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## Women's Work Histories in Italy: Education as Investment in Reconciliation and Legitimacy?

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## Abstract

Within pre-enlargement Europe, Italy records one of the widest employment rate gaps between highly and poorly educated women, as well one of the largest differences in the share, among working women, of public sector employment. Building on these stylized facts and using the Longitudinal Survey of Italian Households (ILFI), we investigate the working trajectories of three cohorts of Italian women born between 1935 and 1964 and observed from their first job until they are in their forties. We use mainly, but not exclusively, event history analysis in order to identify the main factors that influence entry into and exit from paid work over the life course. Our results suggest that in the Italian context, where employment protection policies have also been used as surrogate measures to favour reconciliation between family and work, and where traditional gender norms still persist, education is so important for women's employment decisions because it represents an investment in 'reconciliation' and 'work legitimacy' over and above investment in human capital.

## Keywords

Female participation, lifetime employment patterns, non-monetary returns to education, public sector employment

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## 1. The issue

Two facts about female employment are well known among scholars and resonate with our everyday experience of how developed market economies work. Where overall female employment is low, the reason often lies in low participation of poorly educated women. Where overall female employment is high, public sector employment is likely to be an important contributor. If we take the EU 15 countries in 2004, calculate for each of them the employment rate gap between poorly educated and highly educated women (up to lower secondary versus tertiary education), and verify the correlation between this gap and the overall rate of female employment, the coefficient turns out to be negative and statistically significant.<sup>1</sup> Furthermore, if we take the share of women employed in the public sector and correlate it with the overall level of female employment in the country we get a positive and significant coefficient.<sup>2</sup>

Italy and Sweden drive these correlations in that they stand at the opposite extremes of the female employment spectrum within EU 15. Whereas in 2004, 10% more highly-educated women aged 25-64 worked in Sweden than in Italy, the difference soared to 26.6% among the poorly educated. Moreover, *the employment rate gap between highly and poorly educated women in Italy was the second highest in pre-enlargement Europe*. One striking asymmetry between these two groups of Italian women is their respective distributions in the private and public sectors. *three fourths of college educated female employees work in the public sector, whereas eighty percent of low-educated female employees are in private employment*. All (pre-enlargement) European countries register a similar asymmetry, but to rather different degrees. If we take the share of women employed in the public sector in the total of the best educated women at work, and if we compute the difference with the equivalent share among the least educated, the third largest difference between the two shares accrues to Italy, with only Austria and Portugal recording an even higher difference.<sup>3</sup>

This association between education, high participation and the public sector on the one hand, and low education, low participation and the private sector on the other, inspired the idea that we want to explore in this paper. We argue that education may offer women important benefits in the guise of ‘reconciliation returns’ by giving them access to public sector jobs that make reconciliation between work and family easier or less costly, and thus particularly attractive in contexts where proper reconciliation policies are scarce. Education also affords the kind of ‘legitimacy to work’ that women may need in order to overcome pressure to give priority to the family in social contexts where traditional norms are still strong and demand for labour relatively weak. Returns in terms of reconciliation and legitimacy depend on the institutional and cultural context, and they may be additional to strictly monetary returns, or be traded off for the latter.

Although we provide a conceptual framework for such returns, we do not formally model them here. Rather, we attempt to trace their influence indirectly by empirical investigation of the extent to which education and private/public employment matter in differentiating women’s work histories over the life course. As the above comparison with other European countries suggests, Italy is an ideal case to examine education-based employment differences among women. Our primary data source is the first wave of the Longitudinal Survey on Italian Families or “Indagine Longitudinale sulle Famiglie Italiane” (ILFI), and the focus is on three of the main transitions that make up a lifetime employment pattern: entry into paid work, exit from paid work to housework, and return into paid work. We estimate the determinants of each of these transitions and adopt an indirect, residual approach to identify non-monetary returns, given that the data do not allow for direct identification.

