24,2	5,0	1,6	17,6
> 500	10,9	6,3	2,8	1,1	0,7	13,9	2,3	1,4	10,2
WHOLE	20,0	12,3	5,2	1,2	1,3	22,5	4,8	1,5	16,2
1985									
50 to 199	28,9	18,7	7,0	1,3	1,8	30,1	6,6	1,6	21,9
200 to 499	23,0	15,1	5,3	1,4	1,1	25,2	4,9	1,7	18,6
> 500	11,6	6,8	2,7	1,4	0,7	15,5	2,3	1,7	11,5
WHOLE	21,5	13,8	5,1	1,4	1,3	23,9	4,7	1,7	17,5
1986									
50 to 199	30,7	20,3	7,5	1,3	1,5	31,4	6,9	1,5	23,0
200 to 499	24,8	16,8	5,7	1,4	0,9	27,0	5,1	1,7	20,2
> 500	12,1	7,4	2,6	1,4	0,7	16,1	2,3	1,8	12,0
WHOLE	23,1	15,2	5,4	1,4	1,1	25,3	5,0	1,7	18,6
1987									
50 to 199	32,9	22,1	8,1	1,4	1,5	32,2	7,5	- 1,7	24,0
200 to 499	26,2	18,0	6,0	1,2	1,0	28,8	5,4	1,8	21,6
> 500	12,9	8,0	2,8	1,4	0,7	17,2	2,5	1,8	12,9
WHOLE	24,9	16,6	5,8	1,3	1,1	27,0	5,4	1,8	19,8
1988									
50 to 199	36,8	24,6	9,0	1,5	1,6	35,8	8,7	1,8	25,3
200 to 499	29,1	20,1	6,9	1,2	0,9	29,8	5,9	1,9	22,0
> 500	15,2	9,7	3,4	1,3	0,8	17,6	3,0	1,6	13,0
WHOLE	28,2	18,9	6,8	1,4	1,2	28,7	6,2	1,8	20,7

. TURNOVER DECREASES WITH SKILLS

T A B L E 19 :

	ENQ	ONQ	EQ	CADRES	OQ	MTD	WHOLE
	%	%	%	%	%	%	%
QUIT RATE	105,6	45,5	27,3	16,0	11,8	9,0	28,7
(including dismissal)	14,0	7,8	7,0	5,0	2,9	2,5	6,2

ENQ : Unskilled white collars - ONQ : unskillet blue collars - EQ : skilled white collars
CADRES : Professional - OQ : skilled blue collars - MTD : Technicians.
Source : H. BERTRAND (1990), p. 104 to 107.

built in flexibility would probably made the adaptation to a new recession easier than during the early Seventies. The new regulations about temporary and part time work still reinforce this opportunity. May be this might be the underlying reason why the French business association has become quasi silent upon the issue of job regulations : in 1990, the required flexibility is institutionally warranted to most entreprises.

To sum up, the more severe episode of job deregulation is probably over...as far as a new and unexpected recession does not burst out. In any case, the contemporary economies have regained a lot of flexibility. Nevertheless, let us stress the contradictory effects upon this variable of the ongoing structural transformations : growth rate and its predictability, firms'size and skill composition, the shift a way from fordist have opposite effects, the balance of which is hard to assess, from a purely theoretical point of view (Figure 15).

6. ONLY DETAILLED EMPIRICAL RESEARCHES CAN DISENTANGLE THE ISSUE OF WORKERS'PROTECTION.

Conventional neo-classical theory is often invoked to argue that labour flexibility has unambiguously a positive impact upon employment *always and everywhere* . But it relies upon crude and irrelevant hypotheses about the labour contract, which are not rejected by contemporary theories of the capital/labour relations. Labour flexibility is optimal for employment and welfare only if labour can be assimilated to its services, if labour is hired on a spot market, whereas not any adverse selection problem or commitment and loyalty issue are at stake. On the contrary, if the theory recognises the separation of hiring and using labour, the long run character of modern labour contracts, the key importance of work intensity and loyalty to the firm, then the conclusion collapses. The new and more sophisticated models provide so numerous and contradictory effects, that the impact of job security can no more be assessed on a priori grounds. Let us develop this view, which seems to be leading among the scolars who have studied this job security issues (M. EMERSON (1988), C.F. BUECHTEMANN (1989), R.J. FLANAGAN (1988), D. METCALF (1987), D.S. HAMERMESH (1988), J. GENNARD (1986)).

