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The professional training of youth: What benefits from the speciality?

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Abstract

The speciality in vocational training is often assumed to generate additional earnings only if the individual obtains a job in the same employment speciality. The results obtained for the youth finishing professional education in 1998, surveyed in 2001 in both France and Germany, indicate that this point of view must be nuanced. To begin with, a hierarchy of salaries exists among educational specialities, even in situations of education-job mismatch. Specialities in vocational training thus transmit the capacity to adapt to posts in other fields. Furthermore, youths in situations of mismatch benefit from unobserved individual characteristics. These findings are not in contradiction with the Assignment theory of worker-job allocation.

Keywords: assignment, human capital, signalling, speciality, vocational training

JEL classification: I2, J2, J3

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1. Introduction

For numerous countries, one of the objectives of educational policy is to develop vocational training so that the greatest possible portion of the population may obtain an education and can meet the needs of the productive system. This objective has now become European.[1] The speciality in occupational training is assumed to be determinant here exclusively for gaining access to a job in a similar speciality. This hypothesis is not only controversial on the theoretical plane, but is also often in contradiction with the facts since educational specialities are not as specific to a domain of employment speciality as such a conjecture would imply.

The objective in this article is to attempt to understand the absence of correspondence between the educational speciality and job speciality for the youth finishing professional training in France and in Germany. These two countries are characterised by very different systems of professional training, the first favouring a more general initial education and more remote from the firm, and the second giving priority to apprentiship. The comparison of these two cases makes it possible to draw relatively general conclusions with respect to the role played by training specialities. More precisely, the problem is to reveal the determinants of the mismatch between training and job specialities and to examine the impact of training specialities and of other characteristics on earnings, according to whether or not the individual works in his training speciality.

The first section is devoted to the theoretical framework: the theory of human capital, and more particularly to the Assignment theory (Stattinger 1993).

In the following section, we describe the French and German data from which are extracted observations taken in 2001 of two cohorts terminating professional education in 1998. We also present here the switching regression model, the method used to treat selection with respect to the correspondence by speciality. The findings are examined in the final sections.

In conclusion, the findings do not seem in contradiction with the Assignment theory: they are notably the recognition of a positive impact on earnings of unobservable characteristics for the individuals in situations of training speciality/job mismatch and of the existence of a hierarchy of earnings among the training specialities for these same salaried workers. This last aspect, and the differences observed between France and Germany, lead us to call into

[1] 'Education & Training 2010 work programme', Commission of the European Communities – SEC (2005) 1415.

question the role of the training speciality in the current attempt to establish professional training equivalences at the European level.

2. The role of the training speciality: theoretical interpretations

How is it possible to illustrate on the theoretical plane the point of view predicated on the concept that the training speciality plays a role only when the employment is in the same speciality, point of view defended by institutions and shared by common sense?

Such a viewpoint supposes a strict correspondence between the educational supply and demand, coinciding in this with the theories that assume market adjustment, notably the theory of human capital. To explain the training/job match by speciality in this analytical framework, it is necessary to hypothesise that productive capacities are of two types. Capacities belonging to a first category take on value over the whole spectrum of employment, which is general human capital in the usual meaning of this expression. The capacities of a second category are valuable only in a limited number of employments. These are vocational competencies that are distinguished by the characteristic that they are of value in a subset of posts (Heick, Meng and Ris 2003). This is only the simple extended meaning of 'specificity' as used by Becker that is frequently exploited in research on local labour markets (by Groen 2006, notably). In this case, training in a speciality has a relatively high earnings yield in a job, or in a set of jobs, belonging to the same speciality.

As evoked in introduction, and as the descriptive data will confirm for our samples, the hypothesis of a strict correspondence by speciality does not resist trial by the facts. What alternative explication can then be found for the absence of correspondence between the training speciality and the job speciality?

