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Remuneration of continuing vocational training and skill-building under the German and French education systems¹

Because it helps broaden the range of skills of people in industry, continuing training is regarded as contributing to individuals' career advancement by creating opportunities for better pay and improving qualifications... In this respect training is also considered as an investment for the individual concerned and should consequently have an impact in wage terms.

1) This article reports some of the chief findings of research into "Salaries, negotiations and employment policies" which was put out to tender by the French Commissariat du Plan in September 1995 and in which Anne-Marie Daune-Richard and Eric Verdier collaborated. As well as continuing vocational training the report analyses the changes that have taken place in initial vocational training as regards the general or occupation-related nature of qualifications and looks at how their recognition in wage terms developed between 1977 and 1993 in France and between 1984 and 1993 in Germany. We are grateful to the German Institute for Economic Research (DIW) for making the published version of the German Socio-economic Panel (GSOEP) available to us and to LASMAS-IDL for allowing us to access the Training and Occupational Qualifications Surveys of INSEE.

Introduction

Since economic science accepted the theory of human capital, training has usually been considered a form of investment (Becker 1964). And indeed, since training involves expenditure, is the result of a choice and is expected to yield a benefit greater than the expenditure approved it can be said to meet the theoretical criteria for an investment.

So far as employers are concerned it is doubtful whether the decision to provide their personnel with vocational training is philanthropically motivated, whichever the country concerned, the objective generally being to enhance the productivity of their workforce. In France, Delame and Kramarz (1997) have shown that the impact of training on a firm's performance is positive so long as the expenditure involved is higher than the legal minimum - which accords with the definition of investment given above. Generally speaking studies on the effectiveness of training from the employer's point of view conclude it to be significant and positive (OECD 1995).

The role of in-company continuing training can be defined in terms of its three prime objectives:

□ To make good individuals' lack of basic skills;

□ To adapt employees' specific skills to a firm's short-term needs;

□ To prepare employees for a forthcoming major change in their technical or organisational environment.

Because it helps broaden the range of skills of people in industry, continuing training is regarded as contributing to individuals' career advancement by creating opportunities for better pay and improving qualifications. Moreover, this aim is expressly mentioned in the German law of 1969 and the French law of 1971 (see Inset 1: Legal provisions). In this respect training is also considered an investment for the individual concerned and should consequently have an impact in wage terms. It is on this that the present article will focus.

However, as the three objectives mentioned indicate, one cannot effectively deal with this subject without considering it in relation to the initial training available. Continuing vocational training is embedded in a system for the imparting of skills involving, consecutively, the education system, skill-building measures and career advancement in the context of employment. Its rationale is thus inescapably rooted in an institutional context. One may therefore posit that the manner in which skills are imparted under the education system partly determines the extent and level of in-company continu-



ing training, which in turn will determine access to training and its effects.

This makes it particularly interesting to situate continuing training in a societal context, justifying the adopted methodology of an international comparison in order to evaluate the hypothesis. The choice of France and Germany results from the fact that the "production characteristics" of their educational systems differed considerably during the seventies. Since then the French education system has undergone wide-ranging development that has enabled it to make good some of the ground separating it from the German system. Again, the relationship between training and employment in the two countries was also very different, as is confirmed by the work of Maurice, Sellier and Silvestre (1982) and of Géhin and Méhaut (1993), making it possible to put the most recent developments in perspective.

The major changes that have taken place in the French education system would seem to have altered the place and the role of continuing training. During the sixties when workers possessed only scant initial training, continuing training was used to build skills within the internal markets of the firms themselves. The marked increase in the number of those acquiring initial school-based training in the eighties did not go hand in hand with a structural overhaul of the training available, which is still directed chiefly to identifying an individual's potential abilities. Consequently, progress within firms would now seem to be governed by a process of weeding out and selection with a view to identifying the best performers likely to take advantage of the continuing training provided. Seen from this standpoint continuing training is conceived not so much as an accumulation of human capital as the implicit recognition of competence previously acquired. In Germany, on the other hand, the initial training system has since the sixties been important in terms of numbers and in terms of quality directed to meeting the requirements of industrial firms. Despite emerging threats to the continuing stability of the dual system it remains a central feature of the German education system. Consequently, continuing training is directed to the acquisition and ex-

Inset 1:

Legal provisions concerning vocational training in France and Germany

Following the passing of the Law of 16 July 1971, continuing vocational training in France was developed with a view to remedying two deficiencies causing concern at the time, namely

- ❑ To make good the shortage of skilled technical personnel, particularly at technician and foreman level, attributable to weaknesses in employees' initial training - compulsory schooling was only extended to the age of 16 in 1969.
- ❑ To offer those who had left the education system without any general or vocational qualification certificate a second chance to train. This was aimed at the practical objective of social advancement by opening the way to new career opportunities.

