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**How do Japanese and French firms in steel industry address the
institutional change and the globalization?
Employment adjustment and age management in a downsizing context**

Emilie LANCIANO* , Michio NITTA^

Since the 1960s, downsizing has become a mode of adjustment widely used by corporate managements in the face of changing markets and economic competition (Raveyre 2005, Fayolle 2005, Lefresne and Sauviat 2008). It is an organization conscious use of permanent personnel reductions in an attempt to improve its efficiency and/or effectiveness (Cascio, 1993, Appelbaum, Close, Klasa, 1999, Freeman, 1999). Thus in various ways depending on the period and country in question, different management strategies have been applied in order to adjust human resources to company configurations and new work organisation systems.

In particular, Steel industry has been engaged for a very long time in a downsizing process which has deeply transformed social and industrial relations, work and employment management. Once, these industry was owned and managed by big national groups (sometimes public) and employed a lot of workers at different levels of qualification. Now, a large movement of concentration leads to the emergence of transnational leader. Steel industry has become more and more a footloose industry, with high technological level.

In this context, age emerges as a criterion in decision-making and the selection of employees to be dismissed. The age management represents now the main way – and the cheapest one in the short term– to reduce and optimize the firm workforce, but also a crucial issue for the preservation of knowledge and skills, required by the activity. Supported to a considerable degree by government employment policy measures, the management of downsizing can be regarded in many cases as management by age. After several downsizing operations, firms must adopt now more flexible strategies which integrate the aging of workforce (with the retirement of baby- boom generation), and the question of transmission of skills.

Numerous studies have investigated on organizational change and on different means to improve and optimize organizational efficiency. Specially, the question of efficiency of the decision to proceed to a downsizing (Appelbaum, Close, Klasa, 1999) and the conditions of these effectiveness on firm performances (Cascio, 1993, Chadwick and al., 2004, McKinley, 1995) have been investigated. Others studies pointed out the effects of downsizing on individuals, particularly the “survivor syndrome” (Isabella, 1989, Maertz and al., 2010), on organizational climate.

However, few investigations treat the downsizing process as a recurrent event in some organization, which tends to affect structure and employment practices. In deed, the majority of studies considers downsizing as a special event, which belongs to the short term. The mid- or long- term effects on the structure (Freeman, 1999) are neglected. It doesn't represent anymore a special event, but it tends to be a recurrent mean to proceed to

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adjustment and change. Corporate restructurings have become a 'commonplace' indeed almost a 'natural' phenomenon and large companies are now '*permanently engaged in restructuring*' (Raveyre, 2005), to the point where it is possible to speak of restructuring processes. Whereas most writing emphasizes either the methods by which organizations reduce their size, there has been relatively little investigation about the links between downsizing and restructuring defined as a organizational redesign in a long term perspective. A long term perspective is so very useful to understand how firms and organizations manage organizational change by reducing workforce and how does it affect firm structure and the work system.

Second, the main literature tends to treat the problematic of downsizing, with the single focus of the firm. At the different stapes of the downsizing process, several heterogeneous resources are mobilized: public actors, financial actors and shareholders. Governments are said to have encouraged and taken part in these changes, which have given rise to significant tangible and intangible investments. New competitive context contributes to change the nature of actors engaged in these process. Until a few years ago, the management of downsizing appeared to be a process organised by company management but in which the state, and others actors as shareholders, in various guises and in various ways, played an important role. In recent years, it has withdrawn and financial actors have become the principal players, leading to the adoption of a least cost strategy.

In this perspective, organizations, and specially work system, are considered as institutional entities: work groups, departments, plants, enterprises, public agencies. (Sorge, 2004). It doesn't mean that institutions are external factors which affect organization and work system. Work system and Human Resource Management are embedded into a national and international wide of social relation they contribute to change. Downsizing practices tends so to change the nature of these relations, inside the organization but also in the whole society. Then, downsizing can be understood more broadly as a long process which influences the wage-labour nexus in society and the management of work and employment (Rolle 2004, 2006) in firms.

French and Japanese firms have been characterised by the important literature by the peculiar employment system and practices, and the dominance of Internal Labour Markets¹ (Doeringer and Piore 1971). Organizations define their own work system which tends to privilege long life career, internal mobility and training. In these employment systems, institutions play a decisive role in the organisation and structuring of the productive system (Whitley, 1994, Lanciano-Morandat, Maurice, Silvestre, Nohara, 1998).

The main purpose of this paper is to investigate the assumption of the change of these peculiar employment systems in a context of institutional change and globalization. The question is how age management used to proceed to employment adjustment affects the specific work organization of Japanese and French firms, and finally contributes to the destabilization and the reconfiguration of internal labour markets. We outline and compare the evolution of these age-based management strategies and practices in two steel companies, one French, the other Japanese. Both of them have been involved since the mid-1970s in permanent downsizing processes. This analysis should enable us to examine the different ways in which firms manage the downsizing process in a long term perspective, and the transmission of knowledge and expertise from one generation to another in this difficult environment (Le Roux, 2006, Gautié et al. 2006, Lanciano-Morandat, Maurice, Silvestre, Nohara, 1998). We will consider changes that have occurred in traditional institutionalised work management, and finally in internal labour markets (Doering and Piore 1971, Nohara and Silvestre 1986, Marsden 1999, Lefresne 2002, Gautié 2004) in periods of economic crisis.

¹ ILM, later

We decide to focus on a heavy industry with a long tradition, despite the fact that researchers in the social sciences today tend to be more interested in high-technology industries. For the last 30 years, the steel industry has been engaged in a transition from a method of production based on a workforce for whom physical strength was essential to one that makes extensive use of robots and in which the machinery has evolved to such an extent that a high level of technical knowledge and expertise is now required. It is a cyclical industry, but one in which the periods of growth and recession have until recently been predictable and could therefore be anticipated. However, ever since the advent of strong competition from emerging countries with lower labour costs than those in France and Japan, this type of prediction has become more uncertain. The most recent crisis in 2009 has hit the industry hard in both France and Japan, causing the two plants under investigation here to carry out new adjustments.

These two plants have a parallel history. They both belong to the steel manufacturing group that dominates the sector in their respective countries. They were both built on the coast in the early 1970s and a large part of their workforce was transferred from the interior of the country to work in the new plants, which were then ultra-modern. While their early histories are very similar, their trajectories have diverged over time.