According to Sattinger (1993), the weakness in the theory of human capital is to ignore the problem of allocating individuals to jobs by assuming an identity between earnings and individual characteristics. To explain the link, and still more the absence of link, between the training speciality and the job speciality, it is necessary to have recourse to a theory integrating the role of the characteristics of demand in determining earnings. This is the case for Thurow's queuing theory (1975). Here the competition is not exerted for earnings acquisition but for access to the job (job queuing), and thus the salary depends on the post. The salary is set by institutional elements whose regulation is not essentially determined by market forces. The initial education plays the role of an entry ticket for the job, yet it does not signal the individual's productivity, signalling rather his employability. In this perspective, the higher the level of professional education, the greater the capacities for

adapting to the job. If certain training specialities lead youths to the acquisition of adaptive capacities that are superior to those acquired in other specialities, then they will have access to better paid jobs.

The advocates of this approach are situated nowadays in the framework of the Assignment theory. The issue, for example, is to examine the choices of individuals among sectors in which the demand for labour is given. Indeed, the structures of qualifications and salaries are assumed to be fixed *ex ante* by institutional factors. Thus, 'Assignment models are consistent with structuralist theories in sociology, in which wage structures influence the wages associated with particular jobs (Granovetter 1981)… Lester Thurow (1975) develops a similar model in which the wage rate is determined primarily by the job' (Sattinger 1993, 834).

The authors of this school will invoke numerous reasons for the allocation problem *ex post*, or for the problem of correspondence between the supply of education and a structure of qualifications, assumed to be exogenous. One of the principal explications consists in taking into account the heterogeneity of tasks and of individuals. The workers will differ, for example, by their 'talent' for executing certain tasks, talent which may be partially disconnected from their schooling (Willis and Rosen 1979). To the multiplicity of tasks and combinations of tasks can only respond then a great number of combinations of competencies. The correspondence between acquired and required competencies is therefore complex and goes beyond the framework of a simple association between qualification, job speciality and level, and training speciality.

The link, or absence of link, between speciality of training and job speciality then are both furnished with an explanation. The correspondence is probable when the training speciality confers a great adaptability to a job in the same speciality, which is the case for a job with high technical content. This reasoning overlaps the theory of specific human capital in the sense evoked above. However, such a perspective is considered to be a particular case of allocation to employment in the Assignment theory (Sattinger 1993). In this theory, the absence of correspondence by speciality is a more general case, reflecting the phenomenon that certain individuals possess innate or acquired talents, which are exterior to the educational system, for gaining access to a job in a speciality that is not the one of their training or, still further, that the acquired training speciality bestows talents that can be mobilised for job in other specialities.

3. Data and methodology

The French sample is extracted from the Cereq's 'Generation 98 Survey'.[2] This survey tracks over a three year period, month by month, a panel of youths who terminated their initial education in 1998. It concerns slightly more than 55,000 representative youths leaving the educative system in 1998 (roughly 700,000 in all).

The major difficulty in establishing a correspondence by speciality is the absence of common nomenclature in most European countries for vocational training on the one hand and for jobs on the other. A solution is to have recourse to a subjective approach (Robst 2007), but such methodology is based on personal perceptions of the correspondence between training and employment categories. It thus reflects an appreciation of the matching, which takes into account the adaptability of a training speciality to distinct job specialities, as well as the adaptability of the individual. So as truly to measure the correspondence by speciality in the most restrictive meaning of the human capital that is specific to a given job, it is therefore necessary to determine the coincidence between the contents of the vocational training and the contents of the job, beginning from a 'normative' measure that corresponds to the 'theoretical' grounds for each training speciality. The table of correspondences that we use here was elaborated for the purpose of improving regional guidance for professional training in France (Fourcade, Ourtau and Ourliac 1992). Each detailed speciality is associated with a 'body of knowledge' that is unique, based on the contents of vocational education and the contents of the job categories as listed in the two national nomenclatures (*Nomenclature des Spécialités de Formation – NSF*, *Professions et Catégories Socio-professionnelles – PCS*), so as to arrive at a single nomenclature: the Training-Job Groups or TJBs (*Groupes Formation Emploi, GFE*). This nomenclature, which was constructed with regional vocational training policies in mind, only applies to professional education at the level of the French *Baccalauréat* (called the 'Bac') plus 2 years of study and less. This limit applies to the sample selected. The youth terminating professional training at these levels in the 'Generation 1998 survey' were 32,500 in number, of whom 29,016 held employment in 2001. This last population constitutes the sample.