The paper is organised as follows. Section 2 describes the work histories of Italian women in the ILFI data set distinguishing between three types: ‘continuous’, ‘interrupted’, and ‘curtailed’. Section 3 illustrates our notion of monetary and non-monetary returns, substantiating it with analysis of the structure of earnings in the public and private sectors. Section 4 undertakes

multivariate and event-history analysis of three employment decisions – first entry into the labour market, first exit and re-entry - with a view to also verifying the significance of such returns. Section 5 concludes. The data and the variables used are discussed in the Appendix.

## **2. Education, public sector employment and work histories: descriptive evidence**

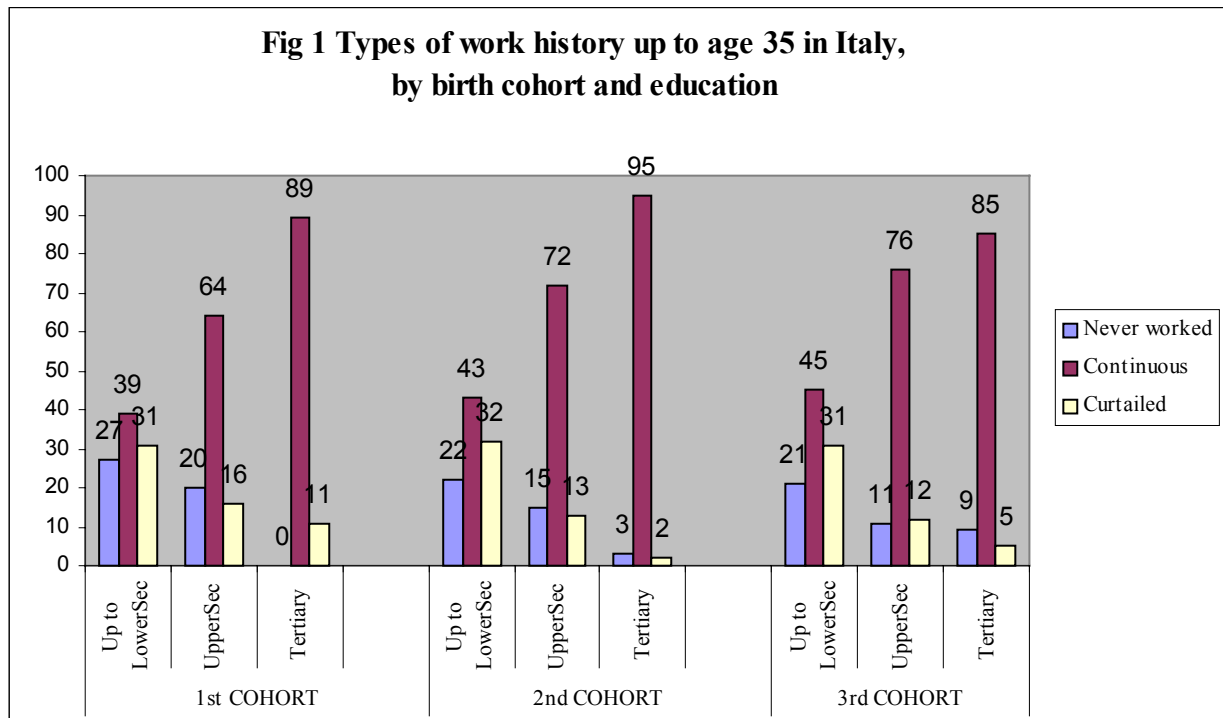
The ILFI is a five-wave longitudinal survey which began in 1997 and concluded in 2005. It combines a retrospective with a prospective design and thus allows reconstruction of the entire life histories of individuals up to the time of interview (see the Appendix for details). In this work we use the first wave (1997) and focus on women born between 1935 and 1964 so that we can observe them for a relatively long span of their life course, from the end of full-time education up to age 45.<sup>4</sup> Moreover, we consider three cohorts of women that entered the labour market and built their families and careers in different historical decades: the first birth cohort (1935-44) mainly in the 1960s, the second cohort (1945-54) in the 1970s and the latest (1955-64) in the 1980s and early 1990s. Unlike previous research, which has typically looked at labour force transitions around childbirth (Mc Rae 1993; Jacobs 1997; Dex *et al* 1998; Saurel-Cubizolles *et al* 1999; Bratti *et al.* 2005; Vlasblom and Schippers 2006) after marriage (Blossfeld and Drobnic 2001) or confined analyses to single cohorts or specific regions (Joshi *et al* 1996; Schizzerotto *et al* 1995; Bison *et al* 1996; Jenkins 2006), we analyse women's employment dynamics over long periods of historical and individual time. This has two important advantages. First, with the widening of the individual observational window we can also observe exits and re-entries later in life. Second, as Drobnic (2000) argues, we avoid the risk of sample selection inherent in research that focuses only on specific groups of women. At the same time, comparison across cohorts becomes more problematic since the first and the second cohorts can be followed up to age 45 (with some exceptions for the second) while the youngest members of the third cohort are observed until age 33 and the oldest until age 42. This is a minor problem in regression analysis where we control for age, but can be a problem in the presentation of descriptive figures. In order to ensure comparability without much loss of information, all descriptive statistics refer to women 'observed' until age 35, bearing in mind that 35 is the lower limit used by demographers to estimate completed fertility.

