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Employment and Career Path Security : What Are the Links ?

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SYNTHÈSE

Beginning from an inquiry into the security of professional paths, INSEE's Training and Professional Qualification survey (TPQ)[1] enabled us to test three of its principal dimensions as defined by the CERC[2] (2005): employment stability, employment security and income security.

The analysis of career paths of active workers in the labor market cannot be reduced to the characterization to their individual profiles. It is also necessary to take into account another determining dimension in professional mobility: the previously held job. The work references of persons in salaried employment in 1998, notably on the nature and content of the post, made it possible to better characterize their trajectories over a five-year period.

We found that the characteristics of the employment relationship, the nature of the post held or the type of firm yield a stronger explanation of job stability, as well as of secure professional mobility in terms of income. On the other hand, individual characteristics play a more determining role in employment security, which is to say, the risk of experiencing a period of unemployment longer than six months. Categories of differentiated professional mobility emerged from these findings: career mobility within the firm, having a rising path with increasing income, as well as risky professional mobility due to exposure to lasting unemployment. These tendencies therefore persuaded us not to explore the issue of the security of employment trajectories independently from the jobs previously held by the wage earner.

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[1] In French, the acronym is FQP from the French *Enquête sur la Formation et la Qualification Professionnelle*, by France's National Institute of Statistics and Economic Studies (INSEE).

[2] Council for Employment, Income and Social Cohesion.

SOMMAIRE

The issue of reconciling flexibility for the firm and career security is at the heart of current thought concerning professional mobility (de Larquier, Remillon, 2008). The idea of "flexicurity" constitutes one of the axes of convergence on employment policies in Europe. A consensus has been reached about the necessity of urging labor supply to become more mobile and/or flexible, leading to the consideration of employability as the result of individual choices (OCDE, 2004; Council of the European Union, 2007). A new model of the workplace has thus been put forward: it presupposes that professional mobility becomes more intensive, that individuals must continually readjust themselves, while the social protection attached to internal markets decays. These different observations are controversial, as much for the question of the nature of the labor market transformations as for their implications in terms of public policy (Germe, 2001; Cahuc, Kramarz, 2004; Boyer, 2006; Méda, Minault, 2005 for example).

The purpose of this study is to explore the nature and the quality of professional trajectories of employed working-age people, without entering into the debate about the volume increase of job mobility or into the discussion about the evolution of seniority in employment.[3]

Using the data from the Insee's Training and Professional Qualification survey (TPQ) that describes the individual professional trajectories over the 1998-2003 period, we propose to better identify the elements of the job that enable individuals to move more or less easily along their professional trajectories. According to our hypotheses, these individual trajectories also reflect firms' methods of manpower management and, consequently, generate information about the strategies individuals use to adjust to the conditions imposed upon them. While the effect of individual characteristics on professional mobility has often been studied, the role of the nature of previously held employment remains much less explored. The TPQ survey permits the joint analysis of individual and longitudinal data concerning salaried employees and data on the firms in which these persons work. The aim is therefore to examine here to what extent the professional trajectories are also linked to the characteristics of previously held jobs.

1. BEYOND INDIVIDUAL CHARACTERISTICS: THE IMPORTANCE OF THE NATURE OF PREVIOUSLY HELD EMPLOYMENT

Surveys of individual data, such as the Training and Professional Qualification survey, have frequently given rise research focusing on labor supply and its individual characteristics. However, the TPQ survey also contains a great wealth of information on the jobs salaried employees occupy. This survey offers numerous variables worth exploiting that are descriptive of the firm and of the jobs held. It is certain that the trajectory in the labor market also depends on job content and on the employee's position in the productive organization. From a theoretical point of view, the job competition model (Thurow, 1975) is a particularly good illustration of how firms' rationality combines with the nature of the jobs to be filled to structure the characteristics of labor supply and the constitution of job queues. In this model, salaries are considered to be fixed in advance of any recruitment, and adjustment is accomplished through changes in quantity. Consequently, the salary is attached to the job and not to the individual. Thus, at the moment of selection, "the function of the educational system is not to transfer competencies to individuals… but rather to certify that they have the aptitude for being trained and to confer upon them a certain status" (Thurow, 1975). From this moment on, firms will seek out individuals whose training costs will be the lowest, and not those individuals expected to be the "most productive". The firms will use the diploma as a signal of the aptitude to be trained and will chose individuals with the most or highest degrees. If it is supposed that the characteristics of the previously held jobs may also determine the aptitude to be trained, then this explicative framework enables us to understand the differences in career trajectories among salaried employees having the same individual characteristics, but not having held the same jobs. Recent empirical research supports this view: Chardon (2005) emphasizes that the educational specialty, on the whole, plays a secondary role in

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[3] Applied studies on the evolution of instability of employment have arrived at contradictory findings, for example: for Fougère (2003) and L'Horty (2004), job insecurity has not increased, while Givord and Maurin (2003) or Behaghel (2003) contend that this risk is spreading.

gaining access to most occupations, and that for the youth, the correspondence between their diploma or educational specialty and their job is far from being the norm (Giret *et al.*, 2005).

Since the work of Aoki (1990), the importance of the organizational architecture of the business firm has been brought to light. The firm contributes to the production of transferable qualities and qualifications through on-the-job training, the content of the tasks, but also through the modes of organizing work and the circulation of information within the group, leading to the creation of differentiated domains of mobility. Currently, new modes of organizing work in Europe since the 1980s are replacing the Taylor-Ford organizational paradigm (Valeyre, 2007). These transformations have great importance for understanding individual professional trajectories. Along these lines, the research of Askenazy and Caroli (2003) and of Greenan and Mairesse (2006) present the advantage of mobilizing data from business organizations for the purpose of linking the employment flows with organizational types and with techniques used by the firms. In particular, these studies analyze the link between the use of information and communication technologies (ICT) and the evolution of employment in the firm – in volume, but also according to personnel qualifications. This literature shows that the effects of ICT do appear, in connection with the biased technological progress, but in certain particular organizational contexts and in a differentiated manner.

