



This article appeared in a journal published by Elsevier. The attached copy is furnished to the author for internal non-commercial research and education use, including for instruction at the authors institution and sharing with colleagues.

Other uses, including reproduction and distribution, or selling or licensing copies, or posting to personal, institutional or third party websites are prohibited.

In most cases authors are permitted to post their version of the article (e.g. in Word or Tex form) to their personal website or institutional repository. Authors requiring further information regarding Elsevier's archiving and manuscript policies are encouraged to visit:

<http://www.elsevier.com/copyright>

Contents lists available at [ScienceDirect](http://www.sciencedirect.com)

Journal of Public Economics

journal homepage: www.elsevier.com/locate/econbase

Evaluating the impact of the French tax credit on the employment rate of women [☆]

Elena G.F. Stancanelli ^{*}

CNRS, GREDEG, University of Nice and OFCE, Sciences-Po, Paris, France

ARTICLE INFO

Article history:

Received 8 February 2006

Received in revised form 18 February 2008

Accepted 20 February 2008

Available online 4 March 2008

JEL classification:

C34

I38

J21

Keywords:

Policy evaluation

Difference-in-differences estimator

Labour supply

ABSTRACT

This paper investigates the employment impact of a new tax-credit programme that was put in place in France in 2001. According to the theoretical labour supply model, tax credits will have a positive effect on individual labour market participation as they increase the rewards from work. However, tax credits may discourage married women's participation mainly due to income effects. We analyse the introduction of the French measure by adopting a non-experimental evaluation method. Various treatment and control groups are defined. The first specification adopted relies on the policy eligibility rules for the construction of the control and treatment groups. The others hinge, respectively, on marital status, for women in couple-households, and on the presence of children, for single women. We find evidence of a negative employment effect for married women, with a reduction of about three percentage points in the employment rate after the introduction of the policy. In particular, it seems to be the conditioning on total household resources that discourages married women's labour market participation. On the contrary, the employment impact of the measure is positive for cohabiting women and twice as large. The policy effect is very small and statistically not significant for single women. The net impact of the introduction of the tax credit on the total employment of women is very marginal, amounting to the creation of about two thousand new jobs.

© 2008 Published by Elsevier B.V.

1. Introduction

The French tax credit, called the “Prime Pour l'Emploi”, that is the “work premium”, was launched by the Socialist government of Prime Minister Lionel Jospin in the Spring of 2001, and later amended by ensuing Conservative governments. According to fiscal administrative records (see for example, [Barnau and Bescon, 2006](#)), 8.7 million households received some tax credit in 2001, representing approximately 25% of French households. Total government expenditure on the tax credit amounted to 2.5 billion Euros and the average tax credit per household was 290 Euros per year, varying between a minimum of 30 Euros and a maximum of over 500 Euros.¹ In Anglo-Saxon countries, tax credits cover a smaller proportion of the population but the payments involved are much larger.² In the UK over the period we consider, about one million households were beneficiaries of the Working Family

[☆] Earlier versions of this paper were presented at the “Association Française de Sciences Economiques” in September 2004, at the IZA Transatlantic Meeting of Labour Economists in June 2005, and at invited lectures given in 2004–05 at LEO (University of Orléans), TEAM (University of Paris 1), PSE (Paris), and the Econometrics Department of the University of Tilburg. I thank the seminar and conference participants for useful comments. In particular, I am grateful to Hans Bloemen, Andrew Clark, Gael Dupont, Bertrand Lhommeau, Bruce Meyer and Thomas Piketty for helpful comments. I owe many thanks to two anonymous referees and a journal editor for providing me with constructive remarks. All errors are mine.

^{*} OFCE 69 Quay d'Orsay, 75007 Paris, France.

E-mail address: Elena.stancanelli@free.fr.

¹ In 2005, the number of beneficiaries increased to 9.2 million, representing about 26% of the population, and the average payment was 295 Euros.

² The larger number of tax-credit beneficiaries in France partly results from poor targeting – although some households only receive payments of 30 Euros per year – and partly from the fact that the distribution of earnings in France is very compressed around the minimum wage.

Tax Credit, with an average yearly expenditure of over 2500 Euros per household. In the USA, there were nearly 20 million recipients of the EITC, with an average expenditure of almost 700 Euros per household.

According to the theoretical labour supply model, tax credits will have a positive effect on the participation decision of (unmarried) individuals as they increase the rewards from work. For individuals already working, the effect on hours is ambiguous and, in particular, it depends on the relevant portion of the credit schedule – individuals in the phase-in of the measure, where the tax credit payable increase with earnings, will be induced to increase their working hours, while individuals in the phase-out, where payments decrease with earnings, will have opposite incentives – and on the size of substitution and income effects.³ For married persons, eligibility to the tax credit is conditional on total household income (as opposed to individual income). For primary earners, the effects of the tax credit will be the same as for unmarried persons. For secondary earners, often the wives, both the decision to participate and the hours worked will depend on the relevant portion of the credit schedule as well as on substitution and income effects. In particular, married women, who are most often the secondary earner in the household, may opt to reduce hours or not participate at all in the labour market in order to make their husband eligible for the credit and/or to maximize the amount of credit payable (Apps, 2007). The literature shows that secondary earners' labour supply is particularly sensitive to tax incentives (Triest, 1990; Bourguignon and Magnac, 1990) and that tax credits discourage secondary earners' participation and hours (Apps, 2007). The Earned Income Tax Credit (EITC) has been shown to increase work incentives for lone parents in the United States (see, for example, Meyer and Rosebaum, 2001) but to significantly reduce married women's participation rates and hours of work (Dickert et al., 1995; Ellwood, 2000; Eissa and Williamson Hoynes, 2004; Eissa and Hoynes, 2004). Heim (2005) appeals to a structural model of married couples' labour supply to conclude that while participation effects are small, there are negative effects of the EITC on the hours of work of both husbands and wives.

Here, we investigate the employment effects of the French measure for married and unmarried women. French women have been previously found to be more responsive than men to policy incentives in the French taxation literature (see, for example, Piketty, 1998; Bourguignon and Magnac, 1990). To our knowledge, this is the first evaluation of the employment effects of the French tax credit using non-experimental methods. Previous micro-simulation studies, prior to the introduction of the policy, predicted a small positive employment effect for French women, amounting to at most a few thousand new jobs for women in the age range 25–49 according to the most reliable estimations (see Stancanelli and Sterdyniak, 2004, for a review of this literature). In our analysis, we distinguish women further by their marital status to disentangle the differential incentive effects for married and unmarried women. Cohabiting women faced similar tax-credit incentives to single women, as joint taxation and means-testing on total household income only applied to formally married women in France at the time covered by the analysis. Various treatment and control groups are defined. The first specification adopted relies on the policy eligibility rules for the construction of the control and the treatment groups. The others hinge, respectively, on marital status, for women in couple-households, and on the presence of children, for single women.