Our analysis is built around a tripartite classification of work histories, as noted. There are various ways to define and classify work histories. Our classification identifies the following types: "never worked" for those women who have never recorded a job episode; "continuous" when a woman has never experienced a housework episode by age 45 or the highest age observable, although she may have stopped working for different reasons (unemployment, education); "curtailed" when a woman has withdrawn from employment without returning.

### **2.1 Education**

The first question we wish to address is how work histories vary across levels of education. Our three educational levels broadly correspond to ISCED level 0-2 (up to lower secondary education, labelled "Up to LowerSec"), ISCED 3-4 (upper secondary education, labelled "UpperSec") and ISCED 5-6 (tertiary education, labelled "Tertiary").<sup>5</sup> The distribution of the women in our sample by cohort, education and work history yields two insights (Fig. 1). The first is rather as expected: education favours continuity to the extent that non continuous histories occur in no more than 10 % of cases among highly-educated women. The second is less well known: there is little difference between cohorts in the distribution of work histories, lending support to Schizzerotto and Solera's findings that the increase in female participation in Italy in the post-war period hides a compositional effect. That is, participation increased because women in younger cohorts

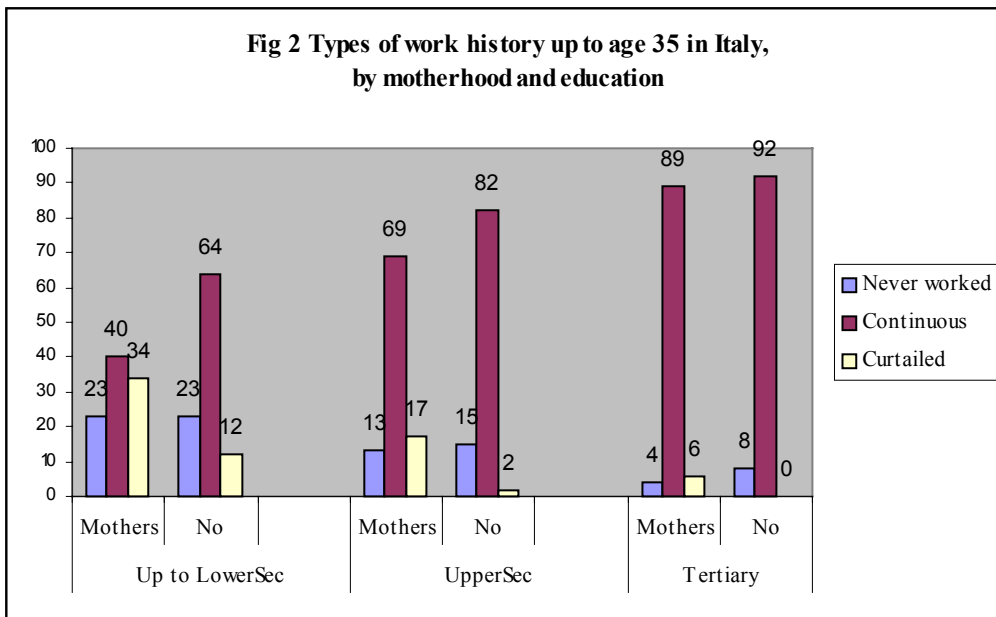
progressively acquired higher education, hence better jobs and childlessness, while the propensity to participate at any given level of education did not change significantly (Schizzerotto *et al* 1995; Solera 2004; 2005).