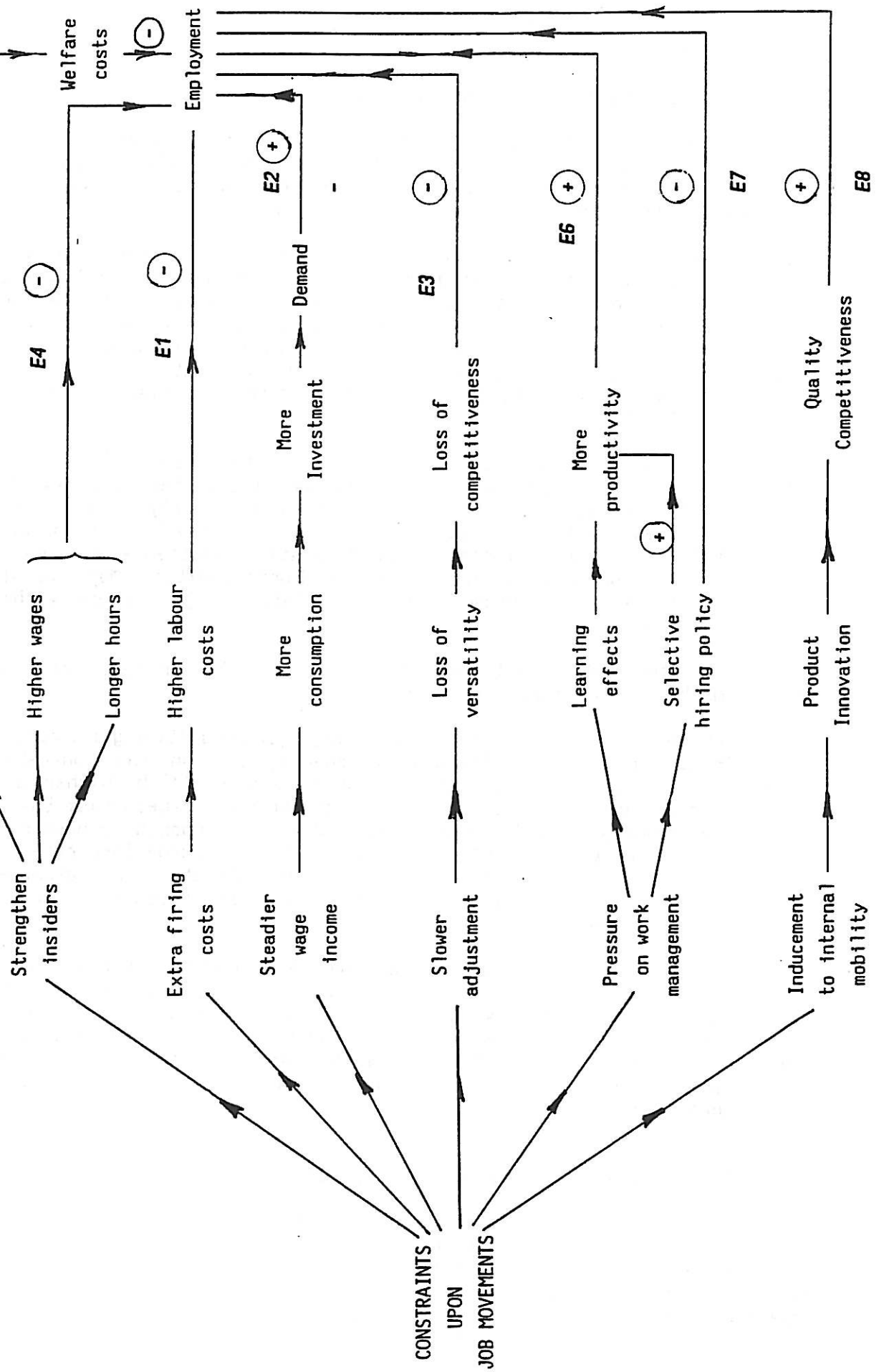
° *Even in the short run, job security may benefit to employment.*

A whole spectrum of mechanisms interferes within hiring and firing decisions (Figure 14). At the first level, two broad conceptions of macroeconomic equilibrium can be opposed :

. The expectation of *the extra-costs* associated to firing (lags between the firms'decision and public authorisation, compulsory or statutory severance payments...) will induce a rational firm to employ less workers. The standard neo-classical employment function (see previous Table 13) forecasts a *negative impact* of job tenure upon the employment level (mechanism E1).

. In modern economies, wage earners represent the dominant part of active population. Therefore, any employment stability provides a form of income security, which tends to smooth cyclical adjustments in *effective demand*. This higher income feeds a larger consumption, which enhances investment via an accelerator mechanism. Globally, effective demand generation has to be taken into account according to the keynesian macroeconomic theory : the impact of

FIGURE 14 : THE VARIOUS EFFECTS OF JOB PRESERVATION REGULATIONS



job security would be *positive* (mechanism E2).

This analysis has to be extended when the economy is largely open to foreign trade and competition. Since a continuous trend in internationalisation of trade, production and finance has taken place during the last two decades, two other complementary mechanisms are to be considered :

. Employment regulation might induce slower adjustments, therefore imply a loss of adaptability to the changing patterns in world demand. Simultaneously, the extra-costs associated with firing provisions do increase national prices of production costs : the corresponding *loss in external competitiveness* will hurt employment, as soon as the industry is price-taker (mechanism E3). Let us note that this has been a leading argument put forward by business associations and governments in promoting defensive flexibility strategies (R. BOYER (1988)).

. But this negative impact is not a fatality. it has been previously shown that the constraints imposed upon firms management induce the speed and direction of technical change (see Table 15). A *better productivity* might compensate the extra costs associated to a sophisticated job security legislation (mechanism E8). Still more, the firm can use the cumulative competence of wage earners in order to react quickly to new international opportunities. More specifically, product innovation dynamism might be related to job tenure within large conglomerates.

Again, the net impact can be either positive or negative. Two other mechanisms have to be taken into account :

. In accordance with insider/outsider theory, job security might induce a *better bargaining power for employed wage-earners*, and on the contrary weaken unemployed people. On one side, labour unit cost will be higher (mechanism E4), eventually compensated by a larger productivity (mechanism E6). This is the more commonly considered mechanism, which is supposed to have *a negative impact* upon employment. But that effect (E4) will outperform effect (E6) is not a fatality, but a matter of empirical investigation. For example, large Japanese firms do not seem to suffer from any loss of competitiveness due to the bargaining power of insiders.

