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YOUTH EMPLOYMENT IN FRANCE

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ABSTRACT

Youth Employment Policies In France*

In this Paper, we present a summary of recent microeconometric results on the evaluation of the effects of active labour market policies on youth employment in France. We focus our discussion on three types of policies: (1) youth employment schemes for out-of-employment and low-skilled young adults, (2) on-the-job training schemes, (3) payroll tax subsidies for minimum wage workers. Training programs for unemployed young workers have in general no effects on post-training wages or employment probabilities, except if they have a large training content. In contrast, the reduction of labour costs has significant effects on employment probabilities of low-wage workers; however their effects appear to be stronger for workers between 25 and 30.

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NON-TECHNICAL SUMMARY

Active labour market policies were introduced in France at the very beginning of the seventies, when unemployment started its increase. These policies were targeted at the unemployed as well as at workers with the highest unemployment risks, such as young adults or older workers. These policies are similar to those implemented in other European countries, France being a median user. In this Paper, we focus on microeconometric evaluation of active employment policies in France targeted at young workers, aged between 16 and 30. Direct employment subsidies and incentives for human capital investments are the two main instruments of these policies. Almost any mixture of these two components can be found within French employment policies. For instance, public employment schemes such as community jobs (Travaux d'Utilité Collective, TUC) or the program called 'Contrats Emploi Solidarité' (CES) have almost no component of practical training or learning. At the other extreme, apprentice contracts have a very intensive training content. Note also that some schemes are targeted at the young population whereas others have no such restriction. Following this distinction, we present our summary of evidence starting from programs strictly designed for unemployed young adults, to more general policies, such as payroll tax subsidies for minimum wage workers. In between lie policies designed to improve human capital investments in the population, such as apprenticeship or continuous training. There are just a few empirical studies using French data that adopt the spirit of the literature on program evaluations. Almost all of them use observational data, as opposed to experimental data. In addition, just a few among the few control for selection bias and unobserved heterogeneity. We focus here on this last group. Their main results can be summarized as follows. Training programs directed at unemployed young persons have no effect on post-training wages or employment probabilities unless they have a large training content. On the other hand, payroll tax subsidies have significant effects on employment probabilities of low-wage workers, but their largest effects concern workers between 25 and 30.

1. Introduction

Active labor market policies were introduced in France at the very beginning of the seventies, when unemployment started its increase (see DARES, 1996, for a historical description). These policies were targeted to the unemployed as well as to workers with the highest unemployment risks, such young adults or older workers. These policies are similar to those implemented in other European countries (Scarpetta, 1993), France being a median user.

In this paper, we focus on microeconometric evaluation of active employment policies in France targeted to young workers, aged between 16 and 30. Direct employment subsidies and incentives for human capital investments are the two main instruments of these policies. Almost any mixture of these two components can be found within French employment policies. For instance, public employment schemes such as community jobs (Travaux d'Utilité Collective, TUC) or the program called "Contrats Emploi Solidarité" (CES) have almost no component of training or learning by doing. At the other extreme, apprentice contracts have a very intensive training content. Note also that some schemes are targeted to the young population whereas others have no such restriction. Following this distinction, we will present our summary of evidence starting from programs strictly designed for unemployed young adults, to more general policies, such as payroll tax subsidies for minimum wage workers. In between, lie policies designed to favor human capital investments in the population, such as apprenticeship or continuous training.

There are just a few empirical studies using French data that adopt the spirit of the literature on program evaluations (Heckman and Smith, 1995). Almost all of them use observational data, as opposed to experimental data. In addition, just a few among the few control for selection bias and unobserved heterogeneity. We will focus on this last group. Their main results can be summarized as follows. Training programs directed at unemployed young persons have no effect on post-training wages or employment probabilities unless they have a large training content. On the other hand, payroll tax subsidies have significant effects on employment probabilities of low-wage workers, but their largest effects concern workers between 25 and 30.