We analyse the impact of the initial policy. We may *a priori* not expect to find particularly large effects of the French tax credit on employment, given the relatively small amounts of money at stake. Although “announcement” effects might magnify the economic effects of the policy (see for example, Blundell et al., 2004),⁴ it may take quite some time for individuals to learn about the new tax credit and to react to the policy.⁵ Therefore, we may not be able to capture here the full policy effects.

Our estimation results suggest a negative employment effect for married women. In particular, it seems to be the conditioning on total household resources that discourages married women's labour market participation. The marginal effect of the policy is estimated to be roughly 3 percentage points for this group, suggesting the destruction of some 120 thousand jobs since the introduction of the tax credit. We find evidence of a positive employment effect for cohabiting women. This effect is twice as large, in absolute terms, as that for married women. The estimates of the impact of the tax credit are very small and not significant for single women. The net impact of the introduction of the tax credit on the total employment of women is very marginal, amounting to the creation of about two thousand new jobs.

The structure of the paper is as follows. The next section describes the French tax credit, and the evaluation model is presented in Section 3. The data and the selection of the sample for analysis are described in Section 4. The results of estimation are presented in Section 5, and Section 6 concludes.

2. The workings of the French tax credit

Tax credits belong to the family of “in-work benefits”⁶ and as such have two main policy objectives. The first is to fight poverty amongst low-skilled workers by redistributing income towards the “working poor”. The second is to reduce “unemployment traps”, and thereby increase incentives to work, by increasing the income from work relative to unemployment. In most countries, in-work benefits have been targeted at workers from households with dependent children, as the risk of poverty is greater and unemployment traps are more severe for this group.

³ See, for example, Nelissen et al., (2005), and Nelissen and Van Soest, (2003), for a simulation of the impact of in-work benefits on employment in the Dutch labour market.

⁴ Overall wage growth was small in the 2000s in France – partly due to working-time reductions which were negotiated against wage moderation starting in 1999, partly because of slow economic growth. This could potentially make small increases in income from work more valuable to workers (see Blundell and Hoynes, 2003, for a discussion of the effects of tax credits in different economic contexts).

⁵ For example, Maag (2005) shows that, in the United States, years after the introduction of the EITC many individuals, and especially low-educated parents, were still unaware of the existence of the programme.

⁶ When in-work benefits are administered by Tax Offices rather than by the Social Security Administration, they are called “tax credits”.

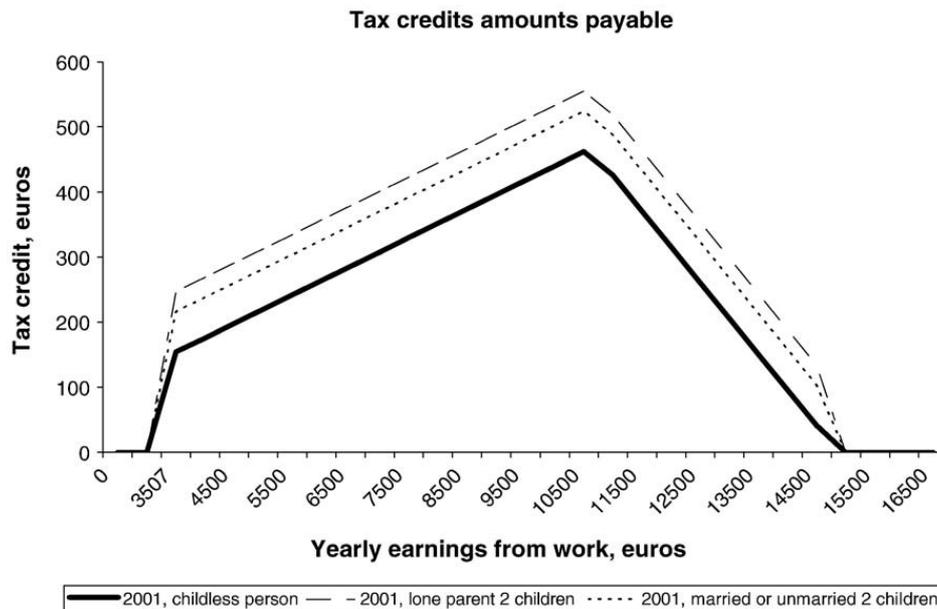


Fig. 1. Tax credits payable by household type.

The amount of tax credit payable as a function of full-time equivalent yearly earnings is shown in Fig. 1.⁷ During the phase-in, where payments increase with earnings, the applicable rate was 4.4% of earnings in 2001. The payments reach their maximum at about the yearly earnings level of someone working all year, full-time, at the minimum wage. Payments then decline, in the phase-out of the measure, at 11% of the difference between 15,000 Euros and actual full-time equivalent yearly earnings. The premium per child is very small: 31 Euros per dependent child per year, and 62 Euros for the first child of single parents. Married individuals with a dependent spouse receive an additional 78 Euros.

The eligibility constraints on married individuals from the conditioning on total household resources are illustrated in Fig. 2, where we show the tax credit amounts payable to a married person with two children, as a function of their work earnings in two distinct situations. In the first case, the spouse works full-time at the minimum wage; in the second case, s/he earns twice the minimum wage. It can be seen that own tax credit receipts fall as spouse's income increases. Moreover, income and earning conditions are looser for married individuals with a dependent spouse (see Appendix).

According to the theoretical labour supply model, increasing the rewards from work should increase individual labour market participation. For single (unmarried) persons, the tax credit should affect positively the decision to participate in the labour market, inducing some individuals to move from non-participation into participation. For single (unmarried) persons already working positive hours, the effect on hours is ambiguous. It depends on the relative portion of the tax credit schedule applicable – individuals in the phase-in of the measure, where payments increase with earnings, would be induced to increase their working hours, while individuals in the phase-out, where payments decrease with earnings, would have opposite incentives (see Fig. 1) – and on the size of substitution and income effects. For married persons, eligibility to the tax credit is conditional on total household income (as opposed to individual income). For primary earners, the effects of the tax credit are the same as for single (unmarried) persons. For secondary earners, often the wives, the effects of the tax credit on the decision to participate and the hours worked will depend on the relevant portion of the credit schedule as well as on substitution and income effects (see Fig. 2). In particular, married women, who are most often the secondary earner in the household (see Stancanelli, 2007, for a discussion of the typology of French couples' labour market statuses) may opt to reduce hours or not participate at all in the labour market in order to make their husband eligible for the credit and/or to maximize the amount of credit payable (Apps, 2007; Eissa and Williamson Hoynes, 2004; Eissa and Hoynes, 2004). Here, we investigate the participation effects of the policy for married and unmarried women. Hours responses are not dealt with. Given the rigidity of hours in the French labour market, individuals may well trade off between working and not working, rather than by reducing hours.

