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Perceived Job Insecurity in early careers and human capital accumulation

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Abstract: The paper explores how perceived job insecurity (PJI) evolves with time among early careers using a cohort of French school leavers over the period 1998-2008. The study intends to clarify why PJI increases both with years of experience and tenure in a firm in contradiction with expectations. The human capital content of experience and tenure is considered in parallel with identifying the main component of PJI: risk of job loss or fear of not regaining equivalent employment conditions. Main findings are: (i) Declining macroeconomic conditions explain the apparent rise of PJI with experience. (ii) The increase of PJI with years of tenure still remains whatever the specification. A negative correlation was detected in the case where years of tenure reflect the accumulation of transferable human capital and when the probability of job loss is unlikely. (iii) The relation of human capital to subjective job insecurity tends to disappear with the economic downturn of 2008.

Sommaire

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1. Introduction

Employment instability and economic uncertainty have increased in many industrialized countries in the last two decades giving rise to perceived employment insecurity among workers (Chung, van Oorschot 2011). It has been shown that perceived job insecurity (PJI) significantly modifies economic behaviours such as saving (Manski, 2004), consumption (Benito, 2006), entry to further education (Elman and O'Rand, 2002), reduces job performance (Cheng and Chan, 2008) and generates adverse health and well-being effects (De Witte, 2005; Böckerman *et al*., 2011), that is why a better understanding of its determinants and multidimensional nature is crucial.

Yet few studies have addressed subjective job insecurity antecedents and changes specifically during the first quarter of working lives, where expectations of rapid career development should enhance employment security (Becker *et al.,* 2010). Thus, subjective feelings of insecurity about one's job situation are likely to recede with experience and occupational tenure. France is a relevant setting therein, as its institutional and legislative context involves a high level of employment protection and an active labour market policy for young people (Clark and Postel-Vinay, 2009; Le Barbanchon and Malherbet, 2013), both of which should curb job insecurity[†]. However, individuals' perception of job insecurity is also sensitive to macroeconomic conditions (Schmidt, 1999) that could counteract the reassuring influence of the length and content of work experience and tenure.

Previous studies have shown that the relationships between tenure in firm and job insecurity are complex. Some studies postulated a negative impact of tenure on perceived job insecurity, whereas others suggested a positive impact or a non-monotonic relationship. On the one hand, tenure generally entails potentially firm-specific human capital investment (Becker, 1964) and usually involves multiple legal mechanisms (Deloffre and Rioux, 2004), both of which protecting workers from dismissals. Employers also endeavour to ensure job stability so as to attract and retain the most talented workers. Thus, the accumulation of seniority at the beginning of working life is a sign of successful integration into employment ,as it is generally associated with wage progression (Giret and Lemistre, 2012), whereas short tenure may be linked both to less protected, non-regular employment and to the difficulties individuals face in achieving employment stability. As tenure increases, the perception of a threat to one's current job should recede and hence perceived job insecurity should correlate negatively to tenure in a firm. Consistent with this assessment, Valetta (1999) directly considers the worker's tenure as a parameter of job security. For France, Behaghel (2003) asserts that the increase in job insecurity in the nineties concerned primarily those with less than five years of tenure. On the other hand, being apprehensive about the future can grow with tenure, because longstanding employees may have more to lose. In fact, in addition to the fear of income and benefits loss during extended periods of unemployment, there may be anxiety resulting from pessimism about the prospects of finding more or less equivalent employment. Furthermore, long-term employment stability fosters decisions regarding long-term private investments, like real estate projects, thereby raising a cost in terms of job dependence (Greenhalgh and Rosenblatt, 2010). Hence, perceived job insecurity could be positively related to tenure.

For several authors including Erlinghagen (2008) or Green (2003), the distribution of self-perceived insecurity with tenure is likely to be U-shaped. In fact, the risk of dismissal is greater in the first years in a job and Green et al. (2000) contend that difficulty in finding re-employment is positively related to tenure. This may arise for at least two reasons: tenure may encourage a large amount of investment in firm-specific human capital (Becker, 1964) that is difficult to transfer to another work environment and, as such, detrimental to external occupational mobility. Thus, while the acquisition of firm-specific human capital with tenure reduces the probability of being fired, it also increases the cost of job loss. An alternative reason is that long tenure may mask skills' obsolescence because of

[†] Kahn (2016) in an international comparative framework showed that a stricter protection of employment fosters workers' investments in specific human capital for permanent jobs' holders, which should involve lowering job insecurity.

atrophy of the worker's human capital or because of an economic skills' obsolescence affecting the market value of the worker's human capital (De Grip and Van Loo, 2002).

In this perspective, the aim of the paper is threefold: appraise how the perceived job insecurity is related to experience and tenure in a firm; propose to analytically disentangle two of its underlying components – risk of job loss and prospects of finding another employment position with equivalent rewards to raise a few hypotheses; and finally, explore the determinants of PJI stressing the human capital content of work experience to provide a better understanding of the correlation between years of tenure and subjective insecurity. This contribution draws on longitudinal data about 11,000 young French individuals followed over 10 years (in four rounds) after the end of schooling.

The remainder of the paper is organized as follows. We first return to the definitions of job insecurity then develop our analytical background and derive some hypotheses. The following sections successively present the data and the model specification, then the empirical findings which are finally discussed.

2. Theoretical background

2.1. Defining and measuring perceived job insecurity (PJI)

Job insecurity is first of all together seen as a multidimensional and subjective phenomenon (Greenhalgh and Rosenblatt, 1984; Sverke and Hellgreen, 2002).