1- Downsizing and age Human Resource Management

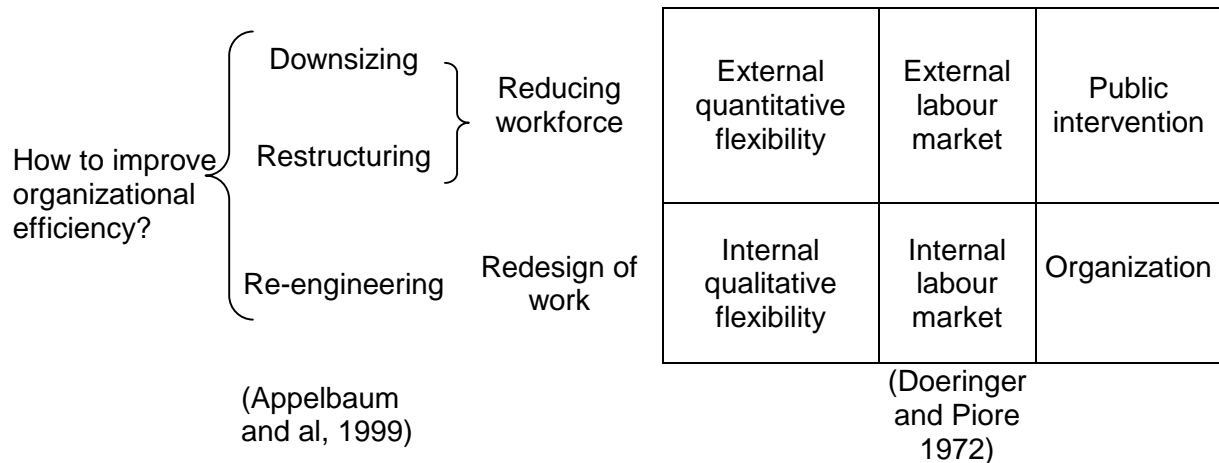
1-1. How to proceed to improve organizational efficiency? Two generic strategies

Firms engaged in a process to improve organizational efficiency adopt different kinds of human resource management strategies. These strategies are linked directly to the aims of the organizational change and the external resources available to the firm, notably in terms of public programmes. The strategy involves applying the cost reduction targets within the company and adapting work and workforce organisation to the company's overall strategy. Consequently, the downsizing plan must both fulfil the short-term objectives that are the reason for reorganising work and employment and maintain the company's medium and long-term prospects, particularly during periods of economic downturn. Thus it is important to consider the practices associated with downsizing and the adjustment of employment to firms' economic situation over a sufficiently long period in order to take into account the effects of decisions taken at a specific point in time and assess the effectiveness of the measures taken.

Different generic strategies have been identified by the literature to conduct employment adjustment:

- External quantitative flexibility, the aim of which is to reduce the stock of human resources recruited during earlier periods. In these cases, several studies make the difference between downsizing, which corresponds to a response to a situation of declining market, and restructuring in case of growing or shifting market strategy² (Appelbaum and al., 1999, Leatt and al, 1997). However, for Freeman, downsizing is not necessarily indicative of decline or mal-adaptation. (Freeman, 1999)
- and internal qualitative flexibility, the aim of which is to change the internal employment structure on the basis of forecasts and strategic positioning. It corresponds to "redesign", which includes "change in work processes, in relationships and coordination among individuals, teams, departments, or tasks, or in specification or distribution of tasks." (Freeman, op. cit.)

² Anglosaxon literature makes the distinction while French one not. Restructuring can represent both reduce workforce and redesign; the term is also linked to public intervention dispositives.



These two generic strategies tend to use different resources. The reducing workforce strategy consists to externalise the redundant workforce on the external labour market on the firm. Different possibilities exist: using part-time employees instead of permanent ones, lay offs, early retirement for some individuals, etc... In these case, the State in its capacity as regulator of labour market and of the arrangements for managing pension benefits and compensation is mobilized. It determines the conditions under which workers can be made redundant, the compensation they receive, unemployment benefits, training grants for firms, the modes of payment, activation date for pension rights etc. Similarly, the state can support firms' strategies by putting in place measures to accelerate workers' retirement. Otherwise, internal qualitative flexibility consists to operate changes in the internal labour market; organization is the main actor to proceed to a new job rotation, job hierarchy.

In the context of an increasingly uncertain economic environment the task of designing and implementing managerial policy is becoming more and more complex. The ability of managers to choose from a range of potential solutions to questions of workforce planning seems to have increasing enormously (Grisham and al., 2001). These two forms of flexibility doesn't represent different strategies of employment adjustment, but are usually combined and involve selecting those groups in the employed population that will be the principal target of any measures taken and will be destined to leave the firm. Precisely, Freeman shows that these two strategies are linked and interdependent (Freeman, 1999). Freeman emphasizes two different cases:

- when downsizing drives the redesign of work and obliges organisation to proceed to change in order to do the same thing with fewer people.
- Otherwise, redesign strategy may conduct the firm to reduce the workforce.

1-2. How to proceed to the selection of redundant workforce? Organizational change as an age management

Thus company managements have two main means of carrying out this selection process and identifying who is to be made redundant or to leave the company. The selection is determined by the reasons for the restructuring and the time management has to make its decisions, as well as by the external resources and public programmes available to the firm:

- The restructuring may be carried out in order to refocus a company's operations on its core business. Such a strategy requires management to have given thought to the firm's future technological trajectory and mode of work organisation and to know its employees' current capabilities and the potential for development. In this case, the selection process focuses on those individuals with the competences closest to those being sought.

- Managing restructuring on the basis of age (Godelier, 2007) generally offers many more advantages and is the variable favoured by corporate managers. It places age at the heart of the arrangements for managing overmanning; more specifically, it makes the oldest and therefore probably the most experienced workers the main adjustment variable. This strategy involves less linkage with the firm's overall policy than the previous one and less need to anticipate the evolution of the crisis.

After all, the departure of large numbers of workers in the oldest age group makes it possible to fulfil many of the objectives of a restructuring exercise:

- the cost reduction targets are more easily attained because the target population is precisely the one that is most expensive for the firm to employ;
- the departure of the oldest employees may be an opportunity to introduce greater internal qualitative flexibility. A younger population is likely to be better trained and to adapt more readily to technical progress (Gautié et al. 2006);
- the lines of authority and responsibility are shortened, which may create more opportunities for promoting younger employees to positions of responsibility;
- finally, age-based management enables company managements to minimise trade union reaction and reduce the risk of a deterioration in the firm's industrial relations climate.

These different ways of reducing labour costs have been used in both countries in their restructuring processes. Nevertheless, as maximising financial profitability has become the overriding concern, so the time available to management for planning has been reduced and firms are increasingly being encouraged to adapt age-based management. This new context also concerns the public regulatory bodies, which are also subject to increased financial constraints. They have reduced the support they give firms in order to reduce the cost of restructurings (tendency to increase the age at which employees can be made redundant/take retirement, to make it more difficult to have applications accepted and to reduce the level of financial support provided) (Benallah et al., 2009).

1-3. ...towards a destabilisation of boundaries of internal markets and work systems

The age-based management of downsizing processes raises the question of firms' human resource management policies and modes of intergenerational knowledge transfer (Le Roux, 2006, Gautié et al. 2006) and gives a few indications about the evolution of internal labour markets and its boundaries. After all, over and above the management of overstaffing, those policies have a particular impact on recruitment strategies, training activities and the adaptation of the workforce to the changes taking place in the firm.