3. The evaluation model

We appeal to a difference-in-differences approach to estimate the employment effects of the new tax credit measure. We focus on employment outcomes rather than participation, as the state of employment can be picked up more neatly with the subjective

⁷ Eligibility conditions are described in the Appendix to the paper. Since the introduction of the tax credit in 2001, a number of relatively small changes have been made to the program. These consisted of slightly higher payments to part-time workers, a gradual rise in the amount payable to anyone in the phase-in, from 4.4% of full-time equivalent yearly earnings in 2001 to 4.6% in 2005, and adjusting the earnings and income conditions for inflation. A major reform took place in Spring 2004, allowing beneficiaries to cash an advance payment of the tax credit upon returning to work after a spell of unemployment.

Tax credit payable to a married person with 2 children as a function of spouse's earnings

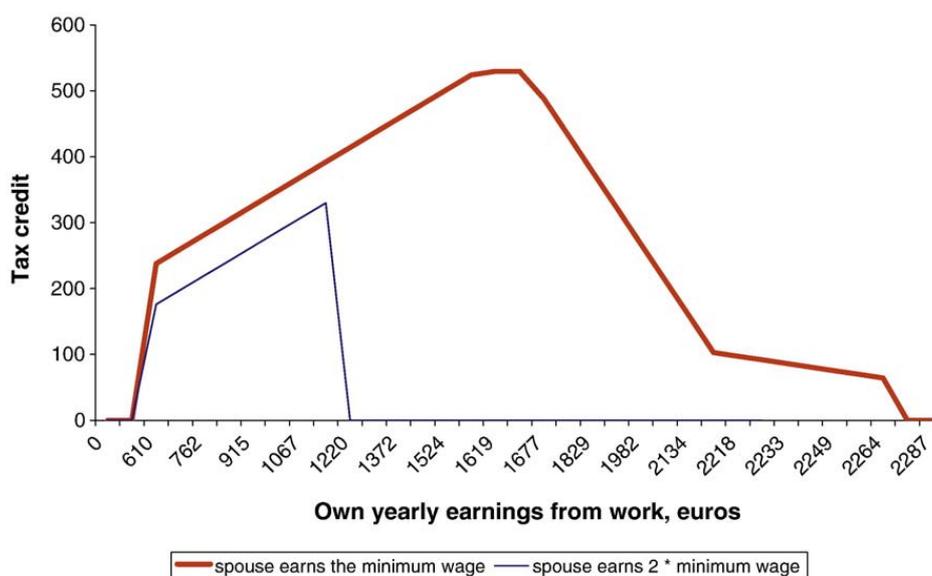


Fig. 2. Tax credits payable to a married person as a function of own and spouse's income.

data to hand.⁸ We do not consider changes in hours of work.⁹ Using non-experimental data, the impact of the programme is measured by the difference between the employment probabilities of women who are potentially eligible for the policy (the treatment group) and women who are not eligible (the control group), measured before and after the policy change. There is now an extensive literature that applies this counterfactual method to evaluate labour market programmes. Here, three different sorts of “treatments” are considered.

1. Treatment based on potential eligibility for the tax credit, which is conditional on predicted earnings. The control group consists of women who are not eligible either because of their husbands' income or because their (predicted) earnings are above the eligibility threshold.
2. Treatment based on marital status. Here we define married women – regardless of their earnings – as the treated, and cohabiting women, who are not subject to means-testing on total household income, as the control group. In this case we do not estimate the full effects of the policy but only the potential disincentives arising from conditioning on total household resources.
3. Treatment based on lone parenthood, defining lone parents – regardless of their earnings – as the treated and childless single women as the control group. The rationale for this approach hinges on the less restrictive earnings and income eligibility bounds for lone parents. In practice, almost all lone parents in our sample are potentially eligible for the tax credit, as opposed to a much lower proportion of single childless women.

We define E as a binary variable taking the value one if individuals are employed and zero if they are not. The model we specify is a conventional difference-in-differences model (see for example, Stewart, 2004a,b for an application to the employment effects of minimum wage laws). The latent expression for employment can be specified as:

$$E_{it}^* = \alpha_g + \eta_t + \gamma d_{it} + X'_{it}\beta + \varepsilon_{it} E_{it} = 1 [E_{it}^* > 0] \tag{1}$$

where α_g is the group effect, which is fixed over time, with $g=1$ if individuals belong to the treatment group and $g=0$ if they are in the control group; η_t is the time effect which is common across both groups; and an interaction term d_{it} which equals 1 if individuals belong to the treatment group ($g=1$) and $t \geq t^*$, where t^* is the policy year, with $d_{it}=0$ otherwise. The X are individual and labour market characteristics which allow us to control for differences in observables between the control and treatment groups. The policy effect is measured by γ .

Assuming that the error term follows a closed-form logistic distribution, the evaluation model is a logit model of employment, E , as given by Eq. (1). To account for any serial correlation that may bias the standard errors of the model (see, for example, Bertrand et al., 2004; Kezdi, 2002) we use robust standard errors. In this model, serial correlation may arise from the correlation of the

⁸ Non-participants include women who defined themselves as “housewives”, possibly due to discouragement and few opportunities in the labour market. This is more likely to apply to married and cohabiting women than to single women, and might, therefore, bias the measurement of “participation” (see also Jones and Riddell, 2006, for a more general discussion of the definition of unemployment and non-employment). Given the time lag between deciding to work and finding a job, we will likely underestimate participation responses by focusing on employment.

⁹ A number of articles have shown that hours are very rigid in the French labour market (see, for example, Bourguignon and Magnac, 1990; Donni and Moreau, 2007). Answers to survey questions on whether part-time work was “voluntarily” chosen, indicate that the vast majority of female part-time workers in France did not choose their hours of work but are rather “involuntary” part-timers.

explanatory variables over time. This may especially be the case for the binary treatment variable which determines programme eligibility; serial correlation may also result from highly positively-correlated values of the dependent variable over time.

We also estimate a random-effects logit, which allows for individual unobserved heterogeneity, exploiting the rotating-sample structure of the surveys (one-third of the sample is replaced each year). The random-effects logit model of employment, E , is given by Eq. (2) below:

$$E_{it}^* = \alpha_g + \eta_t + \gamma d_{it} + X'_{it}\beta + c_i + u_{it}E_{it} = 1 [E_{it}^* > 0] \quad (2)$$

Here c_i refers to the individual unobserved effects and u_{it} to the idiosyncratic errors.

In the analysis we will use data drawn from the French Labour Force Surveys (LFS) for the years 1999 to 2002. For the policy measure considered, the introduction of the tax credit, the years 1999 to 2001 are the controls and 2002 is the policy year. The tax credit was first announced in February–April 2001, but participants in the 2001 LFS survey, collected in February–March, are unlikely to have changed their behaviour in response to the policy announcement. Participants in the 2002 LFS survey not only knew that the tax credit had been created (the announcement effect) but could have already collected it in September 2001, on the basis of their tax declarations made in March 2001, and relative to their earnings and income in 2000, seeing as the policy came into force with retroactive effect.