For Germany, we reconstituted the 'Generation 98' sample. The German data are from the Institute for Employment Research on labour markets and occupational issues, the

[2] The 'Generation 98 Survey' (*Enquête génération 98*) was carried out by the French Center for Research on Education, Training and Employment (*Céreq*).

(*Institut für Arbeitsmarkt- und Berufsforschung – IAB*). Here the data concerned active workers paying contributions to health insurance fund (IAB 1975-2001 – regional data), which includes nearly 2% of 'active' workers in Germany. The database so constituted concerns 4,103 youths who had terminated their professional training degree in 1998, the *Duale* (*Volks-, Haupt, Realschule mit Berufsausbildung*), equivalent to a French Bac + 1 year of professional qualification (*Abitur mit Berufsausbildung*) or to a Bac + 2 years of initial professional qualification (*Fachhochschulabschluss*) and who held an employment in 2001, keeping in mind that they were all employed during their schooling, principally in apprenticeship capacity.

The relative superiority of the German database concerns the essential: the correspondence between the specialities on both the training and employment sides. The nomenclatures are the same since they are employment specialities during occupational training in 1998 – the youths always holding jobs while in training – then of the employment in held in 2001. For the sake of comparison with the French findings, the 130 categories were regrouped into the 13 Training-Job Groups or TJBs (*Groupes Formation Emploi, GFE*). Indeed, conserving a very detailed nomenclature would have led to an extremely limited fulfilment of matching criteria since a nomenclature that includes 130 posts leads to considering as mismatches situations in which individuals occupy job in a speciality quite close to their educational speciality. It is moreover the objective of the TJBs to regroup categories by 'bodies of knowledge' so as to limit this type of bias. A final reason, technical this time, could justify in itself the regrouping of the 130 categories: simply the constraints on numbers per category. The transition from the nomenclature with 130 posts to the 13 TJBs is simple enough since the 130 posts regroup the totality of the 386 employment categories in the French PCS nomenclature (Professions and Socio-professional Categories).

For Germany, it is important to note that it is impossible to identify the inactive population or the unemployed at the end of the 2001 period, notably because those who do not make contributions to the health insurance fund do not figure in the database. This is the reason why the unemployed in 2001 were not included in the analysis, this restriction being applied to the French sample as well for the sake of comparability. The classification by unemployment was therefore not treated for either sample. Nevertheless, taking it into account for the French sample marginally affects the estimations of the earnings yield to training specialities and, while it does add information, does not change the classification between those who work in their training specialities and the others (Bruyère and Lemistre 2009).

Table 1. Career Path 1998-2001. Level of studies and speciality: Descriptive statistics France - Germany

	France		Germany	
	Mean		Mean	
998-2001 Career Path				
Number of months unemployed	2.83		1.69	
Number of sequential employments	2.1		2.5	
	%	**% Match**	%	**% Mat**
Vomen	43.1	53.4	55.9	76.3
Ien	56.9	36.7	44.1	63.4
evel of studies*				
Bac+2, certified	29.9	57.5	1.9	57.7
Uncertified	7.6	34.6		
Bac, certified	18.4	47.9	9.3	71.8
Uncertified	4.3	32.3		
Less than a Bac	34.2	34.9	88.8	70.7
raining-Employment Groups				
Mechanics	3.5	34	3.7	41.2
Metallurgy – metal industries	8.8	30.2	3	54.8
Electricity – electronics	7.8	30.4	2.6	63.6
Food industries	5.6	46.9	3.2	65.5
Wood, paper	2.4	38.5	3.6	65.8
ffice – data processing – secretarial	16	47.9	22.4	82.3
Wholesale and retail trade	9.8	45.5	11.8	63.1
Paramedical – social assistance	19	70	26.1	73.8
Hotels, restaurants – leisure	4.5	33.1	4	64.8
Agriculture	8.8	17.7	2.3	80.6
Construction and public works	6.3	49.5	10.5	67.8
Other industries	3.2	19.4	5.5	70.8
Other services	4.3	43.3	1.2	77.8
otal manpower	(29,016)	**44**	(4,103)	**70.5**

For categories of occupational training, captured on a relatively aggregated level (the 13 TJBs), only 44% of youth who had left the educational system in the 'Generation 1998' and who had taken a professional degree course held job in their training speciality in 2001.