According to the latter, "the global measures concern threats of imminent job loss" (2002, p. 27). In addition to this "quantitative" form of insecurity, it is referred to a "qualitative" one that concerns changes affecting valued attributes of the employment (Gallie *et al*., 2017). For instance, Nickell *et al.* (2002) consider the chance of a decline in real hourly pay for those continuously employed. Green (2009) posits that job-related insecurity arises from uncertainty over the present value of a worker's income stream. This relates to a second dimension of insecurity termed "labour market insecurity" (Anderson and Pontusson, 2007; Chung and Mau, 2014) which measures the individual's belief about the preservation of the current valuable job features if one had to find another job in the near future. This dimension involves what Klandermans *et al*. (2010) call "the perceived severity of job loss". Would the job loss happened, the question is about the perception of one's ability to quickly find another job of equal value for minimizing the costs of joblessness. Finally, in a more symbolic sense, subjective job insecurity may also relate to the risk of social downgrading (Maurin, 2009). This component refers to the social status and prestige provided by the employment situation, the way it contributes to the individual social identity and the risk of vanishing in case of dismissal. If we leave aside change that may solely affect the qualitative content of the job without challenging its existence, perceived job insecurity as a cognitive assessment covers both the risk and the cost of job loss (Manski and Straub, 2000). Insecurity derives from the uncertainty attached to the "time horizon" of joblessness and from the values attached to the different attributes of the job eventually obtained. A lack of job opportunities in the economy thus increases the cost of job loss and casts doubt on the possibility of obtaining an employment situation at least as rewarding as the previous one.

Moreover, the term subjective experience of, or perceived job insecurity implies that psychological traits are likely to affect such feelings (Ashford *et al.*, 1989). For instance, Erlinghagen (2008, p. 192) pointed out that "self-perceived job insecurity does seem to be a facet or symptom of a general lack of trust in other people". Such idiosyncratic unobserved characteristics are likely to raise subjective experience of job insecurity rendering important attempting to control for these sources of unobserved heterogeneity when measuring the determinants of perceived job insecurity.

2.2. Components of PJI and links with the human capital content of tenure

Overall, Perceived job insecurity could be divided between a *short-term component* linked to the potential immediate drop in income that follows the job loss and a *medium-term component* related to the chance of recouping the earnings loss and eventually restoring social status when employment is recovered. We first formalize how perceived job insecurity might be dependent on the probability of a job loss (p), its cost (C), the period spent unemployed (t) and the wage earned once the next job is obtained (W*). Say G is a function of all the components contributing to perceptions of job insecurity:

$$PJI = G(p, C, t, Z, Y, W^*/W) \quad (1)$$

Where Z represents all the individual characteristics likely to influence PJI (e.g., personal attributes such as age, gender, etc., and professional factors such as employment sector, type of work contract, etc.), Y stands for all the information on the economic climate available to the worker and refers to macro-level dimensions and W^*/W compares earnings obtained in the next job (W*) with those in the previous job. Then p, C and t relate to the short-term component of PJI (i.e., fear of job loss). Taken together, these three parameters clearly cover the drop in income due to job loss and to the long-lasting possibility of unemployment. The W^*/W ratio refers to the medium-term component of PJI (i.e., fear of not regaining an equivalent social position).

We propose to assess how the four parameters C, t, p and W^*/W vary with tenure (T) in the firm. We first wonder about the sign of p'(T) ?
Where (') stands for the first derivative, T is tenure within the firm, assuming that tenure supports investments in human capital. T is obviously heterogeneous regarding its human capital content, which is why the sign of the derivative of p is undetermined if the "nature" of T is not specified.
Say T_0 denotes passive tenure devoid of any human capital investment or updating of skills and consequently likely to lead to obsolescence of unused skills. T_1 represents recognition of experience that is both firm- and job-specific and cannot be rewarded equally in another company (Bingley and Westergaard-Nielsen, 2003; Kambourov and Manovskii, 2009). Finally, say T_2 represents tenure accompanied by internal mobility between different jobs and general on-the-job training, conveying qualitative information on the human capital enhancement of individual skills and therefore supporting their market value beyond the current employer.

The probability of involuntary job loss[‡] may be positively correlated with tenure that does not involve any internal progression, leaving the employee in a "dead-end" job situation. The protection offered by such tenure is likely to be undermined by any economic disruption, as the worker has not accumulated sufficient human capital or updated her/his skills enough to convince new employers. Skills' obsolescence is likely to affect these employees, making them particularly vulnerable to any technological or market shock where their job is at stake. We expect $p'(T_0)>0$. Conversely, we expect $p'(T_1)$ to be strictly negative, i.e., when T involves the accumulation of specific human capital within the firm, helping to reinforce the worker's attachment to the firm and vice-versa. Assuming T_2 is transferable the probability of quitting is higher than if such skills were purely specific. However, the chance of an involuntary job loss $p'(T_2)$ should be lower because the employer has more latitude to transfer the worker to another job inside the firm than if T is either partly job-specific or lacking any human capital accumulation.
So we have:

$$p'(T_0) > 0 \qquad p'(T_1) < 0 \qquad p'(T_2) < 0 \qquad \text{and} \qquad p'(T_2) < p'(T_1) < p'(T_0) \quad (2)$$

The cost of job loss will naturally be higher when tenure leads to specific human capital acquisition than when such tenure does not support any increase in knowledge and skills. But the hierarchy in

[‡] Since Greenhalgh and Rosenblatt (1984), it is admitted that job insecurity only occurs in case of involuntary job loss.