In the analysis, three types of treatment and control groups are used. For the first of these groups, treatment is based on potential eligibility for the tax credit. To determine eligibility, we replace observed earnings by predicted earnings for all women in the sample, as earnings are likely to be endogenous in a model of employment probability.¹⁰ We thus estimate a Heckman selection model of hourly wages. To calculate eligibility, predicted hourly earnings must be transformed into full-time equivalent yearly earnings.¹¹ In addition to passing the earnings test, total taxable income must be lower than the total income bound for eligibility, and this last varies with both the number of children, and the employment status and earnings of the husband, if married.¹² The control group is made up “ad hoc” including: a) women whose earnings are between the upper earnings threshold for eligibility and about half the minimum wage more than this threshold (expressed in terms of full-time equivalent earnings); and b) married women who fail eligibility because of their husband's income. Treatment and control groups are further defined by crossing marital status with potential eligibility. For example, we compare married women who are potentially eligible for the tax credit (the treatment group) with married women who are not eligible because they earned a little too much money or because their husband's income stopped them from being eligible (the control group).

Next, groups are drawn only using information on marital status, for women in couple-households, and on the presence of children, for single women – regardless of eligibility and earnings. We exploit the fact that unmarried women cannot file joint tax declarations to test for possible work disincentives due to conditioning on total household income. Here we restrict the sample to women who are aged forty at most¹³ (although the results are not affected if we retain women of all ages as in Stancanelli, 2004). Regarding single mothers, the approach hinges on the fact that the earnings and income eligibility conditions are considerably looser for lone parents, so that they are more likely to receive the tax credit than are single individuals. Almost all of the single mothers in our sample are potentially eligible for the tax credit, whereas this is true only for a smaller proportion of single childless women. Here we restrict the sample to women aged twenty-five or more.

The validity of the non-experimental policy-evaluation approach adopted here rests on a number of hypotheses. The first is that the employment probability of the control group is unaffected by the policy change. This corresponds to assuming that women with earnings and income just above the programme eligibility thresholds do not modify their labour market behaviour so as to be able to participate in the programme. Some higher-earning women may have reduced their working hours to become eligible for the tax credit. Hours rigidity potentially limits this kind of behaviour, which would otherwise seriously bias the estimates of the measure's impact. In cases 2 and 3 above, the treatment and control groups are drawn on the basis of marital status, for women in couple-households, and regarding the presence of children, for single women. Recent literature has shown that the EITC has affected marriage rates (Bitler et al., 2004). To our knowledge, there is no research testing whether marriage rates responded to the

¹⁰ This is the same approach taken by, for example, Eissa and Williamson Hoynes (2004).

¹¹ Yearly earnings (W) equal hourly earnings (w) multiplied by “annualized” working hours ($52 * h$) scaled by the “equivalent full-time earnings factor”, which is equal to 1820 ($35 * 52$) over annualized hours. This produces the following expression:

$$W_i = w_i * (h * 52) * 1820 / (h * 52) = w_i * 1820 = w_i * 35 * 52$$

It follows that for part-time workers actual hours of work cancel out and, if we assume that full-time workers work a 35-hour week (which is not an unreasonable assumption given that, first, many firms have introduced a 35-hour week and, second, that hours of work do not matter that much for full-timers, as they are not really paid by the hour), then hours do not enter our evaluation model. We can therefore reason in terms of (predicted) hourly earnings to determine eligibility for the tax credit. There is just one caveat for the lower earnings threshold, which is fixed independently of hours of work. In the LFS, about 3% of women in the sample have actual earnings below this minimum earnings level. When we replace actual hourly earnings by their predicted level, we find no observations in this situation.

¹² We assume that the employment status (and earnings) of the husband are not affected by the policy, which is justified, at least to a certain extent, by the observation that over 90% of married men in the sample are the household's main earner. Total income is calculated as the woman's predicted earnings from work plus their husband's income.

¹³ We set the boundary at forty as cohabitation rather than marriage could be partly a function of age. The proportion of cohabiting women, in our 1999–2002 sample, passes from 24.6% (25.3% using sample weights) to 31.4% (32.0% using sample weights) if age is restricted to forty years at most. We also test the sensitivity of our estimates to restricting the sample to women older than twenty-five and younger than forty, in which case the proportion of cohabiting women is equal to 28.6% (29.4% using sample weights).

introduction of the tax credit in France. Work on the sensitivity of married women's labour supply to work disincentives due to joint taxation is also thin on the ground for France.

The second important assumption is that the difference between the employment probabilities of the two groups is time invariant. In this respect, at about the same time that the tax credit was introduced in France, other policy changes have occurred that might have affected the employment of the low-skilled.¹⁴ However, none of these programmes were administered by the tax administration, and they all treated married and cohabiting women alike, unlike the tax credit. Were any of these programmes to have affected the employment probabilities of the treatment and control groups differently across the period considered, our policy evaluation estimates would be biased.

Finally, for the difference-in-differences approach to be meaningful, the assigned control group should be as close as possible to the treatment group, without however being eligible for the programme. Given that ineligible women have higher earnings than eligible women, it is difficult to draw a control group that is very similar to the treatment group. Even when treatment is based on marital status and presence of children, the resulting treatment and control groups do not match perfectly. The use of controls for observables in the evaluation model will to an extent help to account for differences between the control and treatment groups.

4. The data

The sample for analysis is drawn from the French Labour Force Surveys from 1999 to 2002. The LFS series was broken in 2003 to comply with the harmonization requirements of Eurostat regarding the collection of European LFS surveys. We cannot therefore extend our analysis to later years. The break and the non-comparability of the two LFS series have been thoroughly documented by the French National Statistical Institute (see, for example, [INSEE, 2003](#)).

We select from each survey year a sample of women satisfying the following conditions:

- They were either household heads (“*personne de référence du ménage*”) or the spouse of the head.¹⁵
- They were aged over 16 and under 52. School is compulsory in France up to age 16. Special labour market programmes apply to older workers, who are, for example, exempted from searching for a job while claiming unemployment benefits, and protected from dismissal, if in work (by the so called “*Delalande*” law which obliges employers to pay extra compensation for the dismissal of older workers).
- Self-employed women were dropped from the sample as their earnings were not collected.
- Only the employed, the unemployed and housewives¹⁶ were retained in the sample. Full-time students and trainees as well as retired women were dropped.
- Women holding more than one job were also dropped, as only earnings in the main job were recorded.

Women were next matched to their partner, if any, and observations were pooled over the years under consideration. Women with self-employed or retired husbands, or an employed husband who did not report earnings from work were also dropped from the sample, in order to check whether the total household income conditions for eligibility were met.¹⁷ The resulting sample consists of roughly 24–25,000 women per year over 1999–2002.