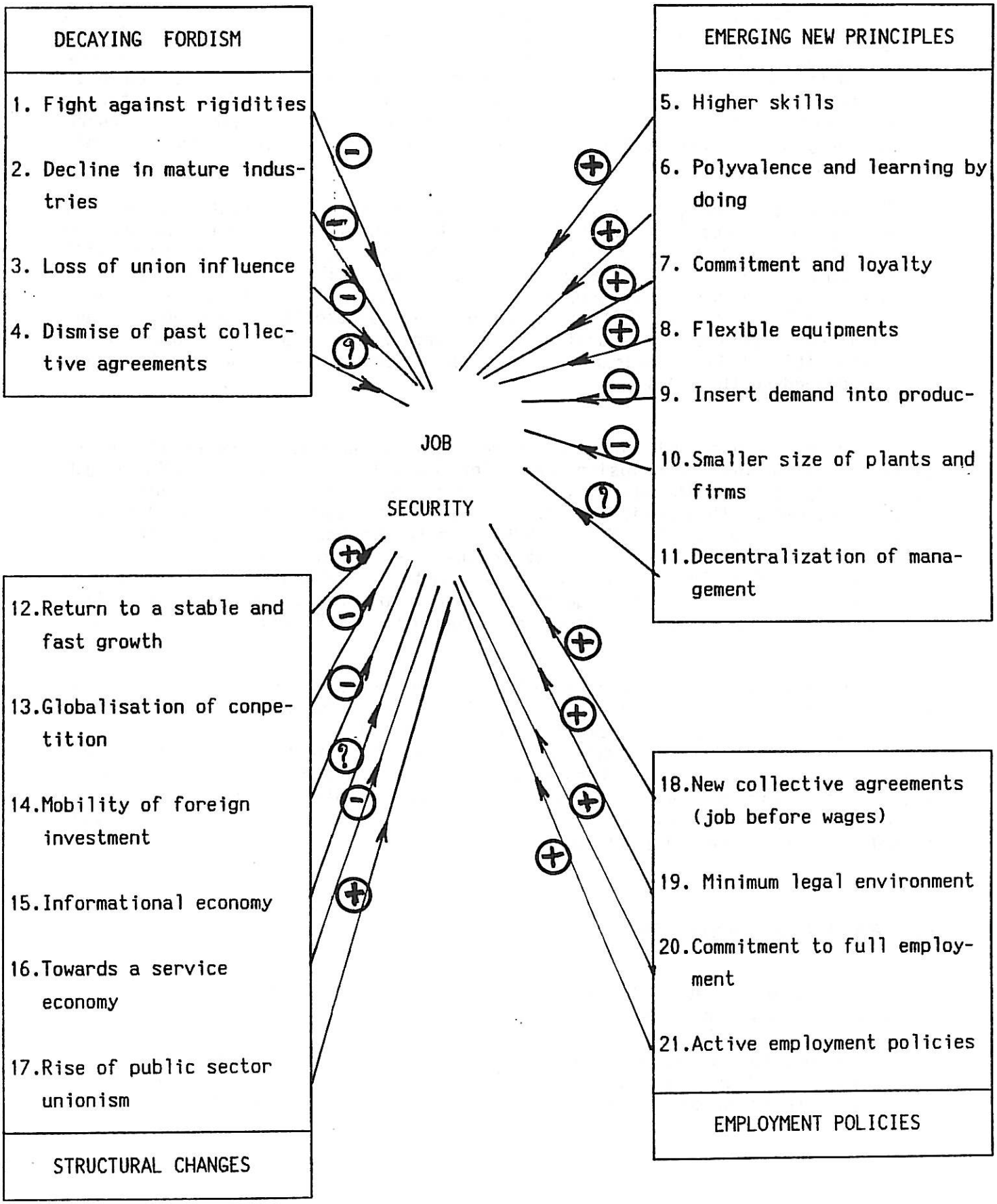
. On the other side, the *long duration unemployment* will probably be the outcome of such a segmented labour market. Consequently, when Welfare State has institutionalized unemployment benefits, social security will incur extra costs, eventually to be covered by new taxes to be levied upon employed wage earners or firms profits (mechanism E5). Again if the sector or national economy is price-taker, this might deteriorate external competitiveness, and consequently the employments.

° *In the long run, public regulations shape technical change and innovations.*

A long run history of French industrial relations has tentatively shown that any advance in the institutionalisation of a new capital labour relation (interdiction of night shifts children manufacturing work, limitation of week duration, institutionalisation of a minimum wage...) might induce new organisational forms, invention and the innovation in engineering and machine tools design (CEPREMAP-CORDES (1977)). An acceleration of technical change is a

F I G U R E 15 : JOB SECURITY IN THE 90'S.

A SYMMING UP



possible but not always granted response to the challenge posed by advances in social regulation. But still contradictory mechanisms combine themselves and shape the ex post trends in technical change :

. *Learning by doing* and a cumulative experience about the core business of the firm might be a major advantage in stimulating long run productivity. Similarly highly skilled workers play a major role in elabourating new products and processes as well as proposing incremental improvements. Clearly, job tenure has then a positive impact upon productivity (mechanism E6). Furthermore, a constant product innovation might help in renewing monopoly power and getting a competitive edge upon international markets (mechanism E8).