For Germany, the first correspondence by speciality that is easily measurable concerns the 130 specialities in 1998 as compared to 2001. The rate of matching here was 59.7%. This correspondence by speciality consequently seems particularly strong since the level of detail is very high. We may therefore logically suspect that the grouping by 13 TJBs of the 130 categories would lead to a very great matching by speciality. Yet, such is not the case since the correspondence rate 'only' increases by 10% to reach 70.5% (Table 1). In other

words, nearly one third of young Germans who had finished professional training did not work in their speciality three years after their studies when aggregated at the level of TJBs, which is, nevertheless, less than half the figure for France. We might, however, have expected a more substantial difference for several reasons. In the first place, for the evident reason that 100% of the German youths worked in their speciality while studying. Then, and foremost, the occupational training systems are fundamentally different, as much in what concerns their place within 'social representations' as in the links they maintain with the labour market.

Before examining the determinants of correspondence by speciality in greater detail, we present the econometric method.[3]

The fact of working or not in one's training speciality depends on the level of education (*ed.level*), on the training speciality (*train.spec*) and on other characteristics of the training and educational path of each individual – reason for stopping studies for France, abandon or finishing late for Germany, notably – (Z_i). The error term (ε_i) captures the individual characteristics that are not signalled by the observable variables.

$$M_i = \begin{cases} 1 \text{ if } M_i^* > 0 \\ 0 \text{ otherwise} \end{cases}$$

$$\text{where } M_i^* = \gamma_1 ed.level_i + \gamma_2 train.spec_i + \gamma_3 z_i + \varepsilon_i \qquad (1)$$

[3] For more detail, Maddala (1983) may be consulted.

Let us recall that in the Assignment theory the principal hypothesis is the potency of the characteristics of the job in determining earnings, with nevertheless an effect of unobservable personal characteristics via the process of signalling adaptive capabilities. Along these lines, the regime equations explain the logarithms of the net monthly earnings in each situation according to:

$$\begin{cases} w_{i1} = \beta_{11}\, ed.level_{i1} + \beta_{12}\, train.spec_{i1} + \beta_{13}\, x_{i1} + \beta_{14}\, y_{i1} + u_{i1} & if\ A_i=1 \\ w_{i2} = \beta_{21}\, ed.level_{i2} + \beta_{22}\, train.spec_{i2} + \beta_{23}\, x_{i2} + \beta_{24}\, y_{i2} + u_{i2} & if\ A_i=0 \end{cases} \qquad (2)$$

The individual variables are: the level of education, the training specialities and the vector (x_i), the variables concerning the job appear in the vector (y_i). For the youths in a matching situation, the training and employment specialities are the same. The coefficient (β_{12}) measures the returns to specific human capital associated with each speciality, or in this particular case of allocation, for the Assignment theory, the differentiated earnings between jobs having distinct specialities. For the youth not in a matching situation ($A_i=0$), the coefficient of the training speciality (β_{22}) captures the earnings impact associated with the adaptability of each training speciality to other job specialities. We suppose that the terms $u_{i1,}$ u_{i2} and ε_i follow a trivariate normal distribution according to:

$$\begin{pmatrix} \varepsilon_i \\ u_{i1} \\ u_{i2} \end{pmatrix} \sim N \left\{ \begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix} \begin{pmatrix} 1 & \sigma_{1\varepsilon} & \sigma_{2\varepsilon} \\ \sigma_{1\varepsilon} & \sigma_1 & \sigma_{12} \\ \sigma_{2\varepsilon} & \sigma_{12} & \sigma_2 \end{pmatrix} \right\}$$

Here, the selection is assumed to be endogenous. Concretely, there should exist a correlation between the selection (being principally remunerated according to seniority) and each earnings equation, which is to say: $\sigma_{1\varepsilon} \neq 0$ and $\sigma_{2\varepsilon} \neq 0$. This is the test that we now perform below.