Section 2 provides a brief description of youth employment policies in France. Section 3 raises some methodological issues. In Section 4, we present evidence on the effects of training programs for unemployed young workers. In Section 5, we report results on the effect of payroll tax subsidies for minimum wage workers. Section 6 concludes.

2. Active labor market policies in France

Over the last twenty years, youth unemployment is the most striking feature of the French labor market. For workers between 15 and 24 years old, the unemployment rate increased from 13% in 1979 to 26.6% in 1999, after reaching a maximum, 29%, in 1987. This explains the ever increasing government intervention since the mid-seventies. Approximately fifty measures were implemented since 1974, even though only ten programs are still in use. These programs may be classified according to

the characteristics of eligible participants, the level of implementation (local or national), the employment sector (public or private), or the legal status (training course or labor contract). Each year, 800,000 individuals between 15 and 25 years old are financially assisted through public programs which give them a training course or a subsidized job.[1]

Behind the profusion of measures, three main types of public interventions can be distinguished:

1. job creation in the public sector, thanks to massive wage subsidies, directed to low-skilled unemployed young adults,

2. promotion of training programs in the private sector, these programs include classroom education and on-the-job training in order to increase labor market experience and human capital,

3. reduction of total labor costs in the private sector, in order to increase the labor demand for unskilled workers. Since 1994, reductions in labor costs took essentially the form of payroll tax subsidies for minimum wage workers.[2]

The most representative program of the first type is the so-called "Contrat Emploi Solidarité" (CES, or "Employment-Solidarity Contract"). This program has replaced the "Travaux d'Utilité Collective" (TUC, or community jobs) which were set up in 1984 and suppressed in 1990. Hiring of low-educated jobless young adults and long-term unemployed in community service jobs is heavily subsidized; the objective being not only to give a job but also to increase employability. There were 228,805 participants in such programs in 1993, but budget restrictions reduced this number to 170,163 in 1996.[3] Employers are public institutions, local administrations and non-profit associations. The CES contract is a part-time (20 hours a week) fixed-term (from 3 to 12 months) employment contract. Contract length may be extended to 24 months and, even, to 36 months for people with poor employment prospects (very long-term unemployed, unemployed over 50, income support recipients). This contract may be renewed two and even three times for some categories of recipients, within the limits of the maximum contract length (12, 24 or 36 months). The hourly wage is the legal hourly minimum wage. It is entirely paid by the State. The employer is exempt from Social Security contributions but not from Unemployment Insurance contributions. In 1996, recipients were mainly women (61.8%) and low-educated persons (83.8% of recipients graduated either from primary school or junior technical school, or had no diploma at all).

The most representative programs of the second type are the apprenticeship contract and the so-called "Contrat de Qualification" (CQ, or "Qualification Contract"). The French apprenticeship system is similar to the German apprenticeship system (e.g. Soskice, 1994, for a description). The French apprenticeship system

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[1] Of course, the number of recipients is lower, because the same young person may benefit from several programs in the same year. Let us recall that the number of recipients was highest in the mid-eighties: in 1987, almost one million young people benefited from the public programs.

[2] Tax exemptions have also tried to favor part-time jobs. We will not examine these policies.

[3] See Bilan de la politique de l'emploi en 1996 (1997).

is a training scheme which offers participants part-time work in the firm, complemented by part-time education in a public training center. Every participant prepares himself/herself for a national diploma; to obtain this diploma, a test has to be taken at the end of the apprenticeship contract. The applicant has to be between 15 and 25 years of age, the applicant must find a firm which is authorized to hire apprentices, and he/she has to be registered in a training center for apprentices ("Centre de Formation pour Apprentis"). The apprenticeship contract, signed both by the employer and the employee, is registered by a local office of the Ministry of Employment and Social Policy. The usual length of an apprenticeship contract is two years, but it can vary between one and three years. The training is partly general, but it also comprises occupation-specific components. The apprentice is a wage-earner, and his/her wage is calculated as a fraction of the minimum wage level (called SMIC in France), according to the apprentice's age and seniority in the contract. For example, if less than 17 years old, the apprentice earns 25% of the minimum wage in the first year of the contract, 37% in the second year, 53% in the third year. If the apprentice is between 18 and 20 years of age, the wage is equal to 41% of the minimum wage level during the first year of the contract, 49% in the second year, 65% in the third year. Over 21 years of age, these percentages are 53%, 61% and 78%, respectively. At the end of the apprenticeship contract, the employee may be hired by the firm either under a fixed-term labor contract (CDD), or under a long-term labor contract (CDI).