Other aspects of the organization of the firm may be approached from the working conditions. Utilizing the TPQ survey, Amossé and Gollac (2008) looked into the connection between the constraints on the rate of work endured in the workplace and the changes in professional situations. They emphasized that a strong intensity in 1998 was associated with more frequent professional mobility between 1998 and 2003. The types of constraints on the pace of work are reflections of the organizational and technological contexts that are different in function of the business firms. These contexts are not described as such in the TPQ survey, but they are more or less captured in the analysis of the nature or the content of the job and of the pressure from the organization of work. For example, for these authors, contrary to certain preconceived ideas, the principles of hierarchical control persists in modern organizational forms, notably for determining the rate of work of an increasing number of salaried employees. They bring to the fore a double effect of the intensity of work on careers: it is positive for those who have the means to meet the constraints and negative for the other workers.

Admittedly, the data concerning individuals in the TPQ survey do not make it possible to easily extrapolate firms' modes of managing human resources, but they furnish clues. The various research efforts into the role of using techniques such as the ICT or into constraints in the workplace deserve therefore to be studied in relation to the types of professional trajectories identified in the TPQ survey. Taken as a whole, certain variables describing the firm, the characteristics of the jobs held and the type of work organization allow us to capture the interaction between the characteristics of salaried worker and the attributes of his job. The seniority in the post, the type of work contract or the socio-professional category, for example, thus constitute the variables characterizing the matching process between firms and individuals.

2. A PROPOSITION FOR MEASURING THE SECURITY OF CAREER PATHS

We analyzed the professional trajectories between 1998 and 2003 by comparing the situation of the job held in 1998 with that of the employment occupied at the date of the survey (2003). Our approach focused on the individuals with salaried employment in 1998 and still present in the labor market in 2003. We carried out our estimations on 21,210 of the 39,285 individuals included in the survey. We limited this study therefore to the analysis of professional trajectories of persons employed in 2003, and we excluded from the field of investigation by construction persons unemployed or inactive in 1998. On the basis of the minimum length of the individuals' presence in the labor market, open-ended work contracts[4] were by far the most numerous, which is consistent with the data on relative guidelines on the nature of work contracts for salaried workers.

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[4] An open-ended work contract is known as a "CDI", *Contrat de travail à Durée Indéterminée*, as compared to a fixed-term work contract called a "CDD", *Contrat de travail à Durée Déterminée*.

The security of professional paths has been defined by the Council for Employment, Income and Social Cohesion (2005), based on three important criteria. Using the TPQ survey (2003), we constructed three probability models capable of replicating these three criteria and of characterizing the professional paths:

- Criterion 1 relates to employment stability and designates the continuity of the link of employment between the salaried worker and the firm. We tested here the probability of remaining in the firm between 1998 and 2003, with or without changing posts or internal promotion. Thus, 15,676 persons did not change firms during this period, out of the 21,210 individuals in our sample (Selection 1), which is to say 73%, and 5,534 others experienced external mobility.

- Criterion 2 concerns employment security. It refers to the fact of remaining employed without lasting interruption, even when there has been a change of employers. We estimated this risk on the population having experienced an external mobility between 1998 and 2003 so as not to be redundant with the first model. This population is composed of 5,534 individuals (Selection 2). In our model, we approached this criterion via the risk of experiencing lasting unemployment, which is to say, an interval of unemployment or inactivity of more than six months between 1998 and 2003. This risk concerned 1,470 persons (26.7% of the sample): thus, 4,064 others were rapidly able to find employment again.

- Criterion 3 relates to income security. Our data only allowed us to detect the stability and/or progression of income for those who had moved between jobs or firms (Box 1). This measurement concerned a population of 9,477 "mobile" persons (Selection 3), of whom 3,943 with an internal change of posts and 5,534 with an external mobility. 7,223 of them maintained or increased their incomes (75.6% of the cases), and 2,254 lost some salary.

Box 1

WHAT INCOME SECURITY HAVE NON-MOBILE INDIVIDUALS?

In our sample, 11,733 persons neither changed employers nor posts within the firm from 1998 to 2003, and it was not possible to obtain information on the evolution of their income from the data in the TPQ survey. Can we deduce that these individuals at least experienced income stability, knowing that downward-wage rigidity is often assumed? According to the legal principle, the base salary constitutes an element of the work contract that cannot be adjusted downward without the assent of the salaried worker. For the persons who did not change employers, this element of remuneration can therefore be considered fixed or stable. Nevertheless, according to Biscourp *et al.* (2005), downward-wage rigidity may be overestimated in numerous studies based on survey data. By using administrative sources, these authors showed that, each year, from 20% to 30% of salaried workers witness their remuneration decrease, this variability resulting partly from bonuses (13% of income), while base salaries presented their usual characteristic of fixity. The variations in salary can also come from changes in working conditions (shifts in schedules). According to the authors, the persons remaining in the same firm are also those most ready to accept a decrease in salary. Thus, we have not supposed income maintenance or increase for these non-mobile persons.

The estimations of the three probability models took into account the sample selection effect. In the first model (employment stability), the issue was to correct for selectivity bias linked to the statute of salaried worker in 1998 and to the fact of being still active in 2003 (Selection 1). In the second model, it was necessary to reduce the sample selection to mobile persons; which is to say, those who had changed employers in 2003 with reference to 1998 (Selection 2). The third model concerned the individuals who were salaried in 1998, still active in 2003 and who had experienced at least one mobility (internal or external) during the 1998-2003 period (Selection 3). Our estimation technique followed the method of Van de Ven and Van Pragg (1981), (cf. Box 2).