4. Determinants of training-employment matching

Table 2. Earnings and match versus mismatch by speciality in France and in Germany

Correspondence by speciality	**Match**				**Mismatch**			
Country	**France**		**Germany**		**France**		**Germany**	
	Coeff.	*std.dev.*	Coeff.	*std.dev.*	Coeff.	*std.dev.*	Coeff.	*std.dev.*
Constant	6.962	*0.024*	3.999	*0.179*	6.864	*0.019*	3.443	*0.302*
Women	-0.093	*0.006*	-0.116	*0.023*	-0.089	*0.006*	-0.058	*0.038*
Level of studies*								
Bac+2, certified	0.197	*0.010*	0.315	*0.067*	0.105	*0.007*	0.262	*0.100*
Uncertified	0.113	*0.011*			0.060	*0.009*		
Bac, certified	0.048	*0.009*	0.133	*0.032*	0.001	*0.007*	0.069	*0.055*
Uncertified	0.044	*0.013*			0.016	*0.010*		
Less than a Bac	ref.		ref.		ref.		ref.	
1998-2001 Career Path								
Number of sequential employments	0.018	*0.002*	0.008	*0.005*	0.016	*0.002*	-0.048	*0.009*
Number of months unemployed	-0.004	*0.000*	-0.001	*0.003*	-0.002	*0.000*	0.002	*0.004*
Paris region 2001	0.076	*0.006*			0.084	*0.006*		
Western Germany 2001			0.197	*0.095*			0.010	*0.155*
Specialities								
Mechanics	-0.049	*0.017*	0.047	*0.085*	0.051	*0.013*	0.121	*0.100*
Metallurgy – metal industries	-0.040	*0.015*	-0.142	*0.086*	0.055	*0.011*	0.279	*0.112*
Electricity – electronics	-0.065	*0.015*	-0.142	*0.084*	0.051	*0.011*	0.109	*0.120*
Wood, paper	-0.095	*0.019*	-0.131	*0.083*	0.012	*0.015*	0.118	*0.110*
Office – Data processing – secretarial	-0.096	*0.013*	-0.159	*0.066*	-0.027	*0.011*	0.030	*0.099*
Wholesale and resale trade	-0.040	*0.013*	-0.119	*0.068*	-0.016	*0.011*	0.174	*0.092*
Health care-paramedical-social	0.050	*0.013*	-0.103	*0.068*	0.021	*0.012*	0.175	*0.088*
Hotels, restaurants – leisure	-0.003	*0.016*	0.001	*0.077*	0.026	*0.013*	0.143	*0.113*
Agriculture	-0.080	*0.020*	-0.155	*0.073*	0.061	*0.011*	0.110	*0.107*
Construction and public works	-0.057	*0.016*	-0.104	*0.075*	0.018	*0.012*	0.047	*0.093*
Other industries	-0.027	*0.022*	-0.426	*0.097*	0.065	*0.014*	0.056	*0.152*
Other services	-0.037	*0.015*	-0.215	*0.110*	-0.018	*0.013*	-0.189	*0.199*
Food industries	ref.		ref.		ref.		ref.	
sigma_1	0.221	*0.001*	0.484	*0.008*				
sigma_2	0.270	*0.003*	0.503	*0.012*				
rho_1	-0.010	*0.053*	-0.911	*0.009*				
rho_2	-0.635	*0.022*	-0.113	*0.149*				

Figures in italics are standard deviations. Other explanatory variables are not displayed: type of work contract, sector of economic activity (17 for France, 16 for Germany), size of the firm (3), work type (full-time, part-time percentages).

While the hierarchies among specialities with respect to matching are relatively distinct between the two countries (Tables 1 and 2), the circulation between specialities, which will not be described here in detail, obeys quite similar logic in France and in Germany.[4]

For the sake of comparison and to simplify the presentation, we have attempted to select similar explanatory variables, as much for earnings as for matching. An initial difference appears nevertheless concerning the level of training since the French data make it possible to distinguish between the youths who received their diploma and those who failed or gave up *in fine*. Since this aspect seems to be particularly determinant in France (Table 2), the distinction has been retained for this country where obtaining a diploma continues to be a relatively strong element for signalling specific skills.