The earnings information in the survey concerns usual gross monthly wages, net of (after) employee payroll taxes but gross of (before) employee income taxes. Information on bonuses is collected in a separate question. We add wage bonuses to women's monthly wages to compute the total monthly wage. Information on usual weekly working hours is used to compute the hourly wage. Some women in the sample report hourly earnings below the minimum wage. Cross-checking observations with unusually low earnings against an indicator of unreliable survey responses provided in the survey did not reveal any correlation. Moreover, in France workers may earn less than the hourly minimum wage, in jobs like babysitting. The standard contract for these household employees distinguishes between “*active*” and “*passive*” hours of work, where “*active*” hours of work amount to 2/3 of actual working time and only these are actually paid by the employer. For these reasons, we dropped observations earning less than half the hourly minimum wage from the sample, as women misreporting their wages might not respond correctly to other questions either.

To determine eligibility for the tax credit, total income is computed by setting women's earnings equal to their predicted level, and adding their husband's income. Husbands' income includes earnings from work or unemployment benefits when available. Other sources of income are not taken into consideration here, as they were not collected by the survey. No information is available

¹⁴ These included the possibility of the previously unemployed continuing to receive housing benefits and social security benefits when taking up work. In addition, some small- and medium-size enterprises entered into “35-hour” working-week agreements over this period, as the introduction of the 35-hour week was staggered over time. The “35-hour” working-week applied to roughly one in every two French workers in 2002. New measures to further reduce employers' social security contributions rates for the low-skilled (which started in 1995–96) were also implemented around the 2000s.

¹⁵ This implies that we in particular drop young women who are still living at home with their parents.

¹⁶ All questions in the survey are subjective. Individuals can classify themselves as unemployed, according to the ILO definition, as well as other unemployed, employed, housewives, in full-time education, or retired.

¹⁷ The LFS 1999–2002 only collected the earnings of salaried workers and unemployment benefit for the unemployed. Pensions and other income sources were not recorded. Roughly 9% of married women in our (final) sample were dropped because of missing information on their husbands' earnings from work. An alternative would have been to predict earnings for employed (salaried) husbands, but this adds to the noise around the boundaries between the treatment and the control groups.

Table 1
Descriptive statistics for the LFS sample

1999–2002		
Variable name	Mean	SD
Age	36.71	8.19
Experience	17.79	9.47
Education 1, CEP	0.24	0.43
Education 2, BEPC	0.08	0.27
Education 3, BEP-CAP	0.26	0.44
Education 4, BAC	0.16	0.37
Education 5, BAC+2	0.15	0.35
Married	0.50	0.50
Cohabitant	0.25	0.43
Single	0.25	0.43
Number of Children	1.33	1.19
Any child of age <3 years	0.15	0.35
Paris	0.15	0.36
Small city	0.42	0.49
Large city	0.21	0.41
Ile de France	0.18	0.38
French nationality	0.92	0.28
Employed	0.71	0.45
Hourly salary, Euros	7.83	4.72
Hourly salary predicted	6.83	1.88
Husband employed*	0.92	0.27
Husband's income*, Euros	1500.87	810.26
No. of observations	96798	

*The mean of partner's employment status is computed only for married and cohabiting women. The salary of the husband is the monthly salary, averaged over positive values only. Earnings are measured in current values.

on non-wage income except for unemployment.¹⁸ We assume that income from property or interest from savings are on average negligible. Taxable income is computed by applying a standard approximation.¹⁹

The education dummies are increasing in the educational level, with the omitted category being the highest education level, equivalent to a university degree. Experience is computed by subtracting age at the end of formal schooling from current age.

To account for local labour market conditions, we construct a series of dummies for the region of residence, with the omitted category being “Ile-de-France”, the region including Paris. An additional set of dummies accounts for the type of agglomeration in which individuals live: small cities include rural neighbourhoods or urban neighbourhoods with less than 20,000 inhabitants; large cities are those with more than 200,000 inhabitants; and Paris stands on its own as the largest urban agglomeration in France. The omitted category refers to medium-sized cities with populations of 20,000 to 200,000 inhabitants. Given that “Paris” accounts for a large share of the population of “Ile-de-France”, we only enter “Ile-de-France” in our regressions.

The descriptive statistics from the LFS sample are shown in Table 1.

5. Estimation results

In the analysis, three types of treatment and control groups are used. The first treatment and control groups defined using a conventional approach based on predicting eligibility are not particularly close in terms of observed characteristics (see Table 2). Women in the control group tend to be older, more educated and have less work experience. They are more likely to be married, but have fewer children. They are more likely to live in Paris and the Ile-de-France, and are more likely to be French. Their employment rates are much higher than those of women in the treatment group and so are their hourly wages. Their husbands earn more on average and are more likely to be employed. However, some of these differences narrow down when eligibility is crossed with marital status (see Table A in the Appendix).

The treatment and control groups defined only on the basis of marital status for women aged forty at most are much more similar in terms of education, earnings, husbands' employment rates and area of residence (see Table 3), but they are still different with respect to age, experience, number of children and nationality. In particular, the employment rates of cohabiting women are higher than those of married women. Finally, we compare single mothers to childless single women in Table 4. Here again treatment is not a function of earnings and income, but depends on the presence of children for

¹⁸ Information on unemployment income from the LFS is not generally considered to be very good. However, only a small number (between 4 and 6%) of the husbands in our sample are unemployed in each of the years considered. Moreover, for our purpose, earnings conditions matter more than total household income, as over half of French households filing tax forms pass the total income test for eligibility for the tax credit, but only one in every three workers actually receives it based on their own earnings.

¹⁹ This consists in multiplying pre-tax income by a factor of 0.72, which takes into account various standard deductions.

Table 2

Descriptive statistics: treatment and control groups defined on the basis of eligibility rules

Variable name	Treatment group		Control group	
	Mean	SD	Mean	SD
Age	36.62	8.01	38.21	7.43
Experience	18.65	9.38	16.86	9.05
Education 1, CEP	0.31	0.46	0.03	0.18
Education 2, BEPC	0.10	0.30	0.03	0.17
Education 3, BEP-CAP	0.32	0.47	0.10	0.31
Education 4, BAC	0.17	0.37	0.13	0.34
Education 5, BAC+2	0.08	0.27	0.37	0.48
Married	0.55	0.50	0.61	0.49
Cohabitant	0.17	0.38	0.21	0.41
Single	0.28	0.45	0.18	0.39
Number of Children	1.47	1.18	1.11	1.10
Any child of age <3 years	0.16	0.37	0.14	0.34
Paris	0.11	0.32	0.27	0.44
Small city	0.45	0.50	0.33	0.47
Large city	0.21	0.41	0.22	0.41
Ile de France	0.13	0.34	0.30	0.46
French nationality	0.91	0.29	0.94	0.24
Employed	0.66	0.47	0.82	0.39
Hourly salary, Euros	6.55	0.20	9.29	2.97
Hourly salary predicted	5.72	1.05	8.20	1.87
Husband employed*	0.90	0.31	0.99	0.11
Husband's income*, Euros	1322.44	547.47	2096.75	1107.04
No. of observations	69352		14061	

*The mean of partner's employment status is computed only for married and cohabiting women. The salary of the husband is the monthly salary, averaged over positive values only.

single women. The employment rates of single childless women are much higher than those of single mothers. Single childless women tend to be younger, have less work experience and more education than lone mothers. They are more likely to live in inner Paris and to be French than are lone mothers. We restrict the two samples to women aged twenty-five or more, as these differences and, in particular, those with respect to education, were more marked for younger age groups.