the cost related to T_1 and that related to T_2 is undetermined, depending largely on the amount of human capital acquired with tenure and the conditions under which the employer awards it[§]. It follows:

$$0 \leq C'(T_0) < C'(T_1) \text{ and } 0 \leq C'(T_0) < C'(T_2), \text{ but } C'(T_1) >?< C'(T_2) \quad (3)$$

The length of time before being recruited by the next employer, t, will increase with tenure if T involves partly-specific investment in human capital. The increase should be even more pronounced when there has been no training investment or skills updating in the current job. In contrast, it should take less time to recover a job when a qualitatively rich tenure profile ensures the transferability of the worker's skill.
Hence:

$$t'(T_0) > t'(T_1) > t'(T_2) \geq 0 \quad (4)$$

To sum up, the above equations lead us to expect that the short-term component of PJI, which combines p, C and t, will be highest for $T=T_0$ and lowest for $T=T_2$.

Concerning the medium-term component, we expect that the ratio of future labour income to current wage will be lowest for T_1 when tenure involves partly-specific human capital that cannot be rewarded elsewhere in the economy. For T_0, the expected wage is likely to be lower than the current one if skills have become obsolete. But the ratio could also be close to 1 in the absence of skills' obsolescence and if the market rate for initial skills is constant in the economy. Finally, for tenure favouring the accumulation of perfectly transferable human capital, the ratio should be greater than or equal to 1.
So we can expect the following:

$$W^*(T_2)/W \geq 1 > W^*(T_0)/W \geq W^*(T_1)/W \quad (5)$$

Depending on type of tenure, the medium-term or social status component of perceived job insecurity will vary slightly from job loss component. It will be highest when the human capital acquired with tenure in the firm is partly specific. Conversely, when tenure has not led to skills' updating, the worker who becomes unemployed has nothing more to lose. And if tenure has ensured perfect transferability of skills, the worker can expect to be at least equally rewarded in the next job.

Based on the above, we can formulate four hypotheses:
Hypothesis 1. Because early careers accumulating transferable skills in their current position (T_2) are better equipped to compete in the labour market, they should experience less PJI than those with specific tenure (T_1) or passive tenure (T_0).
Hypothesis 2. On the whole, PJI increases with tenure. This is straightforward with passive tenure (T_0) and should also apply if tenure is not wholly transferable (T_1). The variation in the qualitative content of tenure among the workforce suggest that PJI is more likely to increase with tenure,
Hypothesis 3. PJI rises faster with specific tenure (T_1) or with non-human capital accumulation tenure (T_0) than with transferable tenure (T2), all other characteristics being equal.
Hypothesis 4. PJI decreases with tenure if the human capital acquired with tenure in the firm is completely or nearly completely transferable (T2).

[§] Note that severance payments and unemployment benefit lower the cost of a job loss. Workers in France are entitled to unemployment benefit provided the previous period of employment lasted at least four months.

3. Data and econometric specification

3.1. The data set

We use the "Generation 98 panel survey" conducted by the French Centre for Research on Education, Training and Employment (Cereq). The sample comprises 10,961 young individuals - representative of the 742,000 people who left secondary or tertiary education in 1998 - who were surveyed in spring 2001, 2003 and in the last quarter of 2005 and 2008. Previous investigations on the whole population confirm that PJI is the highest among unemployed individuals. Here, we want to focus on those who are employed, and whose reasons for job insecurity are more difficult to establish. Hence, the selection concerns those employed in 2008 because the probability of being employed at the survey round increases with experience so it is a way to maximize the sample size of the target population[**]. Moreover, variables of interest to differentiate the human capital content of tenure are only available for the third and fourth rounds of the survey (see below)[††].

Perceived job insecurity of these early career workers is approximated by their dichotomous answer to the question: "*How do you feel regarding your own employment future?*" with the alternative answer: "*rather anxious*" *vs.* "*rather optimistic*". The question was asked at each round of the survey, allowing perceived job insecurity to be related to the characteristics of the current position and to employment changes experienced in the past. Fisher et al. (2016) recently showed that in some circumstances and despite their limitations, single-item measures can provide useful information[‡‡]. As the measurement given by this single indicator is general, it is important to ensure that the information collected is connected with the anticipated risk of job loss (Dickerson and Green, 2012) and that it correlates with past wage growth and previous experience of unemployment (Campbell *et al.*, 2007; Knabe and Rätzel, 2011). This is clearly confirmed by descriptive analyses: unemployed individuals are much more insecure than job holders (51% vs. 24% in 2008) and the longer the previous period of unemployment, the higher the probability of being anxious about future work prospects. Moreover, perceived job insecurity is responsive to past wage growth, with the lowest growth more frequently leading to feelings of anxiety. Finally, those who were anxious about their professional future spend between two and three times longer unemployed in the next three years than those who were not. The question on anxiety about individual future employment is thus likely to accurately approximate an individual's self-perception of job insecurity.

3.2. Econometric specification

A first approach is to estimate panel data models with fixed effects so as control for the non-observable heterogeneity of individuals. However, this type of model raises three problems. First, the observable individual characteristics (gender, diploma...) cannot be distinguished from the unobservable ones (personality, motivation...) which makes impossible to measure their potential impact. Second, this methodology can only be applied to individuals who changed of opinion regarding PJI on the whole period (about 40%). The latter have slightly different characteristics, particularly in terms of employment rates and permanent contracts, than those who keep their

[**] Using a balance sample would be inappropriate as those presenting PJI would be more likely to be observed in 2008 than the same considered at a previous round. Indeed, those with higher PJI in the first rounds would be selected on being employed in the next round-s. So it is likely that a larger fraction of those with PJI in the first rounds be unemployed in the next round-s and then excluded from the estimation, whereas it is not the case for "PJI individuals" identified in the last round.