. But *selective hiring policies* might have counterbalancing effects. Large firms are usually screening job applicants to hire the more competent, productive and the most fitted to the firms'objectives. Consequently, the managers will be very choosy and partially exacerbate labour market segmentation : by definition, primary jobs suppose secondary ones, with much more employment unstability (mechanism E5). Some authors have argued that the global impact will be negative : persistence of long run unemployment and rising unequalities between primary and secondary jobs on one side, employed and unemployed on the other.

Adding up and combining all these eight mechanisms is necessary before deriving any definite conclusion about the nocivity...or the viability of job security regulations. Therefore, very sophisticated empirical studies are needed in order to reduce this basic uncertainty. Without any surprise, our conclusion is very similar to that of J. GENNARD (1985) : "On the one hand, the regulations might curb employer flexibility to the extent that particular avenues and means for adjustment are foreclosed and degrees of adaptation reduced (...). But on the other hand, regulation may be required to open up paths and space for flexibility which would not be available in its absence" (quoted by D. METCALF (1987), p. 66).

The previous sections have delivered some components of such a general model, but they have to be combined and refined, which is not an easy task (Figure 15)! Still more, adequate statistical indexes should be collected over a sufficient long period in order to capture the specificities of each national trajectories, specially the interaction between the system of innovation and the industrial relations. *These configurations might be specific to a given period, sector, country or even region.* Without any detailled investigations, *a cautious approach about job security deregulation* is welcome.

VI - PROVISIONAL CONCLUSIONS.

1. The debate about labour flexibility frequently supposes that the maximum social deregulation would be optimal from an economic point of view. Conventional models in which labour is a commodity as another, inescapably suggest that conclusion. *Modern micro theories* of the capital labour relation and the labour contracts challenge and distrust this optimistic view. When the quality of workers is uncertain, learning effects important and commitment a central

issue, *some inertia in employment adjustments might be optimal*. Conversely, instantaneous variations in wage and employment *would not be optimal*.

2. *Macroeconomic modelling* and international comparative studies too tentatively conclude that employment flexibility should not be always and everywhere maximal. Job security, provided by regulations or collective agreements, triggers a series of contradictory mechanisms which ex post can or cannot benefit to productivity, standard of living, unemployment, labour market homogeneity. Everything is up to detailed empirical studies which would measure and assess the impact of these various mechanisms. The survey of existing literature and the present econometric tests, rather crude, suggest a cautious approach to job deregulation. The *advantages might be uncertain and small*, if positive and existing.

3. Nevertheless, the *job security dilemma* should not be denied. On one side, a complete immobility of labour within and outside firms will inhibit the adjustments to varying international conditions and to technological and organisational innovations. Statistical evidences suggest that for European countries, some job regulations have unvoluntary induced long duration unemployment, labour market segmentation, and have possibly exacerbated mass unemployment. On the other side, the absence of any constraint upon hiring and firing, a complete flexibility in wage formation might hinder labour saving, product and process innovations. The most flexible labour markets are associated, at least during the Seventies, to a sluggish adaptation to technical change and poor productivity performance. Again, regulations per se are not to be blamed but only *unadequate configuration for job security* or collective agreements.

4. Too often, economists and politicians prepare themselves to win the last war...and they often loose the next one, which usually exhibits new and unexpected features. The labour flexibility debate might be a good example for such an *inertia between perceptions and an evolving situation*. The flexibilization strategies implemented by firms and governments seem to have introduced a lot of degrees of freedom, whereas most of the typically fordist rigidities have been removed or circumvented. Now the crucial issue has drastically shifted : what would be the capital labour compromise and the public regulation which would spur *the emergence of an alternative to fordism*, let it be toyotism (i.e. micro corporatism and labour segmentation) or volvoism (i.e. macro corporatism and strong labour homogeneity). The breaking down of most previous econometric regularities between macroeconomic variables and labour market characteristics, as well as qualitative and institutional studies give a strong support to this hypothesis. Under this perspective, new forms for implementing the ideal of job stability and voluntary and/or collectively negociated mobility are on top of the agenda.

5. More precisely, within this new management model, the status of employment stability is at the crossing of numerous and *contradictory determinants*. On one hand, the emphasis upon well educated workers, commitment and loyalty, learning by doing, the upgrading in skills call for *more sluggish employment adjustments*, if not a complete job tenure for all workers. But on the other hand, the trends towards productive decentralization, union decline (at least

outside Scandinavian countries), the continuous rise in tertiary employment, the disturbances linked to international investment mobility, and finally the stiffening in international competition call for a significant speed in employment and/or wage variations. The provisional prognosis is that a return to a fast and steady growth would help in implementing the minimum stability which is at the core of toyotism/volvoism. But, any catastrophic and unexpected recession would delay the path towards this new management model and spur a new burst into purely defensive flexibility strategies.

6. The same basic principles, alternative to the decaying fordist conceptions, do not imply a one best way model. Quite on the contrary, the same functional properties can be obtained by *very contrasted national institutional forms*. Given its past socio-technical trajectory, the industrial relations atmosphere, its cultural value, each society has to develop a genuine and own articulation between job regulations, collective agreements and labour contracts. Let us recall that Japan seems to exhibit the more sluggish employment adjustments, whereas its economy is highly competitive and quasi full-employment is prevailing in the early Nineties. But the Swedish society has managed to be technically innovative and economically competitive with low wage differentials, active employment policies and strong unions. Unfortunately, most of the countries belonging to EEC exhibit rather disappointing results : their hybrid institutions between a purely decentralized system and a fully-flegded social democratic compromise has brought moderate successes in innovation, but quite disappointing performances in job creations. May be the opportunities opened by the integration of Western Europe will induce a renewal of rapid growth, and might prolong the revival of employment increases observed since 1985.