To estimate the impact of the tax credit on employment outcomes, we control for observed characteristics in the evaluation regression. This is especially important given the differences in observed characteristics between the treatment and control groups.

The estimation results for the models specified in Eqs. (1) and (2) of Section 3 are given in Table 5, for the different control and treatment groups. The marginal estimates of γ are shown, which quantifies the impact of the policy. We expect to find negative employment effects for married women but positive effects for unmarried women.

Table 3

Treatment and control groups defined only on the basis of marital status

Variable name	Married women		Cohabiting women	
	Mean	SD	Mean	SD
Age	33.28	4.61	29.69	5.24
Experience	14.12	5.86	10.06	6.18
Education 1, CEP	0.21	0.41	0.18	0.38
Education 2, BEPC	0.07	0.26	0.07	0.25
Education 3, BEP-CAP	0.28	0.45	0.26	0.44
Education 4, BAC	0.17	0.38	0.19	0.39
Education 5, BAC+2	0.15	0.36	0.17	0.38
Number of Children	1.81	1.13	0.91	1.04
Any child of age <3 years	0.27	0.45	0.25	0.43
Paris	0.15	0.36	0.14	0.35
Small city	0.46	0.50	0.44	0.50
Large city	0.20	0.40	0.19	0.39
Ile de France	0.17	0.38	0.16	0.37
French nationality	0.87	0.33	0.96	0.19
Employed	0.63	0.48	0.71	0.45
Hourly salary, Euros	7.62	4.17	7.16	3.63
Hourly salary predicted	6.12	1.61	5.92	1.61
Husband employed*	0.92	0.27	0.90	0.30

Note: The sample includes only women aged 40 or less.

*The salary of the husband is the monthly salary, averaged over positive values only.

Table 4

Treatment and control groups defined only on the basis of presence of children for single women

Variable name	"Lone parents"		Single women	
	Mean	SD	Mean	SD
Age	40.34	6.90	37.52	8.71
Experience	22.16	8.20	17.44	10.49
Education 1, CEP	0.33	0.47	0.16	0.37
Education 2, BEPC	0.09	0.29	0.06	0.24
Education 3, BEP-CAP	0.28	0.45	0.20	0.40
Education 4, BAC	0.14	0.35	0.16	0.36
Education 5, BAC+2	0.10	0.30	0.20	0.40
Number of Children	1.69	0.92		
Any child of age <3 years	0.09	0.28		
Paris	0.16	0.37	0.23	0.42
Small city	0.31	0.46	0.25	0.43
Large city	0.26	0.44	0.25	0.43
Ile de France	0.18	0.39	0.24	0.43
French nationality	0.90	0.29	0.94	0.23
Employed	0.68	0.47	0.86	0.35
Hourly salary, Euros	7.74	4.71	8.19	5.73
Hourly salary predicted	6.45	2.03	7.12	2.29
No. of observations	11521		11220	

Note: The sample includes women aged 25 and over.

For the first model, where treatment depends on potential eligibility, we find a negative but insignificant impact of the policy on employment for all women considered together. We find evidence of a negative and significant (the two-sided p -value is equal to 0.04) impact for married women in the logit model specification, but the impact becomes statistically insignificant in the random effects logit specification. The size of the coefficient indicates a reduction in the employment rate of married women following the introduction of the tax credit of about three percentage points. The strongest participation disincentive effects estimated by [Eissa and Williamson Hoynes \(2004\)](#) for married women corresponded to a fall in participation of over two percentage points. Tax credits amounts payable are much larger in the United States than in France. This would suggest larger negative effects of the tax credit measure for French women than for American women, which is perhaps consistent with [Piketty's \(1998\)](#) finding of particularly large labour supply responses of French married women.

We find a positive but statistically not very significant (the two-sided p -value is 0.08) impact of the policy for cohabiting women, in the model where treatment is defined on the basis of eligibility rules. This impact is estimated to be about twice the size, in absolute terms, of the negative effect for married women, suggesting an increase of roughly six to seven percentage points in the employment rate of cohabiting women after the introduction of the tax credit. Always defining treatment on the basis of eligibility and splitting women into groups according to marital status, we do not find any significant effect of the tax credit on the employment rate of single women. We cannot separate the impact of the policy for lone parents from that for single childless women, as on the basis of eligibility rules, almost 100% of lone parents in the sample are eligible for the policy.

We next define treatment on the basis of marital status (model 2) and presence of children for single women (model 3), making no direct reference to eligibility conditions based on own earnings and total household income. In model 2, we define treatment as marital status and take cohabiting women as the control group. Here, we focus on the possible disincentives to work arising from the conditioning of the credit on total household resources, as cohabiting women are also eligible for the tax credit but they are not subject to conditioning on their husband's income. In both the logit and the random logit specification, we find a negative and significant impact (the two-sided p -value is equal to 0.008) of conditioning on total household

Table 5

Estimation results: marginal impact of the tax credit on employment

	Logit models		Random effects logit	
	Marginal effect	Standard error	Marginal effect	Standard error
1) Eligibility rules:				
All women	-0.002	0.013	0.0001	0.013
Married women	-0.032**	0.016	-0.029	0.019
Cohabiting women	0.060*	0.035	0.069*	0.036
All Single women	-0.012	0.028	-0.010	0.023
2) Married against cohabitants	-0.030**	0.011	-0.035**	0.014
3) Lone parents against single childless women	-0.0008	0.013	0.0007	0.010

The models estimated are logit models with robust standard errors and random effects logit models. The dependent variable is the employment outcome. The covariate vector includes the following explanatory variables: a quadratic in age, education dummies, number of children and presence of small children aged under three, region dummies, and size of living area dummies. The marginal estimates are calculated as the change in the probability when d_i in Eq. (1) changes from one to zero.