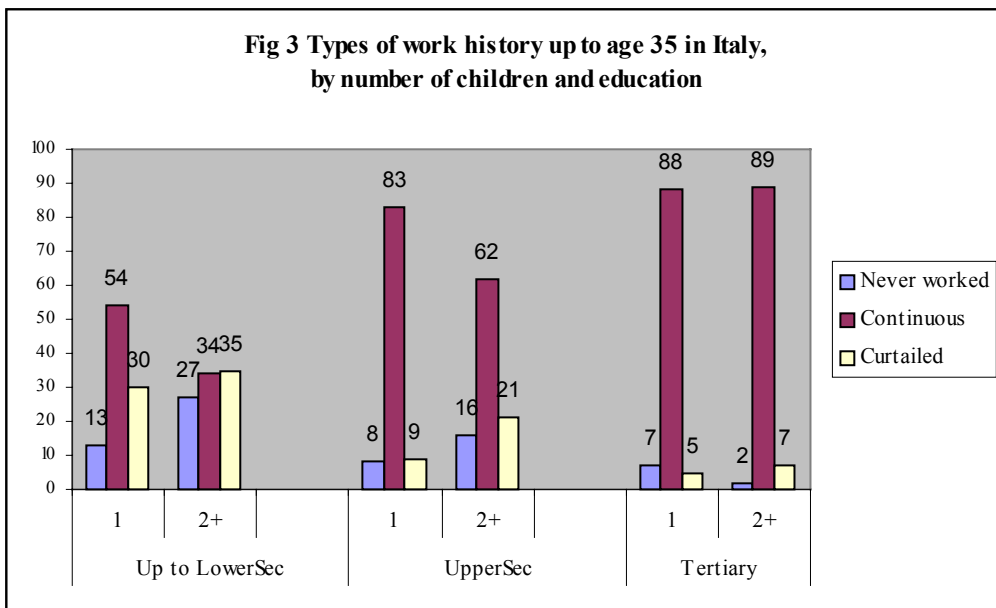
Notes: percentages may not exactly add up to 100 because the tiny minority of women with different types of work history (“one break with return” or “two or more breaks”) has been dropped from the charts in order to reduce graphical clutter

Source: ILFI, 1997

Motherhood has a strong influence on work history continuity only at low levels of education. Childless women tend to be considerably more continuous than mothers among the less educated (24 percentage points difference), whereas the impact of motherhood halves among women with intermediate levels of education and practically disappears among the highly educated (Fig. 2). Similarly, the number of children is an important discriminatory factor for work continuity, but it matters primarily among low educated women (Fig. 3). For college educated women there is little difference in work history continuity between mothers of one child and mothers of at least two children; if anything, the latter exhibit slightly greater attachment since the share of those with curtailed or no work experience is slightly lower. With all the caution warranted by the numbers involved, this is compatible with the possibility that the relationship between fertility and education is U shaped, e.g. on account of family income effects combined with assortative mating (because a two-earner couple where both partners are highly educated can more easily afford to buy child care services or domestic help).