[††] Note that the results obtained are qualitatively unchanged when the models are estimated on the whole sample, i.e. whatever the employment situation of individuals at each round, or whether we focus on those employed at the third round but not necessarily at the fourth round.

[‡‡] Several studies use a very general question about perceived job insecurity in terms of concerns or worries about future employment (Böckerman, 2004; Bryson *et al.*, 2009; Erlinghagen, 2008; Luechinger *et al.*, 2010; Muñoz de Bustillo and Pedraza, 2010).

opinion unchanged through the 10 years. Third, variations in tenure, other than through the passage of time, are driven by job changes which themselves depend on PJI as we shall see.

In addition, it is also possible, as shown in some studies (Deloffre and Rioux, 2004; Valetta, 1999), that the influence of experience and tenure might evolve over time.

For these reasons, we prefer using a simultaneous equation model to estimate PJI by maximum likelihood using the GHK simulator (Cappellari and Jenkins, 2006). We therefore implemented multivariate Probit models where "*being anxious about one's employment future*" is the dependent variable, explained by employment characteristics at time t and other variables relating to the individual's labour market path. The use of a standardized weighting enables us to take account of the distortion of the sample due to attrition since the first round. In addition, the dependence between repeated observations on individuals has been handled by a cluster option.
We have four variables Y_{01} Y_{03} Y_{05} Y_{08} ($Y_t = 1$ if $y^*_j > 0$, 0 otherwise, where t is the year of the survey) derived from a system of four latent equations:

$$\begin{cases} y^*_{01} = \beta_{01}X_{01} + \alpha_{01}Z + \varepsilon_{01} \\ y^*_{03} = \beta_{03}X_{03} + \alpha_{03}Z + \delta Y_{01} + \varepsilon_{03} \\ y^*_{05} = \beta_{05}X_{05} + \alpha_{05}Z + \delta Y_{01} + \varepsilon_{05} \\ y^*_{08} = \beta_{08}X_{08} + \alpha_{08}Z + \delta Y_{01} + \varepsilon_{08} \end{cases}$$

X represents all the dimensions related to the situation at time t and variables related to past labour market events (see Table 1 for details). Z encompasses fixed individual characteristics like education or gender[§§] and a composite indicator (UEA) related to a lack of education attainment that stands for a particular propensity (or inclination) to PJI. In fact it corresponds to individuals who claim that they did not succeed in obtaining the desired level of education, whether because they have been refused to pursue in the next grade or whether they have to drop out for financial reasons. The result that all error terms are positively correlated suggests that unobserved components condition PJI in the same way throughout these early careers and advocates for the use of multivariate Probit models instead of independent Probit models.

[§§] The lack of space prevents us to justify independent variables in X and Z. Past studies have clearly shown for instance the influence of education, employment status or past wage growth on subjective job insecurity (Campbell *et al*., 2007; Clark and Postel-Vinay, 2009; Green, 2009; Näswall and de Witte, 2003).

Table 1 • Summary of statistics (Full sample over 10 years)

	2001	2003	2005	2008
Number of observations	10,961	10,961	10,961	10,961
People being anxious about one's employment future (PJI)	16.3	21.2	21.4	26.8
By type of tenure (a):				
No human capital accumulation (T0)			21.1	26.3
Specific Human Capital (T1)			23	25.4
Transferable Human Capital- weak definition (T2w)			14.4	20.5
Transferable Human Capital- strong definition (T2s)			12.8	20.1
Individual characteristics				
Age	24.8 (3)	26.8 (3)	28.8 (3)	31.8 (3)
Female	49	49	49	49
Unwanted educational achievement (UEA)	19	19	19	19
Lives in couple	34	47.8	60.3	68.7
Partner employed	29.4	41.7	51.4	57.8
Parent (at least one child)	12.3	24.6	38.5	55.3
Education level (in 1998):				
University post-graduates, “Grandes Ecoles” (>Bac+5)	8.1	8.1	8.1	8.1
University Bachelor degree (Bac+3,4)	10.6	10.6	10.6	10.6
Technical or Higher Vocational diploma (Bac+2)	18.6	18.6	18.6	18.6
Baccalaureate plus some tertiary education (Bac+1)	12.3	12.3	12.3	12.3
Baccalaureate (Bac)	17.4	17.4	17.4	17.4
Secondary vocational diploma or no qualification	33.1	33.1	33.1	33.1
Industry-specific diploma (vs. Service or Academic	34.2	34.2	34.2	34.2
Employment situation				
Employed	82.1	82.9	86.5	88.5
Unemployed	9.2	10.8	9.3	6.8
Inactive	3.9	3.1	2.7	4
In education or training	4.8	3.2	1.5	0.7
Regional Unemployment Rate Differential (b)	-0.033	-0.001	-0.00068	0.071
Employment position with subordinates	16	12	16.4	25.5
Number of job changes (since entry or last survey)	0.83	0.57	0.51	0.43
Vocational training at time of hiring	18.4	20.9	22.6	22.7
Vocational training while employed : once	8	14.7	15	14.4
Vocational training while employed : more than once	8.8	18.1	20.7	24.8
Accumulated months in employment (experience)	26 (9.7)	47.7 (13.9)	73.6 (18.6)	107.7 (24.4)
Accumulated months in the firm (Tenure)	19 (11.2)	30 (20.6)	50 (28.2)	72 (40.3)
LORD (low risk of dismissal)	12.2	17.7	20.1	21.3

Source: Generation 98 survey over 10 years, Céreq, people in employment from 2001 to 2008

Note: Table shows percentages, except for the continuous variables Age, Experience, Tenure, Unemployment, and Income shown as means.