French and Japanese firms are used to be characterised by the strength of their internal labour markets (Doeringer and Piore 1971), particularly because of their management of labour mobility and the level of deferred wages. Internal labor markets can be defined as "an administrative unit within a firm in which pricing and allocation of labor is governed by a set of administrative rules and procedures". (Doeringer, Piore, op.cit) The remainder of jobs within the ILM is filled by the promotion or transfer of workers who have already gained entry. At the opposite, external labour market corresponds to a work organisation regulated by market rules (inter-firm mobility, recruitments at every level of the job hierarchy, wages fixed on national and international standards, etc.) .

Thus before the crisis, Japanese firms used to recruit, once a year, a cohort of young people selected on the basis of the reputation of the educational establishments from which they had graduated. These young recruits were regarded as a standard product, and the generic knowledge and expertise they were expected to acquire were specified throughout the course of their professional lives in accordance with their employers' training needs and dispensed through explicit vocational training programmes and on-the-job training. In both countries, mobility was internal and, for the clerical, technical and supervisory staff category

in France, was restricted to the site at which they worked, while in Japan it extended to subsidiaries. Seniority was the essential criterion for promotion. In Japan, knowledge transfer was codified in accordance with strict rules laid down by company management and took place in a systematic fashion. In France, firms hired a product that had already been graded by the education system and adapted it as their requirements evolved. The transmission of professional practices (apprenticeship) took place tacitly and informally on the basis of the assumed relationship between young and old without intervention on the part of management (Lanciano et al., 1998). Steelmaking companies belonged to this industrial world where, regardless of how their efficiency evolved, older workers could be relatively confident that their earnings would continue to rise until the statutory retirement age.

Successive crises have radically changed these internal markets and destabilised them. The growing use of temporary employment practices, external recruitment of specialist staff would reduce the strength of labour markets in favour of the external one. In some countries, 'the early departure culture' (Guillemard 2003) has spread to the entire firm, making workers' age and seniority no longer a source of accumulated experience but the primary indicator of departure to the external labour market or into retirement.

Numerous studies investigate the question of the permanence of internal employment practices (Grimshaw and al., 2001, Gautié, 2004). The assumption of the destabilization of ILM doesn't consist to deny the existence of ILM, but rather to observe the new boundaries between external and internal labour markets (Cappeli, 1997, Grimshaw and Ribery, 1998): Markets rules would be also now present even in organizations and employment system dominated before by the logics of internal labour markets. Thus Florence Dufresne (2003) shows that external markets have 'embedded' themselves within internal markets and introduced competition among employees within firms. Luc Behagen and Jérôme Gautié (2006) show how it is in firms' interest that older workers who used to be in an internal labour market are redeployed to a new area of activity and hence into the transitional market (Gazier, 1998).

Our analysis should reveal how the internal labour markets in the two steelmaking companies have evolved. The succession of downsizing processes and the use of mixed strategy combining a reducing workforce and a redesign, the focus of these mixed strategies on the age criterion should contribute to shift the work system of organizations and the relation between internal and external labour market.

2- Downsizing processes in France and Japan: differences in pace and focus

The two steel plants were set up under similar conditions. They both belong to their countries' national champions in the sector. Technological developments, the decision to stop using the local iron ore (known as *minette* in Lorraine) in the production of steel and the high cost of coal mined in France compared with that extracted in emerging countries led these groups gradually to shut down their old plants in favour of new, more modern ones located on the coast ('steel on sea') so that the exported raw materials could be unloaded at a nearby port. The two plants date from the beginning of the 1970s and were built in 'empty spaces' without any industrial tradition that had until then been given over to agriculture and fishing. The local labour force was made up largely of self-employed craftsmen with no experience of wage work. Although the sites were developed in order to provide the modern plant and equipment required for new projects, many of the workers from the old plants were 'deported' to the new centres, which meant they could be brought into operation quickly. Another characteristic shared by the two plants is that since they were built they have undergone a series of restructurings that justify our description of the phenomenon or process as 'commonplace'.

The histories of the two plants at Fos-sur-Mer and Kimitsu in Japan³ are marked by extensive and repeated downsizing processes. However, their integration into specific national industrial systems explains the persistence of differences in the origin and nature of these processes. (Sorge, 2004)

2-3. Fos-sur-Mer: a steel plant shaped by the conditions under which it was established and changes in its capital structure

The restructuring processes that have characterised the history of the Fos-sur-Mer plant are a direct result of the conditions under which it was set up in 1973 and of the changes in the company's status with the gradual withdrawal of the state, globalisation and the financialisation of its capital structure.

The Fos-sur-Mer plant dates from 1972 and its construction was part of an ambitious industrial project that was national in scale. After the post-war reconstruction period, the aim was to strengthen France's industrial champions and to equip them with modern plant and equipment. The Fos-sur-mer project also fell within the 'industrialising industry' paradigm, according to which the development of heavy industry leads to the creation of new light industries; in this case, the government was looking for a testing ground to put into practice its new doctrine of 'regional development' (Bisanti, 2003). Just a few years before the first oil shock, the plan's ambitions in terms of productive capacities were considerable and the aim, in constructing a plant on the coast, in imitation of the Japanese steel industry, was to reinvigorate the French iron and steel industry, which had traditionally been located in Lorraine in eastern France. Thus both the state and the company were 'thinking big': the plant was to have three blast furnaces, a coking plant and a hot and cold rolling mill producing an annual output of 3 million tonnes of steel. The workforce was to number 3500 direct and of the order of 2000 indirect employees. However, scarcely had the plant been partially completed when the oil crisis suddenly erupted, calling into question the original plan and its ambitious aims: the third blast furnace was never built and the cold rolling mill was abandoned. The planned Manning levels were never to match actual requirements.

The Fos-sur-mer site perfectly illustrates the major changes this heavy industry has been through in France. Firm F is, after all, the result of the many divisions and mergers that have taken place in the French iron and steel industry since the end of the Second World War. These restructurings were initiated by the state as part of its efforts to build up a coherent national system, if not a single national champion. The various companies that emerged from the 'ironmasters' were still in competition with each other when firm F was set up in Fos as a production cooperative working for three major European groups. From this date onwards, two major periods can be identified: the first one, up to 2006, was characterised by industrial downsizing, the second, from 2006 onwards, by financial downsizing.

Within the first period, we will focus on two sub-periods:

- from 1978 to 1995, the period of greatest state influence. In 1978, the state took control of firm F. In 1982, it nationalised the two French iron and steel groups and merged them in 1987. Through the many changes it initiated and the holdings it took, the state settled the firm's debts and took responsibility for managing the effects of the various recessions and industrial crises. The restructurings were as much a response to the various crises the industry went through during this period as a reflection of the various national industrial strategies.
- In 1995, firm F was privatised and the Fos plant was incorporated into the flat carbon division. It is the main plant in the flat products division and produces solely for the group of which it is a part. In 2002, the renamed group merged with a Spanish and a Luxembourg company to form a new group, the largest steel producer in the world. Having been a national champion, it had become part of a European group.

