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Abstract
Though shared custody arrangements after divorce are more and more frequent in many countries, little is known about their economic consequences for parents. By relaxing family time constraints, does shared custody help divorced mothers return to work more easily? This article analyses to what extent the type of child custody arrangement affects mothers' labour market behaviours after divorce. Using a large sample of divorcees from an exhaustive French administrative income-tax database, and taking advantage of the huge territorial discrepancies observed in the proportion of shared custody, we correct for the possible endogeneity of shared custody. As it turns out, the probability of being employed is 16 percentage points higher for mothers with shared custody arrangements compared to those having sole physical custody, with huge heterogeneous effects: larger positive effects are observed for previously inactive women, for those belonging to the lowest income quintiles before divorce, for those with a young child, and for those who have three or more children. Shared custody is particularly helpful for women who are far removed from the labour market.

Key words: Divorce, Child custody, Shared custody, Labour supply

JEL: J12, J18, J22, K36

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1.   Introduction

The proportion of parents who divide about equally the time spent with their children after separation – that is to say, they adopt a shared physical custody arrangement[1] – has substantially increased in many countries (Cancian et al. 2014), though sole custody with the mother remains the most frequent arrangement after divorce. In Sweden and Norway for instance, more than 30% of children in separated families currently have shared residence[2]. Though cross-national comparisons are complex and should be considered with cautious[3], the proportion of recent divorces with shared custody arrangements reaches one out of five separations in many European countries such as France (19%), the Netherlands (22%), and almost one third of divorces in Spain (28%) and in Belgium (33%)[4]. Primarily exercised by a small selected group of socio-economic advantaged separated parents, shared custody is now commonly used, and families are more diverse (Meyer et al., 2017, Kitterød and Wiik, 2017). More frequent joint custody arrangements might be linked to changing parenting norms: responsibilities are shared more often, and fathers are more willing to be involved in their children's education. New laws promoting co-parenting encourage parents to share equally their parental responsibilities and time spent with children after their separation. In several European countries (Spijker and Solsona, 2016) and US[5], initiatives have been launched and implemented to make joint physical custody the default or legally presumed post-divorce arrangement. By promoting an egalitarian policy toward the time spent with both parents, the objective is

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[1]   By shared custody, we refer here to child physical custody or shared residency. In the French context, it means an equal (or roughly) division of time spent by the child with each parent. One should not confuse with shared (or joint) legal custody which gives parents only the rights to decisions about children's matters (health, education, property).

[2]   See Statistics Sweden (2014) for Sweden and Kitterød and Wiik (2017) for Norway.

[3]   Definitions, shared-time parenting thresholds (time spent by the child with each parent may range from at least 25% to 50%), units of analysis (at the children's or divorce's level), measures (incidence or prevalence) and data sources (surveys, court data) may be different across countries (Smyth, 2017).

[4]   See Guillonneau and Moreau (2013) for France; Poortman and van Gaalen (2017) for the Netherlands; Solsona and Ajenjo (2017) for Spain and Sodermans et al. (2013a) or Sodermans et al. (2013b) for Belgium.

[5]   The Washington post pointed that "25 US states in 2017 considered laws to promote shared custody of children after divorce" https://www.washingtonpost.com/local/social-issues/more-than-20-states-in-2017-considered-laws-to-promote-shared-custody-of-children-after-divorce/2017/12/11/d924b938-c4b7-11e7-84bc-5e285c7f4512_story.html?utm_term=.9cd31787592f.

to encourage shared custody. France is no exception. Recent debates have recently arisen following a proposed law initiated by a political party asking that dual residency[6] for children become the default situation.

Though shared custody arrangements after divorce have become increasingly frequent, little is known about the economic consequences for parents. Most of the research on the consequences of shared custody has focused on the educational attainment, behaviour, health and well-being of children (Bauserman, 2012, Vanassche et al., 2013) or on stress (Turunen, 2017), and to a lesser extent on the non-economic consequences for parents. Some recent papers analyse repartnering opportunities for parents (Ivanova et al., 2013, Schnor et al., 2017, Berger et al., 2018) or their well-being (Soderman et al., 2015) and health (Struffolino, 2016). Up to now, very little research, to our knowledge, has studied the labour market consequences of shared custody for parents. Yet, having a job or remaining at a job after divorce is the very means for avoiding a drastic decline in one's living standards, and it may help escape poverty. It is especially the case for mothers who bear more frequently the negative consequences (Finnie 1993, Smock, P. 1994, Bianchi et al. 1999) and who could have a more distant relationship at work than men for several reasons (past work history, childbearing interruptions, lower wages,...).

However, shared custody instead of sole custody may support labour market involvement, regardless of whether it is a constrained or conscious choice. From a time perspective, custody every other week can relax childcare constraints and improve the work-family balance of lone mothers. This arrangement should have a positive effect on labour market outcomes. From a monetary perspective, the effects are more mixed. On the one hand, shared custody is often associated with no child support payments, considering that parents share the child cost equally by taking care of children equally. The lack of child support payments compared with mothers having sole custody might be an incentive for women with shared custody arrangements to work. On the other hand, child costs are also reduced because parents share these from the point of separation onwards.

Using rich French administrative fiscal data with information on child custody arrangements at the individual level, this research paper aims to analyse whether shared custody leads recently divorced mothers to remain in the labour market or to re-enter it. We provide evidence that shared custody has positive and large effects on employment after divorce compared to sole custody arrangements (+ 16 percentage points). We also

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[6] Precisely, the very recent proposition from the deputy Lacombe makes a distinction between the residency of children who automatically reside in both parents' dwellings – except in some exceptional cases – and the share of the child's time, stating that they are not necessarily equal. http://www.assemblee-nationale.fr/15/dossiers/garde_alternee_ enfants.asp

document heterogeneity across the population. Larger positive effects are observed for previously inactive women, for those belonging to the lowest income quintiles before divorce, for those with a young child, and for those with three children or more. Shared custody turns out to be particularly helpful for women with weak ties to the labour market. It may reduce work-family conflict by diminishing childcare expenses. It may enlarge the possibilities to find a suitable job because of more relaxed family constraints for instance.

The paper is organized as follows. The next section briefly describes the background on divorce, types of custody arrangements, and labour supply. In Section 3, we explain the channels at work when analysing the links between types of custody arrangements and female activity. The data and methodology used are described in Section 4, with particular discussion dedicated to tackling the issue of selectivity. Section 5 presents the results and Section 6 concludes.

2.   Background

2.1   Being employed is a way for lone mothers to escape poverty after divorce

The economic consequences of divorce have been quite extensively studied, but as far as we know there has been very little focus on child custody arrangements. The literature on the economic consequences of divorce emphasizes the gendered economic consequences of union dissolution, showing a general worsening of women's living standards after separation while those of men remain stable or increase (Finnie, 1993, Andress et al. 2006, etc.). As a consequence and in spite of welfare programs that aim to mitigate the negative economic consequences of divorce for parents, separated mothers and their children still face huge poverty risk in many countries (Brady, Burroway, 2012). Finding a job or remaining at their current one is a way to avoid or reduce the losses in living standards faced after divorce. As such, this in turn helps escape poverty.

However, re-entering or remaining in the labour market after divorce could be hindered by the presence of children. Lone mothers with young children are one of the least-employed groups and they face high unemployment rates. Separated women with young children and/or several children may face difficulties in returning to the labour market because of family-work schedule conflicts. As Table 1 shows, French lone mothers are more willing to be in the labour force than mothers in a relationship, whatever the number of children. However, lone mothers are effectively less often employed than mothers in a relationship. The lone motherhood penalty on job access may partly come from their greater difficulties in balancing

family and work. For instance, they may be more likely to decline jobs with demanding schedules or those that require long distance commuting. Note also, however, that when they are working, they more often do so on a full-time basis[2], probably because of heavy financial constraints. Regarding public transfers in France, lone parents can benefit from social benefit (called RSA *Active solidarity income*) when they are not working.[7] On the other hand, they also benefit from substantial tax reductions and are given strong incentives when they work while on welfare.[8] As a result, it is not clear whether the perception of welfare benefits could constitute a strong disincentive to work.