In fact, the 1971 law required firms with at least 10 employees to share in the financing of continuing vocational training. The minimum contribution of 0.8% of the total payroll originally prescribed has in the meantime risen to 1.5%. This definition of training involving a financial obligation means that French firms spend substantially more on training than do their counterparts in other European countries - namely 2.8% of total payroll compared with 1.25 in Germany² (Aventur, Möbus 1996). Since 1992 firms with fewer than 10 employees have been obliged to contribute a minimum of 0.15% of their total payroll.

The situation with regard to continuing vocational training in Germany is governed by two main laws:

- ❑ The law on vocational training of 1969 which created the dual system and governs certain forms of continuing training and retraining. According to Articles 46 and 47 of this law as quoted by Möbus (1996) "Continuing vocational training for purposes of adaptation and career advancement must make it possible to maintain occupational knowledge and skills, to enhance them and to adapt them to technical developments or to rise in the occupational hierarchy" The government's role is mainly confined to certification, which assures those receiving training of better recognition of their qualifications.
- ❑ The law on the promotion of employment of 1969 provides for the public funding of continuing training in the form of payments made to individuals with a view to bringing their qualifications more into line with labour market requirements. It thus gives all employees a right to continuing training.

However, three-quarters of this assistance is currently being directed to job-seekers; moreover, there is no requirement for firms to participate in the continuing training of their employees (Möbus 1996).

Given the absence of any obligation on the part of firms to finance continuing training and the importance attached to individual initiative (Géhin and Méhaut, 1993) firms' own continuing training activity tends to be directed mainly to the continuing upgrading of workers' skills as their work demands.

2) Findings of a Community survey of in-company continuing training conducted in 1993. Prior harmonisation of the categories used and the methods of calculation in each country explain why the figure is lower than the 3.3% usually quoted in French publications.



“Major changes in the French education system have altered the place and the role of continuing training.”

“Since in France vocational training mainly took place in firms, the latter were faced with the need to create the conditions to ensure that their employees would remain with them for a good length of time. Hence the adoption of specific rules for the functioning of their internal labour markets.”

tension of skills and accords with employers’ recognition of initial training.

We shall now look at how training is structured within the two education systems and its consequences for qualifications and wages, before proceeding to analyse the way in which continuing training is reflected in remuneration in France and in Germany.

Relationship between initial training, qualifications and wages

We shall first look at the situation as it existed in the sixties and seventies and then at the changes that have taken place in initial training in the two countries being considered, with particular reference to the structure of formal qualifications and their recognition for career purposes. Having identified the different principles underlying skill-building at the initial training stage in France and Germany we shall show the differences that separate the two countries as regards the fixing of qualifications and wage levels. Finally we shall attempt some predictions as to the future use of continuing training.

Marked disparity in the proportions of formal qualifications in the sixties and seventies

In the sixties the two countries differed not only because of the occupation-oriented nature of most training courses in Germany, but also because of the very small proportion of French workers holding a certificate of initial training. In 1970 60% of French workers were without any kind of formal qualification compared with only 20% in Germany. If we look at the proportion of those holding a certificate of vocational qualification and disregard higher education, the figure is 27% in the case of France and 69% for Germany (Maurice, Sellier, Silvestre 1979) Eight years later, looking only at the industrial sector and considering only men, French wage-earners holding a vocational qualification certificate still represented under a third of the total figure, whereas in Germany they accounted for 75%.

These very diverging patterns reflect a different correspondence between job level and training, close in one case and very loose on the other. Thus in 1978 more than 90% of skilled male workers over 35 in Germany held at least a certificate of apprenticeship whereas 65% of their French counterparts had no formal qualification at all.

The curious functioning of the labour markets

With almost two-thirds of France’s active workforce without qualifications in the early seventies, firms were themselves obliged to provide their workers with the necessary industrial skills. Since vocational training mainly took place in firms, the latter were faced with the need to create the conditions to ensure that their employees would remain with them for a good length of time. Hence the adoption of specific rules for the functioning of their internal labour markets. Looked at from this point of view, wage progression based on length of services with a firm and systems of internal promotion had to provide the motivation for employees to acquire skills and retain them once training was completed and enable the firm to benefit from its expenditure through increased job mobility. In-company continuing training as a means of skill-building was clearly regarded as an investment of benefit to both employer and employees.