Important disparities between the countries become evident. Educational levels that are lower than the French 'Bac' concern 88.8% of youths in Germany, as compared to slightly more than a third in France (Table 1). This difference may be explained in first instance by the general structure of the two educational systems, France having more than 40% of youth obtaining a degree in higher education, as opposed to less that 30% in Germany (source OECD). Next, in Germany the track of vocational education is especially concentrated in the 'dual system', and the link between the educational levels is relatively vague, even though the dual training programmes have the reputation of being inferior to the level of the German *Arbitur* or French Bac. Added to this, particularly in France, is an important phenomenon of over-education, leading notably numerous youths with the level of a Bac + 2 years of further study to occupy posts requiring a lesser level (Giret and Lemistre 2004). This phenomenon accounts for the marginal differences when research is carried out by educational levels in France (Bruyère and Lemistre 2009). The foregoing precautions taken, the *ceteris paribus* analysis uncovers a remarkable distinction, quite revealing of the essential differences between the educational systems (Table 2). Here, it is a question of identifying the lower probability of training-employment matching at educational levels that are equal or superior to the Bac (*Arbitur*) in Germany, as opposed to what occurs in France. Such a finding would seem, in reality, more coherent with theory than the results for the French case. Indeed, the rise in the educational level has as its corollary an increase in the capacity for adaptation (Thurow 1975), which should logically lead to a lesser probability of correspondence between training speciality and job speciality as the educational level rises. If such not be the case for France, it obviously calls into question the value of the 'speciality signal' for the

[4] The detailed matrices are available from the author on request.

lower educational levels, signal that turns out to be determinant at the higher educational levels in spite of the more general contents of the training. Numerous youth are in fact oriented by default toward certain occupational training programmes that are at a lower level than the Bac, (a 'relegation path').

We shall not tarry over the coefficients of variables figuring in the selection equation that do not figure in the earnings functions (which are required for the estimation of the model) since the signs of these coefficients turn out 'as expected' (non-significant variables in the earnings functions for each country).[5]

5. Correspondence by speciality and earnings

In the two countries, working in one's occupational speciality is manifestly not a random phenomenon. It is therefore logical to question the link between this selection and earnings. Estimation by the switching regression model makes it possible to clarify this issue. The result obtained for both countries (each selection effect being overwhelmingly significant statistically for at least one country) may seem altogether paradoxical, at least in the interpretive framework of the theory of human capital proposed above. Undeniably, the correlation among residuals of the selection equation and the earnings equation for those in matching situation is negative, as well as for the correlation with the earnings equation for those in situation of mismatch. This simply means that the youths working within their occupational speciality have unfavourable unobserved characteristics with respect to earnings, and inversely so for youths holding a job in another speciality than their own.[6] From the moment the hypotheses of the Assignment theory are accepted, such a result finds its explanation: the youths who do not work in their occupational speciality exploit talents that are innate or acquired outside of the milieu of schooling (these being the only ones captured here via the initial education), which generate greater adaptability for them, and inversely so for the others.

[5] In France, we have access to information not only on apprenticeships and internships during training, but on reasons for dropping out of schooling. We drew inspiration from these variables to create proxies for the educational path from the German database, which does not offer equivalent variables. These are gap variables with respect to the median length of schooling for each level and each Training-Employment Group (TJG). A negative gap for the single year 1998 (marginally positive) reflects a probable abandon before the end of the degree course. A positive gap (negative marginally) for the total length of time mostly reflects being behind. These gaps are at once the sources and consequences of reasons for abandoning education.

[6] The negative correlation applies here to the selection equation 'working in one's speciality' and therefore is read in reverse for the fact of not working in one's speciality.