Table 6
Sensitivity analysis: dropping year 2001

	Logit models		Random effects logit	
	Marginal effect	Standard error	Marginal effect	Standard error
1) Eligibility rules:				
All women	-0.00	0.013	-0.002	0.014
Married women	-0.041**	0.017	-0.039*	0.021
Cohabiting women	0.054	0.036	0.070*	0.039
All Single women	-0.007	0.030	-0.007	0.027
2) Married against cohabitants	-0.030**	0.011	-0.036**	0.012
3) Lone parents against single childless	-0.0009	0.013	-0.0007	0.014

Relative to the estimates shown in Table 5, here the model is estimated for the years 1999 to 2002, not using the year 2001. The models estimated are logit models with robust standard errors and random effects logit models. The dependent variable is the employment outcome. The covariate vector includes the following explanatory variables: a quadratic in age, education dummies, number of children and presence of small children aged under three, region dummies, and size of living area dummies. The marginal estimates are calculated as the change in the probability when d_i in Eq. (1) changes from one to zero.

resources for married women in 2002. The marginal impact of the conditioning on total household resources for tax credit eligibility is slightly larger in absolute values under the random effects specification (0.036) than under the logit model (0.030). Following the introduction of the policy, the employment rate of married women is estimated to have fallen by 3.6 percentage points.

Finally, consider model 3, where lone parents, for whom eligibility rules are looser, are taken as the treatment group and single childless women are used as the control group, independent of the eligibility criteria explicitly based on earnings and income. Here, we conclude that the policy had no significant effect. The insignificant findings might partly be due to the poor specification of the control group. We showed in Table 4 that the two groups are quite different. In addition, single childless women are also eligible for the tax credit, although with a much lower rate than lone mothers. Given that all lone mothers are eligible for the credit, it is difficult to find a control group that compares well to them.

We tested for the robustness of our estimates to different specifications. First of all, we re-ran the various evaluation models excluding the year 2001 from the analysis. In our analysis the year 2001 is considered as a “control” year, even though the new tax credit policy started in 2001. The 2001 LFS survey was carried out in February–March and the policy was announced for the first time in February 2001. The estimates of the impact of the tax credit are quite robust to the exclusion of data from year 2001 from the analysis (see Table 6). In particular, the estimates from the model based on eligibility rules, are slightly larger, in absolute terms, and statistically more significant, for married women than in our preferred specification (see Table 5). The estimate for cohabiting women stays the same in the random effects logit specification and becomes less significant in the cross-sectional logit model. The finding of a significantly negative disincentive effect of conditioning on total household income for married women is very robust (model 2). The policy effect stays statistically insignificant and very small in size for single women.

Next, we checked the robustness of the estimates to the exclusion of younger women aged less than twenty-five from the analysis (see Table 7). Under this specification, the effect of the policy for married women become slightly less significant and smaller in absolute terms, both in model 1, based on eligibility rules, and in model 2, based on marital status only. The impact for cohabiting women in the specification based on eligibility rules is also slightly smaller in absolute terms.

To sum up, we find some evidence of a negative employment effect of the tax credit for married women mainly due to the conditioning on total household income. The effect for cohabiting women is on the contrary positive and twice as large in absolute terms. Given that 50% of the women in the population considered are married and 25% are cohabiting, the net impact of the introduction of the tax credit on the employment of women is very marginal, amounting to the creation of about two thousand new jobs.

Table 7
Sensitivity analysis: selecting only women older than twenty-five

	Marginal impact of the tax credit on employment			
	Logit models		Random effects logit	
	Marginal effect	Standard error	Marginal effect	Standard error
1) Eligibility rules				
All women	-0.000	0.013	0.001	0.013
Married women	-0.029*	0.016	-0.025	0.018
Cohabiting women	0.056*	0.033	0.064*	0.033
All Single women	-0.009	0.028	-0.008	0.022
2) Married against cohabitants	-0.025**	0.012	-0.029*	0.015
3) Lone parents against single childless	-0.0008	0.013	0.0007	0.010

Relative to the estimates shown in Table 5, here the model is estimated restricting the sample to women aged twenty-five years or more. The models estimated are logit models with robust standard errors and random effects logit models. The dependent variable is the employment outcome. The covariate vector includes the following explanatory variables: a quadratic in age, education dummies, number of children and presence of small children aged under three, region dummies, and size of living area dummies. The marginal estimates are calculated as the change in the probability when d_i in Eq. (1) changes from one to zero.

6. Conclusions

This paper provides a number of estimates of the impact of the French tax credit, “la Prime Pour l'Emploi”, on the employment rate of low-earnings women. This is to our knowledge the first evaluation study based on data posterior to programme implementation. It is also the first to apply non-experimental evaluation methods.

Like similar in-work benefits programmes, the French tax credit was expected to increase work incentives for non-employed individuals. However, it may decrease incentives to work for (married) secondary earners, as found in the American EITC literature. Cohabiting women faced similar tax-credit incentives to single women, as joint taxation and means-testing on total household income only applied to formally married women in France at the time covered by the analysis.

We estimate the impact on employment of the introduction of the policy in 2001. We may *a priori* not expect to find particularly large effects of the French tax credit on employment, given the relatively small amounts of money at stake. We test for employment effects of the policy on women by applying a standard non-experimental evaluation method, a “difference-in-differences” approach. Various treatment and control groups were defined. The first specification adopted relies on the policy eligibility rules for the construction of the control and the treatment groups. The others hinge, respectively, on marital status, for women in couple-households, and on the presence of children, for single women.

The data used for the empirical analysis are drawn from the French Labour Force Surveys from 1999 to 2002. On the basis of the estimation results, we conclude in favour of a negative employment effect of the programme for married women, amounting to a reduction of roughly three percentage points in married women's employment following the introduction of the tax credit. In particular, it seems to be the conditioning on total household resources that discourages married women's labour market participation. The employment rate of cohabiting women, not subject to the means-testing on total household resources, instead increased by six to seven percentage points. The employment effects of the tax credit for single mothers were not statistically significant. This could partly reflect the poor specification of the control group, which is difficult to define as almost all lone parents turned out to be eligible for the tax credit.

We conclude that the net impact of the introduction of the tax credit on total employment of women was very small, amounting to the creation of about two thousand new jobs.

Appendix A. The French tax credit “the work premium”

The French tax credit was designed to compensate the lower-end of the distribution of tax payers for tax reductions granted to wealthier households. Within the “family” of OECD in-work benefits, it stands out as a “hybrid” measure attempting to achieve a number of different objectives, such as, for example, discouraging low-hours part-time jobs and rewarding full-time “minimum wage” workers. Individuals earning only little over the year or working only a few hours in low-paid jobs were not eligible for the tax credit. The tapering-off of payments is such that the credit is the largest for individuals having worked continuously over the year in a full-time job at a salary corresponding to the minimum wage. To be eligible for the tax credit, individuals must be in work and satisfy both an earnings condition and a total household income condition. These eligibility conditions can be summarised as follows:

- Beneficiaries must be in work; those who are out of work are not eligible.
- Individual yearly earnings must exceed a minimum level (3200 Euros in 2001). Hours of work and earnings over the year must be such that full-time equivalent earnings are underneath a maximum earnings threshold (approximately 15,000 Euros in 2001; 23,000 Euros for the married with workless spouses or spouses earning less than 3200 Euros)
- Total “taxable” household income, equal to total household income minus standard tax deductions, must be smaller than a certain amount, set at 12,000 Euros for the single and 24,000 Euros for married couples in 2001. These limits rise by about 3000 Euros with each dependent child.