The number of apprenticeship contracts has significantly increased during the last years, from 170,799 in 1994 to 211,458 in 1997. Approximately 71% of apprentices are men: this proportion is steady over the last years. In 1997, 52% of apprentices were less than 17, and only 15.7% had a 'Baccalauréat' (which is the terminal high-school diploma in France) when they entered the apprenticeship system. The average duration of the apprenticeship contracts has recently decreased: the proportion of apprenticeship contracts with length greater or equal to 2 years was 76.3% in 1994, but 69.3% in 1997.

The "Contrat de Qualification" is very similar to the apprenticeship contract. It is a fixed-term contract with length that may vary from 6 to 24 months. Every participant prepares himself/herself for a diploma as in apprenticeship contracts. This program is addressed to unskilled or long-term unemployed young adults. At least one-fourth of the contract period must be devoted to training. This training takes place during working hours and is approved by collective agreements. The participant is paid by the employer; the wage is equal to a fixed fraction of the monthly legal minimum wage, and this fraction varies according to the age of the participant and the seniority in the contract. For example, below 17 (respectively above 21) years old, the wage is 30% (respectively, 65%) of the minimum wage in the first year, 45% (respectively, 75%) in the second year. The employer is exempt from Social Security contributions. In 1996, 32% of such contracts lasted between 13 and 23 months, 32.2% lasted exactly 24 months. The same year, 54.2% of the participants were men, and 44.8% were low-educated people (same definition as above). The number of "qualification contracts" has decreased over these last years from 116,737 in 1994 to 96,184 in 1996.[4]

Finally, notice that public expenditures for active labor market policies have

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[4]See Bilan de la politique de l'emploi en 1996 (1997).

been multiplied by 5 between 1973 and 1994 (see DARES, 1996) from 25,796 million francs (FF) in 1973 to 134,861 million FF in 1994.[5] As a fraction of the GDP, they rose from 0.6% to 1.9% between the same dates. The average public cost of a "qualification" contract (CQ) was 27,000 FF a year in 1994. The same year, this average cost was 40,000 FF for a SIVP[6] and 50,000 FF for a CES. We will show in Section 4 that there is a negative relationship between such costs and the benefitial effects of these programs. Furthermore, public policies for adult and older workers are much more expensive. In 1994, the average cost of a training course for an adult worker was 120,000 FF, while the cost of an early retirement program for a worker aged between 55 and 59 was 90,000 FF (see DARES, 1996).

3. Methodological issues

Microeconomic evaluations of training programs or subsidized employment programs for young workers are lagging behind in France (see Lechene and Magnac, 1996, for a survey) when compared to the US where controlled experimental procedures are routinely used. In France, controlled experiments are difficult to implement because of legal restrictions and typically the evaluation of training programs is made using non experimental data, as in other European countries. In view of the work of James Heckman and his coauthors (Heckman, Ichimura, Smith and Todd, 1998 and papers cited therein), evidence from these sources are informative provided that care be taken in estimating econometric models (Heckman and Hotz, 1989). In France, these data sources are household or individual surveys undertaken by various public statistical offices (INSEE, CEREQ, DARES,[7]...) or administrative data (unemployment, social security or retirement agencies). Two main arguments might be used to discriminate amongst these sources. First, as evaluation relies on comparing groups of treated and non treated individuals sharing some characteristics, it is preferable that the sampling design should be adapted to this requirement. A second point is that a sufficient number of individual characteristic variables should be available. This point is particularly important in the case where matching or IV methods are used. Because of these limitations, the use of survey data seems to dominate the use of administrative data in France because the latter often suffers from severe endogenous sampling and under-recording of individual characteristics. The main data sources are the Unemployed Follow-Up Survey (Bonnal, Fougère and Sérandon, 1997, Brodaty, Crépon and Fougère, 1999), the Labor Force Survey (Magnac, 1997, 1998), both from INSEE, and a survey on unskilled young workers from CEREQ (see for instance Sollogoub and Ulrich, 1999).