In Germany the considerable work done on the dual system has underlined the importance of the way it is regulated through cooperation between central government bodies and workers’ and employers’ organisations. Cooperation in the design of training courses lent legitimacy to the structuring function of initial training as regards vocational qualifications and the demarcation of areas of mobility on the labour market (Blossfeld and Mayer, 1998). The lesser remuneration of age and experience compared with France (Depardieu and Payen, 1986) and the smaller qualification-related wage differentials, as well as the greater uniformity in the division of labour in German firms (Maurice, Sorge and Warner, 1980) clearly reflect this influence. The cross-sector acceptability of certificates of vocational training and the degree of inter-firm mo-



bility which this confers did not encourage employers to generously reward their employees for years of service even though the age distribution of the workforce was fairly similar to that of France. As a result with qualification and continuing vocational training an extension of initial training, training had the power to structure job markets well beyond the first years of working life.

Differing trends in initial training in the eighties and nineties

In 1989 the proportion of the total active working population without a formal qualification was 43% in France and 19.5% in Germany³. In 1993 the proportions in the case of employed males were 36% (not including BEPC - certificate of first stage of education) and 15% respectively⁴. These figures show the enormous increase in the number of those leaving the French education system with a formal qualification, particularly since the beginning of the eighties, while the situation in Germany showed little difference from this point of view.

Rapid increase in initial training availability in France

One of the most striking indicators is the fact that in less than 15 years the proportion of a generation taking the baccalauréat rose from 34% in 1980 to over 70% in 1994. Over the same period those graduating from an institution of higher education rose from 15.2% to 36.3%. Thus by 1995 more than a fifth of the total active population held a certificate of higher education (Gouy et al., 1996).

At the same time the government realised the need to make training more work-oriented. This resulted inter alia in the creation of the vocational baccalauréat in 1985, the overhaul of the content of the CAPs (certificates of vocational aptitude) and in making it possible in 1987 for all vocational and technical qualifications to be gained through work-based (combined on-the-job/off-the job) training. Another sign of the change was the explosive growth in the number of people on occupational courses of higher education: between 1972 and 1994 the number of students registered at university institutes of technology (IUTs) increased fourfold

and those attending higher technician (STS) courses increased by a multiple of eight, while the number of students at the engineering colleges was only 2.5 times the 1994 figure.

More moderate increase in Germany

In 1965 almost 55% of the active population held a certificate of apprenticeship and although the figure fluctuated it was still at this level in 1989 and always above 50% in the mid-nineties. The work-based system of vocational training thus continues heavily to influence initial training in Germany, attracting up to 70% of young people in an age group in the first half of the eighties.

Since the end of the eighties the dual system's contribution to the German labour market has been slightly lower in percentage terms. This is due to a number of factors. One is the growing importance of the long phase of secondary education - the Gymnasium - which now accounts for almost 30% of the number of those leaving the education system, who then have direct access to higher education. Another is the reduced opportunities for promotion for those holding "Techniker" (technician) or "Meister" (master craftsman) qualifications (Drexel, 1993): A third is the manifest desire both of young people and their families that they should go on to higher education (Schober and Tessaring, 1993). Several indicators confirm the reality of these phenomena. Thus in 1990 almost a third of those first registering with an institute of higher education had previously followed a course of vocational training under the dual system and for the first time the number of students in higher education exceeded the number of apprentices (Adler et al., 1993). The take-up rate for apprenticeships fell to 0.55 in 1992 and even to 0.41 in the metal industry whereas in the mid-eighties the number of apprenticeship vacancies on offer was always insufficient to meet demand. There are increasing signs that large firms are offering fewer vacancies for apprentices. In the first half of the nineties the number of vacancies decreased by five percentage points compared with the proportion accounted for by craft trades (Pfeiffer, 1997). All in all, supply and demand factors are combining to undermine the system of initial training,

"With qualification and continuing vocational training an extension of initial training, training had the power to structure job markets well beyond the first years of working life."

3) With at best the BEPC but without any vocational qualification in France and with a completed Hauptschule and Realschule with or without a certificate of vocational qualification in Germany (Möbus and Sevestre, 1991).

4) This does not include the population in the east of Germany.



“In France recognition given to vocational training is still very much governed by a level-of-education mentality and the traditional method of selection on the basis of scholastic performance persists.”

“The skills to be provided by training under the dual system are specifically identified by employers, which ensures a close match between job categories and wage levels and a cross-sector acceptability of qualifications on the labour market. This double effect legitimises initial training’s function of determining qualifications and wage levels.”

5) The average salary for employed men without a qualification is indexed at 100 for each country. Those with the highest qualifications have an index value of 362 in France compared with 234 in Germany (Béret et al., 1997).

which nonetheless largely remains dominant.