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[7]　From 2009, lone parents with one child could benefit from an allowance of 690 euros per month (maximum amount in case of no labour income and no housing allowance). This amount increases to 828 euros for lone parents with two children, 1012 for those with 3 children and 184 per additional child thereafter. They can also receive an additional allowance (ASF, 89 € monthly per child) when they demonstrably do not receive any support payment from the other parent. Housing benefits are also important for the low-income households.

[8]　The welfare system encourages welfare beneficiaries to enter and return to the labour market. A part of the social benefit (called *RSA activité)* is maintained in case of low-paid activity.

Table 1: Mothers' labour force participation in France, 2004-2007 (%)

	In a relationship	Lone mothers
Labour market participation rate		
All mothers	82.7	88.5
1 child	89.1	92.3
2 children	84.8	88.9
3 or + children	66.2	72.6
Employment rate		
All mothers	73.5	70.2
1 child	79.7	75.5
2 children	76.5	70.6
3 or + children	55.5	48.9
Part time among workers		
All mothers	35.0	26.8
1 child	26.5	22.9
2 children	38.4	29.7
3 or + children	47.0	40.2

Source: Insee, Enquêtes annuelles de recensement 2004 à 2007 (Chardon et Daguet, 2008)

2.2 Single-mother-focused active labour welfare programs

A strand of the literature focuses on the employment rate and the labour market outcomes of lone/single mothers. As lone parents – and particularly lone mothers – are at a higher risk of poverty and unemployment, they are often implicitly or explicitly targeted by welfare programs (Whitworth, 2013). Most recent programs aim to improve their financial incentives to work or to reduce their "inactivity trap". Several studies analyse the effect of welfare reforms on lone mother employment in the U.K. (Francesconi and van der Klaauw, 2007; Gregg, Harkness and Smith, 2009), in the U.S. (Meyer, 2002) or in France (Dang and Trancart, 2011). They use as a control group either the parents in a relationship or single and childless women. They generally find a positive effect of such programs on lone parents' employment rate at the extensive or intensive margins.

2.3 Employment and child schedule

Another group of studies highlights the crucial role that childcare cost plays in a mother's employment probabilities. For instance, Goux and Maurin

(2010) find a positive effect of early education[9] on employment for lone mothers. Francesconi and van der Klaauw (2007) show a higher positive employment impact of the working family tax credit program for women having one pre-school aged child.

However, the use of external care is only part of the story. The difficulties that lone mothers experience in obtaining employment may also differ according to the post-divorce parental arrangements regarding children, which is a dimension of lone mothers' heterogeneity that is largely neglected in the literature. The sole exception is the contemporaneous work of Vuri (2017), who studies changes in the labour market outcomes of single mothers in the US following child custody reforms. She shows that the probability of being in the labour force is not affected by the introduction of joint custody at the state level.

2.4   Our contributions

Thus, though the research and policies valued the importance of employment to escape poverty for single mothers, and emphasized the child schedule as a crucial determinant of lone mother employability, most articles do not distinguish among lone parents those who have children on a full time- or almost full-time- basis from those with a more equal division of child time between both parents in cases of shared custody arrangements. Children's post-divorce living arrangements are a potential source of heterogeneity in a mother's employment behaviour after divorce, and this needs to be addressed. Our first contribution is to show that "part-time mothering" in the case of shared custody can help mothers get a job.

Our second contribution contrasts with Vuri (2017) and many other economic studies (Böheim et al. 2012, Halla 2013) in that we are able to use individual-level measures of post-divorce life-course arrangements instead of using aggregate measures or change in law. This individual information is often missing or concerns too few cases in surveys to study its consequences precisely. Our individual-based approach employs an appropriate identification strategy (described further) to extend the existing literature on the consequences of shared custody. It does so by measuring a causal effect for divorced mothers opting for this childcare arrangement (our "treated group") rather than what is often done: just for the whole population of divorcees, regardless of the kind of childcare arrangements.

Our third contribution is to focus on *de facto* situations (joint physical custodies) rather than on legal arrangements (joint legal custodies). The *de facto* arrangements are much more informative since they affect the

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[9]   More precisely, having access to school in France from age two and a half instead of three.

time spent by each parent with her/his child. Because they contribute to daily life schedules, the *de facto* arrangements can be considered to have much more consequences on parents' labour market outcomes than legal arrangements.[10]

3. How custody arrangements may affect mothers' activity?

Several mechanisms may explain how the type of custody arrangement after divorce can affect a mother's activity.

First, time availability is a crucial point. Shared custody arrangements are less time-consuming than sole custody arrangements for parents. As mothers may spend less time on parenting activities, they may increase time devoted to other activities such as work and possibly also leisure. Furthermore, joint custody is associated with less parenting burden and stress (Bauserman, 2012) than sole custody. Kitterød and Wiik (2017) pointed that "shared residence may be convenient or necessary for mothers who want to pursue careers"(p.564). Balancing work and family may be easier if mothers are able to work more intensively one out of two weeks. Van der Heijden et al. (2016) recently showed a significant reduction in time pressure for mothers having a joint custody arrangement relative to main custodial mothers. It might thus help mothers to continue working or enter a new job.

Second, the organizational costs may be high in cases of shared custody arrangements, especially with young children (Bauserman, 2012). However, it remains unclear whether these costs are more pronounced than in sole custody arrangements where the most common cases involve children visiting their fathers during weekends.

Third, an income effect may play a role in two opposite directions. On the one hand, divorces with shared custody arrangement are generally not associated with additional child support payments. Parents are generally considered to share equally in child costs because they share equally in parental time. This absence of child support may affect a mother's financial need to work, since public transfers for lone mothers only partially alleviate budget constraints. On the other hand, child's needs are more naturally 'equally shared', and child cost is balanced between parents. Thus, mothers who opt for shared custody might need less money for their children than those in sole custody. This could play negatively on her likelihood to work. Note also that because of socio-economic selection, parents who opt for

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[10] In the case of France from 2002, legal parental responsibilities are shared between parents whether they are married or not, and they continue after the couple disruption. Cases where only one parent is granted legal custody ("Autorité parentale") remain exceptions.

shared custody arrangements are selected and generally wealthier. They may thus have different (probably lower) needs to work because of savings, but they may also have different preferences towards work (e.g., being more work-oriented for instance). The income gradient in shared custody prevalence and the resulting selection issue is also a crucial point that should be taken into account.

Fourth, job market opportunities might be reduced in the case of shared custody. Due to the child's frequently commuting between parental homes on a regular basis, parents are constrained to live close to each other and also close to their child's school (Ferrari et al., 2017). For this reason, they are less likely to accept a job far from their home than would parents with sole custody.

Lastly, divorces with shared custody arrangements are generally less conflictual[11], that might facilitate parents' self-esteem and attitudes toward work. It may help mothers become less stressed and thus recover more easily after divorce, which in turn will facilitate their maintaining or re-entering the labour market. There is also a positive association between egalitarian values toward parental responsibilities and the choice of shared custody arrangements (Solsona and Ajenjo, 2017). In this situation, women may then be more likely to work. However, shared custody involves the need to live close to the former spouse and to have frequent contacts with the other parent, especially when the children are young. This could become a source of stress (Bauserman, 2012), for instance, if parents disagree about daily organization or educational decisions.

The overall effect is unclear and depends on the relative strength of the diverse effects. Moreover, heterogeneity in women's characteristics and situations may imply heterogeneous effects that we want to account for.