The rationale for setting a minimum earnings requirement for eligibility was to discourage low-hours part-time jobs. About 3% of working-age women in the LFS sample are ineligible due to “small” earnings, according to our estimates. Tax credits are payable to individuals rather than households, in spite of their being means-tested on total household income. This implies that in some households both husband and wife could receive the credit, if they both satisfy the eligibility conditions.

Table A

Descriptive statistics of treatment and control groups, married women: eligibility rules

Variable name	Treatment group		Control group	
	Mean	SD	Mean	SD
Age	37.66	7.28	39.75	6.89
Experience	19.87	8.63	18.50	8.73
Education 1, CEP	0.32	0.46	0.02	0.18
Education 2, BEPC	0.11	0.31	0.03	0.17
Education 3, BEP-CAP	0.33	0.47	0.09	0.28
Education 4, BAC	0.16	0.37	0.14	0.34
Education 5, BAC+2	0.07	0.26	0.44	0.50
Children number	1.80	1.13	1.52	1.10
Any child of age <3 years	0.17	0.38	0.15	0.36
Paris	0.10	0.30	0.22	0.42

Table A (continued)

Variable name	Treatment group		Control group	
	Mean	SD	Mean	SD
Small city	0.51	0.50	0.37	0.48
Large city	0.19	0.39	0.23	0.42
Ile de France	0.13	0.33	0.26	0.44
French nationality	0.89	0.32	0.93	0.26
Employed	0.64	0.48	0.79	0.41
Ln hourly salary obs., Euros	3.76	0.30	4.15	0.37
Ln hourly salary pred. Euros	3.60	0.16	4.05	0.20
Husband's employed*	0.91	0.28	1.00	0.28
Husband's income*, Euros	8925.88	3551.39	15085.28	7474.27
Observations number	38062		8559	

Note: These statistics are computed over the 4 years period.

*The mean of partner's employment status is computed only for married and cohabiting women. The salary of the husband is averaged over positive values only and computed on a monthly basis.

References

- Apps, P., 2007. Taxation and labor supply. The Australian University, Center for Economic Policy Research, Discussion paper, No. 560. September.
- Barnau, L., Bescon, G., 2006. Analyse de l'évolution des bénéficiaires de la PPE. *Economie et Prévision* 173, 163–169 2006-02.
- Bertrand, M., Duflo, E., Mullainathan, S., 2004. How much should we trust differences-in-differences estimates? *Quarterly Journal of Economics* 119 (1), 249–275.
- Bitler, M., Gelbach, J., Williamson Hoynes, H., Zavodny, M., 2004. The impact of welfare reform on marriage and divorce. *Demography* 41 (2), 213–236 (May).
- Blundell, R., and Hoynes, H. (2003), Has 'in-work' benefit reform helped the labour market? mimeo.
- Bourguignon, F., Magnac, T., 1990. Labour supply and taxation in France. *Journal of Human Resources* 25 (3), 358–389.
- Blundell, R., Costa Dias, M., Meghir, C., Van Reenen, J., 2004. Evaluating the employment impact of a mandatory job search assistance program. *Journal of the European Economic Association* 2 (4), 569–606.
- Dickert, S., Houser, S., Scholz, J.K., 1995. The earned income tax credit and transfer programmes: a study of labor market and programme participation. In: Poterba, J. (Ed.), *Tax Policy and the Economy*, vol. 9. MIT Press, Cambridge, pp. 1–50.
- Donni, O., Moreau, N., 2007. Collective labor supply: a single equation model and some evidence from French data. *Journal of Human Resources* 42, 214–246.
- Eissa, N. and Hoynes, H. (2004), The hours of work responses of married couples: taxes and the earned income tax credit, mimeo.
- Eissa, N., Williamson Hoynes, H., 2004. Taxes and the labour market participation of married couples: the earned income tax credit. *Journal of Public Economics* 88, 1931–1958.
- Ellwood, D., 2000. The impact of the earned income tax credit and social policy reform on work, marriage and living arrangements. *National Tax Journal* 53 (4), 1063–1105.
- Heim, B.T. (2005), The impact of the earned income tax credit on the labour supply of married couples: structural estimation and business cycle interactions, Duke University, mimeo.
- INSEE, 2003. La nouvelle enquête emploi, l'activité et le chômage. *Economie et Statistique* (362) juillet.
- Jones, S.R.G., Riddell, W.C., 2006. unemployment and nonemployment: heterogeneities in labor market states. *Review of Economics and Statistics* 88 (2), 314–323.
- Kezdi, G. (2002), Robust standard error estimation in fixed effects models, University of Michigan, mimeo.
- Maag, E. (2005), Disparities in knowledge of the EITC, urban institute and brookings institutions, Tax Notes, March 14th.
- Meyer, B., Rosebaum, D., 2001. Welfare, the earned income tax credit and the labour supply of single mothers. *Quarterly Journal of Economics* 116 (3), 1063–1114.
- Nelissen, J.H.M., and Van Soest, A.H.O. (2003), Rapportage minimum loon, armoedeval and productiviteitsval, mimeo, Tilburg, CentER Applied Research.
- Nelissen, J.H.M., Fontein, P.F., Van Soest, A.H.O., 2005. The impact of various policy measures on employment in the Netherlands. *The Japanese Journal of Social Security Policy* 4 (1), 17–32.
- Piketty, T., 1998. L'impact des institutions financiers au travail sur les comportements individuels: une estimation pour le cas français. *Economie et Prévision* 132–33, 1–35.
- Stancanelli, E., 2004. Evaluating the impact of the French tax credit, "la Prime Pour l'Emploi": a difference in differences model. OFCE, Document de Travail, No. 2004-07. juillet 2004.
- Stancanelli, E., 2007. Marriage and work: an analysis for French couples in the last decade. OFCE, working paper No. 2007-10.
- Stancanelli, E.G.F., Sterdyniak, H., 2004. Un bilan des études sur la Prime Pour l'Emploi. *Revue de l'OFCE*, No. 88. janvier.
- Stewart, M.B., 2004a. The employment effects of the national minimum wage. *Economic Journal* 114 (494), C110–C116.
- Stewart, M.B., 2004b. The impact of the introduction of the UK minimum wage on the employment probabilities of low-wage workers. *Journal of the European Economic Association* 2 (1), 67–97.
- Triest, R.K., 1990. The effect of income taxation on labour supply in the United States. *Journal of Human Resources* 25 (3), 491–516.