The thinking underlying initial training remains specific to the country concerned

In France recognition given to vocational training is still very much governed by a level-of-education mentality and the traditional method of selection on the basis of scholastic performance persists (Verdier, 1995). Consequently progress through the levels of initial training where the governing criterion is the demonstration of theoretical, abstract knowledge involves a gradual weeding out process and increasing selectivity as regards abilities and their upward standardisation. Under this system of values technical and practical skills are perceived as attributes of low capacity for abstract thinking and as only worthy of interest when backed by a high level of general education. As a result the market recognition of the contribution of training to productive efficiency is guided by the level of the related formal qualification, which is taken as a measure of an individual’s ability. In this respect the education systems’ organisation is designed to assure the weeding-out function and, in a second stage, to provide the knowledge and skills usable in the labour market. This situation is largely due to the fact that in France the contribution of firms and employers’ organisations to the design of formal qualifications is generally restricted to consultation, whereas in Germany they are actively involved in negotiating vocational training content (Möbus and Verdier, 1997).

In Germany training provided under the dual system is two-thirds financed by firms who also participate in drawing up training requirements and determining the skills young people have to demonstrate at their various examinations. This heavy involvement of industry tends to standardise the general skills of young apprentices which otherwise could vary according to the type of secondary school course chosen. As a result the market positioning of those holding certificates of apprenticeship will depend more on the nature of their specialist training than on the number of years of secondary schooling. Similarly, the skills to be provided by

training under the dual system are specifically identified by employers, which ensures a close match between job categories and wage levels and a cross-sector acceptability of qualifications on the labour market. This double effect legitimises initial training’s function of determining qualifications and wage levels. As a result the wage hierarchy⁵ and the impact of job experience on wage progression are less marked than in France. One has only to compare the situation of holders of a certificate of apprenticeship in Germany with that of French holders of a vocational CAP or BEP (brevet d’études professionnelles) and of those with a technical baccalauréat.

Structuring of wages on the labour market (specific to each country)

This is shown inter alia by a less marked scatter in the salaries of holders of dual system qualifications in Germany compared with people in France with similar qualifications (see Table 1). Furthermore, the margin of progression of wages as workers gain experience would seem to be far less marked in Germany than in France, indicating that employers give immediate recognition to productive skills. Since their qualifications are quite clear and their knowledge can be immediately applied, holders of dual system qualifications are soon paid according to their level of competence and fairly similarly. Wage progression, though less marked than in France, operates on the basis of subsequent acquisition of skills on the job and through continuing training, building on the skills acquired during initial training.

In France the abundance and diversity of initial training courses now available to young people considerably reduces the need for firms to build their workers’ skills. However, given the adherence to the idea of selection on the basis of ability which governs the number of those who successfully qualify, uncertainty as to the competence of those turned out by the system is still considerable. The way in which the system of formal qualification filters out the most able also reflects in markedly higher wages during the first years of working life, although the gap then closes rapidly. Since formal qualification certificates are thus seen as



predicting productive capacity and individual behaviour, they essentially play an allocating role, determining the level at which a holder enters the firm and his scope for career development. Subsequently, experience takes over from formal qualification in deciding career advancement and wage progression through selective, differentiated manpower management. At this stage uniform systems of wage progression based on age and experience lose their raison d'être even though they are enshrined in collective agreements (Grandjean, 1989). Despite the increased proportion of those with many years of service with their firm (OFCE, 1996) the contribution of age and experience to salaries generally is clearly shrinking (Béret, 1992). This is not the case in Germany (see below).

When firms resort to continuing vocational training

In Germany in-company continuing training still has an important role to play in employees' acquisition of skills. Surveys carried out by Géhin and Méhaut (1993) show that such training has three major characteristics:

- Organisation of continuing training is closely linked to initial training because of the resources available for initial training that can also be used for continuing training;
- The decision as to who is to participate in continuing training is markedly decentralised to department or workshop level;
- Continuing training is closely integrated with production.

This kind of continuing training is far more liable to be effective since it is juxtaposed with the set of skills acquired during initial training, whose usefulness is already well established. Empirical studies show that continuing vocational training is very rarely given to personnel with no initial qualification and that it is mainly directed to people starting out in working life, chiefly those aged between 25 and 35. On the basis of the 1991 Microcensus data Pfeiffer and Brade (1995) show, for example, that job experience enhances the probability of participation in a training

Table 1
Wage dispersion and wage progression as a function of experience in 1993

| Country | France | | Germany | | |
|-----------------------|----------------------------------|-------------------------|----------------------|------------------------|---------------------------|
| | Certificate of initial training* | CAP or BEP without BEPC | CAP or BEP with BEPC | Technical baccalauréat | Dual system qualification |
| Wage dispersion | | 0.47 | 0.47 | 0.46 | 0.40 |
| Experience-based wage | | | | | |
| 14 years | | 100 | 100 | 100 | 100 |
| 20 years and over | | 148 | 173 | 145 | 115 |

Dispersion index: interquartile (Q3-Q1)/Q2
Population: men, survey see Inset 2

* The BEPC is the certificate awarded by schools at the end of the first four years of general secondary education. The CAP and BEP are vocational certificates awarded on completion of a short cycle of technical education which does not necessarily require the BEPC. The technical baccalauréat is the certificate awarded on completion of secondary education for those courses mainly comprising technical subjects. Like the general baccalauréat, it provides access to higher education.

course during the first seven years of working life, after which it decreases.