4.   Data and method

4.1   A huge selectivity issue

As suggested by the several mechanisms we previously pointed out, the type of post-divorce child arrangement is not random, and couples who choose joint custody arrangements might be highly selected. As it happens, mothers using shared custody have different observed and probably unobserved characteristics. They are generally more educated and wealthier (Kitterød & Lyngstad, 2012); they might have less conflictual relationships or more egalitarian values toward sharing parental tasks; and they might be more work-oriented. Note that recent works from Meyer et

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[11]   As explained below, the quality of the parents' relationship is evaluated by a family affair judge before granting shared custody.

al. (2017) on US or Kitterød and Wiik (2017) on Norway emphasize that shared custody is becoming more common among the whole population, and that parents would be thus less selected nowadays. Parents opting for shared custody arrangements still have particular characteristics however.

Because of this potential selectivity (or reverse causality) issue, simple empirical analysis comparing the outcomes between the two groups of mothers (those with sole custody and those with shared custody) are likely to be biased.   Reverse causality appears if mothers who want to work choose shared custody arrangements for this reason. Table 2 shows that divorce is positively associated with female participation for both mothers who choose sole or shared custody. It also shows that mothers who chose shared custody were more likely to work before the divorce than mothers who opted for sole custody.

Table 2: Mothers' Labour Market Participation before and after divorce according to child custody arrangements

Child custody arrangements	Labour market participation of mothers	
	Before divorce	After divorce
Sole custody	0.841	0.894
Shared custody	0.943	0.972

Source: French Fiscal data, divorcees in 2009

It is challenging to find a way to treat this selection issue. However, in a previous work (Bonnet et al., 2015), we show that shared custody arrangement decisions do not depend only on couples' characteristics but also on residential location. In France, the share of child custody ranges from 7 to 21%, depending on the place of residence (see Figure 1). These differences go largely beyond the population structure or socioeconomic differences, and they are likely to come from a divorce court (or family judge decisions) effect at the local level. Taking advantage of these huge territorial discrepancies (that are not linked to individual characteristics), we are able to correct for the endogeneity of choosing shared custody and to estimate a causal effect of child arrangements on the extensive margins of women's labour market participation after divorce.

4.2   Data

Using the French exhaustive administrative income-tax database, which has been recently made available in France, we select the sample of 2009 divorced mothers (and those who break a PACS: the French civil

partnership). After excluding tax returns with missing data[12], we obtain a sample composed of 61,554 women aged 20 to 55 who were married or "PACSed" (in 2008) and separated in 2009.

The huge size of our dataset allows observing a substantial number of parents with shared custody arrangements, which is in contrast to most previous studies using survey samples. The custody regime has to be declared on the income tax return because it gives some tax refunds for having children. According to the tax administration, shared/ joint custody means that the time children spent in each parent's home should be "roughly" equal.[13]

Furthermore, compared to usual survey data in which incomes are self-reported and subject to imprecise responses, incomes in tax-income datasets are already filled in by the fiscal administration and are thus definitively more reliable. The complete family composition (number of members, age of children, child(ren) custody arrangements) is also reported.

We define the state of "being employed" (versus "not employed") as receiving at least labour market earnings above two months of minimum wage, i.e., 2,100 yearly euros in 2009. We conduct robustness checks on this threshold for defining "having a job" and show that our results are not sensitive to this definition (see appendix A3).

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[12] We fully describe in Appendix C the several steps for creating the dataset (Bonnet et al., 2016). We also detail weight computations to account for potential differential attrition using tools developed by the French Statistical Institute ("macro CALMAR"). The same weights restricted to mothers are always used here to insure nationally representative results.

[13] We cannot completely rule out that – for tax benefits – parents can declare child custody arrangements that are different from their actual practices. However, as they are supposed to report the same child custody arrangement on both tax-returns, this behaviour is risky and unlikely. As we show in Bonnet et al. (2015), divergences between the two parents are very rare (less than 10%).

Figure 1: Proportion of shared custody arrangements, French departments (2008)

Legend:
- (.17,.21]
- (.15,.17]
- (.14,.15]
- (.13,.14]
- (.11,.13]
- [.07,.11]
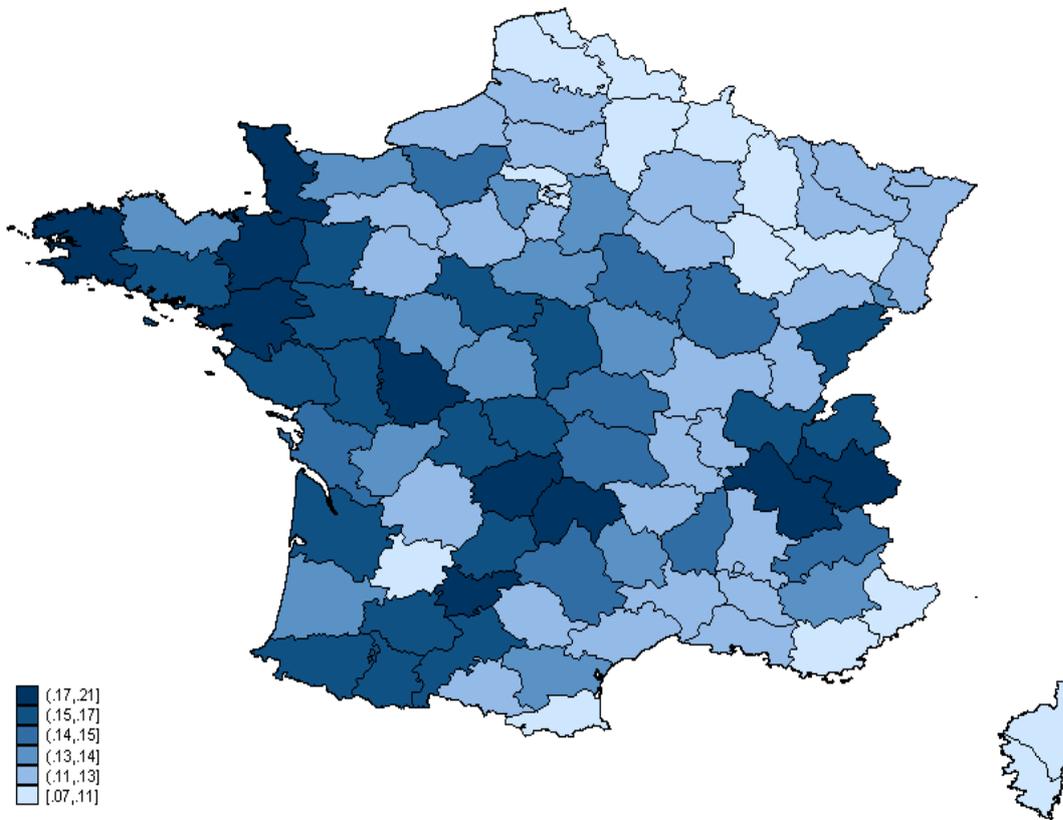
4.3 Model

Our aim is to assess the effect of shared custody arrangements on the labour market participation of mothers. We first estimate a simple probit model on the probability of being employed after divorce for mothers, whether they have adopted a shared or sole custody arrangement.

However, as already discussed, custody arrangements are presumed to be endogenous. Couples who opt for shared custody may have different observed and unobserved characteristics; and women may potentially differ from those who opt for sole custody arrangements.

Our identification strategy relies on the way custody arrangements are granted. Usually the process is the following. Divorced parents, following their lawyer's advice, decide on the child custody arrangements that they propose to the family court judge. To assess a parental request for shared custody, family court judges are asked to take into account the "child's well-being". They evaluate it through several dimensions: the child's age and maturity, the relationship between the parents, the distance between the parental home, and the general characteristics of the situation (parents' availability, comfort of the dwellings, etc.). There are no specific rules about

how to consider and weight each of these elements, and they are therefore open to interpretation. In the absence of precise guidelines, family judges have to take their decision relying on their own way of considering these different elements while also taking into account the parents' wishes that were initially advised by their lawyers. In practice, judges rarely go against the parents' request. In most cases (90%[14] of cases according to the Ministry of justice[15]), the parents relied on the help of their lawyers to agree before the judgement, which guarantees a quicker process. The real "initial choice" of the parents cannot be observed because the lawyers for both parents may advise them to change their initial choice of custody arrangement if it is deemed likely to be refused by the family judge or not compatible with the other partner's choice. As it turns out, family judges and lawyers jointly play a crucial role in the final decision. The final decision relies on several factors, but mostly on the judge's opinions regarding the "child's well-being"[16] and on the lawyers' experience, which altogether makes the final result exogenous to the initial parents' choice.