Box 2

ESTIMATION OF A PROBIT MODEL WITH SELECTION EFFECT

We are concerned with a maximum-likelihood estimation of the following relations:

$$(1): y_i^* = X_j \beta + u_{1j}$$

$$(2): y_i^{probit} = (y_j^* > 0)$$

$$(3): y_i^{select} = (Z_j \gamma + u_{2j} > 0)$$

$$corr(u_1, u_2) = \rho$$

The dependent variable Y_i is observable only when the relation (3) is true. If $\rho \neq 0$, then the estimation along the lines of Van de Van and Van Pragg is unbiased and asymptotically efficient. The selection effect is proven to exist. This is the case in our three estimations since the null hypothesis of $\rho = 0$ is always rejected.

To choose the excluded instrumental variables that make it possible to correct for the selection effect, we selected variables that were independent of our three probabilities of interest (employment stability, employment security and income security), but which accounted well for the selection in question.

In this way, our excluded instrumental variables were: the father's diploma, the status of the father or the mother when the surveyed individual finished his studies (self-employed, home helper, salaried employee in the public or private sector), the number of children, the father's socio-professional group (farmer, craftsman, executive, intermediate profession, office worker, manual worker).[5] The variable "professional experience" did not have explicative value for the probability of maintaining or increase income. On the other hand, this instrument was strongly correlated with the probability of belonging to Selection 3, which is why it was excluded in its role of instrumental variable.

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[5]. The father's socio-professional group was an instrument for only the Selection 2 estimation.

3. ESTIMATION OF THE SECURITY OF PROFESSIONAL PATHS

Table 1

Estimation of the Security of Professional Trajectories

(Probit Model with Correction for Sample Selection Bias)

		Model 1	Model 2	Model 3
		Probability of remaining in the same firm from 1998 to 2003 **Employment stability**	**Probability of experiencing non-employment longer than 6 months from 1998 to 2003** **Employment security**	**Probability of maintaining or increasing income from 1998 to 2003** **Income Security**
Specialized field of training (reference: techno-professional domain of production)				
	Without specialized field or undocumented	0.009	-0.010	0.024*
	Educational domain	0.002	-0.024	-0.001
	Techno-professional service domain	0.022**	-0.034	-0.002
Activity of the business firm (reference :education, health care, and management)				
	Agriculture, fishing, forestry	-0.072**	0.048	-0.029
	Industry – consumer goods	-0.017	0.057*	0.001
	Industry – investment goods	0.017	0.027	0.005
	Construction	-0.074**	0.022	-0.005
	Trade	-0.025*	0.039	0.012
	Transport	-0.024	0.000	-0.002
	Financial and real estate activities	0.023	0.018	0.016
	Services to businesses and households	-0.029**	0.031	-0.007
	Unknown	-0.116**	0.089*	-0.073**
Social category (reference: intermediary professions)•				
	Craftsmen, retailers	-0.109*	0.131	-0.040
	Executives and higher intellectual professions	-0.026**	-0.003	0.025*
	Office workers	0.035**	-0.030	0.019
	Unskilled office worker	0.027**	0.046*	0.003
	Skilled worker	0.021*	0.003	0.006
	Unskilled worker	-0.008	0.028	0.015
	Unknown	0.024	-0.118	0.172
Size of business entity (reference: more than 1000 workers)				
	0 to 9 salaried workers	-0.116**	0.051*	-0.010
	10 to 49 salaried workers	-0.044**	0.027	-0.029
	50 to 1000 salaried workers	-0.016	0.014	0.018
	Without response	-0.068**	0.011	-0.008

Supervision (reference: supervises no one)		0.000	0.000	0.000**
Man (reference: woman)		-0.049**	-0.105**	0.032**
Highest diploma (reference: CAP, BEP or level V[6])				
	Baccalaureate + 3 years of university and more	0.003	-0.074**	0.043**
	Baccalaureate + 2 years of university	-0.014	-0.117**	0.009
	Baccalaureate or level IV Professional certificate	0.001	-0.021	-0.013
	BEPC (*Brevet d'études du premier cycle*)	-0.003	0.016	-0.018
	Without diploma	0.016	0.052**	-0.004
Seniority in the business firm (reference: less than 5 years)				
	From 5 to less than 10 years	0.093**	-0.054*	0.041**
	From 10 to less than 20 years	0.150**	-0.042	0.030**
	More than 20 years	0.187**	0.024	0.028
Experience in the labor market (reference: more than 20 years)				
	From 0 to less than 5 years	-0.111**	-0.227**	
	From 5 to less than 10 years	-0.061**	-0.120**	
	From 10 to less than 20 years	-0.044**	-0.060**	
Part time, less than 90 % (reference: full time)		-0.010	0.056**	0.035**
Do not use ICT (reference: utilization of ICT)		0.014*	0.034**	0.015
Subject to work rate of machines (reference: not subject)		0.028**	0.017	-0.045**
Subject to work delays (reference: not subject)		-0.011	-0.026	0.011
Public sector (reference: private sector)		0.072**	0.051*	0.009
Subject to hierarchical control (reference: not subject)		-0.047**	-0.022	-0.015*
Subject to client requests (not subject)		-0.006	0.017	-0.010
Has contact with the public (reference: no contact)		-0.007	0.000	0.002
Function (reference: production operation)				
	Maintenance	0.012	-0.005	-0.026
	Cleaning service	0.010	-0.009	0.010
	Handling	0.003	0.058*	-0.022
	Secretariat, reception	-0.004	0.056	-0.006
	Accounting, management	-0.048**	-0.002	-0.007
	Development	-0.039**	0.016	-0.015
	Sales	-0.013	0.023	0.005
	Teaching	0.010	-0.011	0.009
	Health care	0.016	-0.042	-0.056**
	Other	-0.027**	0.018	-0.016
Work Contract (reference: open-ended contract CDI)				
	Fixed-term contract (CDD)	-0.148**	0.134**	-0.056**
	Temporary worker	-0.221**	0.037	-0.056**
	Apprentice	-0.145**	0.105**	0.012

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[6] CAP, *Certificat d'Aptitude Professionnelle*, BEP, *Brevet d'Études Professionnelles*, level V being 3-year professional diplomas in the French secondary school system.