Notes: see fig.1  
 Source: ILFI, 1997



Notes: see fig.1  
 Source: ILFI, 1997

## 2.2 Employment in the public sector

The second question we want to explore is the role of public employment in women's work continuity. There is increasing recognition in the European literature that the private/public sector divide matters for wage differentials, but in other respects as well, including fertility behaviour and lifetime employment patterns. Emerek *et al* (2001), in particular, find a positive correlation between the share of women in public sector employment and the overall female employment rate. Bettio (2005) concurs with Emerek *et al.* in interpreting this correlation as evidence that the public sector, and welfare institutions in particular, contribute to 'externalising' women's unpaid work in the home – i.e. transfer it to the market or to public production - and this externalisation expands female employment. While externalisation may drive the above correlation on the demand side, the

evidence below suggests that the public sector enhances female employment on the supply side as well, by significantly enhancing continuity.

Table 1 reports the private/public distribution of male and female full time employees in Italy by level of education. Data are based on the Bank of Italy Survey of Household Income and Wealth 2000 (Indagine sui Bilanci delle Famiglie Italiane, SHIW for short) and are sufficiently representative, given the size of the sample. While 41% of all (full-time) women worked in the public sector in Italy in 2000, the corresponding figure for men was 26.5%. For both women and men the share in public sector employment increased noticeably with the level of education, but the gender gap in favour of women was highest among the most educated: 74.3 % of all women with tertiary education and in full time employment worked for the public sector, against 56% for men.

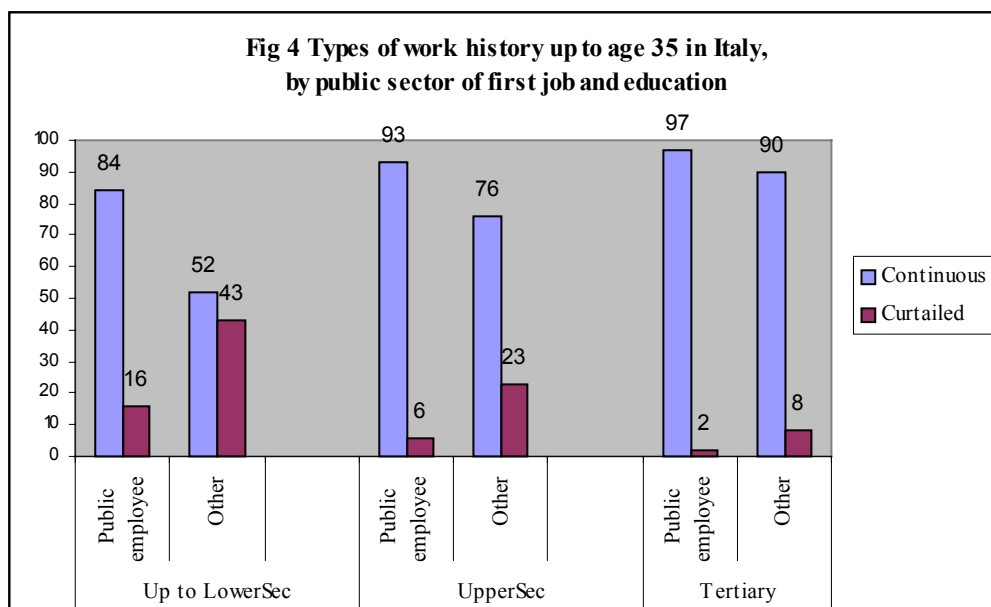
**Table 1: Share of women in the public sector by cohort and education**

	Share of employees in public sector (All ages, full-timers only) <sup>a</sup>		Share of ever-working women with first job in public sector <sup>b</sup> (by cohort, both full-timers and part-timers)			
	Women	Men	All cohorts	1 <sup>st</sup> Cohort 1935-44	2 <sup>nd</sup> . Cohort 1945-54	3 <sup>rd</sup> . Cohort 1955-64
Up to Lower Secondary	20.1	16.8	6.7	6.8	7.1	6.7
Upper Secondary	43.2	29.4	43.8	53.0	48.0	38.3
Tertiary	74.3	56.0	67.5	85.7	76.7	50.6
Overall	41.0	26.5	22.7	18.4	25.5	23.0

Source: <sup>a</sup> SHIW, 2000. <sup>b</sup> ILFI, 1997.