A second difference with the US is that evaluation there is mainly concerned with the effect of training schemes on post-training incomes. The effect on subse-

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[5] In 1990 French Francs.

[6] SIVP is the French acronym for "Stage d'Initiation à la Vie Professionnelle". This is an on-the-job training program in the private sector. It lasts between 6 and 12 months. Participants are employed under a fixed-term labor contract.

[7] INSEE: Institut National de la Statistique et des Etudes Economiques, CEREQ: Centre d'Etudes et de Recherches sur l'Emploi et les Qualifications, DARES: Direction de l'Animation de la Recherche, des Etudes et des Statistiques.

quent employment histories is less studied (Card and Sullivan, 1988, or Eberwein, Ham and Lalonde, 1997, for counter examples). It presumably reflects the motivation for US training policies to affect the income generating process in face of increasing wage inequalities. Unsurprisingly, active labor market policies in France are targeted to increase employment probabilities.[8]

In evaluation studies, recent advances in econometric methodology are designed to disentangle the effects of unobserved heterogeneity from state or duration dependence using panel or duration data. In the case where the variable of interest is continuously distributed, as income is, the control of unobserved heterogeneity might be achieved by introducing additive individual effects (Heckman and Robb, 1985) and by using standard panel data analysis. On the other hand, if the evaluation concentrates on the effect of training schemes on subsequent employment or unemployment probabilities, two modeling devices can be used. First, durations within states and transitions between states can be modeled in continuous time. Second, discrete time observations on the individual labor market states can be modeled using discrete panel data methods. Even though these methods are dual of each other and should yield identical results (Lancaster, 1990), the treatment of unobserved heterogeneity or state and duration dependence can make them not equivalent. A model where an individual effect multiplicatively enters the hazard rate in a proportional hazard framework is in no way equivalent to a discrete time model where individual effects additively enters latent variables describing propensities to be in each labor market state (Card and Sullivan, 1988).

There are tradeoffs for using the one or the other modeling device. Duration dependence for instance has a different meaning from state dependence in a continuous time setting only. Duration dependence refers to the duration in the current spell while state dependence refers to the previous spell. In discrete time, this distinction between state and duration dependence has no meaning. That the previous state belongs or not to the same spell is unobserved. Because dynamics are easier to model in continuous time, corresponding studies tend to be more careful about the way duration and state dependence are modeled and put less emphasis on unobserved heterogeneity. In multistate models in continuous time, unobserved heterogeneity is often described as a one or two-factors effect (Bonnal, Fougère and Sérandon, 1997). On the contrary, simple dynamics such as first order Markov models are the rule in a discrete time setting (Card and Sullivan, 1988, Magnac, 1997) but higher order Markov models can easily be used and unobserved heterogeneity can be described by an unrestricted covariance structure (Magnac, 1998).

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[8]While these methodological points differ, measures of the impact of training schemes for unemployed young people in France or in the US are scarcely different. Training schemes seem to have no or a minor impact on subsequent employment histories, except if they have a large training content. This is the same result that US training schemes which seem to be effective for adult women but not for young workers and adult men (Lalonde, 1995) and only if they have a strong training content (Meyer, 1995).