It thus seems safe to assume that in the nineties continuing training is still regarded as an investment from which the employee also stands to benefit in terms of higher wages.

In France use of manpower has to allow for the relative uncertainty that exists as to individuals' productive efficiency. Internal career management is used to identify competence by means of job rotation. Here enhancing employees' skills is only a secondary objective. Determining employees' productive abilities enables training to take better account of existing skills and abilities, so that the training component of internal markets will only truly be mobilised for that fraction of the workforce that is best integrated into the organisation, having demonstrated both competence and commitment. A firm following this procedure can rely on training bringing the hoped-for increase in productive efficiency.

Two arguments support this interpretation:

- A comparison of the conditions for access to continuing training in France and



“The facts suggest that during the nineties France witnessed the decoupling of conditions justifying higher pay and those giving access to continuing training.”

Germany with the same set of explanatory variables showed that years of service with the firm and the fact of having benefited from internal mobility prior to training carry considerable weight in France but are irrelevant in Germany. In other words, in France those who have been longest in a firm and whose career has been punctuated by job rotation have a greater chance of participating in in-company training.

□ On the other hand, as the economy slowed down in the early nineties it was found that manpower management measures were gradually leading to the creation of a core workforce possessing competences of key importance for the firm, on whom continuing training efforts was tending to be concentrated (Bentabet and Marion, 1995).

These various facts suggest that during the nineties France witnessed the decoupling of conditions justifying higher pay and those giving access to continuing training. In other words training in itself is seen as a reward, a recognition of working efficiency whose chief purpose is to objectively demonstrate the relative success of the person concerned in the selection procedures used as the main basis of reference for planning internal careers.

These hypotheses, which run contrary to the principles guiding firms' use of training, will be tested in the second part of this article.

The wage impact of continuing training in France and Germany

Generally speaking the thinking underlying training in the education systems of the two countries seems to reflect essentially different attitudes to its remuneration.

A study recently completed permits some responses to be given to the hypotheses formulated (Béret, Daune-Richard, Dupray, Verdier, 1997). The definitions of populations, surveys and models used are given in Inset 2.

The first point to be checked is whether there has been a change in the wage impact within firms. Thus at the beginning of the nineties the reward for long service with a firm was no longer significant in France, whereas it was still substantial in Germany (Table 2, model 1)⁶. This is very important since it implies that there is no longer an accumulation of specific human capital for everyone in France and that continuing training may play a different role in the internal skill-building process.

Three possible indicators can be used to assess this aspect:

- The last training course attended, whether recent (FPC1)
- or a long time back (FPC2)
- The total number of courses attended.

The first two indicators may allow us to pinpoint any change in the way in which continuing training is remunerated. They are used to test that continuing training in Germany is underpinned by the concept of accumulating vocational skills whereas in France it is seen as a selective form of reward for those employees who have been identified as the most productive or as having the greatest capacity for career advancement. From this point of view the number of training courses attended would testify to the degree of ability an individual was considered to have. To this end simultaneous incorporation in a wage equation of the number-of-courses-attended indicator and the two variables for the last course attended makes it possible to predict that it is the number of training courses attended that will carry the greatest weight in France. In Germany, on the other hand, it is the last training course that is likely to be the deciding factor. Finally it is possible to take account of any bias deriving from non-random selection of trainees, viz. that training is given to the best paid⁷

Continuing training pays better in Germany

In Model 2, the simplest, we see first of all that the wage remuneration for the last training course if recent (FPC1) is significantly less in France (the wages of those who have received training are 8.8%

6) Initial model which includes the number of years of study, job experience, service with the firm and the square of these variables. We refer readers to the report for the detailed results.

7) We shall give the results of using a method for correcting this bias.



higher than those who have not) than in Germany⁸. The same is true when one looks at those whose last training course took place in the earlier period (FPC2, Model 3). Apart from the fact that this difference suggests that continuing training is taken into account more by German employers, the subsequent remuneration can also be explained by the fact that qualifications obtained at initial training level are transferable. The significant reward in wage terms can then be seen as an attempt to prevent employees from moving to another firm.

Also worth noting is that, unlike the situation in Germany, in France it is when the last training course attended lies further back in time that the pay-off is better. However, the difference between the two French figures is not sufficient to justify the conclusion that the method of allocating and rewarding continuing training has changed. In order to interpret this difference one must also consider the number of training courses attended by employees. In France 42.9% benefited from at least one continuing training course during their working life. The average number of training courses attended by all in 1993 was 1.61. In Germany, over an average period of 7 years, 37.1% of employees attended a course of training. For the workforce as a whole the average number per person in 1993 was 1.51. These figures testify to the greater spread of continuing training among the active population in Germany. The inclusion of this indicator in the model permits us to calculate the reward for the total number of training courses in wage terms.