(a): available only for 2005 and 2008.

(b) : indicator built on a national data set on the whole population. The fact that the distribution of regions is not uniform in our sample prevents means to equal 0.

To determine the human capital content of tenure and separate "productive" tenure profiles from "fruitless" ones, we used available information on the type of training received by workers and their internal job mobility in the period since the previous round of the survey[9]. We consider those who have received no training during their years with the firm and who have also remained in the same job since entry as most at risk of dismissal and of having their skills become obsolete. These attributes, then, represent an approximation of tenure of type T_0. Tenure is considered to involve the accumulation of transferable human capital if, in addition to training received on recruitment, the worker has received further training leading to a diploma or a professional qualification or, alternatively, has been promoted since entry. We will use T_{2w} for this weak definition. A strong definition combines these two conditions (diploma and promotion since entry) and is labelled T_{2s}. Lastly, tenure resulting in specific human capital can be negatively defined by having both T_0=0 and T_{2w}=0. We will call this $T_{1.}$ It is found when the employee has received non-transferable in-service training not leading to any qualification and has not enjoyed any internal promotion since joining the firm. All these human capital characteristics are only available for 2005 and 2008 datasets[10].

One way to empirically disentangle the two components of PJI is to separate individuals who do not run the risk of dismissal in the short run from those who run this risk. Being employed on a long-term contract and not seeking another position indicates that the job held is less under threat than a temporary contract. The absence of job seeking may suggest that workers are satisfied with their position and not currently worried about losing it - as confirmed by the finding that job seeking behaviour is highly positively correlated with perceived job insecurity, likely being one of its consequences. The distinction can be enhanced by considering an additional factor such as working for a large firm (or a public agency). The combination of these three conditions is then labelled by the variable LORD for "low at risk of dismissal". Indeed, the power of a company, here approximated by its size, ensures that internal employment conditions are better insulated against the business cycle and labour market competition than in small firms. Under "LORD" conditions, the immediate risk of involuntary job loss is rather small and PJI would be based mainly on the fear of not finding another job as rewarding as the present one in the (unlikely) event of dismissal.

[9] Previous studies have shown that workers' training participation enhances employability and fosters firm internal career (Sanders and de Grip, 2004) and it is also known that promotion can be a condition of specific human capital accumulation (Prendergast, 1993). Consequently, training and internal promotion are closely linked.

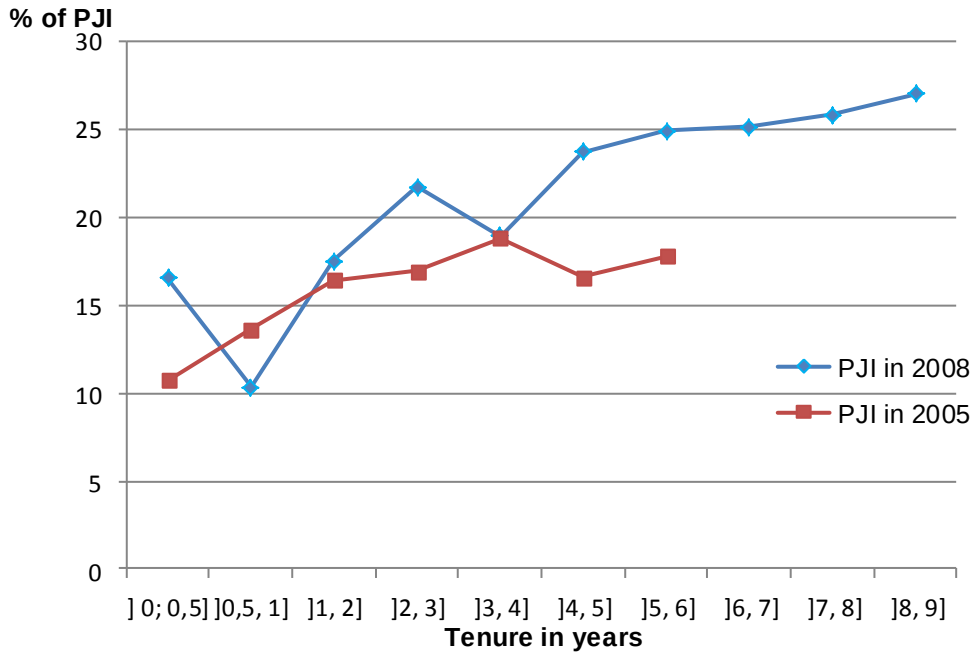
[10] A lack of information about internal mobility events in the first two rounds of the survey prevents us from constructing this indicator for the overall period of observation.

4. Results and discussion

4.1 The evolution of PJI with tenure: descriptive results

The objective employment situation of the cohort of young workers improved significantly over 10 years: employment rate increased by 8 percentage points, permanent contracts almost doubled and wages increased by 50 percent. Nevertheless, the percentage of young people who claim to be anxious about their future employment has increased from 16% to 27% between 2001 (1st round) and 2008 (4th round). Up to the last quarter of 2005, PJI mirrors the changes in the youth unemployment rate whereas at the end of 2008, individuals appear to be anticipating the 2009 recession, aftermath of the financial crisis, with a proportion feeling insecure far in excess of the unemployment rate at the time (27% against 21%). The business cycle and the way it permeates attitudes and behaviours counteracts the expected negative influence of individual experience on perceived job insecurity. In addition, those who have been with their current employer longest tendentiously feel more insecure about their professional future than those with shorter tenure (Figure 1).