4. Empirical evidence

4.1. The effects of training programs for unemployed young workers

The empirical evidence that we now present come from our own recent work (Bonnal, Fougère and Sérandon, 1997, Brodaty, Crépon and Fougère, 1999, Magnac, 1997, 1998). These papers markedly differ in their methodology which we tend to see as a warranty for our empirical conclusions. The first two papers are cast into a continuous time framework with one or two-factor individual random effects. They take into account state and duration dependence. The last two ones use a discrete time data modeling strategy with fixed effects using conditional likelihood methods. First order or second order Markov models are considered. Bonnal, Fougère and Sérandon (1997) use a sample of more than 1,000 individuals between 16 and 26 years old, over the years 1986-1988. It is extracted from the Unemployed Follow-up Survey which records continuous occupational histories. Brodaty, Crépon and Fougère (1999) use the same survey. In Magnac (1997,1998), the sample of more than 5,000 individuals between 18 and 29 years old is extracted from the labor Force Surveys of 1990-1992. This survey records discrete time occupational histories over the period 1989-1992. In all studies, six labor market states are distinguished. Five states are similar: out-of-the-labor-force, unemployment, participation to a training program, employment under a long-term labor contract, employment under a short-term labor contract. Education is considered as an endogenous state while attrition is disregarded in Magnac (1997,1998) while the reverse holds in Bonnal, Fougère and Sérandon (1997). We shall only insist on two stylized questions. How are transition probabilities towards a job under a long-term labor contract affected by a previous participation into a training program? How are durations in such a job affected by a previous training spell?

The estimates of the short-term impact of a training program on subsequent employment probabilities are generally not significantly different from zero except in some peculiar cases (see below). Generally speaking, training schemes do not seem effective in promoting access to employment under a long-term labor contract. A very similar conclusion applies when the duration in employment is the object of interest. Employment spells under long-term labor contracts are shorter when they follow spells of employment under short-term labor contracts, paid training or unemployment (Magnac, 1998). It is confirmed by Bonnal, Fougère and Sérandon (1997) where the previous experience of a job under a long-term labor contract before the current unemployment spell is shown to increase the probability of reentering this type of job at the end of the unemployment spell.

We can contrast these results by stratifying the sample according to various individual characteristics such as education (Bonnal, Fougère and Sérandon, 1997), father's education, gender or age (Magnac, 1997). It yields the only controversial point between our two studies. In Bonnal, Fougère and Sérandon (1997), it is found that training schemes with a large training content (such as apprenticeship contracts and "qualification contracts") could be effective for low-educated young workers. In contrast, Magnac (1997) finds that the effect of training schemes are more noticeable for young men and for individuals whose father is more educated. These effects are however not significant. It must be however kept in mind that the latter study does not distinguish between different training schemes while the

former does. We now turn to describe these results where training schemes are distinguished.

Bonnal, Fougère and Sérandon (1997) and Brodaty, Crépon and Fougère (1999) consider additional covariates to contrast the effects of various training schemes. The main discrimination between training schemes come from their training content. In particular, public sector schemes or "workfare" programs stand in sharp contrast with schemes that are proposed to young workers in the private sector. The latter include apprenticeship and part-time training/part-time work contracts. Results indicate that public sector schemes have at best no effects and that for some groups, they have a negative effect on transitions to jobs under long-term labor contracts or on durations in these jobs. They interpret these effects as a stigma effect because they are significant for more educated young workers only. In contrast, schemes with a large training content improve the lot of unskilled individuals in a significant way.