³ For reasons of confidentiality, we will call the French plant firm F and the Japanese plant firm J.

The financial downsizing began when firm F was acquired by an Indian group and became firm F-I. The F-I group, whose majority shareholder is an Indian industrialist, owns more than 60 production plants throughout the world. The Fos plant is in direct competition with the group's other plants, and the drive to achieve the lowest possible cost has become the main cause of the restructurings.

During the period of industrial downsizing, the production facilities, which were some of the most modern in Europe, were continuously being modernised. The high point came in 1982, with the abandonment of the ingot mill and the adoption of continuous casting, which equated to the introduction of a fifth shift. This technical innovation was followed by others, which led to a series of reorganisations of the work process. Production procedures became automated; as a result, the heavy physical work associated with earlier technologies disappeared, to be replaced by monitoring and control tasks, usually carried out at a computer screen.

2-4. The Kimitsu plant: an ultra-modern Japanese champion sensitive to cyclical fluctuations and integrated into the Japanese industrial system

The history of the Japanese Kimitsu plant is significantly different from that of the Fos plant in France. Kimitsu, built in 1968, is located at the mouth of Tokyo Bay and is one of the second generation of innovative plants built on the coast. It is part of the Japanese J group, the second largest steel producer in the world, after the F-I group. It is now one of the largest Japanese steel plants, producing 10,000,000 tonnes of steel a year. It has two blast furnaces and employs 3,500 people, with a further 6,000 working for subcontractors.

Two of the most striking characteristics of the Japanese iron and steel industry and the Kimitsu plant are the absence of mineral resources and the very high degree of sensitivity to the global economic situation. These are two of the main factors in the development of plants making use of innovative technologies.

In contrast to France, Japan has no mineral resources and therefore has to import the coal required to produce steel. In order to counteract the absence of mineral resources, steelmaking in Japan developed from the 1950s onwards through the construction of plants using the most advanced and innovative technologies. Japan was the first country to adopt the model in which integrated steel plants, such as the Kimitsu plant, are built on reclaimed land at the far end of a bay that can be accessed by large ore carriers. The model then spread throughout the world, as can be seen in the case of the Fos plant.

Furthermore, steelmaking in Japan has long been characterised by a very high degree of integration with the Japanese industrial system. The post-war period saw the Japanese steel industry develop very rapidly and very efficiently. The impetus for its development came from the state and private interests working together in the name of economic voluntarism and nationalism. Their objective was to support the growth of Japanese manufacturing industry, to contribute to the country's post-war economic reconstruction and to respond to the economic imperialism that was manifesting itself in Japan. The industry's development was characterised by a very high level of integration with the rest of the Japanese industrial system. It developed and continues to maintain very close links with its customers, particularly in the automotive industry. Production processes have long been designed by taking account at a very early stage of specific requests made by customers, the vast majority of whom are Japanese. The involvement of the state and the public authorities does not take the forms of direct capital holdings, as it does in France; however, the steel industry is strongly represented within the powerful Ministry of Economy, Trade and Industry and is protected by the large subsidies that are granted in order to support this strategic sector of Japanese capitalism.

This particular configuration of sensitivity to the global economic situation and a high level of integration with the Japanese industrial system has not protected the Kimitsu plant from economic crises and restructurings. As in the case of Fos-sur-Mer, the plant's history is

punctuated by recurrent crises that have led to extensive restructuring. Nevertheless, in the case of the Japanese plants, these restructurings have resulted largely from deteriorations in the global and/or Japanese economic situation, including the two oil shocks and the Plaza agreements, which had a seriously adverse effect on the whole of the Japanese economy in the mid-1980s.

These crises repeatedly forced the company management to implement major changes to production processes and work organisation. The company and the Kimitsu plant were particularly affected by extensive and recurrent restructurings from the 1980s onwards. The first restructuring took place in 1985, at the time of the Plaza agreements that seriously overvalued the Japanese currency and severely reduced the competitiveness of the whole of the Japanese manufacturing sector. The second took place in the 1990s, during the period of economic stagnation. There has been a constant tendency to rationalise activity at the plant in the course of successive crises. The first objective of the strategy implemented by the company as it tried to adjust to changes in the steel industry's economic situation after the 1980s was to close inefficient plants and increase productivity by investing in modern facilities, thereby lowering costs. In particular, the medium-term plan drawn up in 1987 triggered a large-scale rationalisation programme. According to this plan, 5 of the 15 blast furnaces operated by company J at the time had to be closed down. Since then, the company has operated 10 blast furnaces at six sites, three of them at Kimitsu. The period between 1987 and 1993 was characterised by successive shutdowns of blast furnaces, the concentration of production facilities and a painful reduction in the size of the workforce. Finally, the tendency towards concentration that has been at work globally in the steel industry since the beginning of the new century and which has led to the emergence of large international groups (such as Arcelor Mittal) has played out in a fairly specific way in the Japanese steel industry. The concentration of capital has taken place strictly within Japan's national boundaries, with the Japanese steel firms gathered together under the umbrella of a holding company. Under strong government pressure, the four main Japanese steel firms formed themselves in 2002 into a wholly Japanese owned holding company. On the other hand, the first decade of the 21st century saw a change in the close ties between the steel and automotive industries, and Nissan in particular. Up to this point, the steel industry had worked for the automotive industry on the basis of stable, long-term contracts. However, the new management at Nissan imposed new competitive margins, forcing the steelmakers to reduce costs once again.

Ever since they were first set up, these two firms have been engaged in continuous restructuring processes. However, the causes of these restructurings are different. Although the international competitive environment certainly played its part, those carried out in France were responses to changes in the company's capital structure and industrial strategy and, more recently, the globalisation of its shareholders. The Japanese company has not experienced any significant changes in its capital composition; in this case, the different downsizing were responses to macroeconomic shocks affecting the Japanese economy as a whole. These two downsizing trajectories recently converged when the 2009 crisis erupted, affecting both companies in similar ways. The sharp reduction in activity and order books – which became apparent at a very early stage of the crisis – caused both companies to speed up cyclical and structural adjustment measures.