7. Needless to say, these are *provisional and probably shaky results*. Given the importance of issues at stake, too daring or ambitious labour regulations should not be designed and decided before the disposal of more sophisticated and detailled empirical studies. In a sense, the present conference constitutes a significant step towards this objective. This paper, however imperfect and lacunary, would have fulfilled its aim if it would stimulate clever and thoroughly documented researches.

REFERENCES

ABRAHAM K.G., HOUSEMAN S.N. (1989) Job Security and Work Force Adjustment ; How Different are U.S. and Japanese Practices ?, *Journal of the Japanese and International Economies*, December, p. 500-521.

AMENDOLA M., GAFFARD J.L. (1988) *The innovation Choice. An Economic Analysis of the dynamics of Technology*, Blackwell, Oxford.

AOKI M. (1988) A new paradigm of work organization : The Japanese experience, *Working Paper WIDER*, n° 36, February.

AYRES R.A. (1985) A Schumpeterian model of technological substitution, in *Technological Forecast and Social Change*, n° 27, Elsevier Science Publishing Company.

AZARIADIS C., STIGLITZ J. (1983) Implicit Contracts and fixed Price Equilibria, *The Quarterly Journal of Economics*, Vol. XCVIII, Sup., p. 1-22.

BENASSY J.P. (1982) *The Economics of Market Disequilibrium*, Academic Press, Boston.

BENASSY J.P., BOYER R., GELPI R.M. (1979) Régulation des économies capitalistes et inflation, *Revue Economique*, Vol. 30, n° 3; Mai.

BERTRAND H. (1989) Modèle d'emploi européens : convergence ou divergence ? *Mimeograph INNOVENCE*, Novembre, Recherche réalisée pour le compte de la Commission des Communautés Européennes.

BOWLES S., BOYER R. (1990) Labour market flexibility and decentralisation as barriers to high employment ? Notes on employer collusion, centralised Wage bargainbing and aggregate employment, in R. BRUNETTA, C. DELL'ARINGA Eds, *Labour Relations and Economic Perofrmance*, MacMillan, Basingstoke, p. 325-352.

BOYER R. (1979) Wage formation in historical perspective : the French Experience, *Cambridge Journal of Economics*, n° 3, March, p. 99-118.

BOYER R. (1981) Les transformations du rapport salarial dans la crise : une interprétation des aspects sociaux et économiques, *Critiques de l'Economie Politique*, n° 15/16, Avril-juin.

BOYER R. (1983) Wage Labor, Capital Accumulation, and the Crisis : 1968-1982, *The Tocqueville Review*, Vol. V, n° 1, Printemps-été, p. 136-163.

BOYER R. (1983) L'introduction du taylorisme en France à la lumière de recherches récentes. Quels apports et quels enseignements pour le temps présent ? *Travail et Emploi*, n° 18, Octobre-Décembre, p. 17-41.

BOYER R. (1986) La relation salariale entre théorie et histoire, in *Le travail : Marchés, Règles, Conventions*, R. SALAIS et L. THEVENOT Eds, Economica, Paris.

BOYER R. (1987) Labour flexibilities : many forms, uncertain effects, *Labour and Society*, Vol. 12, n° 1, January, p. 107-129.

BOYER R. (1988) Is a New Socio-Technical System Emerging ? mimeograph prepared for The Conference *"Structural Change and Labour Market Policy"*, Arbetslivscentrum, Var Gard June 6-9.

BOYER R. (1988) *The Search for Labour Market Flexibility*, Clarendon Press, Oxford.

BOYER R. (1989) L'impact du marché unique sur le travail et l'emploi : une comparaison des approches macroéconomiques et des recherches en économie du travail, ronéotypé CEPREMAP, préparé pour la Conférence Inaugurale de l'Association Européenne des Economistes du Travail : *L'emploi dans les années 1990, les chance de New Deal*, Turin, 8-10 Septembre.

BOYER R. (1989) New Directions in Management Practices and Work Organisation, Mimeograph CEPREMAP, November, prepared for the OECD Conference on "Technical Change as a Social Process : Society, Enterprises and Individual", Helsinki, Decembre 11-13.

BOYER R. (1989) The transformations of the capital labor relation and wage formation in eight OECD countries during the Eighties, mimeograph CEPREMAP, November, prepared to the International Symposium on "*Making Economies more Efficient and Equitable, Factors determining Income Distribution*", Tokyo, November 27-29.

BOYER R. (1989) The transformations of modern capitalism. By the light of the regulation approach and other political economy theories, mimeograph CEPREMAP, May, prepared for the *Comparative Governance of Economic Sectors Conference*, Bellagio May 29-June 2.

BOYER R. (1990) The Capital Labor Relations in OECD Countries : from the "Golden Age" to the Uncertain Nineties, *Mimeograph*prepared for the WIDER Project : *The Transformations of the Capital Labour Relations*, J. SCHOR Ed., forthcoming.

BOYER R. (1990) *La seconde transformation : Trajectoires du capitalisme contemporain*, A paraître Economica, Paris.

BOYER R., CORIAT B. (1986) Technical Flexibility and Macro Stabilisation, *Ricerche Economiche*, Vol. XL, n° 4, Ottobre-Dicembre, p. 771-835.

BOYER R., MISTRAL J. (1978) *Accumulation, Inflation, Crises*, P.U.F., Paris, 2nde éditon refondue et actualisée, 1982.