As a proxy for this simultaneous "judge/lawyer effect", we use the share of custody arrangements granted in each French *département* (henceforth "department").[17] Since we control for parents' characteristics and local unemployment[18], the variability in the remaining part of this share relies mostly on how different judges and lawyers evaluate similar situations. It thus constitutes a valid instrument. Moreover, the high value of the statistics when testing the nullity of the instrument in the first-stage regression rules out the risk of a weak instrument issue.[19]

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[14]   Among them, 10% of decisions correspond to situations where a parent did not make any custody request.

[15]   See Guillonneau and Moreau (2013).

[16]   Even when both parents ask for shared custody, judges can refuse if they consider it could harm the child.

[17]   We do not consider overseas departments.

[18]   The unemployment rate was the only significant parameter of the regression we ran at the aggregated level to explain the proportion of shared custody at the department level (see Appendix 2). We added it and its square in the simultaneous equation model as an additional control.

[19]   We test the nullity of our instrument in two ways. First, consistent with our non-linear specification, we use a univariate probit model where shared custody at the individual level is regressed on all the covariates used in the bivariate probit. The Chi square statistics obtained when testing the nullity of our instrument is 141. This is clearly a high value. To compare the statistics of the test with the usual thresholds used to detect weak instruments (see Stock et al., 2002), we perform a simple linear regression (in the same way as with the previous univariate probit). The F-statistic is 82, which is clearly much higher than the standard thresholds that are used. We are thus confident about the fact that our instrument is not a weak instrument.

We use a simultaneous equation model. Indeed, custody arrangements and labour market participation decisions might be taken simultaneously. In the context of a binary endogenous and dependent variable, we estimate a recursive bivariate probit model to assess the effect for mothers of shared custody (SC_i) on being employed (E_i).

$$E_i = \alpha SC_i + \beta X_i + u_i$$

$$SC_i = \gamma Z_d + \delta X_i + \varepsilon_i$$

Z_d is the proportion of shared custody in the different departments (counties) of France used as an instrumental (exclusion) variable. X_i includes different covariates that could have an influence on having a job: mother's age, number and age of the children, household income in 2008, and the share of the couple's resources that the woman provided before divorce.

We provide the results of a placebo test in Appendix 1. They suggest that our instrument is uncorrelated with unobserved characteristics that may play a role in women's employment (particularly among divorced women).

We additionally ran a regression at the macro-level to see whether the proportion of shared custody at the local level might be explained by local characteristics (see Appendix 2). The variability remains, whatever the numerous characteristics tested.

5. Results
5.1 Baseline model

Table 3 presents the simple probit and the recursive probit model with two steps, as well as both coefficients and marginal effects.

Regarding the probability to opt for a shared custody arrangement (col. 6-7, Table 3), we observe that our exclusion variable is highly significant. The proportion of shared custody agreements at the local level has a positive and very significant effect on the individual likelihood to opt for a shared custody arrangement. Shared custody is less common for mothers with three or more children than for smaller families. Sharing time with children equally is more frequent when the youngest child is between 4 and 7 years old, and less frequent for younger and older children. Older children can decide more freely with whom to live, and shared custody arrangements are less likely for teenagers. We observe an expected positive income gradient with a higher probability of shared custody among wealthier households. Another indicator of wealth is the homeownership status before divorce, which is positively associated with the choice of shared custody.

The town size has very little effect. [20] Lastly, shared custody is also less frequent for women who were out of the labour force before divorce. Consistent with their possibly more traditional values and gender role division, they are more likely to have sole custody after divorce.

Being in shared custody arrangements is associated with a 5.2 percentage point higher probability of being employed after divorce (col. 2, Table 3) in the univariate model. When using a recursive bivariate probit model for taking into account the potential endogeneity of shared custody (col. 3), the effect becomes more pronounced. We observe that unobserved selection indeed plays a role, as demonstrated by the correlation between the residuals of the two equations, which is negative and significantly different from zero. The probability of being employed turns out to be 16 percentage points higher for mothers with shared custody arrangements than sole custodial mothers.

To better understand the direction of the change[21], we refer to the usual local average treatment effect (LATE) interpretation. Women who are compliers for our instrument are those who would not have obtained shared custody if they had been in a department that rarely grants it but instead obtained it because they live in a department where shared custody is more frequently granted. We interpret the negative sign of the rho as follows: women who are compliers, i.e., those who react to the local variation of shared custody, have unobserved characteristics that affect employment negatively.
The other control variables give expected results. The probability to work after divorce increases in age and in the age of the youngest child while it decreases in the number of children. The activity rate is higher for wealthier households, in big cities and when the unemployment rate is low.

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[20]   Living in very big towns has a small negative effect on having shared custody, which is probably related to the higher price of housing that could constitute a constraint to having two dwellings with enough space for hosting children one out of two weeks.

[21]   As well as the negative rho of the bivariate model.

Table 3: Effect of shared custody on mothers' employment

| | Univariate Probit | | Bivariate probit | | | |
| | Employment | | Employment | | Shared custody | |
	Coef.	ME	Coef.	ME	Coef.	ME
Individual Shared custody	0.295***	0.052***	1.023***	0.155***		
	(0.027)	(0.004)	(0.195)	(0.025)		
Shared Custody per 100 divorces in the department					0.037***	0.008***
					(0.005)	(0.001)
PACS	0.128**	0.024**	0.113*	0.023*	0.052	0.011
	(0.047)	(0.009)	(0.046)	(0.009)	(0.033)	(0.007)
Age	0.099***	0.019***	0.086***	0.017***	0.062***	0.013***
	(0.010)	(0.002)	(0.012)	(0.002)	(0.014)	(0.003)
Age^2	-0.001***	-0.000***	-0.001***	-0.000***	-0.001***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Number of children =2 (ref=1 child)	-0.002	-0.000	-0.001	-0.000	-0.007	-0.001
	(0.018)	(0.003)	(0.017)	(0.004)	(0.018)	(0.004)
3 children	-0.160***	-0.030***	-0.130***	-0.027***	-0.157***	-0.033***
	(0.021)	(0.004)	(0.023)	(0.004)	(0.022)	(0.005)
4 or more	-0.376***	-0.071***	-0.319***	-0.065***	-0.432***	-0.090***
	(0.025)	(0.005)	(0.033)	(0.005)	(0.047)	(0.010)
Youngest child =0-3 (ref=4-12)	0.007	0.001	0.025	0.005	-0.141***	-0.030***
	(0.021)	(0.004)	(0.019)	(0.004)	(0.018)	(0.004)
Youngest=13+	0.029	0.006	0.069**	0.014**	-0.263***	-0.055***
	(0.022)	(0.004)	(0.025)	(0.005)	(0.025)	(0.005)
Household Income_Q1 (ref=Q3)	-0.499***	-0.095***	-0.436***	-0.089***	-0.425***	-0.089***
	(0.029)	(0.005)	(0.041)	(0.006)	(0.028)	(0.006)
Household Income_Q2	-0.278***	-0.053***	-0.232***	-0.047***	-0.213***	-0.045***
	(0.025)	(0.005)	(0.035)	(0.006)	(0.021)	(0.005)
Household Income_Q4	0.203***	0.039***	0.152***	0.031***	0.213***	0.044***
	(0.028)	(0.005)	(0.033)	(0.006)	(0.018)	(0.004)
Household Income_Q5	0.113***	0.021***	0.045	0.009	0.334***	0.070***
	(0.032)	(0.006)	(0.040)	(0.008)	(0.028)	(0.006)
Working before separation	1.194***	0.227***	1.127***	0.230***	0.227***	0.047***
	(0.023)	(0.004)	(0.041)	(0.005)	(0.020)	(0.004)
Homeowner	0.147***	0.028***	0.100***	0.020***	0.293***	0.061***
	(0.017)	(0.003)	(0.025)	(0.005)	(0.020)	(0.004)
Unemployment rate	-0.062***	-0.012***	-0.052**	-0.010***	0.004	0.001
	(0.016)	(0.003)	(0.017)	(0.003)	(0.017)	(0.004)
Unemployment rate^2	0.002***	0.000***	0.002***	0.000***	-0.000	-0.000
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
Town size= 2000-4999 (ref= rural)	0.031	0.006	0.027	0.005	0.018	0.004
	(0.032)	(0.006)	(0.031)	(0.006)	(0.029)	(0.006)
5000-9999	-0.068	-0.013	-0.064	-0.013	-0.028	-0.006
	(0.038)	(0.008)	(0.037)	(0.008)	(0.028)	(0.006)
10000-19999	-0.047	-0.009	-0.056	-0.012	0.080*	0.017*
	(0.034)	(0.007)	(0.033)	(0.007)	(0.037)	(0.008)
20000-49999	-0.078**	-0.015**	-0.077**	-0.016**	0.008	0.002
	(0.029)	(0.006)	(0.028)	(0.006)	(0.030)	(0.006)
50000-99999	-0.051	-0.010	-0.050	-0.010	-0.006	-0.001
	(0.032)	(0.006)	(0.030)	(0.006)	(0.035)	(0.007)
100000-199999	-0.101*	-0.020*	-0.107*	-0.022*	0.030	0.006
	(0.048)	(0.010)	(0.045)	(0.010)	(0.044)	(0.009)