3- Age-based management: a tool used in downsizing

3-3. Changes in size of workforce

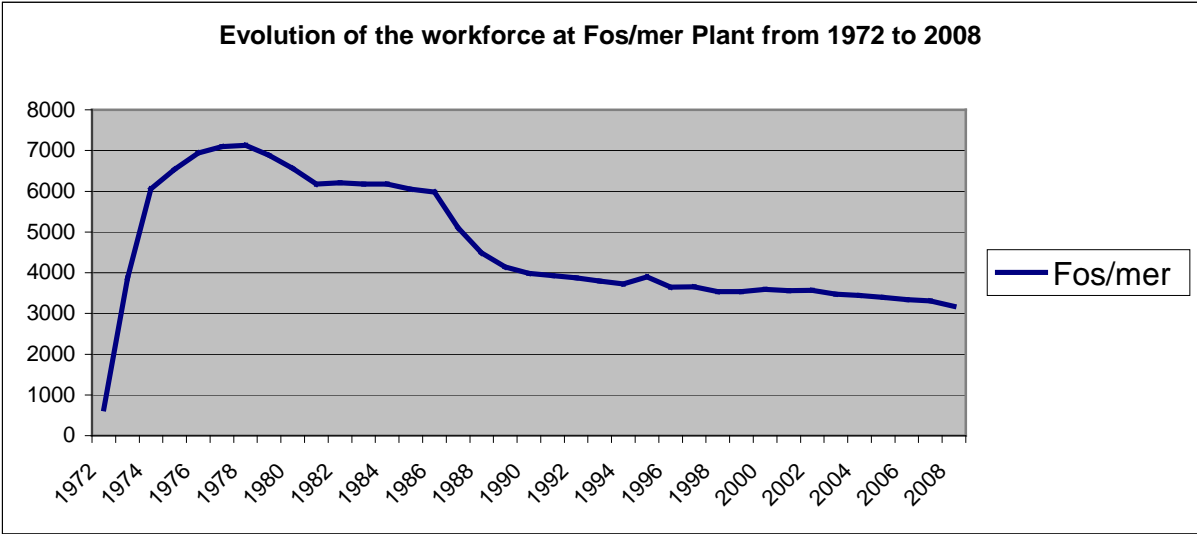
Both Japanese and French plants face to an unstable environment which obliges it to adapt and to proceed to employment adjustment. These downsizing processes has been conduct in different ways. The French plant has been focused on constant reduction of workforce which obliges it to proceed to several change in the work organization. The Japanese plant

has favoured redesign measures which have permitted to stabilize the workforce in proceeding to important organizational change.

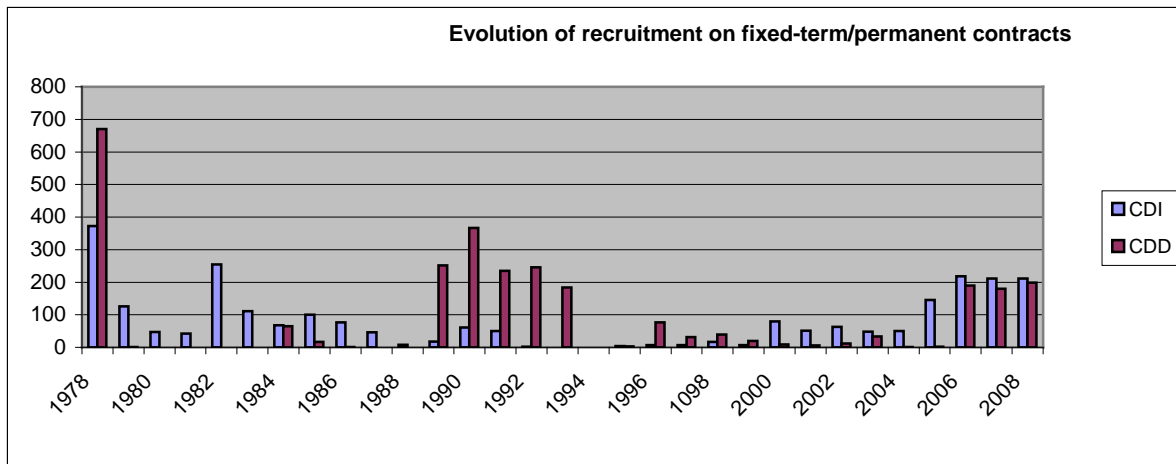
3-1-1. Constant reduction in employment at Fos

The evolution of employment levels at the Fos plant since it was first established clearly reveals the sudden change in strategy caused by the crisis and the reconfiguration of the site and its production capacity. The period following the plant's construction naturally saw an increase in employment levels. Between 1972 and 1978, the number of employees increased more than tenfold. On the other hand, the effects of the 1973 oil shock and the reconfiguration of the site did not make themselves felt until later, and it was some time before employment levels began to fall. However, from 1978 onwards, the size of the workforce was to be in continuous decline, at different rates depending on the period. By 2008, the plant was employing slightly more than 3000 people, less than in 1973, the first year of operation, and virtually half the number of people employed in 1978. Overall, the effects of forecasting errors were always to be the explanation for the continuous reduction in employment levels from that date onwards.

The high aspirations that accompanied the construction of the plant were made possible during the early years of its operation by the transfer of experienced workers from Lorraine (in the 1970s they accounted for two thirds of the workforce) and the recruitment on permanent contracts of unskilled and inexperienced young workers from the Fos area. The transfers of workers from Lorraine were to decline gradually without stopping altogether; particular peaks coincided with the closure of some of the company's other plants.

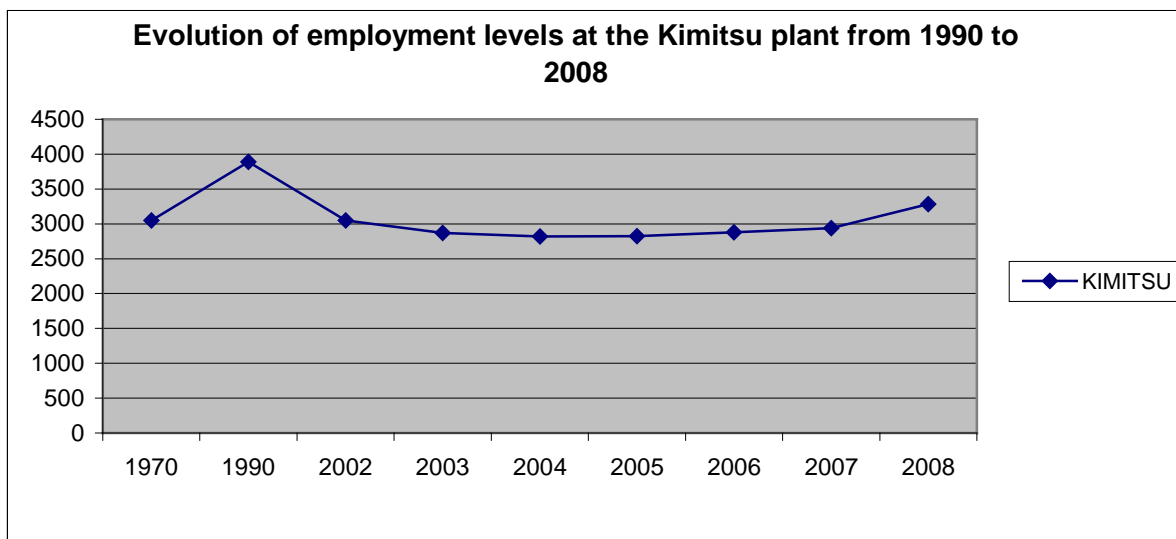


Workers were recruited on fixed-term contracts during the start-up phase in 1978 and between 1990 and 1994 in order to replace employees originally from Lorraine who were retiring. From 2006 onwards, recruitment on fixed-term contracts took place simultaneously with the recruitment of permanent staff in order to limit risks in the event of recession. This slight increase in recruitment coincided with the acquisition of Arcelor by Mittal.