Figure 1 • Perceived Job Insecurity and Tenure



As stated above, feelings of insecurity can arise for several reasons likely to be specific to particular populations. As a first approximation, there is a difference of at least 6 percentage points in PJI – in 2005 as in 2008 - between those whose tenure was not valued (T_0) and those who experienced at least one promotion or benefited from a certified training since entry (T_{2w}) (Table 1). Moreover, anxiety is less likely when human capital accumulation is more transferable than specific to the employer or to a particular occupation. These results confirm Hypothesis 1.

Thus, workers with long tenure comprise very different groups likely to base their subjective job insecurity on different grounds: among others those who keep on accumulating human capital at work and enhance transferable skills, and those who are stuck in dead-end jobs exposed to market obsolescence of their skills. Indeed, people with long tenure not involving career progression, despite

their early work history, can be supposed to have low employability, otherwise they would have looked for another job and achieved a better situation.

4.2. Econometric Results

As previous investigations have shown, results for 2001, 2003 and 2005 confirm that unemployed and inactive individuals are the most at risk to feel insecure about their professional future. A second finding concerns the positive correlation of PJI with years of tenure, all other characteristics being equal (Table 2). Tests of equality of coefficients show that most of the tenure intervals' coefficients, taken in pairs, differ from one another[11]. This finding confirms Hypothesis 2.

At the same time, and as expected, accumulated professional experience reduces the probability of PJI. Thus, the growth of PJI with time spent on the labour market reported in descriptive statistics clearly has more to do with the downward trend in the business cycle, which is partially controlled for in the estimations by the regional unemployment rate differential.

Table 2 • Simultaneous Equation Model of Perceived Job Insecurity

	2001	2003	2005	2008
Constant	-1.12***	-0.955 ***	-0.694 ***	-0.937 ***
Unwanted educational achievement (UEA)	0.193***	0.143 ***	0.125 ***	0.037 ***
Male (=1)	-0.267***	-0.094 **	-0.12 ***	-0.079 *
Lives in couple (=1)	-0.083	-0.076	-0.036	-0.053
Partner in employment (=1)	-0.0008	-0.016	-0.081	0.037
Parent (at least one child) (=1)	0.157 **	0.041	0.006	0.027
Number of job changes since last survey	-0.0007	-0.0038	-0.0134	0.007
Experience (accumulated months in employment)	-0.0119 ***	-0.0057 ***	-0.0052***	-0.0022 ***
Regional unemployment rate differential (μ)	0.138	0.029 **	-0.0069	0.03 **
Unemployed	0.569 ***	0.642 ***	0.781 ***	
Inactive	0.362 **	0.213	0.716 ***	
In education or full-time training	0.0056	0.178	-0.077	
Level of education (ref: no qualification)				
Postgraduate and "Grandes Ecoles" (Bac + 5)	-0.064	-0.036	-0.064	-0.000
University Bachelor (Bac+3,+4)	0.145 **	0.221 ***	0.077	0.344 ***
Technical and Higher Vocational (Bac+2)	Ref.	Ref.	Ref.	Ref.
Baccalaureate with some tertiary Ed. (Bac+1)	0.143 *	-0.026	-0.038	0.086
Baccalaureate	0.185 ***	-0.075	-0.012	-0.006
Secondary Vocational secondary or no diploma	0.285 ***	0.093 *	-0.02	0.073

[11] For instance, for the 2005 equation, the coefficients obtained for 1 to 2 years of tenure or the interval [2;3[are significantly different from those obtained for the intervals [4,5[and [5,7[and the like for 2008.

Employment sector and work contract				
Public sector – civil servant or open-ended contract	-0.262 ***	0.048	-0.081 *	0.097 **
Public sector – temporary contract	0.508 ***	0.36***	0.208 ***	0.003
Private sector – temporary contract	0.367 ***	0.276***	0.465 ***	0.383 ***
Private sector – open-ended contract	Ref.	Ref.	Ref.	Ref.
Managerial position (vs. subordinates)(=1)	-0.17 ***	-0.236***	-0.171 ***	-0.135 ***
Industry-specific education (vs. Service or Academic) (=1)	0.051	0.108 **	0.139 ***	0.114 **
Years of tenure:				
≤ 1 year	Ref.	Ref.	Ref.	Ref.
]1-2 years	0.169 ***	0.203 **	0.109	0.159 **
]2-3 years	0.249 ***	0.297 **	0.228 ***	0.262 ***
]3-4 years		0.344 ***	0.358 ***	0.179 *
]4-5 years		0.44 ***	0.421 ***	0.389 ***
]5-7 years			0.428 ***	0.485 ***
]7-9 years				0.569 ***
] 9 +				0.547 ***
Vocational training at time of hiring (=1)	0.026	-0.103 **	-0.034	0.031
Vocational training while employed :				
No	Ref.	Ref.	Ref.	Ref.
Once	-0.034	-0.116 **	-0.069	-0.091 *
More than once	-0.099	-0.133 ***	-0.152 ***	-0.112 ***
Wage increase since entry:				
< Q1 (first quartile of the distribution)	0.115 **	0.154 ***	-0.016	0.086 **
[Q1; Q3[	Ref.	Ref.	Ref.	Ref.
≥ Q3	-0.141 **	-0.033	-0.119 **	-0.155 ***
$\rho_{01,03}$	0.457 ***			
$\rho_{01,05}$	0.333 ***			
$\rho_{01,08}$	0.285 ***			
$\rho_{03,05}$	0.501 ***			
$\rho_{03,08}$	0.395 ***			
$\rho_{05,08}$	0.499 ***			
Number of Observations	9990	9990	9990	9990

Data source: Generation 98 Survey over 10 years, Céreq.