Age (reference: 35 to 45 years old)				
	Less than 35 years old	-0.009	-0.039	0.004
	45-55	0.008**	0.001	-0.001
	More than 55 years old	0.108**	0.101**	0.024
Mobility within the firm (reference: external mobility)				0.191**
	Constant	0.922**	0.714**	0.626**
	ρ (null hypothesis: $\rho = 0$)	3.130*	5.850**	13.900**
• *The nomenclature for socio-professional categories separating skilled from unskilled employees adopts the usage of Amossé and Chardon (2006).*				

Source: INSEE's Training and Professional Qualification survey (TPQ) 2003, authors' calculations.

The table is read as follows: The figures are elasticities of the probability (dy/dx) in %, calculated as the average of the explanatory variable. Thus, having experienced an internal mobility (within the firm) increased by 19.1 % the chances of a worker maintaining or increasing his income in comparison with those who experienced an external mobility (between firms).

** Significant at the 5% level, * Significant at the 10 % level.

3.1. Stability of Employment

This first estimation linked the stability of the salaried worker in the firm between 1998 and 2003 to the nature of the employment held in 1998 and to attributes of the individual. The business cycle was worth taking into consideration since the period of the survey was characterized by a high rate of job-to-job mobility, with changes of employers, at least until mid-2001. Our analysis, all other factors held constant by means of a Probit model, added confirming evidence to the importance of the nature of the employment in the course of professional careers (*cf.* Table 1, Model 1).

Employment stability was more likely for salaried workers with a technical training in production, working in administration, health care, industry, financial and real estate activities, and more frequent in the public sector. More often than not, these were women office employees, skilled or not, or skilled workers. Clearly, certain relatively unskilled socio-professional categories had greater probability of remaining in the business firm, which can be explained by their position in the organization. *A priori*, the function in the firm was not strongly discriminating for employment stability. Nevertheless, occupying a function in management, accounting or development seemed to have a negative impact on job stability. Undeniably, the professional functions that favored stability were found in the area of "production/operations", which is to say, those concerning the core of the firm's business, while the functions in accounting/management or in development were found upstream or downstream from the firm. The competencies developed in these areas were certainly more transferable, but these functions can also be more easily subcontracted.

These stable persons worked in firms having more than 50 salaried workers. This strongly significant effect confirmed the findings of Duhautois (2006) or of Kalleberg and Maasteca (1998): the probability of leaving a company is inversely proportional to its size. On the other hand, our estimations did not differentiate among companies having more than 50 salaried workers. In absence of observable variables on the organization of the firm, its size furnished clues for understanding its structure: in large entities, remuneration was frequently higher and internal markets larger, which encouraged some people to stay put.

To remain in the same firm, it was best to have a long seniority and experience and, logically, to have an open-ended work contract. Long seniority on the job in 1998 seemed to have been an important factor of stability, and this as soon as individuals had more than five years of tenure. Similarly, this result was coherent with the finding that seniority in the employment was correlated with the size of the company and its organization. In France, the average seniority of a salaried worker in a firm is about eight years, increasing with the size of the entity and rising if the company belongs to a group (Duhautois, 2006). Seniors, more than 55 years old, had greater probability of remaining in the same company, while results for other age groups were not significant. This finding showed, by omission, that the model did not capture the situation of young adults, who at the beginning of their careers traditionally change firms much more often than others[7] (Dupray, 2005). This can be explained by the fact that in our data the generation younger than

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[7] Persons older than 35 represented 23% of our sample.

35 years old included youth already stabilized in their employment, a frequent situation after three years of integration in the labor market.

Concerning working conditions, using of information and communication technologies (ICT), or being subject to machine work rates induced greater employment stability. As a first finding, work constraints and working conditions therefore yielded differentiated post profiles. Some permanent salaried workers endured work rhythms that were imposed by operations, while others worked at a post with a profile that protected them more from rhythm constraints. A Declaration of "not being subject to control or supervision by the hierarchy at least once a day" may be interpreted as a certain degree of autonomy in the workplace, favoring employment stability, which confirmed the findings of Amossé and Gollac (2008). Similarly, recourse to ICT in the work function, which concerned 48% of individuals, emerged as a factor of stability in the firm. Even so, this state was not synonymous with immobility since these persons may have acquired competencies and progressed within the same firm. It is thus probable that the type of mobility, internal or external, of those using ICT much depended on the productive organization of the firm. The observed effect of ICT in our data tended to converge on the findings of Greenan and Mairesse (2006),[8] showing that the diffusion of information technology contributes to "transversalizing" organizations, which recenter their activity on their core business. Thus, ICT encouraged salaried workers to become more autonomous, versatile and flexible. This phenomenon may explain why when recruiting such firms pay more attention to personal competencies that are neither guaranteed by diplomas nor by experience. In this sense, the diploma was not a discriminating element in our model; only those without diplomas had greater probability of remaining in the same firm. This finding coincided with other research according to which those with a low skill level are not endowed with transferable competencies favoring secure external mobility. All else held constant, staying in the same firm permitted the stabilization of their professional situation, certainly without career perspectives. Let us mention that, with the exception of these stabilized professional paths, salaried workers without diplomas remained fundamentally more subject to the risks of obligatory external mobility linked to the end of temporary work contracts or to layoffs (Amossé, 2004).