The gross figure turns out to be very high (Model 4), particularly in France where each course has the effect of boosting earnings by 3.1%, outstripping the impact of job experience, for example. This initial result is very important since it suggests that the reward for continuing training is gained on the basis of an accumulation similar to that of the number of years of education or job experience. The way in which this accumulation is rewarded, however, differs considerably between the two countries; this is shown by simultaneously taking into account the last training course attended and its timing, and the total number of training courses (Model 5).

Inset 2:

Definition of populations, surveys and models used

- ❑ Male and female employees working in the private and semi-public sectors in 1993 who had been employed in France in 1988 and in Germany (western part only) in 1989.
- ❑ INSEE 1993 Training and Occupational Qualification Survey for France, German Socioeconomic Panel for Germany. These surveys covered 5139 individuals in France and 2913 in Germany.
- ❑ In France continuing training has been taken to be the last training course attended at the employer's initiative. In Germany it is the last training course attended but it is difficult to identify the initiator because replies to this question referred to the most important training course and not the last one. Since it would appear that the reward in wage terms and the duration of training courses are fairly similar, regardless of whether the most important course was undertaken in whole or part on the employer's initiative, the lack of precision as to the origin of the last training course is unlikely to affect the analysis.
- ❑ FPC 1: This signifies that the last course attended was in the period 1989-1992 in France and between June 1990 and June 1993 in Germany.
- ❑ FPC 2: This indicates that the last training course took place in the preceding 4-year period (1985-1988) in France and the preceding 3.5-year period (1986-1989) in Germany.
- ❑ We also have the total number of training courses attended throughout the person's working life in France and during the 7-year observation period in Germany.
- ❑ The models tested are gain functions of the type:

$$\text{Log } W_i = \text{cte} + a_1 \text{ETU}_i + a_2 \text{ETU}_i^2 + b_1 \text{EXP}_i + b_2 \text{EXP}_i^2 + c_1 \text{ANC}_i + c_2 \text{ANC}_i^2 + c_3 \text{NBFPC}_i + d_j \text{FPC}_{ij} + g_k \text{SEX}_{ik} + h_l \text{DUR}_{il} + U_i$$

where

| | |
|-------|-------------------------------------------------------------|
| W | is the annual wage in France and monthly wage in Germany |
| ETU | number of years of education |
| EXP | is "real" working experience between 1993 and the first job |
| ANC | is years in service with the firm at 1993 |
| FPC | is continuing training |
| NBFPC | is the number of continuing training courses, |
| SEX | is sex and |
| DUR | duration of work. |

Changes in use of continuing training in France

While in France the return in wage terms on the number of continuing training courses attended remains very high, training received in the more recent period does not reflect in a wage increase, contrasting with the situation when the last

8) In France over a four-year period 19.6% of wage-earners had taken part in continuing training organised by their employer (and 3% had attended training on their own initiative but they are not counted here); the total for Germany was 25% in three and a half years.



Table 2.
Wage impact of years of service and different continuing training variables

| Dependent variable | | France | Germany |
|--------------------------------------|-------------------------------------------------------------------------------|-----------------|------------------|
| Log (net annual wage for France) | | 1992 | 1993 |
| Log (gross monthly wage for Germany) | | | |
| Model 1 | Years of service | + 0.28 ns | + 1.16 |
| Model 2 | FPC 1 = last course attended in last four years, including year of wage | + 8.8 | +14.5 |
| Model 3 | FPC 1 FPC 2 attended during four years preceding FPC 1 | + 9.8 + 12.2 | + 18.1 + 16.9 |
| Model 4 | Number of courses | + 3.2 | + 2.3 |
| Model 5 | Number of courses | + 3.1 | + 0.8 |
| | FPC 1 | ns | + 14.7 |
| | FPC 2 | + 9.1 | + 15.0 |

Coefficients x 100; all significant at threshold of 1% error/ns = not significant at 10%.

in the more recent period had already attended on average 3 other courses, only the succession of which is definitely worthwhile. From this point of view frequent participation in training would seem to testify to the effective performance of the employees concerned.

Training still regarded as an investment in Germany

For Germany, on the other hand, the wage impact of the number of training courses drops very sharply when one also considers the last course attended and its date, even though the average number of courses attended by those whose most recent course took place in the period 1990-1993 was 4.7. Moreover, whatever the period being considered the last training course still has a very marked impact in wage terms. This finding suggests that the value of continuing training is assessed on the basis of an accumulation of human capital. Since for many continuing training is an extension of the technical and other training acquired during initial training, part of its recognition in wage terms must be seen in the light of the differing opinions regarding the importance of technical and vocational knowledge for a firm's performance. In this context a whole series of continuing training courses nonetheless remains profitable, even though the profitability is much reduced due to the decrease in the marginal return on the training investment from the point of view of acquisition of human capital. Each training course thus has an effectiveness of its own regardless of the previous courses attended by the employees concerned.