Level of statistical significance: * p<0.1; ** p<0.05; *** p< 0.01

(μ): Regional unemployment rate – French average unemployment rate.

The estimation results of Table 2 also enables us to compute the marginal predicted probability of PJI for different types of training and mobility events since hiring (Table 3). PJI is clearly higher among those whose tenure has not involved training or internal mobility (T_0). When individuals have experienced specific training (T_1), perceived job insecurity is a bit lower. It is at its lowest when

continuous training and mobility among different jobs stands for the accumulation of transferable skills and productivity (T_2w and T_{2S}). However, the proportion of people anxious about their working future, whatever the "quality" of their career path, increases by 11 percentage points over the seven-year period from 2001 to 2008. In addition, PJI varies less according to the quality content of tenure in 2008 than previously which is evidence that the worsening of macroeconomic conditions smooths out the individual differences in subjective perceptions related to their career path. However, the association of tenure with transferable skills' accumulation helps restraining the increase of PJI between 2001 and 2008 providing an initial confirmation of Hypothesis 3.

Table 3 • Marginal Probit Predicted Probability of PJI (from table 2)

% for:	2001	2003	2005	2008
No human capital accumulation (T_0) between 2003 and 2008	15	20.8	20.5	26
Specific human capital acc. (T_1) between 2003 and 2008	14.1	18.8	19.1	25
Transferable human capital acc. (T_{2w}) between 2003 and 2008	11	15.9	15.9	23.2
Transferable human capital acc. (T_{2s}) between 2003 and 2008	10.9	14	14.6	22.8

Among other factors, the one taken as a proxy for an inclination to worry about one's professional future (UEA) – because of a lack of educational achievement-, has a positive impact on PJI with a declining influence over time. Thus, leaving school early for financial reasons or because of unsuccessful application to the desired educational program has a lasting effect on perceived job insecurity.
The regional unemployment rate clearly fosters PJI, at least in 2003 and 2008, echoing results from Luechinger et al. (2010). Women are more subject to PJI than men but the gender gap decreases after ten years of working life. This can be explained by the fact that men used to enter the labour market more quickly, with access to better paid jobs. Regarding factors that reflect career progression, both being in a managerial position and experiencing wage progression in the upper quartile of the wage growth distribution as could be expected, decrease the likelihood of PJI. Experiencing vocational training while employed also has a moderating effect, whereas the likelihood of PJI increases for those holding a temporary contract, in line with findings of Muñoz de Bustillo and Pedraza (2010). This is also the case of those with an industry-specific education, consistent with the decline of jobs in industry through the period. Results show almost no influence of the family situation variables.

Overall, therefore, PJI is positively influenced by employment characteristics which suggest that the risk of interruption is high (a temporary contract), by the labour market environment and by past events (an educational achievement not in line with one's expectations) that may endanger sustainable employment. All opportunities for future accumulation of skills have the opposite effect, by helping consolidate the career path.

When the type of tenure is taken into account in the model, the accumulation of human capital, mainly transferable rather than specific, has a negative impact on PJI whereas the accumulation of tenure with no qualitative value (T_0) increases PJI in 2008 (Table 4, Model 1).

The following estimation (Table 4, Model 2) provides a second opportunity to give credit to Hypothesis 3. Tenure is introduced as a continuous variable interacting with its human capital content for the situations observed in 2005 and 2008. The positive correlation of PJI with tenure is reduced when tenure leads to the accumulation of transferable and marketable skills (T_{2w}) instead of more specific skills (T_1) or a career path devoid of promotions and training (T_0) – tests of differentiation between coefficients are significant except between interactions terms with T_0 and T_1

in 2005. Another lesson from this model is the finding concerning the variable LORD (identifying people with a *Low Risk of Dismissal*) displaying a negative and significant influence on PJI, except in 2008.

Table 4 • Simultaneous Equation Model of Perceived Job Insecurity according to the type of tenure

	2001	2003	2005	2008
Model 1[a]				
Years of tenure	0.319 ***	0.155***	0.186 ***	0.161 ***
(Years of tenure)²	-0.067 **	0.009	-0.014 ***	-0.088 ***
Type of Tenure :				
No human capital accumulation (T_0)			0.045	0.091 **
Transferable human capital (weak def.) (T_{2w})			-0.136 ***	-0.127 ***
Specific human capital (T_1)			Ref.	Ref.
Vocational training at time of hiring (=1)	0.016	-0.084 **		
Vocational training while employed **:**				
Once	-0.04	-0.102 **		
More than once	-0.12 *	-0.107 **		
No	Ref.	Ref.		
Wald Chi2 (100)	689.1		Log likelihood	-12 880.7
Model 2[a]				
Years of tenure	0.125 ***	0.097 ***		
Interaction Years and type of tenure				
Tenure * T_0			0.071 ***	0.056 ***
Tenure * T_1			0.066 ***	0.045 ***
Tenure* T_{2w}			0.037 ***	0.029 ***
Vocational training at time of hiring (=1)	0.022	-0.082 **		
Vocational training while employed :				
Once	-0.029	-0.093 *		
More than once	-0.108	-0.097 **		
No	Ref.	Ref.		
LORD[b]	-0.224 ***	-0.318 ***	-0.162 ***	-0.07
Wald Chi2 (100)	677		Log likelihood	-12 889.4
Model 3[c]				
Years of tenure	0.084	0.084*		
Interaction Years and type of tenure				
Tenure * T_0			0.038 *	0.006
Tenure * T_1			0.017	0.0028
Tenure* T_{2w}			-0.048 *	-0.0007
Vocational training at time of hiring	-0.034	-0.042		
Vocational training while employed*:*				
Once	0.01	-0.187 *		
More than once	-0.296 **	-0.058		
No	Ref.	Ref.		
Wald Chi2(76) –	194		Log likelihood	-2786.3
Number of Observations (N)	2158	2158	2158	2158

Data source: Generation 98 Survey over 10 years, Céreq. Statistical significance: * p<0.1; ** p<0.05; *** p< 0.01

[a] Except for variables of tenure and continuous vocational training, the specification of independent variables includes all those presented in table 3.