BOYER R., ORLEAN A. (1990) Convention salariale : du local au global, l'exemple fordien, *Mimeograph CEPREMAP*, Avril.

BOYER R., PETIT P. (1988) Science, Technique et Croissance Economique, mimeograph CEPREMAP, Fevrier, prepared for the International OECD Seminar on "*Science, Technology and Growth*", Paris, 6-8 Juin.

BOYER R, PETIT P. (1989) Technical change, cumulative causation and growth : an exploration of some post keynesian theories, mimeograph CEPREMAP, May , prepared for the International OECD Seminar on "*Science, Technology and Growth*", 5-8 Juin.

BOYER R. , REYNAUD B. (1988) Flexibilité salariale : les arguments du libéralisme à l'épreuve des théories microéconomiques modernes, dans A.F.S.E., Colloque Annuel 1988, *L'impact du Libéralisme sur les politiques économiques*, Nathan, Paris.

BRUNHES B. (1989) La flexibilité du travail : réflexions sur les modèles européens, *Droit Social*, Mars, repris dans *Problèmes Economiques*, n° 2.125, 17 mai, p. 23-27.

BUE J. (1989) Les différentes formes de flexibilité, *Travail et Emploi*, n° 3, p. 29-35.

BUECHTEMANN C.F. (1989) More Jobs Through Less Employment Protection ? Evidence for West Germany, Forthcoming in "LABOUR" : *Review of Labour Economics and Industrial Relations*, Vol 3, winter 1989/1990.

BUECHTEMANN C.F. (1990) Employment protection and "de-regulation" : The West German Experience, *Mimeograph Santa Barbara*, prepared for the ILO/IILS/WZB International Conference on *" Workers' Protection and Labor Market Dynamics"*, Berlin, May 16-18.

BUSINESS WEEK (1980) Reindustrializing America , Special issue, April.

CALMFORS L., DRIFFILL J. (1988) Centralization of Wage Bargaining, *Economic Policy*, n° 6, Avril, p. 13-61.

CEPREMAP-CORDES (1977) (BENASSY J.P., BOYER R., GELPI R.M., LIPIETZ A., MISTRAL J., MUNOZ J., OMINAMI C.) *Approches de l'inflation : l'exemple français*, Convention de recherche n° 22/1976, Decembre.

CHAN-LEE J.H., COE D.T., M. PRYWES (1987) Mutations micro-économiques et desinflation salariale macroéconomiques dans les années 80, *Revue Economique de l'OCDE*, n° 8, Printemps.

CHOFFEL Ph., CUNEO Ph., KRAMARZ F. (1988) Les modalités d'adaptation après le premier choc pétrolier, *Economie et Statistique*, n° 213, Septembre, p. 33-40.

CHOFFEL Ph., CUNEO Ph., KRAMARZ F. (1988) Des trajectoires marquées par la structure de l'entreprise, *Economie et Statistique*, n° 213, Septembre, p. 41-50.

COOPER R.W. (1987) *Wage and Employment Patterns in Labour Contracts : Microfoundations and Macroeconomic Implications*, Harwood Academic Publishers, Chur, Suisse, 80 p.

DERTOUZOS M.L., LESTER R.K., SOLOW R.M. (1989) *Made in America*, The MIT Press, Cambridge Ma.

DOERINGER P., PIORE, M. (1971) *Internal Labor Markets and Manpower Analysis*, D.C. Health, Lexington, 214 p.

DORE R. (1986) *Flexible Rigidities*, The Athlone Press, London.

DORE R. (1987) *Taking Japan seriously. A confucian perspective on leading economic issues*, Stanford University Press, California.

DUMENIL G., LEVY D. (1989) Micro adjustment behabior and macro stability, *Mimeograph CEPREMAP*, n° 8915, June.

ELIASSON G. (1986) Innovation Change, Dynamic Market Allocation and Long-Term Stability of Growth, *Conference on Innovation Diffusion*, Venice, 17-22, March.

ELIASSON G. (1989) Modelling Long-Term Macro-Economic Growth as a based, Path-Dependent, Experimentally Organised Economic Process : The Swedish Micro-to-Macro Model , mimeograph prepared for the International OECD Seminar on *"Science, Technology and Economic Growth"*, 5-8 June.

EMERSON M. (1989) Regulation and deregulation of the labour market, *European Economic Review*, 32, p. 778-792.

FAVEREAU O. (1989) Irréversibilités et institutions ; les problèmes du passage micro/macro, paper presented to the International Seminar on *Irreversibilites dansles modes de croissance", E.H.E.S.S.* , Paris 21-23 Juin.

FISHER I. (1933) *The Theory of Interest*, Reprints of Economic Classics, New York (1965).

FITOUSSI J.P., LE CACHEUX J. (1989) Une théorie des années quatre-vingt, *Observations et Diagnostics Economiques, Revue de l'OFCE*, n° 29, Octobre, p. 117-160.

FLANAGAN R.J. (1987) Efficiency and Equality in Swedish Labor Markets, in B. P. BOSWORTH, A. M. RIVLIN Eds *The Swedish Economy*, The Brookings Institution, Washington D.C., p. 125-184.

FLANAGAN R.J. (1990) Hiring behavior and unemployment, *Mimeograph* prepared for the ILO/IILS/WZB International Conference on " *Workers' Protection and Labor Market Dynamics*", Berlin, May 16-18.

FREEMAN C. (1989) The Nature of Innovation and the Evolution of the productive System, mimeograph prepared for the International OECD Seminar on *Science, Technology and Economic Growth*, Paris, 6-8 Juin.