Two cases seemed to emerge from this estimation. The first concerns the industrial worker having a long seniority and subject to machine work rates. This employment stability was therefore constructed by an institutional context of internal industrial markets. The second case relates to the office employee working in the public administration or in large private companies, having a financial or real estate activity, disposing of a certain autonomy. The different characteristics of jobs held in 1998 determining stability in the firm converge on the idea that these salaried workers especially occupied qualified executive posts, personnel more difficult to replace than unskilled workers. They may therefore be similar to an "infrastructural" type of salaried personnel: this type of salaried employees will be stable because they occupy posts that are not affected by variation in output but are necessary for its accomplishment (Stankiewicz, 1990). This "infrastructural" manpower is characterized above all by the nature of the post held, impervious to the business cycle, and not by the individual's degree of specialization or qualification.[9]

3.2. Employment Security

On basis of characteristics of the job and of salaried workers in 1998, what were the factors that explained the exposure to the risk of lasting unemployment (*cf.* Table 1, Model 2)?

In the case of an external mobility between employers, the probability of rapid resumption of employment was more linked to individual characteristics than in the estimations centered on employment stability (*cf.* Table 1, Model 1). Accordingly, beyond the firm, more classical signals such as the diploma or work experience once again assumed importance. The diploma, beginning with the level of a Baccalaureate + 2 years of university, remained a trump card for avoiding lasting unemployment. The women with little experience and seniority on the job of less than five years were the most affected by unemployment longer than six months. In terms of sectors of activity, the individuals most exposed to this risk were those occupying employment in consumer goods industries and those in the public sector. Undeniably, the salaried workers in the public sector having experienced an external mobility frequently worked under fixed-term

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[8] The field of investigation of this research is limited to only to French industry during the 1990s.

[9] Stankiewicz (1990, p. 47) introduces the concept of "infrastructural" manpower that is distinguished from personnel that can adjusted in the short run and from the workers who are quasi-fixed (Oi, 1962).

contracts or "assisted" contracts (36% among them), which perhaps explained their difficulties in finding new employment. Unskilled workers handling goods in warehouses and workers in firms with less than 10 salaried workers were also more frequently concerned by this risk. Moreover, those who use ICT had greater probability of experiencing a period of lasting unemployment, which attests to the differentiated role of this variable depending on the organization of work, but also on individual characteristics.

Temporary or interim work contracts, as well as fixed-term labor contracts (CDDs), were often associated with resuming employment within the six month period. Certain particular forms of employment can thus make it possible to avoid long-term unemployment.[10] On the other hand, employment governed by open-ended labor contracts (CDIs), apprenticeship or still part-time agreements played an unfavorable role in the rapid return to work. As for age, the 35-55 age bracket represented a pivot. The youngest workers experienced long-lasting unemployment less frequently, while the older workers had a 10% greater chance of finding themselves in this situation, the employment opportunities dwindling considerably after 55.

A first configuration illustrated a certain form of employment security encountered by youth having at least the level of a Baccalaureate + 2 years of work experience, working under fixed-term contracts or carrying out interim assignments. On the other hand, a second configuration represented a high risk of employment insecurity. The most fragile profiles and/or characterized by a low skill level emerged: those working notably in consumer goods industries, some of which are in decline. In this case, passing through a period of unemployment longer than six months may potentially lead to descending professional trajectories: the importance of interruptions in activity such as unemployment or inactivity in the professional paths may indeed have explained the increase in the proportion of descending employment mobility during the 1980s (Monso, 2006).[11] The risk of being trapped by recurring or lasting unemployment is not to be excluded either.

3.3. Income Security

The persons under study here are those who have changed posts, either within the same business establishment or between firms. Did the interaction between the individual characteristics and those of the job in 1998 make it possible to identify certain factors that support these positive professional moves (*cf.* Table 1, Model 3)?

The probability of maintaining or increasing one's income in case of switching employment is greatest for men, particularly for those with the highest diplomas (Baccalaureate + 3 years of University and more). As soon as salaried workers had acquired more than five years of seniority in a post, professional mobility also occurred with income security. The combined effect of the diploma and seniority on the job seems to support the conclusions of Germe (2001) for whom the diploma acquired lasting value on the external job market, which does not vanish with the lengthening of professional experience: active workers who enhanced the value of their professional moves in terms of salary were systematically those with the highest diplomas. In our database, this description corresponds to business executives and higher intellectual professionals working under an open-ended work contract (CDI). Autonomy on the job also made it possible to more easily preserve income level: neither being subject to machine working rates, nor to hierarchical supervision operated in the same direction. Working part time in 1998 was a factor increasing income in case of mobility (+3.5%). This finding may be explained by the initially low remuneration in these jobs: beginning from quite low levels, the probability of maintaining or increasing a low salary is therefore high when changing posts.

Mobility within the firm is a strongly determining factor for guaranteeing income security (+19.1% in comparison to mobility between firms). Introducing into the estimation variables that document the type of mobility (external or internal) rendered numerous employment variables weakly explicative. For example, the function performed in the firm, the size of the business establishment and even the sector of activity then hardly explain the probability of maintaining or increasing income. Thus, before being guaranteed by certain types of employment, income security was first assured by maintenance within the same organization. It remains nonetheless true that not all jobs presented the same possibility of remaining in the firm, depending

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[10] Interim work is at once a source of precariousness for salaried workers and a stage in the processes of integrating youth in the labor market (Cancé, Fréchou, 2003).

[11] More precisely, for the importance of ascending and descending mobility when coming out of unemployment, see Lizé and Prokovas (2007).

on the size of the firm and on the sector of activity, among other factors, as we have shown in the evaluation of employment stability.