Contrary to the German situation, selection for training explains its wage impact in France

Another way of looking at the intrinsic productive contribution of continuing training is to analyse the way in which people are chosen for these courses according to their vocational characteristics - formal qualification, category, age etc. In other words one considers more directly the possibility that the employees selected for training are those whom the firm considers to be the best. In this sense the wage return on continuing training could also reflect the existence of this bias in the se-

training course took place during the earlier period. This finding would seem to indicate a change in the way in which continuing training was regarded. And in fact, a similar calculation carried out in connection with the Training and Occupational Qualifications Survey in 1997 showed that the number of training courses attended brought a high pay-off in wage terms but also that the impact of continuing training differed little according to when it took place. Thus in the seventies it would seem that continuing training was mainly regarded as an investment to provide employees with the technical and other skills needed for the firm's activities. Later on the allocation of training apparently took place on the basis of a system of selection and categorisation whose effect was to send out recurrent, favourable signals to employees who the firm hoped would be loyal and remain with the company⁹. This theory is corroborated by the fact that the average number of training courses followed is 4.05 for those falling under the FPC1 heading but only 2.2 in the case of those covered by FPC2. In other words, those employees who benefited from continuing training

9) Computer models designed to assess the conditions for external mobility show continuing training as having a negative influence on the move to another firm. See also Goux, Maurin (1997).



lection of trainees rather than the actual contribution of training to increased efficiency¹⁰. To do this we first corrected the selection bias for the last training course and then calculated the average salary the same employees would have received had they not been given training¹¹.

These calculations showed that the effect of selection for training was very great in France but insignificant in Germany. Moreover, in the case of the French workers taking part in training has no impact in wage terms since wages are mainly determined by factors predating continuing training. Continuing training, therefore, does not in itself produce any benefit in wage terms in France, whereas in Germany it has a positive impact on pay over and above the effects of selection. These results reinforce the earlier ones and confirm the fact that training is considered an investment in Germany and the gradual move towards selection in France, where training is only thought to upgrade potential skills and provide post facto justification for the privileged earnings situation of those employees chosen to undergo training.

Conclusion

Several lessons can be learned from this study of the situation in France and Germany.

France is notable for the disappearance of a wage reward paid by companies as age and experience increase. There is nonetheless a process of selection of employees, judged to be more talented or efficient, who are put through one or more continuing training courses. The apparent substantial reward masks the fact that these employees are already the highest paid and that the training in itself does not bring with it any financial advantage. The rationale of this training is different: employees who have undergone training

are less likely to move to another firm than those who have not - although one does not know whether this is due more to their previous wage level or to the actual training. On the other hand, since they are those best equipped to make use of the knowledge and skills acquired during training they may find themselves the subject of job rotation which enhances their value to the organisation (Dupray, 1995). We may assume that continuing training also plays a justificatory role at two levels by giving post facto legitimacy to the higher wage paid to those who have undergone training compared with those who have not and vis-a-vis the "best" employees to whom the company is now less able to refuse training since a certain amount must be used for this purposes.

In Germany, on the other hand, internal company markets continue to have their own return regardless of access to continuing training, based on the building of skills that are an extension of those acquired at the initial training stage. This process also involves continuing training given to a greater number of employees and meeting the need to adapt skills to changes in job requirements. This policy is considerably helped by the occupational knowledge and skills taught at initial training level, which constitute a homogeneous corpus of knowledge on which it is easy to graft the practical knowledge and skills imparted by continuing training. At the same time, skills are enhanced by means other than continuing training courses, notably by on-the-job training which is far more widely used in Germany than in France (Aventur, Möbus, 1996¹²). Finally, the function of internal markets in Germany compared with France is marked by a far greater variety of training activities and career advancement measures, and even if one cannot rule out the existence of selection it operates differently, determining differences in wage progression that are not in proportion to those found in France.

Bibliography

Adler, T., Dybowski G., Schmidt, H., "Allemagne: la formation professionnelle en question", BREF No. 88, CEREQ, June 1993.

Aventur F., Möbus, M., "La formation continue dans les entreprises, la place de la France en Europe", BREF No. 116, CEREQ, 1996.

Bentabet E. and Marion J.-L., "Effets de la crise, réduction des budgets des entreprises pour la formation continue", BREF No. 105, CEREQ, Jan. 1995.