3-1-2. More stable employment levels at Kimitsu

Employment levels at the Kimitsu plant are the same as they were when it first opened. Nevertheless, the 1990s saw large numbers of compulsory redundancies, which took employment levels back to what they were when the plant first opened. Although pressure to reduce employment levels has certainly been one of the factors driving the restructurings in Japan, their main objective has been to rationalise work organisation and production processes. Workforce size has been stabilised, but its structure has been considerably altered over time. Moreover, in contrast to Fos, the firm has not stopped recruiting at any time, except at a few particularly critical junctures.



Thus the reductions in employment levels and the various processes of work rationalisation are a recurrent feature and constituent element of these two firms' employment management policies. Particularly in the case of the Fos plant, the objective of employment management since the plant was opened has been to deal with the overmanning caused by inaccurate initial forecasts. At the Kimitsu plant, employment management has mainly involved organising and rationalising the work process in order to cope with turbulence in the Japanese economy. In both cases, implementation of these restructuring processes and employment management practices has been based on management by age.

3-4. Management of employment levels by age

When they were set up, both plants recruited large numbers of relatively unskilled workers from the same age group (born in the early 1950s). These young people were recruited straight from school and trained on the job by the older workers transferred from the old plants. Their age pyramids were similar to that described as a 'squashed pear' in the literature (Godelier 2007), in which recruitment takes place only when the firm is first set up but dries up subsequently. Depending on the period and in different ways, management strategy at the two plants has been to alternate measures aimed at reducing the surplus of older workers while at the same time recruiting young workers with other measures intended to maintain the status quo. They have used different methods and drawn on different external resources.

3-1. The management of surplus labour through early retirement schemes for older workers and the individualisation of career management

From the early 1970s at national level and from 1978 onwards at Fos, the French steelmaking industry was forced to make drastic reductions in its employment levels if it was to survive in the face of European competition. To that end, the company's managers have throughout the plant's history systematically favoured the use of early retirement of their oldest employees. Early retirement has been preferred to redundancy programmes and has enabled management essentially to solve the problem of overmanning (Atlan, Simon, 2000). The early retirement schemes have been advantageous for both employees and the company. Until 1990, the schemes were largely funded by the state. At the same time, new employees were recruited only on an individual basis. Faced with this management strategy, the unions adopted a 'follow-my-leader' position: it was difficult for them to go against the wishes of workers already in post, even though, by not opposing the early retirement schemes, they were relinquishing any attempt to defend future employees and the local area. Until 1990, at Fos just as in the rest of the country, the various measures co-funded by the state, including the *Conventions Générales de Protection Sociale* (general social protection agreements), the *Plan de Sauvegardes* (recovery plan) and others, enabled manual workers and employees in the clerical, technical and supervisory staff category to retire at 50, with engineers drawing a pension of 92% of their previous salary.⁴ This early retirement policy had the advantage of sharply reducing the company's wages bill while at the same time enabling management to increase the number of promotion opportunities, which made the changes in work organisation acceptable for the remaining employees and improved the industrial relations climate within the company. On the other hand, the financial support provided by the state came with certain conditions attached. In particular, the company had to use the state manpower services when recruiting.

In 1990, the public authorities cut the level of financial support, which put a halt to the large-scale retirement programmes for workers aged 50 and over. These cuts caused the firm to change its practices.

- From this point onwards, the firm began to make use of *plans sociaux* (redundancy programmes), which were more restrictive and less advantageous for employees. It put in place a strategy of outplacement and spin-offs within the region based on companies set up for that purpose by the group (so-called SODIE, or *sociétés pour le développement de l'industrie et de l'emploi*), which incidentally had very little effect (Centlivre, 2001).
- Above all, however, the firm made a significant and innovative change to its mode of employee management. Indeed, it was in the steel industry that the shift from job-based to

⁴ Atlan, the Usinor HR director at the time, notes that 'since Usinor had made a loss in 1993, pay had been frozen; but during the same year, those who had taken early retirement had seen their benefits rise by 3% because they were indexed to the national minimum wage ...'.

competence-based human resource management originated, before being diffused nationally. In the job-based system, a worker's certified skills were nationally recognised and qualified him to hold a job in any steel plant in France; in the competence-based system, on the other hand, the competences in question were those required by individual firms. Whereas the previous system had been based on a collective approach and sought to integrate workers into the external labour market (national-level certification), the new system targeted the individual and sought to make the internal labour market more flexible (firm-based certification). In the new system, employees had to take charge of their own professional development and be able, if need be, to find themselves employment in the external market. They alone were responsible for their careers. Previously, the boss of the company that had hired them had a responsibility for their future and for that of the local industrial fabric; now employees were 'independent' operators, working within an organisation over which they had no control. The tools provided by the company management were supposed to help employees effect this change, but as the certifiers of their own competence within the plant. This strategy was undoubtedly helpful to management, since it encouraged internal mobility of labour and the diffusion of knowledge and expertise and increased the flexibility of the production system. However, questions must be asked about its value in a period of crisis and contraction of the productive system and the wage bill. It enabled the group management to compensate for the reduction in the number of promotion opportunities caused by the decline in early retirement by offering promotion to selected individuals (Gavini, 1993).

Finally, the crisis management principle of pensioning off the oldest employees has once again been put into practice in the recent crisis. Having recruited new workers following the acquisition of the company, the international group management, driven by financial concerns, adopted a drastic labour cost reduction strategy. The plan specified the number of jobs to be lost between 2009 and the spring of 2010. It mainly affects blue-collar workers. In order to meet its target, the management of the French plant opted once again for an age-based measure that offers voluntary early retirement on very advantageous terms to blue-collar workers aged 56 and over. In order to limit the risk of future redundancies, the plant manager has extended the scheme to all employees. The scheme has been so successful that when it closes in February 2010, more than 15% of the workforce will have opted for early retirement and the group management's targets will have very largely been met. This new scheme is absolutely consistent with previous ones in that it adopts age as a criterion for reducing wage costs. On the other hand, unlike previous schemes, the present one does not involve any state support or measures linked to a social plan. It is funded entirely by the company, which therefore has complete freedom to determine the targets.