External mobility is synonymous with income security on the condition of having a certain level of autonomy on the job and an advanced diploma, which confirms the findings of d'Amossé and Gollac (2008). Working conditions and constraints on the pace of work in 1998 clearly affected these professional trajectories, while the use of ICT was insignificant (Heckel, 2006).[12]

What Career Path Security for Individuals under Open-Ended Work Contracts?
The variable "type of work contract" was strongly discriminating in the three estimations. These results are trivial in the Models 1 and 2 (*cf*. Table 1). Of course, persons under temporary contract, fixed-term, interim or apprenticeship, evidently had greater probability of leaving the firm and more difficulty in maintaining or increase their income between 1998 and 2003.

It may be supposed that the fact of being under temporary contract depends on other explicative variables, observable or not. In this case, that variable is dependent on the error term, and we find ourselves in presence of endogeneity bias. So as to simplify the estimations, we constructed a dichotomous variable – under open-ended contract (CDI) versus temporary contract – from the "type of work contract" variable. In our three models, the endogeneity of the type of work contract proved true (*cf*. Box 3).

Box 3

ENDOGENEITY OF A DICHOTOMOUS VARIABLE IN A PROBIT MODEL:
TEST AND ESTIMATION

To test for endogeneity in of the dichotomous variable "type of work contract" C_i in a Probit estimation, we tested the null hypothesis, H_o: $\rho = 0$, in the following bivariate Probit model:

$$C_i = (Z_j \gamma + u_{2j} > 0)$$

$$y_i = (X_j \beta + C_i \delta + u_{1j} > 0)$$

$$corr(u_1, u_2) = \rho$$

These models were estimated with sample selections 1, 2 and 3; and in the three cases, the null hypothesis was rejected at 11% (for employment stability, P>|Z|=0.048, for employment security P>|Z|=0.008, and for income security P>|Z|=0.113).

In the case of a proven endogenous dichotomous variable, two situations are possible. If the coefficients of the other explicative variables do not vary in function of the type of work contract, we are in presence of constant effect (intercept effect). In this case, the endogeneity is correctly taken into account by the introduction of the endogenous dichotomous variable into the three models and the use of an adapted estimation method.

On the other hand, if the coefficients of other explicative variables vary according to the type of work contract, we are in presence of a general effect (slope effect). In this case it is necessary to estimate two models on the two distinct populations: the first on individuals under open-ended work contracts, and the second on persons under temporary contracts.

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[12] According to Heckel (2006), correlations between computerization and growth of employment and between computerization and growth of salaries were hardly significant for all classes of industrial salaried workers. These were only correlations that did not exclude the existence of technological bias, the author emphasizing that the computerized firms did not strongly reorient their demand for labor in comparison to others.

The comparison of the estimations on the two subsamples showed that we were confronted with a general effect. We have therefore carried out three new estimations for the three probabilities on a subsample reduced to individuals working under open-ended a work contract.[13]

Accordingly, sample selection 1 was reduced from 21,210 to 18,075 salaried workers under open-ended contracts. In the same way as we did previously, we chose the excluded instrumental variables making it possible to explain the three new reduced sample selections, but which were independent of our three probabilities. We arrived at the same excluded instrumental variables as before. Moreover, employment variables were necessary to correctly explain the three new selections. These variables were: working time, socio-professional category and seniority on the job.

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[13] The estimations on the subpopulation working under temporary contracts were based on total numbers that were too small to allow comparison and interpretation.

Table 2

Estimation: Security of Trajectories "All contract types" vs. Open-Ended Contracts

	Model 1		Model 2		Model 3	
	Probability of remaining in the same firm **from 1998 to 2003** **Employment Stability**		**Probability of experiencing non-employment longer than 6 months** **from 1998 to 2003** **Employment Security**		**Probability of maintaining or increasing ones income from 1998 to 2003** **Income Security**	
	All contract types	*Open-ended contracts (CDI)*	*All contract types*	*Open-ended contracts (CDI)*	*All contract types*	*Open-ended contracts (CDI)*
	$\hat{\beta}$	$\hat{\beta}$	$\hat{\beta}$	$\hat{\beta}$	$\hat{\beta}$	$\hat{\beta}$
Activity of the business firm (reference: education, health care and administration)						
Agriculture, fishery, forestry	-0.235**	-0.305**	0.143	0.349*		
Industry – consumer goods	-0.060	-0.106*	0.169*	0.454**		
Industry - investment goods	0.062	0.026	0.078	0.347**		
Construction	-0.240**	-0.300**	0.064	0.334**		
Trade	-0.085*	-0.103**	0.115	0.555**		
Transports	-0.084	-0.122*	-0.001	0.434**		
Financial and real estate activities	0.085	0.047	0.052	0.312**		
Services to businesses and households	-0.101**	-0.133**	0.091	0.464**		
Unknown	-0.362**	-0.413**	0.276**	0.800**		
Public Sector (reference: private sector)			0.149*	-0.236**		
Age (reference: 35to 45 years)						
Less than 35 years old	-0.030	-0.127**				
45-55	0.029	0.058				
More than 55 years old	0.432**	0.383**				
Seniority in the firm (reference: less than 5 years)						
From 5 to less than 10 years					0.163**	0.113*
From 10 to less than 20 years					0.115**	-0.074**
More than 20 years					0.107*	-0.303*

Source: INSEE's Training and Professional Qualification survey (TPQ) 2003, authors' calculations.
The table is read as follows: These comparisons are of estimated coefficients for certain significant explicative variables showing the difference between estimations for "all contract types" and estimations for open-ended contracts (CDIs). For example, in comparison with the private sector, the risk of lasting non-employment was higher in the public sector for "all types of contracts" taken together (positive sign of the coefficient), but it was the inverse for salaried workers under temporary contracts (CDIs).
** Significant at the 5% level, * Significant at the 10 % level.