>200000	-0.030	-0.006	-0.033	-0.007	0.032	0.007
	(0.025)	(0.005)	(0.024)	(0.005)	(0.024)	(0.005)
Paris Area	0.067**	0.012**	0.095***	0.019**	-0.098**	-0.019**
	(0.026)	(0.005)	(0.028)	(0.006)	(0.035)	(0.007)
Constant	-1.245***		-1.210***		-2.572***	
	(0.216)		(0.208)		(0.283)	
Rho			-0.414**			
			(0.119)			
Observations	61554		61554			

Clustered standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Note: Reference: sole custody arrangements, one child, aged 4 to 12 years old, household income in the third quintile in 2008, renter and out of the labour force in 2008.

5.2 Heterogeneous effects

According to their pre-divorce characteristics, being in shared custody arrangements may not have the same labour market consequences for all mothers. To assess heterogeneous effects, we simultaneously interact four variables (previous occupational status, number of children, age of youngest child and income quintile) with shared custody (Table 4).

Shared custody arrangements play a greater role in having a job for women who were inactive before divorce than for women who were already working. The employment rate for mothers who were inactive before divorce and opted for a shared custody arrangement is 51 percentage points higher than for inactive women who had sole custody arrangements. The positive effect of shared custody on female employment is also more pronounced for mothers belonging to the lowest quintile of income before divorce (the probability is 45 percentage points higher for mothers with shared custody mothers than those with sole custody). This advantage diminishes for wealthier mothers. The positive effect of shared custody arrangements following divorce is also more pronounced for mothers with several children compared to mothers with one or two children. Mothers with infants and in shared custody arrangements are also more likely to work than mothers with infants and have their children on almost a full-time basis.

Table 4- Heterogeneous effects of shared custody on mothers' employment

	Coef.	se	ME	se
Shared custody (SC)	1.400***	(0.127)	0.223***	(0.014)
Number of children= 1	Ref			
2	-0.010	(0.018)		
3	-0.112***	(0.021)		
4+	-0.274***	(0.031)		
Shared custody * Nb. children =1	Ref		0.195***	(0.014)
Shared custody * Nb. children =2	0.096*	(0.047)	0.196***	(0.014)
Shared custody * Nb. children =3	0.173*	(0.072)	0.280***	(0.015)
Shared custody * Nb. children =4+	0.386***	(0.115)	0.416***	(0.014)
Household quintile =Q1	-0.375***	(0.037)		
Q2	-0.179***	(0.033)		
Q3	Ref			
Q4	0.089**	(0.033)		
Q5	-0.018	(0.038)		
Shared custody * Q1	0.259**	(0.093)	0.448***	(0.015)
Shared custody * Q2	0.058	(0.064)	0.255***	(0.012)
Shared custody * Q3	Ref		0.151***	(0.014)
Shared custody * Q4	0.011	(0.075)	0.120***	(0.015)
Shared custody * Q5	-0.022	(0.068)	0.143***	(0.018)
Employed	1.031***	(0.042)		
Out of labour force	Ref			
Shared custody * Employed	-0.154**	(0.056)	0.139***	(0.013)
Shared custody * OLF	Ref		0.509***	(0.018)
0-3	0.026	(0.019)		
4-12	Ref			
13-17	0.107***	(0.023)		
Shared custody * 0-3	0.169**	(0.061)	0.271***	(0.015)
Shared custody * 4-12	Ref		0.212***	(0.015)
Shared custody * 13-17	-0.079	(0.064)	0.172***	(0.011)
PACS	0.089*	(0.043)		
Age	0.069***	(0.012)		
Age^2	-0.001***	(0.000)		
Homeowner	0.047*	(0.023)		
Unemployment rate	-0.035*	(0.015)		
Unemployment rate ^2	0.001**	(0.001)		
Town size =rural	Ref			
2000-4999	0.021	(0.029)		
5000-9999	-0.057	(0.034)		
10000-19999	-0.062*	(0.031)		
20000-49999	-0.069**	(0.026)		
50000-99999	-0.045	(0.028)		
100000-199999	-0.106**	(0.041)		
>200000	-0.031	(0.023)		
Paris Area	0.123***	(0.027)		
Constant	-1.125***	(0.203)		
Observations	61554			

Clustered standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Note: If we consider the sub-population of mothers with one child, the probability of having a job after divorce in 2010 is 19.5 percentage points higher for shared custody arrangements compared with sole-custody arrangements.

Interestingly, all these results point in the same direction and are fully consistent. All the common penalties encountered by mothers in the labour market – having young children, several children, being in a poor household before divorce (possibly associated to a low level of education), with career breaks (inactive women) – do not disappear but are largely reduced in the case of shared custody arrangements after divorce. This means that even though shared custody is more likely to be chosen by wealthier parents and active mothers and has a positive effect on labour force participation for all mothers, we observe more pronounced effects for mothers further away from the labour market. In one sense, this result could be expected because the women already involved in the labour market do not have much reason to decrease their labour force participation after divorce, whatever the custody arrangements – especially in a context of decreasing economies of scale following divorce (Bonnet et al., 2015). However, for women who were further away the labour market because of their family burdens, marital specialization choices or human capital, our results show that custody arrangements are crucial.

5.3   The role of child support payments

Child support payments have not been considered so far because they are potentially endogenous. The perception of child support payments is a key issue, since they could be a disincentive for mothers to work if they receive substantial child support, and they could be an incentive for those receiving no support payments. In France, in most cases, there is no transfer of money between parents who opt for shared custody, since they are considered to share child costs equally.[22] For this reason, the perception of child custody payments is potentially endogenous. However some mothers with children in shared custody declare that they receive child support (roughly 15%). Moreover, a significant share of mothers with sole custody do not receive child support, either because there is no obligation decided by the court (the father does not have enough resources or the mother earns enough) or because the father does not make the required payments. We run our bivariate probit on two different subsamples of whether or not the mother receives child support payments, regardless of the amount.