4.2. The effects of on-the-job training programs

Here we distinguish between the apprenticeship system, which is designed exclusively for young workers, and the continuous training system which is accessible to every worker. The empirical analysis of the apprenticeship system in France is far from being complete. For instance, there exists no study on the determinants of the use of apprenticeship contracts by firms. Nevertheless, two recent studies have examined the impact of apprenticeship contracts on employability and wages of young workers (Bonnal, Fleury and Rochard, 1999, Sollogoub and Ulrich, 1999). The first of these two studies has been conducted with data collected from 1990 to 1998 in a French administrative region, the region called "Centre". The survey registers the labor market situation of two groups of young people, the ones who got a high-school vocational diploma and the ones who benefited from an apprenticeship contract. Bonnal, Fleury and Rochard (1999) have compared the unemployment rate of these two groups a few months after the end of their high-school cursus or their apprenticeship contract, restricting their study to the subsample of young workers who prepared the same type of diploma in a high-school or in the apprenticeship system. Their study shows that high-school leavers are more frequently employed in jobs with fixed-term labor contracts, while apprentices are more frequently hired in jobs with long-term employment contracts. Dropouts are generally more frequently unemployed. This analysis has been extended by Sollogoub and Ulrich (1999) who show that apprentices spent more time in jobs with long-term employment contracts than high-shool leavers during the five years following the end of the apprenticeship contract or the exit from high-school. However their study, which is conducted with individual data collected on a national basis from 1989 to 1993 by CEREQ, shows also that five years later, the mean wage of apprentices is slightly lower than the mean wage of young workers who have obtained the same diploma in a high-shool.[9]

These results may be completed by the few empirical evidence concerning the

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[9]This result is obtained through the estimation of a Tobit model which takes into account the possibility of a sample selection bias resulting from the selection on unobservables of young people hired in apprenticeship contracts.

effects of the French continuous training system. While many studies have been carried out on the American, German or English continuous training systems (see Lynch, 1994, Pischke, 1996, Blundell, Dearden and Meghir, 1996), very little has been done on the French system, which is rather specific. In France, firms either have to train their workers or to pay a tax. More specifically, each firm with more than ten employees has to devote a percentage of its total wage bill to train its employees. If the firm is unable to document its training expenses as being greater than the minimum percentage which is imposed by the Tax Administration, it must pay the difference between its actual training expenditures and the minimum imposed level to public training institutions. This system has been in place since 1971. The minimum threshold was initially 0.8% of the total wage bill; it rose to 1.2% in 1988 and is currently at 1.5%. Using a panel data set of 1,097 firms followed up between 1978 and 1987,[10] Delame and Kramarz (1997) have shown that the level of training expenses chosen by the firm is a permanent decision of the firm: firms spending more than the threshold a given year often stay above the threshold in other years, while firms which have to pay the tax one year almost never spend more than the threshold in other years.

The rate of access to continuous training[11] varies significantly with the size of the firm, the skill level, the age and the gender of the worker. For example, in 1995, the rate of access to continuous training was equal to 0.08 in firms employing between 10 and 19 workers, 0.12 in firms employing between 20 and 49 workers, while it was equal to 0.45 in firms employing between 500 and 2,000 workers, and 0.50 in firms employing more than 2,000 workers. This rate was equal to 0.36 for men, 0.32 for women, 0.09 for workers less than 25 years old, 0.33 for workers between 25 and 45 years old, and 0.25 for workers older than 45. It was equal to 0.19 for unskilled manual workers, 0.27 for skilled manual workers, but equal to 0.52 for technicians and foremen, and 0.49 for engineers and higher-grade professionals (see INSEE-Liaisons Sociales-DARES, 1998).

In a recent paper, Fougère, Goux and Maurin (1998) evaluate the impact of continuous training provided by French firms on wages and interfirm mobility. For that purpose, they use the survey « Formation et Qualification Professionnelle » (FQP) collected by INSEE (Paris) in 1993. This survey registers the identities of firms employing the sampled workers before and after the continuous training period. Thus it allows to match the workers data set with an INSEE data file containing informations on firms. This information on firms can be used as instrumental variables for the identification of the structural parameters of a simultaneous equation model in which the access to continuous training, the mobility decision and the wages are the endogenous variables. The estimates obtained by Fougère, Goux and Maurin (1998) show that (1) continuous training has no significant effect on the wage paid by the firm providing training, (2) it decreases the wage loss associated with an interfirm mobility, (3) the mobility decision is not significantly affected by the participation to a continuous training period in the

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[10]This data set has been obtained by matching four INSEE files containing balance-sheet information and an administrative file on training expenses, collected by CEREQ.