Béret P., Daune-Richard, A.M., Dupray, A., Verdier E., "Valorisation de l'investissement formation sur les marchés de travail français et allemand:

10) This possible bias in selection could be analysed by an estimation in two stages based on the Heckmann method (1979).

11) Technically this involves estimating the wages of people who have benefited from training, retaining their characteristics and applying the coefficients for these characteristics obtained using the wage equation adjusted to allow for the selection bias in the case of those who did not take part in training. The result is then compared with the wage as stated by the participants.

12) In 1993, 46% of French firms ran courses and 39% provided on-the-job training, while 47% provided continuing training in the broad sense (courses, on-the-job training, lectures etc.). In other words all firms offering continuing training run courses. In Germany the corresponding figures are 59%, 56% and 85%. All in all, providing continuing training in one form or another is far more widespread in German than in French firms.



distinction entre valeur productive et valeur de signallement", Rapport pour le Commissariat général du Plan, 1997, 161p.

Béret, P., "Salaires et marchés internes: quelques évolutions récentes en France", *Economie appliquée*, Vol.XIV, No. 2, 1992, pp 5-22.

Blossfeld, H., Mayer, K.U., "Labor market segmentation in the Federal Republic of Germany: an empirical study of segmentation theories from a life course perspective", *European Sociological Review*, Vol.4, No. 2, 1988, pp. 125-140.

Delame, E., Kramarz, F.F., "Entreprises et formation continue", *Économie et Prévision* No. 127, 1997 pp. 63-82.

Depardieu, D., Payen, J-F., "Disparités de salaire dans l'industrie en France et en Allemagne: des ressemblances frappantes", *Économie et Statistique* No. 188, 1986, pp.23-34.

Drexel, I., "Le segment intermédiaire des systèmes de formation en France et en RfA" *Formation Emploi* No. 44, 1993, pp.3-23.

Dupray, A., Tenure, mobility and career: an appraisal of human capital hypothesis. Contribution to the 7th EALE conference, Lyon 7-10 September 1995.

Géhin J.-P., Méhaut, P., Apprentissage ou formation continue? - Stratégies éducatives des entreprises en France et en Allemagne, L'Harmattan, 1993, 223p.

Goux, D., Leclercq, J.Y., Minni, C., Formation, emploi, salaire, duplicated note, DEP-INSEE, Ministry of Finance, 1996.

Goux, D., Maurin, E., "Les entreprises, les salariés et la formation continue" *Économie et Statistique* No. 6, 1997, pp.41-55.

Grandjean, C., "Modalités nouvelles de rémunération à l'ancienneté", *Travail et Emploi* No. 41, 1989, pp.7-18.

Heckman, J.-J., "Sample specification bias as a specification error" *Économetrica* Vol. 47, No. 1, 1979, pp. 353-161.

Maurice, M., Sellier, F., Silvestre, J.-J., "La production de la hiérarchie dans l'entreprise: recherche d'un effet sociétal", *Revue française de sociologie*, Vol. XX, No. 2, 1979.

Maurice, M., Sellier, F., Silvestre J.-J., Politique d'éducation et organisation industrielles en France et en Allemagne, PUF, coll. Sociologies, 1992.

Maurice, M., Sorge, A., Warner, M., "Societal differences in organising manufacturing units: a comparison of France, West Germany and Great Britain", *Organisation Studies* 1(1), 1980, pp.59-86.

Möbus, M., La place de la formation professionnelle continue dans le système allemand de formation professionnelle, CEREQ working document, 1996.

Möbus, M., Sevestre, P., "Formation professionnelle et emploi: un lien plus marquée en Allemagne", *Économie et Statistique*, No. 246-247, 1991.

Möbus, M., Verdier, E., "Les diplômés professionnels en Allemagne et en France: conceptions et jeux d'acteurs", L'Harmattan, 1997.

OECD. L'étude de l'OCDE sur l'emploi, Partie II: possibilités d'adaptation des marchés du Travail, 1995.

OFCE. "Chronique des tendances de la société française". *Revue de l'OFCE* No. 56, Jan. 1996, pp. 134-140.

Pfeiffer, B., "Das Ausbildungsangebot der westdeutschen Betriebe, 1995" *BWP* 26/1997/2, 1997.

Pfeiffer, B., Brade, F., "Weiterbildung, Arbeitszeit und Lohneinkommen" in: Steiner V. and Bellmann L., (eds.) *Mikroökonomik des Arbeitsmarktes*, Nuremberg 1995, p.289-326.

Schober, K., Tessaring, M., "Die unendliche Geschichte. Vom Wandel im Bildungs- und Berufswahlverhalten Jugendlicher", *MatAB* 3, IAB, Nuremberg 1993.

Verdier, E., "Politique de formation et marché du travail: la France des années 80", *Formation Emploi* No. 50, April-June 1995.