GENNARD J. (1986) Job Security : Redundancy Arragngements and Practices in Selected OECD Countries, paper prepared for the OECD, Septembre.

GLYN A. (1988) Contraction and Expansion : The Divergence of Private Sector and Public Sector Unionism in the United States, *The Journal of Economic Perspectives*, Vol. 2, n° 2, Spring, p. 63-88.

HAMERMESH D.S. (1990) Employment protection : theoretical implications and some U.S. evidence, *Mimeograph* prepared for the ILO/IILS/WZB International Conference on " *Workers' Protection and Labor Market Dynamics*", Berlin, May 16-18.

HEINER H. (1988) Imperfect Decisions and Routinized Production : Implications for Evolutionary Modelling and inertial Technical Change, in *Technical Change and Economic Theory*, DOSI G., FREEMAN C., NELSON R.,SILVERBERG G., SOETE L. Eds, Pinter Publishers, London.

HOUNSHELL D.A. (1984) *From the American system to mass production, 1800-1932*, John Hopkins University Press, Baltimore.

INSEE (1989) Les comptes de la Nation, *Collection C*, Tome 1.

JORGENSON D.W., STEPHENSON J.A. (1967) The Time Structure of Investment Behavior in U.S. Manufacturing, 1947-1960, *Review of Economics ans Statistics*, Fevrier.

KOIKE K. (1987) Human Resource Development and Labour-Management Relations, in *The political Economy of Japan*, Vol. 1, *The Domestic Transformation*, Stanford University Press, Stanford Ca.. p. 289-330.

LAFONT J., LEBORGNE D., LIPIETZ A. (1982) Redéploiement industriel et espace économique : une étude inter-sectorielle comparative, Couverture Orange hors Série CEPREMAP .

LAYARD R., CALMFORS L. Eds (1987) *The Fight Against Unemployment*, The MIT Press, Cambridge (Ma).

LEBORGNE D. (1987) Vers de nouvelles formes d'organisation et de concurrence ?, mimeograph CEPREMAP, Rapport CGP-CEPREMAP, Février..

LEVY-GARBOUA L. (1982) Les modes de consommation dans quelques pays occidentaux. Comparaison et lois d'évolution (1960-1980), *Rapport CREDOC*, Juin.

LINDBECK A., SNOWER D.J . (1986) Wage setting, unemployment, and insider-outsider relations, *American Economic Review*, Vol. 76, ai, p. 235-239.

LUNDVALL B.A. (1989) Innovation, the Organized Market and the Productivity Slow-Down mimeograph prepared for the International OECD Seminar on *Science, Technology and Economic Growth*, Paris, 6-8 Juin.

MADDISON A. (1982) *Les phases du développement capitaliste*, Economica, Paris.

MANSFIELD E. (1988) Industrial R & D in Japan and the United States : A comparative study. *AEA Papers and Proceedings*, Vol. 78, n° 2, May.

MARCHAND O. (1989) Emploi, offre de travail et chômage dans les principaux pays développés. Les effets de la crise, *Economie et Statistique*, n° 220, Avril, p. 35-45

MARGLIN S., SCHOR J. Eds. (1990) *The Golden Age of Capitalism*, Clarendon Press, Oxford.

MAURAU G. (1990) Regulation, Entrepreneurial Policy and Labour Market Dynamics. The French Situation, *Mimeograph* prepared for the ILO/IILS/WZB International Conference on *" Workers' Protection and Labor Market Dynamics"*, Berlin, May 16-18.

MAURAU G., OUDINET J. (1988) Précarité et flexibilité : un essai de comparaison des industries européennes, *Note de l'IRES*, n° 18, 4ème trimestre.

MEDOFF J., FREEMAN R. (1984) *What do Unions Do ?*, Basic Book, N.Y., 293 p.

METCALF D. (1987) Trade unions and economic performance : The British evidence, in R. BRUNETTTA, C. DELL'ARINGA Eds, *Labour Relations and Economic Performance*, MacMillan, Basingstoke, p.283-303.

MIMOSA (Equipe) (1990) Mimosa, une modélisation de l'économie mondiale, *Observations et Diagnostics Economiques, Revue de l'OFCE*, n° 30, Janvier.

MIRE (1989) (MARUANI M., REYNAUD E., ROMANI C. Eds) *La flexibilité en Italie*, Syros Alternatives, Paris.

NELSON R. (1989) First synthesis of the presentations and debates, mimeograph prepared for the International OECD Seminar on *"Science, Technology and Economic Growth"*, 5-8 June.

NICKELL S. (1986) Dynamic Models of Labour Demand, in O. ASHENFELTER and R. LAYARD Eds *Handbook of Labor Economiocs*, Volume I, New York, North Holland, p. 473-522.

O.E.C.D. (1985) *Perspectives de l'Emploi*, Septembre.

O.E.C.D. (1986) *Flexibility and labour markets.*

O.E.C.D. (1987) *Perspectives de l'Emploi*, Septembre.

O.E.C.D. (1988) *Structural Adjustments and Economic Performance,* Paris.

O.E.C.D. (1989) *Les perspectives Economiques de l'OCDE*, n° 45, Juin.

O.E.C.D. (1989) *Perspectives de l'emploi*, Juillet.

O.E.C.D. (1990) The role of indicators in structural surveillance, Working Papers, Dept. of Economics and Statistics, n° 72, January.