[11]The rate of access is defined as the ratio between the number of workers of a firm having participated to a continuous training period during the year and the number of workers employed by this firm the same year.

initial firm. The access to continuous training is highly selective: the probability of participation to continuous training increases with the educational level, with the size of the firm, and is higher for technicians and foremen than for other professions. It is important to notice that, when we do not control for the selectivity bias, the effect of continuous training on the post-training wage is significantly positive: the simultaneous estimation of a selection equation reduces the magnitude of the post-training effect.

Thus the few studies that have been devoted to on-the-job training schemes in France do not find significant short-term effects of apprenticeship or continuous training systems on post-training wages. In the case of apprenticeship contracts, it is found that post-training wages of apprentices are lower than the wages of young workers who got the same educational diploma in a high-school or a vocational school. A continuous-training period does not increase the wage and has no effect on the interfirm mobility rate. However French firms have increased their training expenses during the last twenty years. These results are in line with the ones recently obtained by Barron, Berger and Black (1999) who find with U.S. data that on-the-job training lowers starting wages, but has a large and robust impact on productivity growth, suggesting that firms pay most of the cost and reap most of the returns to training.

5. The impact of differential payroll tax subsidies on minimum wage employment

The importance of minimum wages on labor market outcomes is a matter of considerable debate. Some argue that minimum wage changes have no visible impact on employment (see the debate surrounding Card and Krueger, 1994, now back to more reason after Card and Krueger, 1998). While some others find that the falling real minimum wage over the eighties had impact both on employment of young as well as adult workers, and on the increase in wage inequality in the U.S. (Abowd, Kramarz, Lemieux, and Margolis, 1999 for effects on employment, and DiNardo, Fortin, and Lemieux, 1996 for effects on wage inequality).

All these studies, indeed almost all existing ones, use wages which is a good measure of total labor costs for the low-wage labor market in the U.S. but is far from being adequate in Continental Europe. Indeed, in France, for a worker paid at the minimum wage, employee-paid contributions increased from 12.22% of the wage in 1980 to 20.02% at the beginning of 1993 while employer-paid contributions remained roughly stable (from 39.00% to 39.19%). Starting in 1993, the employer-paid contributions started to decrease for minimum-wage workers (from 36.49% of the wage in 1993 to 21.77% in 1996), even though the minimum wage steadily increased over the period. Furthermore, the subsidies dramatically increased and, maybe, unexpectedly, between 1995 and 1996.

The statutory minimum wage in France regulates the hourly regular cash compensation received by an employee, including the employees part of any payroll taxes. Because of the extensive use of payroll taxes to finance mandatory employee benefits, the French minimum wage imposed a substantially greater cost upon the employer than its statutory value. In addition, the real (statutory) minimum wage increased over the whole period, partly because of increases in the

employee-paid payroll taxes, partly because of the voluntary policy of the various French governments. To counteract this increasing burden, tax exemptions were enacted during this period. In April 1994, the subsidy is made of two flat rates, the first one, ranging from 1 to 1.1 times the minimum wage, is equal to 5.4%, while the second, ranging from 1.1 to 1.2 times the minimum wage, is equal to 2.7%. In 1995, the ranges became respectively 1-1.2 and 1.2-1.3. In 1996, the subsidy increased dramatically and its shape changed, decreasing from 18% to 5.4% for wages going from 1 times the minimum wage to 1.2 times the minimum wage. In 1997, the two subsidies were merged in one linear reduction that spanned from 1 to 1.33 times the minimum wage.

Hence, between 1993 and 1995, the tax reductions were rather small (at most 6% for a minimum wage worker). But, starting in 1995, reductions became substantial and the cost of a minimum wage worker decreased by 18% of the statutory minimum wage. Employer-paid payroll taxes went from roughly 40% at the beginning of the nineties to 21.77% in 1996.