Thus despite changes in the rationale of the restructurings, in capital structure and in the nature of the crises to be dealt with, comparison of the ways of managing restructuring at the Fos plant over time reveals a considerable degree of continuity in the management of overmanning. More specifically, workers have been strongly encouraged to leave the company and take advantage of their pension entitlements. By taking such measures, the company has automatically and effectively reduced its wages bill. At the same time, however, these measures have deprived the company and its human resources department of the ability to adopt a forward-looking approach to the management of employment. On each occasion, the measures taken have adopted age as the sole criterion, with all employees meeting that criterion being able to take advantage of the programmes put in place. Despite the differences between them, all these programmes have prevented the firm from selecting candidates for severance on the basis of other criteria, such as the nature of work organisation, skill levels and future prospects. In fact, human resource management has here been reduced to a simple tool for managing entries and exits and a set of tools for use by employees. As a result, it has lost its workforce management function. The competence-based approach adopted from 1990 onwards has its origins in the same principle. What it amounts to, after all, is a transfer of responsibility for career management to

the individual worker, with the firm, through its HR department, offloading the task of organising employment.

3-2. The case of the Kimitsu plant

The restructuring exercises carried out at the Kimitsu plant on Tokyo Bay also took age as the criterion, but with different objectives. The company management was always seeking to maintain the Japanese social compromise of lifetime employment and thus to minimise compulsory redundancies. Consequently, working in direct partnership with the company union, management put in place a number of measures that marked an innovative departure from standard practice in Japanese manufacturing and the steel industry, focusing in particular on older workers. (Nitta, 1995).

The aims were to increase internal flexibility through work rationalisation; in particular, young workers were to be favoured over their older colleagues, on the one hand because they were regarded as more amenable to change and, on the other, in order to reduce the firm's wages bill. Thus the measures taken were focused in particular on the modes of remuneration for older workers and their conditions of employment.

Employee remuneration was systematically and significantly reduced from age 55 onwards, in order to reduce the company's wages bill. At the same time, the practice known as 'shukko', that is the transfer of older workers to a subcontracting firm, was established. It involves the secondment of workers to another, generally smaller company, but without their contracts with the original employer being rescinded. Employees continue to draw their wages and the bonuses paid by the original employer; for its part, the host firm benefits from the arrival of the new workers and pays a contribution in exchange. Thus the aim is to filter out the least productive and profitable employees while stopping short of expelling them directly from the workings of the internal labour market.

The procedures are not just monetary or economic but also demand extensive efforts and energy from the parent company. For example, it is necessary to find a company that will not only accept such a loaned employee but will also provide the services necessary to reduce employee dissatisfaction and indirectly monitor job performance for evaluation purposes, since the parent company's employment system is still in effect functioning. Thus the outlay on human resource management is considerable, in terms of both cost and effort.

The employee loan process is not without its problems for the person who is being loaned. Even though income is guaranteed, there is a real possibility of being assigned work different from the previous job. The disruption of human relationships causes great pain. The work place may also become less desirable. There may also be potential human resource management problems for the companies accepting these loaned employees, especially if they maintain a loyalty to their former companies.

In spite of these problems, a large scale loan procedure was chosen as a last resort in order to avoid dismissal and "voluntary retirement." Many of the workers concerned were in their 50s, and they were rather senior workers. The average age within the company was about 42 for the employees who worked at the site, however it was about 52 for those who were loaned from the major companies. There are several reasons for such an age distinction. Firstly, many of this age group were in leadership positions, which were to be given to younger employees as promotional opportunities. Secondly, the employee age distribution was uneven due to the maturation process after the 1970s and the reduction in recruitment (small numbers of employees in their 30s were hired). Thus if younger workers had been loaned, skills would not have been properly transferred to the next generation. However, older workers earn the highest wages and therefore there tends to be a large gap between previous wages levels and those earned at the new company. Their ability to adapt to a new environment is relatively low. These factors highlight the contradictions associated with the loan process.

In the labour reduction plan which was put into practice in the restructuring that occurred after 1992, some of the loaned workers also transferred their status. That is, they officially retired from their former employer and transferred to employee status at the

company they were loaned to. With this practice, the difference in income is supplemented by a one-off retirement allowance. In this way, their income is guaranteed. If the company they are loaned to finds it difficult to maintain their employment, their previous employer will find another company to which they are loaned yet again. This second round of the loaning process or status transfer is different from the first transfer, since workers loaned in this way lose their employment status with the first company. One criticism is that this practice in effect violates the increase in the retirement age from 55 to 60, that occurs gradually from 1994 to 2004.

The pension reform that fixed the age at which a pension could be drawn at 65 (instead of 60 previously), the strong incentives offered by the public authorities in order to encourage the employment of seniors and the problems associated with the ageing of the working population triggered a change in practices with regard to these works. 'Shukko' tended to produce some perverse effects, particularly in terms of the age situation in both the transferring and receiving companies. It led to the transfer of crucial competences acquired during careers spent in the same firm, while for the subcontracting firms it added to the imbalances in their age pyramids.

4- The consequences of this mode of management for inter-generational knowledge transfer

Both the French and Japanese companies have made constant use of age as a criterion in their downsizing exercises. This strategy is clearly effective in terms of the immediate objective of reducing costs and wages bills. On the other hand, the repeated use of these measures has caused specific problems in relation to medium and long-term objectives. After all, the early retirement of the oldest and often most experienced workers can lead to the loss of the knowledge and expertise that they have built up in the course of their careers. This may in turn destabilise the traditional practices associated with the transmission of crucial competences and expertise and force firms to develop new arrangements for transferring these crucial competences. The departure of large numbers of the employees in possession of this knowledge and expertise obviously does not aid the development of such arrangements and may restrict their effectiveness. Thus the effectiveness of the restructuring processes carried out in the two countries can also be measured by the effectiveness of the arrangements put in place for the transfer of these competences, which leads us to give specific consideration to the practices developed by the two firms F-I and J.

4-1. Transmission by job training reactivated as knowledge codification procedures are launched at Fos.

Traditionally in the steel industry in general and at the Fos plant in particular, new recruits have since the 1970s been hired regardless of category on the basis of a state-recognised qualification (usually a technical diploma of some sort) which also determines their pay grade. Their induction is the responsibility of the HR department, which provides them with general information on the firm and arranges for their generic knowledge to be converted into applied knowledge suited to the firm's needs (vocational training provided by means of classes given by experienced managers within the firm). When they are allocated to a job, the technical supervisory staff in the workshop (foreman and then engineer) put them to work under the supervision of a colleague. This 'master-apprentice' pairing, which echoes the model used in craft industries, is the basis of the on-the-job training. This 'apprenticeship' or 'worker and mate' relationship is not recognised by the human resources department. Nevertheless, it has enabled the plant to function since it was set up by virtue of the transfers of expertise from the Lorraine workers to the young workers recruited locally, which took place right up to the last restructuring in 2009. Its effectiveness prevented successive managements from putting in place a real knowledge management system.

The suddenness of the early retirement scheme and the fact that the technical supervisory staff had no opportunity to identify those employees who were not indispensable to the

production process meant that this 'master-apprentice' relationship is no longer effective. According to the experienced workers, the training courses administered by the HRM department may enable the young recruits to do their jobs when all is going well, but they do not have the necessary skills to deal with the technical problems that frequently occur with ageing machinery and against a background of declining manning levels. Aware of this situation, management has hurriedly started to develop procedures for codifying the knowledge and expertise of those departing workers regarded as 'experts' in a particular sphere and has also reactivated, made official and provided financial support for the master/apprentice system.