Results (Table 5) show that the main effect of shared custody is still significant and positive, but the magnitude is much stronger for the mothers who receive child support. For mothers who do not receive any

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[22]   Moreover, the tax treatment of child support payments changes according to the type of child custody arrangement. In sole custody arrangements, paid child support payments are deductible from taxable income and payments received have to be included in taxable income. In shared custody arrangements, neither the child support received nor the child support paid is considered in the income tax return. So, data collection on child support payments in case of shared custody may be incomplete.

child support payment, the magnitude of the shared custody effect is weaker. In that case, the income effect (via the possible lack of resources) might be a stronger determinant in the decision to enter or re-enter the job market. What is particularly interesting is the opposite effect observed for the interaction of shared custody and being inactive before divorce: For inactive mothers receiving child support payments, shared custody has a positive effect on employment; whereas, for those who receive no child payments, shared custody (compared to sole custody) has less positive effects. Being in a sole custody arrangement without receiving payments from the father means that the mother pays all child costs; whereas in shared custody the cost is more equally divided in relation to each household's child schedules. This higher child cost for mothers in sole custody without private transfers might be a strong incentive to work. The monetary constraints take precedence over the time constraints. This result mitigates the previous results by emphasizing the monetary constraints of lone mothers. Shared custody can thus "help" mothers to work, but some mothers in sole custody – specifically, those without financial support from their previous partner – may also be "obliged" to work.

Table 5- Effect of shared custody on mothers' employment, according to repartnering and child support payments

	With child support		Without child support		Repartnered		Not Repartnered	
	Coef	ME	Coef	ME	Coef	ME	Coef	ME
Shared custody	1.813***	0.209***	0.292	0.097*	0.689	0.097*	1.494***	0.240***
	(0.122)	(0.004)	(0.274)	(0.049)	(0.524)	(0.049)	(0.092)	(0.010)
Nb. of child.=2 (ref=1)	-0.033		-0.006		-0.082**		0.004	
	(0.025)		(0.029)		(0.039)		(0.019)	
3	-0.174***		-0.108***		-0.210***		-0.085***	
	(0.027)		(0.038)		(0.053)		(0.021)	
4+	-0.413***		-0.290***		-0.416***		-0.235***	
	(0.043)		(0.048)		(0.064)		(0.036)	
Shared custody * 1 child	ref	0.173***	ref	0.077*	ref	0.079	ref	0.215***
		(0.005)		(0.046)		(0.061)		(0.010)
Shared custody * 2 children	0.083	0.179***	0.140**	0.089**	0.112	0.099	0.092	0.212***
	(0.081)	(0.005)	(0.064)	(0.040)	(0.117)	(0.060)	(0.058)	(0.011)
Shared custody * 3 children	0.275***	0.278***	0.101	0.121*	0.148	0.144	0.177**	0.295***
	(0.093)	(0.006)	(0.104)	(0.066)	(0.142)	(0.086)	(0.078)	(0.010)
Shared custody * 4+ children	0.381**	0.446***	0.200	0.196*	0.322	0.234	0.376***	0.426***
	(0.153)	(0.012)	(0.183)	(0.100)	(0.344)	(0.150)	(0.122)	(0.012)
Hous. Income=Q1 (ref=Q3)	-0.484***		-0.523***		-0.432***		-0.358***	
	(0.040)		(0.053)		(0.071)		(0.033)	
Q2	-0.216***		-0.275***		-0.264***		-0.150***	
	(0.035)		(0.045)		(0.059)		(0.033)	
Q4	0.102***		0.170***		0.213***		0.048	
	(0.033)		(0.062)		(0.063)		(0.031)	
Q5	-0.067*		0.165**		0.032		-0.042	
	(0.035)		(0.072)		(0.057)		(0.036)	
Shared custody * Q1	0.282*	0.520***	0.128	0.196*	-0.185	0.197	0.373***	0.469***

	(0.161)	(0.012)	(0.131)	(0.100)	(0.221)	(0.147)	(0.095)	(0.009)
Shared custody * Q2	0.124	0.281***	-0.008	0.102*	-0.236	0.124	0.126*	0.268***
	(0.117)	(0.006)	(0.099)	(0.054)	(0.166)	(0.085)	(0.068)	(0.007)
Shared custody * Q3	ref	0.134***	ref	0.059**	ref	0.087*	ref	0.166***
		(0.005)		(0.028)		(0.038)		(0.011)
Shared custody * Q4	0.055	0.098***	-0.001	0.041*	-0.294*	0.043	0.116	0.143***
	(0.121)	(0.004)	(0.100)	(0.022)	(0.167)	(0.032)	(0.080)	(0.013)
Shared custody * Q5	-0.175*	0.136***	-0.012	0.039	-0.102	0.072	0.018	0.163***
	(0.095)	(0.006)	(0.106)	(0.024)	(0.199)	(0.039)	(0.070)	(0.015)
Employed	1.204***		1.015***		1.116***		0.995***	
	(0.025)		(0.037)		(0.052)		(0.040)	
Shared custody * OLF		0.541***		0.204*		0.225		0.529***
		(0.010)		(0.122)		(0.172)		(0.010)
Shared custody * Employed	-0.357***	0.097***	0.148**	0.065**	0.025	0.069*	-0.182***	0.148***
	(0.089)	(0.003)	(0.075)	(0.028)	(0.139)	(0.036)	(0.059)	(0.011)
Youngest child 0-3 (ref=4-12)	0.071***		-0.025		-0.021		0.037*	
	(0.025)		(0.029)		(0.042)		(0.021)	
Youngest child = 13-17	0.069**		0.077*		0.068		0.126***	
	(0.027)		(0.041)		(0.049)		(0.032)	
SC * youngest child=0-3	0.135	0.245***	0.205**	0.141**	0.024	0.126	0.229***	0.290***
	(0.105)	(0.005)	(0.086)	(0.057)	(0.126)	(0.077)	(0.061)	(0.010)
SC * youngest child=4-12	ref	0.199***	ref	0.086*	ref	0.109	ref	0.228***
		(0.004)		(0.000)	(0.046)		(0.065)		(0.011)
SC * youngest child=13-17	-0.151	0.173***	-0.153	0.052	-0.181	0.072	-0.081	0.181***
	(0.097)	(0.006)	(0.107)	(0.049)	(0.157)	(0.068)	(0.062)	(0.008)
PACS	0.187***		0.093		0.225***		0.037	
	(0.057)		(0.061)		(0.068)		(0.051)	
Age	0.105***		0.071***		0.102***		0.056***	
	(0.014)		(0.016)		(0.026)		(0.012)	
Age^2	-0.001***		-0.001***		-0.001***		-0.001***	
	(0.000)		(0.000)		(0.000)		(0.000)	

Homeowner	0.084***	0.137***	0.124***	0.029
	(0.022)	(0.045)	(0.046)	(0.022)
Unemp. Rate	-0.051***	-0.041**	-0.062***	-0.026*
	(0.015)	(0.020)	(0.022)	(0.014)
Unemp. rate^2	0.002***	0.001**	0.002***	0.001**
	(0.001)	(0.001)	(0.001)	(0.000)
Town size= 2000-4999	0.004	0.027	0.076	0.009
(ref=rural)	(0.038)	(0.047)	(0.065)	(0.032)
5000-9999	-0.012	-0.133***	-0.074	-0.054
	(0.043)	(0.051)	(0.085)	(0.035)
10000-19999	-0.109***	0.004	-0.075	-0.058*
	(0.042)	(0.052)	(0.065)	(0.031)
20000-49999	-0.073*	-0.093*	-0.058	-0.065**
	(0.040)	(0.048)	(0.054)	(0.031)
50000-99999	-0.108**	-0.014	-0.158***	-0.019
	(0.043)	(0.045)	(0.059)	(0.031)
100000-199999	-0.076	-0.120*	-0.149	-0.094**
	(0.056)	(0.067)	(0.106)	(0.037)
>200000	-0.054*	-0.042	-0.014	-0.035
	(0.031)	(0.032)	(0.046)	(0.025)
Paris Area	0.028	0.092**	0.135***	0.117***
	(0.040)	(0.041)	(0.049)	(0.032)
Constant	-1.616***	-0.762**	-1.297***	-0.987***
	(0.288)	(0.300)	(0.479)	(0.223)
Observations	30,589	30,965	13,628	47,926

Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Note: If we consider the sub-population of mothers with child support (col. 2 and 3) and among them mothers with one child, the probability of having a job after divorce in 2010 is 17.3 percentage points higher for shared custody arrangements compared with sole-custody arrangements.