Table 3. The determinants of the correspondence between training speciality and job speciality

Country	**France**		**Germany**	
	Coeff.	*std.dev.*	Coeff.	*std.dev.*
Constant	-1.021	*0.081*	0.737	*0.429*
Women	0.077	*0.022*	0.158	*0.056*
Level of studies*				
	0.601	*0.031*	-0.003	*0.16*
Uncertified	0.356	*0.038*		
Bac+2, certified	0.422	*0.03*	-0.05	*0.08*
Uncertified	0.2	*0.045*		
Less than a Bac	0.289	*0.027*	ref.	
Uncertified	ref.		ref.	
Number of sequential employments 1998 -2001	-0.025	*0.007*	-0.05	*0.011*
Number of months unemployed 1998 -2001	-0.012	*0.002*	-0.033	*0.006*
Paris region 2001	-0.091	*0.024*		
Western Germany 2001			-0.05	0.*237*
Specialities				
Mechanics	-0.190	*0.055*	-0.086	*0.177*
Metallurgy – metal industries	-0.226	*0.046*	0.232	*0.187*
Electricity – electronics	-0.275	*0.047*	0.391	*0.189*
Wood, paper	-0.154	*0.062*	0.117	*0.177*
Office – Data processing – secretarial	0.261	*0.045*	0.654	*0.146*
Wholesale and retrial Trade	0.143	*0.045*	0.258	*0.15*
Health care – paramedical – social	0.468	*0.047*	-0.059	*0.146*
Hotels, restaurants – leisure	-0.260	*0.052*	0.167	*0.172*
Agriculture	-0.872	*0.048*	0.675	*0.221*
Construction and public works	0.056	*0.049*	0.16	*0.157*
Other industries	-0.617	*0.060*	0.405	*0.163*
Other services	0.218	*0.052*	0.532	*0.267*
Food industries	ref.		ref.	
Occupational training in Western Germany 1998			0.19	*0.078*
Had left employment in 1998			-0.197	*0.044*
Schooling path				
Proxy for being behind in degree course (in months)[7]				
Median years of study			ref.	
1 to 6 months			-0.128	*0.046*
More than 6 and up to 24 months			-0.198	*0.077*
More than 24 months			-0.152	*0.1*
Proxy for dropping out of school during the 1998 academic year[8]				
Median months of study (academic year 1998)			ref.	
More than 1 month			-0.123	*0.079*
Schooling path				
Apprenticeship	0.46	*0.037*		
Internship during studies	0.116	*0.033*		
Reason for ending schooling				
Had attained the desired level	0.21	*0.016*		
Financial reasons	-0.011	*0.018*		
lassitude	-0,083	*0,016*		

[7] *Differences in months for the level of training, and the Training-Job Group in number of median years.*

[8] *Differences in median months of study during the terminal year for the level of training of the Training-Job Group.*

The earnings of youths working in their occupational speciality remain nevertheless higher on the average, and clearly more so in Germany. Accordingly, the average yield to training-occupational correspondence is 1.5% in France and 11.1% in Germany.[9] Such returns nevertheless ignore the effect of selection and the great disparities between the two categories of salaried workers with respect to the effect of observable individual characteristics. To begin with, the youths in a situation of match obtain markedly higher returns for their diplomas. For instance, in France as in Germany, the earnings differential is at least 5% in favour of the Bac/Arbitur level in comparison to lower-level diplomas. Furthermore, strong specialities become evident for each country. In 2001, being a salaried employee in the western part of Germany procured a considerable earnings advantage (on the order of +20%, coefficient 0.197, Table 3); whereas, this benefit was nonexistent for the youths not working in their occupational speciality. Similarly, switching jobs turns out to penalise only the youths in situation of mismatch. As for France, the differentials between specialities are often more substantial when they correspond to the speciality of the employment occupied. It is thus relatively beneficial in terms of earnings to occupy a job in one's educational speciality for some specialities, and not for others. Do such disparities explain the youths' employment arbitrages in France? This is logically the case for regulated professions in the '*Health care–paramedical–social assistance*' Training-Employment Group, the probability of matching (Table 2) and the relative earnings return that is in fact high (Table 3), and inversely for the '*Agriculture*' TJG. However, most matches by speciality do not correspond to these typical cases, the elements that influence individual employment arbitrages being clearly more complex, as the Assignment theory postulates.