The comparison between the results of estimations obtained on these three new sample selections (*cf.* Table 2) and the results from the first three estimations (*cf.* Table 1) show few changes, which on the whole tend to confirm our previous findings. Only a few variables play a more important role when the population under open-ended work contracts (CDIs) is isolated (Table 2). Three results emerge:

First, the comparison of estimations between the set of all work contracts and the open-ended contracts (CDIs) enabled us to refine the analysis of the role of the type of contract according to the firm's sector of activity. The probability of remaining in the same establishment and of avoiding lasting non-employment diminished for all sectors other than "education, health care and administration". In terms of career trajectories, this finding brought to the fore the protective nature of this sector dominated by the public service (in this sector, 73.7% of individuals are civil servants as opposed to only 27.9% in the public at large). Here, belonging to a protected sector (either public or little exposed to competition) seems to explain the stable and securitized career trajectories in case of changing organizations. Isolating the open-ended work contracts therefore highlighted the very protective character of the sector "education, health care and administration". The evolution of the coefficient of the "private/public sector" variable between the two series of estimations added weight to this observation. Undeniably, the risk of enduring non-employment was higher in the public sector than in the private sector when all work contracts were considered together. On the other hand, it was lower for persons under open-ended contracts in the public sector than for persons with the same contract in the private sector. This result shows the protective character of an open-ended contract in the public sector with respect to the continuity of employment. The open-ended work contracts are therefore hardly comparable in the public and private sectors in terms of employment security. On the other hand, we might deduce that those with temporary contracts in public services are more exposed to the risk of long-term unemployment than those in the private sector.

Secondly, age played a different role: employment stability was weaker for persons less than 35 years old under an open-ended contract in comparison to persons between 35 and 45 years old. As for the probability of remaining in the firm, let us recall that the results for "all types of contracts taken together" did not bring to light differences between these two age groups. The young salaried workers under open-ended contract therefore were ensured of a lesser employment stability.[14] To be sure, a non-negligible share of open-ended contracts are "fragile", either because the young salaried workers wish to change employers, or because these breaches of contracts include dismissals or obligatory mobility (Johnson, 1978).

Finally, for mobile salaried workers under open-ended contract, seniority on the job longer than 10 years diminished income security in comparison to lesser seniority. The length of time most favorable to the maintenance or increase in income is thus limited to a period between 5 and 10 years.

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[14] Let us make clear that the majority of workers younger than 35 years old are under temporary contracts. There subsists, therefore, a risk differential between the youngest and the others that cannot be explained by the fact that those under 35 are mostly under temporary contracts.

4. WHAT ROLE FOR EMPLOYMENT AND JOB-MATCHING VARIABLES IN PROFESSIONAL CAREER PATHS?

Examination of the elasticity values of each type of variable brought out the preponderant role of employment and job-matching variables in comparison with strictly individual variables for employment stability and income security (*cf.* Table 1). Of course, the elasticity values cannot be simply added together because the explicative variables are partially correlated. Nevertheless, they give an indication of strength of the link between the explicative variables and the probability in question.

Thus, working in the construction sector, in a firm with less than 10 salaried workers, as a temporary worker and having accumulated less than 5 years of seniority diminished by 60% the probability of remaining in the same organization between 1998 and 2003. That probability fell to lower than 76% when are added: belonging to the private sector, being subject to machine pace while working, to hierarchical supervision and not using ICT. On the other hand, the gender, diploma, experience, age, educational specialization only made the chances of remaining in the same organization vary by 28% (being a woman, without a diploma, having more than 20 years of experience and being older than 55).

The estimation of income security exhibited the same results, but with different employment variables. Being autonomous in the workplace and working under an open-ended work contract increased income security by 11.6%, and when these characteristics were coupled together with a mobility within the firm, the figure of 30.7% was attained. Other employment variables such as working part time intervened (+3.4%), but they certainly were not found in the first case of securitized mobility. On the side of individual characteristics, they played a more modest role: being a man, with a Baccalaureate + 3 years of general studies, only increased income security by 9.7%. In fact, for securitized career paths in terms of income, mobility within the firm occupied a preponderant place. These two estimations ("remaining in the same firm" and "maintaining or increasing income during mobility") confirmed the existence of organized internal career paths that adapt to circumstances, with promotion itineraries for some individuals and apparent stability for others, at least for a five-year horizon.[15]

Holding all else constant, these career paths related more to intermediate qualifications and qualified office or manual jobs than to management employment. Somewhat prudent interpretation is required since mobility within company groups was unobservable using our data and concerned management more than other socio-professional strata: belonging to social networks, a good reputation – a very specific human capital that each individual owns – or more personal competencies that cannot be codified, form as many unobservable variables.

On the employment security side, which is to say the chances of avoiding lasting non-employment, the phenomenon was inversed since individual variables became more determinant than employment variables. Thus, men having a diploma at the level of a Baccalaureate + 2 years of university study, less than five years of experience in the labor market and between 35 and 45 years old, increased their probability of rapidly finding another job by nearly 55%. It is true that the last two characteristics are scarcely compatible[16]. Nevertheless, a longer experience worked in that direction. Faced with this risk, the protective effect of professional experience clearly diminished with length: it fell from 22.7% when it was less than five years to 6% when it attained between ten and twenty years. Without using age, we nonetheless obtained nearly a 45% of probability of not experiencing a period of lasting non-employment. The variables characterizing the nature of the job held and the matching process between the salaried worker and the post still had a non-negligible impact. The employees who were unskilled, used ICT, worked in a small consumer-goods industrial firm, having less than five years of seniority and working under a temporary work contract, had

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[15] The internal employment markets include, on the one hand, possibilities of promotion at the level of the firm and, on the other, regulatory or holding-pattern possibilities for those who are redeployed following plans to safeguard employment for example. While mobility between firms can be estimated from our data, mobility between company groups remains hidden. Yet, an important share of inter-firm mobility conceals a high volume of careers within groups; these movements could have reflected a transformation of internal labor markets rather than their decline (Delarre, Duhautois, 2003).