5.4   The role of repartnering

Additionally, we take into account the repartnering event that may affect both the labour market and custody arrangement decisions. Forming a new couple may also be endogenous because of selection issues in repartnering as well as potential anticipation effects. Indeed, some studies emphasize that repartnering might be a way to escape poverty (Dewilde and Uunk, 2008). We divide the sample into two subsamples of whether or not divorced women are already in a new relationship within the following year. For women who repartner just after divorce, the type of custody arrangement is no longer significant. Thus, whatever the custody arrangement, the probability of working is the same. However, for women not yet repartnered, the positive effect of shared custody remains and is even more pronounced. We find heterogeneous effects that are very similar to those previously observed: shared custody has larger positive effects for mothers with several children or with an infant and those who belong to the lowest income quintiles and are inactive before divorce. The absence of effect of custody arrangement for repartnered women is interesting. It means that repartnering might be a way for some women to not only increase their living standards but to also diminish the work-family trade-off thanks due to the presence of a stepfather who may take care of the children.

5.5   Robustness checks

There is not just one way to define concepts such as employment or inactivity. To test the robustness of our conclusions, we test the sensitivity of our results to other definitions of employment. Since our data do not provide a perfect definition of employment, we have to make assumptions about how to define it from the fiscal data. In our benchmark estimates, we define it by considering a yearly threshold corresponding to two minimum monthly wages (2,100 euros) during the year. We test here alternative definitions by stating the threshold of resources used to define employment at one, three and four minimum monthly wage amounts instead of two. The results presented in appendix A2 are very robust to different definitions.

6.   Discussion and conclusion

An increasing trend in both shared custody practises and the diversity of parents with shared custody arrangements is observed in many countries. In the sharp debate about whether or not to promote shared custody arrangements, the main arguments put forth concerns about either the consequences for children in terms of cognitive or behavioural development, or the equality between parents in terms of rights for visitation and exercising their parental responsibilities equally after divorce.

The impact on labour market outcomes for divorced parents is much less raised, although it may constitute an important factor in the discussion, as it affects the living standards and poverty risk of all family members.

Here we analyse women's labour force participation after divorce according to the prevailing child arrangements. Though a large proportion of parents (one out of five) are now opting for shared custody in France, we still observe a positive socio-economic gradient in shared custody prevalence. The probability of being employed is 16 percentage points higher for mothers with shared custody arrangements compared to sole physical custody. There are huge heterogeneous effects in that larger positive effects are observed for: inactive women, those belonging to the lowest income quintiles before divorce, those with a young child and those with three or more children. Shared custody is helpful for women who are far removed from the labour market. The high likelihood of re-entering the labour market after divorce for mothers who were previously out of the labour force is not a new finding, but the fact that having a shared custody arrangement enlarges this effect is a new and original contribution.

It is interesting to reframe this result in light of the policy against poverty. To fight against poverty, several countries have introduced costly welfare programs associated with 'welfare to work' and 'make work pay' policies, sometimes specifically targeting lone parents. Laws favouring joint custody and the increasing trend in this practice are costless and also have positive effects on divorced mothers' labour market outcomes. To what extent the regulation of shared custody might be compared to welfare employment programs is a crucial public policy question and it should be seriously considered. Even if child custody arrangements do not fall within the scope of employment policy, our research shows that policies promoting more equal sharing of parental responsibilities – such as those increasing shared custody arrangements – could have strong effects on women's financial autonomy, at least in the short term, and they could also have potential long-term effects on pension entitlements.

However our results on the positive effects of shared custody also show that re-entering the labour market after divorce is not universal and is highly sensitive to other factors. Results on subsamples also emphasize the strong financial constraints faced by mothers after divorce. A highly illustrative example can be found in the specific yet quite common case of lone mothers who have their children on a full-time basis and do not receive any support payments, whatever the reason. Because these mothers have to bear the entirety of child costs, they are more active in the labour market than their counterparts who have shared custody. This study confirms previous studies showing that repartnering may be a way for some women to escape these huge financial constraints and to reduce the work-family imbalance.

Our study considers activity status one year after divorce. This is a short period for recovery and is a limitation resulting from our data. Nevertheless, we should expect even stronger effects over more time. Finding a job, especially for mothers who interrupted their career before divorce and organizing for child care may take some time. A second data limitation arises from the impossibility of identifying mothers who are looking for a job (without having found one yet) in case they do not receive unemployment allowances. It is also difficult to distinguish part-time jobs with any precision.

Finally, some specification on the French context can shed light on our results and assess their external validity. France is a family-oriented country, where even mothers with young children work, meaning that this particular country-specific environment provides incentives for mothers to work, with the childcare provision being quite generous. However, there is an educational gradient in the female employment rate, which is emphasized by recent parental leave policies (Piketty, 2005, Lequien, 2012, Joseph et al., 2013). Mothers belonging to the lowest income quintiles are those more likely to quit the labour market after the birth of a child, and to react to new public policies. They were more likely to interrupt their careers after the extension of parental leave. Our results for divorced mothers also show that mothers who are furthest away from the labour market are those for whom the type of custody arrangement after divorce is the most important and whose likelihood for employment is more strongly affected. However, instead of a decrease, we observe a higher likelihood of employment. This shows that some specific populations react more than others to either public policies or new family arrangements. Shared custody in less family-friendly countries is therefore likely to play even more of a role in a mother's employment, since mothers benefit from less support from public policies to balance work and family duties; in which case our results can be seen as lower bounds on the effect that shared custody has on employment. This must be confirmed by replicating our study in other countries however. Finally, another interesting avenue of research would be to look further into the market behaviours of fathers in relation to shared custody arrangements.

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Appendix A1- Validity of the instrument: Placebo test

We directly regress our dependent variable (being employed) on our instrument for two distinct samples: our benchmark sample and the sample of childless women. This "intention-to-treat" regression allows us to see if the fraction of shared custody has an effect on childless women who, by definition, are not concerned with shared custody. If such were the case, it would pose a threat to our identification strategy because that would mean our instrument may be related to other factors influencing women's employment. Table 6 clearly shows that our instrument has no significant effect on childless women: point estimates are between 2 and over 3 times lower than the one obtained for mothers, and they are non-significant even though they are even more precisely estimated. As it turns out, the proportion of shared custody at the department level has a positive effect only on divorced mothers.

Table 6: Placebo test

	Considered sample Mothers		Placebo Childless women	
	All	Inactives	All	Inactives
Proportion of shared custody	0.202*	0.684*	0.149	0.226
	(0.114)	(0.388)	(0.119)	(0.417)
Number of observations	61554	11799	19182	2656

Note: Controls include: women's age and squared age, PACS, income quintiles, ownership status, unemployment rate and squared unemployment rate, town size and previous activity status (for specifications on the whole sample) and number of children and age of youngest (for specifications on the mothers' sample).

Appendix A2: Aggregate level regression

As suggestive evidence of the exogeneity of our instrument, we present here regressions at the department level of the rate of shared custody on a set of local controls reflecting the socioeconomic and demographic characteristics of the department. Indeed, the share of shared custody may be influenced by age structure, economic situation, religiosity, work-family balance possibilities, and divortiality. We use the share of the active population aged between 18 and 60 years old together with the ratio of old people over young people to account for the population structure. To take into account the economic situation at the department level, we include the unemployment rate as an indicator of local labour market conditions, the poverty rate and the (median) level of income. We also include an indicator of the childcare supply that may play both on the preference for childcare arrangement and the mother's employability. As family norms may be important to explain the level of shared custody, we include two indicators of religiosity: the proportion of Catholics and the proportion of people in the department declaring that they have no religion.[23] Finally, we include an indicator of divorce risk.