There was no real system for codifying and transferring knowledge at Fos before the crisis, mainly because of the division of the management hierarchy into two parts (HRM/technical function). The French system has been put in place hurriedly in response to the rapid departure of skilled workers and out of fear that the plant could no longer be operated. Despite the rush to put it in place, it is by no means certain that it is sufficient or effective at a time when large numbers of experienced workers are leaving.

4-2. Older workers called on to transfer knowledge at Kimitsu.

Traditionally, the transmission of knowledge and expertise in Japanese companies is directly linked to the modes of mobility and career trajectories within firms. The technical departments of Japanese companies are themselves responsible for organising the progress of each young recruit within the company in order to construct their professionalism (Lanciano-Morandat et al., 1998). Consequently, training and knowledge transfer activities are incorporated into the vocational training programmes and the on-the-job training provided for young employees by their older and more experienced colleagues.

Despite the system's effectiveness, the severity of the most recent crisis and the effects of transferring older workers into the peripheral workforce at Kimitsu made it necessary to take more active measures.

The 'shukko' system had enabled the company to reduce its wages bill and to modify the age structure of its workforce. On the other hand, it also entailed the sudden and rapid departure of many workers who possessed crucial knowledge and expertise and who had, until their transfer, been the pillars of the system for transmitting knowledge and expertise to younger, less experienced employees. From 2004 onwards, the company gradually restricted these transfers and put forward another arrangement, known as 'tenseki', whereby older workers were to be reintegrated into the core workforce. In this re-employment system, workers who retire at age 60 are offered a one-year, renewable contract. In 2009, these contracts could be renewed annually until age 63; this upper limit is to be increased to 64 by 2012 and to 65 after 2015, in accordance with the 'new pension law', which gradually raises the age at which pensions can be drawn. Pay levels are considerably reduced, since these employees are generally paid between 60 and 70% of their previous salary. On the other hand, the vast majority of them continue to work in the same workshop, carrying out the same functions and holding the same positions. The main objective of this system is to reconstruct and reorganise the spaces and time frames in which the intergenerational transmission of knowledge takes place. The reduction in these employees' pay is justified by the decline in their productivity; their salary now covers only their training and skill transfer activities. The 2009 crisis, which led to a considerable slow-down in activity, also freed up time for organising these training programmes.

5- Towards a restructuring of labour markets in France and Japan ?

Long-term analysis of the employment management systems and the adjustments in terms of skill management helps to observe some evolution in these ILM in France and in Japan in the steel industry. After all, this series of adjustments, their coherence and continuity have

led to changes in the structuring of internal labour markets and in the boundary between the internal markets in these two firms and the external market in France and Japan.

Firstly, the common strategy of targeting downsizing plan at certain categories of personnel is a first indication of destabilisation. After all, the management of employment within an internal market requires long-term investment, the cost of which cannot be measured solely by the pay levels of the oldest workers. The stability of the employment norm, the internal promotion system and low employee mobility outside the internal market mean that, over the years, firms follow the progress of virtually an entire generation. Progression along the various mobility paths depends mainly on seniority. Consequently, when a firm with an internal market has to part with a certain number of employees because of economic difficulties, it is in principle the most recently hired workers who will leave first ('last in first out'). (A. JOLIVET, 2003). Similarly, both firms – and this is particularly evident in the French case – have changed their internal employment management practices, replacing the administrative rules specified and organised at a centralised level with much more individualised arrangements that can absolutely be likened to market mechanisms.

On the other hand, the ways in which the departure of this particular category of employee is organised and the boundaries between the various segments of the labour market reveal certain specificities. Examination of the transitions organised by each company for the employees leaving the internal market reveals that the organising principle of the internal market has been destabilised, although the substitute arrangements put in place obey very different logics.

The measures taken at the Fos plant throughout the period under consideration, and particularly in response to the latest crisis of 2009-2010, were clearly focused on organising the departure of the oldest employees from the internal market and their transition towards the external market or retirement. These employees' 'destinations' have differed depending on the period in question. Sometimes, the company organised and financed their transition into the external labour market through outplacement programmes and the establishment of SODIEs. On other occasions, with assistance from the public authorities or without, as in the current crisis, it organised transitions into inactivity or retirement. Nevertheless, while management in the Anglo-Saxon countries responded by shifting certain employees into the external labour through mass redundancies, the French plants organised transitions from one market to the other. Thus these labour flows, organised on the basis of age, perhaps reveal the existence of transitional labour markets organised in turn by the public authorities or by firms.

The employment and skill management measures implemented at the Kimitsu plant have displayed less continuity. The 'shukko' system involved extending the boundaries of the internal market into subcontracting companies and subsidiaries. Employees transferred to these much smaller companies did indeed retain all the benefits and protections associated with the internal market. However, as we have seen, the use of 'shukko' was a major factor in the deterioration of relations between company J and its subcontractors: by transferring its older workers, it was shifting its excess labour on to these companies, thereby causing imbalances in the age structure of their workforce. Against this background, and faced with the problem of preserving skills, the introduction of the 'Tenseki' system was presented as an advance, in that it seeks to reintegrate into the internal labour market employees who no longer had a place either at the core or the periphery of the company and who were destined to be shifted into the external labour market. Nevertheless, these employees have not been offered stable, well-paid jobs, with career prospects, social benefits and satisfactory working conditions. In other words, they no longer belong to the primary market but are now employed in precarious, poorly paid positions with no promotion prospects that form part of the secondary market (Piore 1978). The company distinguishes between employees on the basis of age but without forcing them to compete with each other as often happens, since

each group performs different tasks. Thus the Japanese case shows that the internal labour market has been destabilised by embedding the external market in the internal market, with age being used as the criterion to select those to be transferred out of the primary market (Lefresne 2002).

Conclusion

Changes in organizations' HR management policies and the strategies and practices they adopt with regard to the labour market may challenge the very basis of a company's industrial relations. In the first downsizing regime, before the wave of rapid downsizing linked to the growing weight of financial actors and shareholders, management strategies differed depending on occupational category, position in the company or skills and qualifications. Today, there has been a change of paradigm that has seen the generations brought into opposition with each other. This shift has enabled management to make the most recent downsizings acceptable, since they have succeeded in confusing employees and trade unions alike at both Fos and Kimitsu.

Nevertheless, these upheavals have not had the same outcomes in the two countries. The Fos plant has come to the end of a process that has seen it developing from a unit within a national company into a unit within a multinational. Kimitsu, on the other, is still protected by the national economic space. This does not prevent us from wondering whether, in both cases, the measures taken in the wake of the most recent restructurings might lead to a breakdown of relations between employees of different generations that has not hitherto existed.

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