For Germany, the first observation concerns the youths working in their occupational speciality for whom we remark earnings differentials that are clearly more substantial between specialities, reaching up to 15% (except for 'other' TJBs), less than 10% in France. This more important role for the speciality may be explained by the more marked professionalization, vocational training being more specific in Germany than in France.

For the youths in situations of mismatch, the occupational specialities do in fact seem to signal capacity for adaptation to employment in other specialities. The earnings differentials between specialities are indeed non-negligible. In France, they deviate from the reference for some TJBs by more than 5%, which is close, or superior to, the earnings differentials obtained between educational levels for youths in situations of mismatch. In Germany, the

[9] The matching variable (0/1) in a single earnings function (equation 2) for the whole population, has overwhelmingly significant coefficients in both cases.

earnings differentials become more profound, reaching nearly 30%, the equivalent of the average earnings differential between holders of a Bac + 2 additional years of study and holders of a diploma of a lesser level. Yet, as was evoked above, the notion of educational level is vaguer in Germany than in France for occupational training. In other words, the earnings return organises a hierarchy of educational specialities in terms of levels beyond their specificity with respect to employment.

6. Conclusion

The French and German systems of professional training are quite divergent, the one remaining largely anchored to the educational system, the other being quite proximate to the firm. Our results nevertheless suggest that even in Germany, where 100% of the youths had held a job in their training speciality during schooling, 30% had left this speciality three years later. As for France, nearly the double of that figure no longer work in their educational speciality three years after the end of their studies.

When one considers that training in a given speciality cannot be exploited advantageously in a job of the same speciality, it is possible to conclude then that the educational systems for professional training are inefficacious, particularly in France. Such a conclusion is in line with a theoretical perspective in which the speciality reflects only the human capital that is specific to employment in the same speciality. This point of view, which is extensively widespread and advocated by institutions, including European institutions, can nonetheless be challenged in part. On the theoretical plane, we have reemphasised that the Assignment theory reveals the complexity of the allocation of individuals to jobs (Sattinger 1993). In this allocation process, the training in a speciality may then permit the acquisition of capacity for adaptation to other specialities. In addition, individuals may possess aptitudes for jobs, which may not necessarily be linked to their educational curriculum. Not working in one's training speciality is then no longer an unfavourable situation with respect to earnings.

The investigations conducted for the generation of youths terminating professional education in 1998 and surveyed in 2001 in France and in Germany substantiate such hypotheses, while nevertheless emphasising at the same time the more fertile role for the diploma when the youths work in their training speciality. Indeed, in the two countries, the level of education and the specialities have a clearly more substantial impact on earnings in this situation. However, certain specialities display relatively weak profitability in situation of speciality match. In addition, for the youths occupying a job in a speciality different from their training speciality, unobservable characteristics procure an earnings advantage for them,

while the training speciality continues to play a role. The employment specialities therefore organise the training specialities into a hierarchy by signalling capacities for adaptation to jobs in other employment specialities and, for gaining access to these jobs, individuals demonstrate aptitudes that were unobserved in the survey data.

At the hour of the current endeavour to establish an equivalence for vocational education and training at the European level, that is 'readable for the labour market' (Bouder, Dauty, Kirsch and Lemistre 2008), via the European Qualification Framework (EQF),[10] the findings obtained in this research call for several comments: in the first place, the level of occupational training in national nomenclatures does not by itself reflect the true level of training on the labour market, notably in terms of earnings. Thus, the speciality turns out to be a classing criterion that is sometimes more determinant than the level itself in France, and still more so in Germany, whether the youth works in his training speciality or not. Therefore, deducing from the levels of training in the national nomenclatures the levels for the European Qualification Framework (EQF) would seem to be over simplistic, at least for the professional qualifications. In addition, the training speciality manifestly does not in itself characterise technical competencies. Yet, the EQF categories, 'knowledge, skills and competencies', often lead to ascribing specialities only to the 'skills' category, while they obviously also influence the two other elements in this trio.

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[10] EQF proposed to create a common reference stated in terms of learning outcomes expressed in 'knowledge, skills and competences', classified into eight levels, as a benchmark for comparing the different existing national qualifications.

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