Only unemployment rate turns out to have a significant impact on the share of shared custody. As expected, unemployment shows a negative impact, thus highlighting that shared custody is more likely to be chosen in a department where the level of employment is higher. Thus, the local share of shared custody is explained only a little by the economic and demographic structure or family values. R squared is only 45%. There thus remains much unexplained variability that cannot be accounted for by the different variables. We definitely do not claim here that our instrument fully explains the remaining variability, but it clearly rules out the idea that all the local conditions we tested are the main determinants of the local share of shared custody. We think that the local "judge/lawyer effect" is an important part of the story and of this remaining unexplained variability.

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[23]   These figures are coded from the report by IFOP 2006 "Eléments d'analyse géographique de l'implantation des religions en France". https://www.google.fr/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwi36-yJ9PzYAhWBWBQKHX8UBNwQFggnMAA&url=http%3A%2F%2Fwww.ifop.com%2Fmedia%2Fpoll%2Freligions_geo.pdf&usg=AOvVaw1qYD3K_b_WXUgtBw6aHGIH

**Table 7: Aggregate level regression on the share of shared custody
in the department**

Variables	Coef.	Std. Err.
Age structure		
Ratio old(+65)/young(<19) people	0.064	0.040
Proportion of active population	0.129	0.252
Economic situation		
Unemployment rate	-0.012**	0.003
Median income	-0.000	0.000
Poverty rate	-0.003	0.002
Work-family balance		
Childcare places per 100 children under 3	-0.000	0.000
Religion		
% of the population feeling catholic (ref=55-63%)		
<=54%	-0.006	0.011
64-70%	-0.006	0.008
71-75%	0.005	0.013
>75%	-0.008	0.014
% of the population declaring they have no religion (ref=20-27%)		
<=20%	-0.010	0.011
27-34%	0.002	0.007
>34%	-0.004	0.011
Divortiality		
Number of divorcees <70 per 1000 married people (ref=[13-14[)		
<11	-0.006	0.009
[11-13[	-0.007	0.008
[14-15[	-0.001	0.009
>=15	0.011	0.009
Constant	0.268	0.141
R2	*0.45*	
N	95	

* $p<0.05$; ** $p<0.01$

Appendix A3: Different definitions of activity/inactivity

The definition of activity versus inactivity emanates from the annual income. The specification used in this article adopts the annual threshold of two minimum monthly wages over the year (2,110 euros). We tried here different thresholds corresponding to one (1,055 euros), three (3,165 euros) and four minimum wages (4,220 euros). The results are very similar.

Table 8: Regressions using different definitions of activity/inactivity

	(1)	basic	(2)	(3)
Threshold (in Euros)	1,055	2,110	3,165	4,220
Shared custody	1.425***	1.400***	1.376***	1.380***
	(0.128)	(0.127)	(0.134)	(0.142)
Number of children = 2	0.005	-0.010	-0.003	-0.007
	(0.019)	(0.018)	(0.017)	(0.018)
Number of children = 3	-0.073***	-0.112***	-0.111***	-0.120***
	(0.025)	(0.021)	(0.022)	(0.024)
Number of children = 4+	-0.232***	-0.274***	-0.283***	-0.297***
	(0.035)	(0.031)	(0.035)	(0.037)
Shared custody * 2 children	0.071	0.096**	0.101**	0.082*
	(0.046)	(0.047)	(0.047)	(0.048)
Shared custody * 3 children	0.113	0.173**	0.130*	0.126*
	(0.072)	(0.072)	(0.071)	(0.068)
Shared custody * 4+ children	0.311***	0.386***	0.330***	0.352***
	(0.114)	(0.115)	(0.108)	(0.105)
Household Income = Q1	-0.352***	-0.375***	-0.380***	-0.396***
	(0.039)	(0.037)	(0.033)	(0.033)
Household Income = Q2	-0.171***	-0.179***	-0.199***	-0.204***
	(0.037)	(0.033)	(0.030)	(0.029)
Household Income = Q4	0.071**	0.089***	0.099***	0.108***
	(0.030)	(0.033)	(0.032)	(0.032)
Household Income = Q5	-0.053	-0.018	0.014	0.033
	(0.038)	(0.038)	(0.037)	(0.038)
Shared custody * Q1	0.265***	0.259***	0.265***	0.263***
	(0.096)	(0.093)	(0.090)	(0.089)
Shared custody * Q2	0.043	0.058	0.082	0.064
	(0.068)	(0.064)	(0.060)	(0.059)
Shared custody * Q4	0.029	0.011	0.028	-0.041
	(0.071)	(0.075)	(0.072)	(0.066)
Shared custody * Q5	0.024	-0.022	-0.006	-0.043
	(0.069)	(0.068)	(0.069)	(0.066)
Employed	1.017***	1.031***	1.107***	1.133***
	(0.047)	(0.042)	(0.040)	(0.042)
Shared custody * Employed	-0.142***	-0.154***	-0.204***	-0.161***
	(0.053)	(0.056)	(0.053)	(0.055)
Age of youngest child = 0-3	0.014	0.026	0.037**	0.058***
	(0.020)	(0.019)	(0.018)	(0.019)
Age of youngest child = 13-17	0.108***	0.107***	0.115***	0.120***
	(0.023)	(0.023)	(0.022)	(0.022)
Shared custody * youngest 0-3	0.208***	0.169***	0.150***	0.139***
	(0.063)	(0.061)	(0.055)	(0.052)
Shared custody * youngest 13-17	-0.090	-0.079	-0.105	-0.099*

	(0.067)	(0.064)	(0.064)	(0.055)
PACS	0.092**	0.089**	0.087**	0.092**
	(0.043)	(0.043)	(0.041)	(0.040)
Age	0.060***	0.069***	0.072***	0.075***
	(0.011)	(0.012)	(0.012)	(0.012)
Age^2	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Owner	0.031	0.047**	0.055**	0.065***
	(0.024)	(0.023)	(0.022)	(0.022)
Unemp. Rate	-0.040***	-0.035**	-0.036***	-0.040***
	(0.015)	(0.015)	(0.014)	(0.013)
Unemp. rate^2	0.002***	0.001***	0.001***	0.002***
	(0.001)	(0.001)	(0.000)	(0.000)
Town size = 2000-4999	0.030	0.021	0.010	0.011
	(0.028)	(0.029)	(0.028)	(0.029)
Town size = 5000-9999	-0.026	-0.057*	-0.050	-0.032
	(0.034)	(0.034)	(0.038)	(0.038)
Town size = 10000-19999	-0.046	-0.062**	-0.074**	-0.055*
	(0.032)	(0.031)	(0.030)	(0.029)
Town size = 20000-49999	-0.066**	-0.069***	-0.060**	-0.064**
	(0.027)	(0.026)	(0.025)	(0.026)
Town size = 50000-99999	-0.038	-0.045	-0.041	-0.036
	(0.029)	(0.028)	(0.029)	(0.029)
Town size = 100000-199999	-0.110**	-0.106***	-0.106***	-0.111***
	(0.044)	(0.041)	(0.037)	(0.031)
Town size = >200000	-0.039*	-0.031	-0.005	-0.001
	(0.022)	(0.023)	(0.021)	(0.021)
Town size = Paris Area	0.100***	0.123***	0.127***	0.124***
	(0.031)	(0.027)	(0.026)	(0.029)
Constant	-0.838***	-1.125***	-1.265***	-1.418***
	(0.211)	(0.203)	(0.216)	(0.208)
Observations	61,554	61,554	61,554	61,554

Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$