[16] Only 143 of those between 35 and 45 years of age had less than 5 years of experience.

37.4% greater probability of experiencing a period of unemployment or inactivity longer than 6 months. These results therefore confirm that not all salaried workers gain the same advantage from inter-firm mobility, the modifications in the functioning of the labor market having introduced strong differentiation in career paths of individuals facing the risk of lasting inactivity or unemployment.

Chart I

Maximal Elasticity of Each Explanatory Variable in % (Absolute Value)
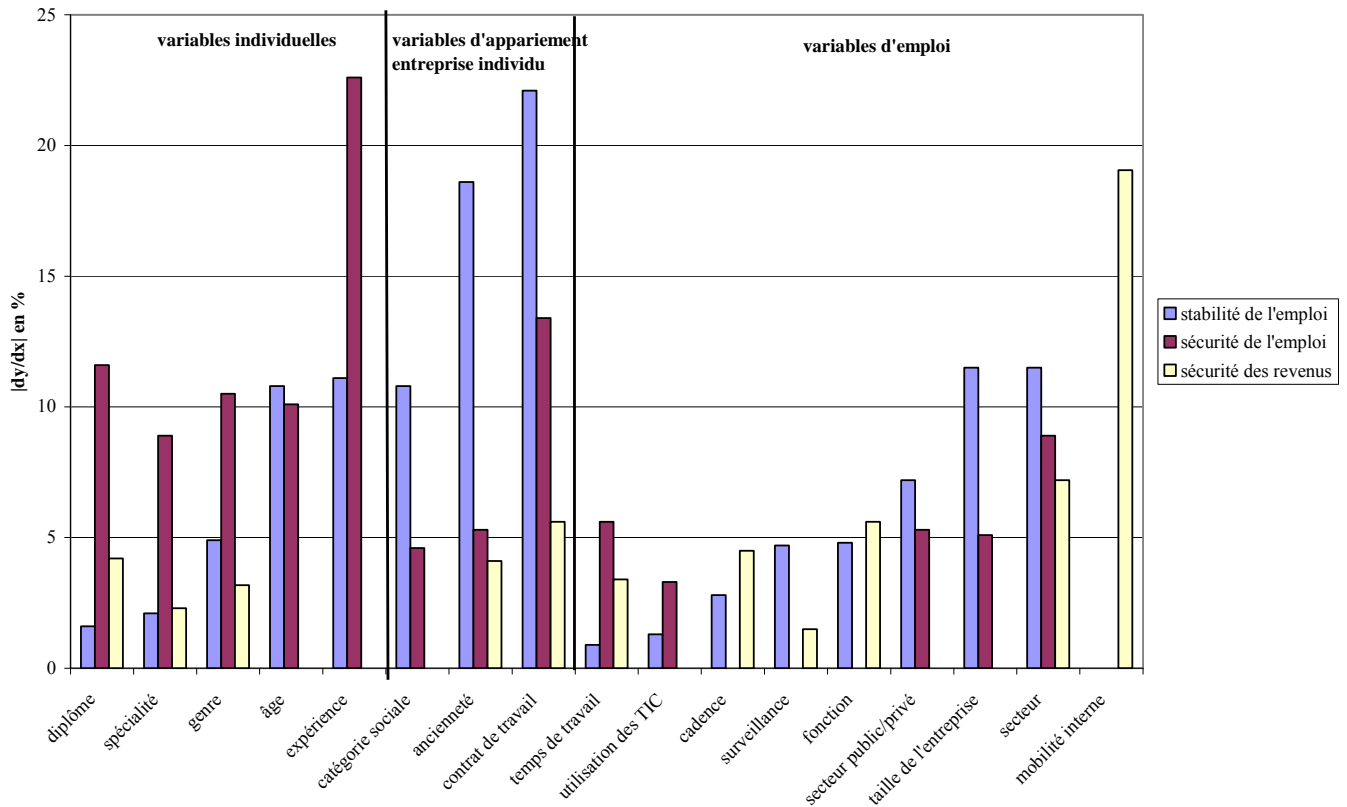
Diplôme = Diploma, *Spécialité* = Specialty, *Genre* = Gender, *Expérience* = Experience, *Catégorie sociale* = Social category,
Ancienneté = Seniority, *Contrat de travail* = Work contract, *Temps de travail* = Work time, *Utilisation des TIC* = Utilization of ICT,
Cadence = Work pace, *Surveillance* = Supervision, *Fonction* = Function, *Secteur public/privé* = Public/private sector,
Taille de l'entreprise = Firm size, *Mobilité interne* = Internal mobility or In-firm mobility

Stabilité de l'emploi = Employment stability, *Sécurité de l'emploi* = Employment security, *Sécurité des revenues* = Income security
Source: INSEE's Training and Professional Qualification survey (TPQ) 2003, authors' calculations.
The chart is read as follows: the effect of the variable "Experience", which had the greatest impact on employment security made the probability of lasting non-employment vary by 22.6%

Taken as a whole, the mobility of a salaried worker is the result of his individual characteristics one side, characteristics of the employment held and the firm on the other side, and of the meeting between the two. The analysis of the variables that are significant (or not) showed that those relative to the firm or the nature of the job occupied in the past played a much more active role than the individual variables for careers within the firm and for securitized mobility in terms of income. Our data contained numerous limits to nuanced interpretation of these phenomena, but at this stage, the "flexicurity" aiming at supporting a more active and open labor market, frequently in a normative manner, merits to be considered in the perspective of how the labor market actually functions. Given the importance of risky mobility, which is to say of being exposed to the risk of unemployment and/or loss of income, the question of the security of professional trajectories cannot leave out of account the nature of the jobs that sustain them.

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