Kramarz and Philippon (1999) study the impact of changes of total labor costs on employment of low-wage workers in France in a period, 1990 to 1997, that saw sudden and large changes in these costs. They use longitudinal data from the French labor Force survey (« enquête emploi ») in order to understand the consequences of real decreases and real increases of the labor cost. In particular, they examine the transition probabilities from employment to non-employment and from non-employment to employment. To estimate the effects of the changes in the costs, they compare these transitions between years as well as within a year. In particular, they compare the transition probabilities of the workers that were directly affected by the changes with the transition probabilities of workers closest in the wage distribution to those directly affected. In all years with an increasing minimum cost, the 'treatment' group (using abusively the vocabulary of controlled experiments) comprises all workers whose costs in year t lie between the old (year t) and the new (year $t + 1$) minimum. In those years, they see whether these workers lose employment more frequently than workers paid marginally above the new minimum cost. In all years with a decreasing minimum, the 'treatment' group comprises all workers whose costs in year t lie between the present minimum cost (year t) and the old (year $t - 1$) minimum cost. In those years, they see whether such workers come more often from non-employment than those paid marginally above the old minimum cost.[12]

Their results can be summarized as follows. For years of increasing minimum cost, an increase of 1% of the cost implies roughly an increase of 3% in the probability of transiting from employment to non-employment for the treated workers, the resulting elasticity being -3. For years of decreasing minimum cost, results are less clearcut. In particular, evidence seems to suggest that the impact is mitigated by substitution between workers with wages surrounding the minimum. Furthermore, anecdotal evidence tends to show that employers may not be fully convinced yet that the change in the cost will be everlasting.

In addition to these reductions for low-wage workers, contracts in various youth

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[12]These results are obtained from the estimation of a logit transition model with two states, employment and non-employment, without unobserved individual heterogeneity or selectivity equation.

employment programs offer either minimum wage exemptions (apprenticeship contracts, for instance) or payroll tax exemptions. These programs were the focus of Bonnal, Fougère, and Sérandon (1997) and of Magnac (1998). To fully concentrate on the effects of the changes in the labor cost for the usual types of contracts, Kramarz and Philippon do not include young workers (below 25) employed under any special program in their analysis. Indeed, such workers only represent a very small proportion of the employed population. Regressing for different age groups, they find that the elasticity is U-shaped, and extremely high for workers between 25 and 30. For such workers paid at the minimum wage, a 1% increase in the minimum cost implies a 3 to 5% increase in the probability to become non-employed.

All in all, Kramarz and Philippon tend to observe substitution in favor of workers who benefit from the tax subsidies. This substitution is achieved by movements within the wage distribution.

6. Conclusion

In this article, we have presented a summary of recent microeconometric results on the evaluation of the effects of active labor market policies on youth employment. We focused our discussion on three types of policies: (1) youth employment schemes for out-of-employment and low-skilled young adults, (2) on-the-job training schemes, (3) payroll tax subsidies for minimum wage workers. Training programs for unemployed young workers have in general no effects on post-training wages or employment probabilities, except if they have a large training content. In contrast, the reduction of labor costs have significant effects on employment probabilities of low-wage workers, even though the effects appear to be stronger for workers between 25 and 30. Indeed, the message that one must draw from these results are close to those found in other countries. It is also rather negative in that such schemes do not appear to efficiently improve human capital investments of low-skill workers.

However, these programs also play an insurance role in bad times. In particular, they may offer a temporary shelter against human capital losses while unemployed. Using his parameter estimates, Magnac (1998) simulates the effects of a policy that suppresses training schemes. This exercise shows that, over the period, unemployment rate increases as well as employment. In addition, a fraction of young people stay longer in school. In this framework, he finds no effect of training schemes.

To conclude, we suggest important avenues for research. First, to recover midterm to long-term effects of employment schemes, longer panel data sets must be constructed. Second, information on the employing firm is needed. In that respect, better access to administrative panel data sets containing matched employer-employee information would be especially useful. This type of data would allow us to examine the effects of on-the-job training on firm productivity or the effects of subsidies on substitution between various categories of workers. Of particular importance is the substitution between young workers and older ones through youth employment schemes on one side and early retirement programs on the other.

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