[b] LORD, for "low risk of dismissal": those employed on a long-term contract, not searching for a job and working for a large company or public authority.

[c] restricted sample corresponding to a population with a low risk of dismissal (LORD 2005=1 and LORD 2008=1) and same vector of independent variables as before except employment sector and work contract, which are correlated with the definition of LORD.

This confirms that the short-term component of PJI, the risk of losing one's job, is certainly important at the beginning of careers.

Attempting to control for the short-term component of PJI, Model 3 is estimated on individuals whose attributes mean they incur a moderate risk of dismissal – thus putting them in the LORD sub-group. For them, the second component of PJI related to the uncertainty of recouping the benefits connected with the current job should predominate. However, this second component should have no impact on those who have accumulated highly transferable skills. This seems to apply to 2005, as the coefficient of tenure interacting with general human capital entailing the highest transferability (strong definition) is negative and significant - corroborating Hypothesis 4 - whereas tenure interacting with T0 still increases PJI. However, in 2008, none of these interaction terms displays a significant impact.

5. Discussion and Conclusions

On the whole, the accumulation of human capital and a career path involving training and promotion that inform other employers of an individual's productivity and skills enhancement do not prevent PJI from increasing on average with tenure. While we can look to the degradation of the labour market environment for an explanation, there may be other reasons. The career aspirations of young labour market participants may well be dashed by the realities of the market, leading some to feel more insecure about their future working life than their current situation warrants.

This study, conducted on a population of French young people in the early stages of their careers, confirms that the relationships between perceived job insecurity and its roots are complex. In fact, these roots extend not solely to the individual situation but also to the labour market environment and probably even to initial employment expectations coming up against the encountered reality. We confirm through the results of the different models that perceived job insecurity is caused by characteristics of incompleteness regarding education, the stability of the employment situation or career advancement.

Our main focus has been on the relation between length of professional life, tenure, in view of its human capital contribution and perceived job insecurity, as descriptive statistics uncovered positive correlations. In fact, as soon as a young beginner commits to working life, gains experience, performs well enough to occupy a stable situation and moves upward in his or her career, the consequence should be a reduction in feelings of employment insecurity. The estimation of different models controlling for other dimensions potentially correlated with experience and tenure partially challenge the expectations. Professional experience per se does decrease PJI, but tenure in the firm still has a positive influence on PJI despite the employment protection legislation rather favourable to workers in France. The apparent increase of PJI with experience revealed by descriptive statistics is mainly due to the slowdown of the business cycle, especially between 2005 and 2008, which seriously undermined workers' confidence in the future.

The positive impact of length of tenure on PJI persists, whatever the model estimated. Of the two components of insecurity, it is the medium-term component that might have been supposed to be responsible for this positive relationship, i.e. uncertainty over recouping the same working and wage conditions in the event of job loss. However, our results show that the short-term component of PJI, fear of losing one's job, is also at play. The increase of PJI with tenure varies, however, depending on the human capital accumulated with tenure in the same firm. The link is weaker when tenure has involved promotion and training leading to a qualification, facets highly visible on the labour market. We even report a negative effect of this type of tenure on PJI, for a sub-group facing a low risk of dismissal because of their employment attributes.

These results can be interpreted as follows: early in the career trajectory, low tenure levels correspond to recent job changes. Less PJI among those with low levels of tenure may be related to the optimism felt when starting a new job, often a better position than previously, that enables the person to envisage new, longer-term prospects. But after a few years, these optimistic beliefs may be revised downward, with the possible consequent emergence of latent feelings of job insecurity. Actually, long tenure may even be a symptom of idiosyncratic traits, like risk aversion, pessimism regarding the context or about the future. A lack of confidence in the institutions and the benefits of competitive markets have thus been identified as specific traits of French society (Algan and Cahuc, 2007). This could lead to a paradoxical increasing gap between the reality of an employment situation proving to be solid and integrative with tenure for most people, and the perception of a severely deteriorated future employment situation. As evidence of this is the civil servant status' positive contribution to PJI in 2008 despite the high protection provided by this status in comparison with private sector permanent contracts.

These findings suggest that the severe economic downturn expected from the stock market crash in autumn 2008 has a scaring effect shared more or less by the whole population, regardless of their employment situation and work contract. Incidentally, our findings echo those of Maurin (2009) on the fear of downgrading in France, which is mainly driven by the macroeconomic environment and its negative consequences on people's mood and consumption behaviours.
In terms of policy implications, the challenge now is to develop means of supporting individuals in gaining recognition and rewards for their skills through institutionally organized and secured job transitions, rather than enhanced job protection. The latter strategy would widen the gap in the workforce between a quasi-fixed share (insiders) and a flexible share adjustable to the business cycle (outsiders). The former strategy should contribute to restoring confidence and employment dynamics.

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