OI W. Y. (1962) Labor as a Quasi-Fixed Factor, *Journal of Political Economy*,Vol. 70, Decembre.

PATEL P. , SOETE L. (1987) The contribution of Science and Technology to Economic Growth: a critical reappraisal of Evidence, OECD, DSTI, September.

PIORE M. (1988) Travail, Action et Metier : l'expérience du travail dans le système de production flexible. mimeograph MIT, prepared for the colloquium "*Logiques d'entreprise et formes de légitimité*", Association PROTEE, Paris, 20-22 Janvier.

PIORE M., SABEL Ch. (1984) *Les chemins de la prosperité*, traduction Française Hachette 1989, Paris.

PORET P. (1986) La formation sectorielle des salaires dans cinq économies européennes : premiers résultats d'une étude statistique, *Document de travail*, n° 86-7, Direction de la Prévision.

PRIES L., TRINCZEK R. (1989) Modernisation of Manufacture in the FRG : Management Strategies at a Time of Change in Technology, Work Organisation and Personnel Policy, mimeograph prepared for the International OECD Conference on "*Technological Change as a Social Process : Society, Enterprises and the Individual*", Heksinki, 11-13 December.

RAFF D. R. (1988) Efficiency Wage Theory, the Intra-and Inter-Industry Structure of Earnings,...", *Working paper*, Harvard University, May, 32 p.

ROSENBERG S. (1989) De la segmentation à la flexibilité, *Travail et Société*, Vol. 14, n° 4, Octobre, p. 387-438.

ROWTHORN R. (1975) What Remains of Kaldor's Law ?, *Economic Journal*, Mars.

ROWTHORN B. (1989) Wage Dispersion and Employment in OECD Countries, prepared to the International Symposium on "*Making Economies more Efficient and Equitable, Factors determining Income Distribution*", Tokyo, November 27-29. A paraître Oxford University Press.

SCHETTKAT R., WAGNER M. Eds (1990) *Technological Change and Employment. Innovation in the German Economy*, Walter de Gruyter, Berlin.

SCHMITTER Ph. and Al. Eds (1989) *Comparative Governance of Economic Sectors* . To appear.

SCHULTZE Ch., LAWRENCE R.Z. Eds. (1988) *Barriers to European Growth : A transatlantic View*, Brookings Institute.

SODERSTROM H.T. (1972) Cyclical Fluctuations in Labor Productivity and Capacity Utilization Reconsidered, *Swedish Journal of Economics.*

SOLOW R. M. (1956) A contribution to the Theory of Economic Growth, *The Quarterly Journal of Economics*, Vol. 70, n° 1.

SOLOW R.M. (1979) Another possible Source of Wage Stickiness, *Journal of Macroeconomics*, Winter, I(1), p. 79-82.

STANDING G. (1986) *Unemployment and Labour Market Flexibility : The United Kingdom*, ILO, Geneve.

STANDING G. (1988) Labour flexibility and insecurity : towards an alternative strategy, mimeograph ILO, September.

STANDING G. (1988) *Unemployment and Labour Market Flexibility : Sweden*, ILO, Geneve

STANDING G. (1989) Labour regulation in an era of fragmented flexibility, *Mimeograph* prepared for the ILO/IILS/WZB International Conference on " *Workers' Protection and Labor Market Dynamics*", Berlin, May 16-18.

STRAH B. (1987) *The politics of De-industrialisation*, Croom Helm, London.

STREECK W. (1989) On the Social and Political Conditions of Diversified Quality Production, mimeograph LME's International OECD Conference "*No way to full employment ?*", Berlin, -7 July.

STREECK W. (1989) The social dimension of the European Firm, mimeograph prepared for the 1989 meeting of the *Andrew SHONFIELD Association*, Florence, September 14-15.

SUNDQVIST's report (1988) Rapport pour l'OCDE.

TARENTELLI E. (1973) *Studi di Economia del Lavoro*, Guiffre, 257 p.

TARANTELLI E. (1986) *Economia Politica del Lavoro*, Utet, Torino.

TEECE D.J. (1989) Technological Development and the Organization of Industry, mimeograph prepared for the International OECD Seminar on *Science, Technology and Economic Growth,* Paris, 6-8 Juin.

Von HIPPEL E. (1988) *The Sources of Innovation*, Oxford University Press, New York.

WATANABE S. (1989) The diffusion of new technologies, management styles and work organisation in Japan : A survey of empirical studies, mimeograph prepared for the International OECD Conference "*Technological Change as a Social Process : Society, Enterprises and the Individual*", Helsinki, 11-13 December. .

WEITZMAN M.L. (1985) Steady state unemployment under profit sharing, *Working Paper*, n° 399, Department of Economics M.I.T., Cambridge Ma.

WILLIAMSON O. (1986) The organization of Work : a comparative Institutionnal assessment, *The Economic Nature of Firm*, PUTTERMAN L. Ed. , Cambridge University Press, p. 135-155.

WOLLEB E. (1988) Mutamenti nei rapporti di produczione nella crisi : Ascesa e tracollo del fordismo in Italia, in BOYER R. and WOLLEB E. Eds *La flessibilita del Lavorno in Europa*, Franco Angeli, Milano.

ZARNOWITZ V. (1985) Recent work on business cycles in historical perspective : A review of theories and evidence, *Journal of Economic Literature*, Vol. 23, June, p. 523-580.

ZYLBERBERG A. (1981) Flexibilité, incertain et théorie de la demande de travail, *Annales de l'INSEE*, n° 42.