Our ILFI data reveal a similar pattern: of all first jobs taken by women, only 7% were in the public sector among women with low education, while the figure soared to 67% among the most educated. However, a declining trend is clearly discernible for the youngest cohorts, and it may be attributable to the progressive shrinking of public sector jobs and the ensuing lengthening of job queues (Table 1).

Continuity of work history is by far the dominant feature of public sector employment, for both low- and highly-educated women. The gap in continuity between the public and the private sectors is far smaller among the well educated, but it is positive nevertheless, suggesting that the public sector makes a difference even at high levels of education (Fig. 4). As noted, highly educated women are disproportionately represented in the public sector, with respect to both men and less educated women. Traditional sex typing of public sector jobs like teaching or nursing is only part of the explanation for this over-representation. For example, doctor and magistrate are public sector occupations in Italy – primarily or exclusively - and were male dominated until no more than twenty years ago. But they are mixed occupations at present and will soon become feminized if the current trends continue. Overrepresentation of highly educated women among public sector employees is thus equally likely to reflect factors other than received stereotypes.



Notes: see fig.1  
Source: ILFI, 1997

Fertility tends to be higher among well educated women in the public sector (table 2): female employees with tertiary education whose first jobs were in the public sector not only bear their first child earlier but also have more children by the age of 35 compared with equally educated private sector workers. The opposite occurs at the lowest level of education: female employees in the public sector with lower than secondary education have, on average, their first child later, as well as a lower number of children compared with their counterparts in the private sector.<sup>6</sup> The public sector therefore appears to increase the compatibility between work and family among more educated women.

**Table 2: Timing and number of children for ever-working women,  
by public sector of first job and education**

<b>A. AVERAGE AGE FIRST JOB AND FIRST CHILD</b>						
	<b>Public employee</b>			<b>Other</b>		
	<i>Age 1<sup>st</sup> job</i>	<i>Age 1<sup>st</sup> child</i>		<i>Age 1<sup>st</sup> job</i>	<i>Age 1<sup>st</sup> child</i>	
Up to Lower Secondary	23.1	26.6		17.6	25.1	
Upper Secondary	22.8	27.2		21.9	26.7	
Tertiary	25.1	28.6		25.8	30.6	

<b>B. SHARE OF WOMEN WITH DIFFERENT NUMBER OF CHILDREN BY AGE 35</b>						
	<b>Public employee</b>			<b>Other</b>		
	<i>0 children</i>	<i>1</i>	<i>2+</i>	<i>0 children</i>	<i>1</i>	<i>2+</i>
Up to Lower Secondary	23.6	37.5	38.9	12.7	26.2	61.1
Upper Secondary	28.2	24.6	47.2	24.2	23.3	52.5
Tertiary	24.5	30.9	44.6	39.4	21.1	39.5



### 3. The public sector and returns to education

Why should educated women choose public sector jobs? One possibility is that they are induced to do so by higher monetary returns to education in the public sector. This is the kind of reason that economists like to hear, but the evidence is less than clear-cut. There is a dauntingly large body of econometric literature on monetary returns to education, and the findings are known to vary across institutional set-ups (countries), gender, sectors of employment, and period of reference. With specific regard to Italy, we may summarize the findings as follows: (i) there is widespread consensus on the fact that returns are higher for women than for men in the private or the public sector (ii) there is some discordance among findings on the relative pay advantage of public versus private employees, and whether this advantage extends to the highly educated or only concerns the least educated. Brunello *et al* find that, overall, the public sector yields lower returns to age and education for both men and women, (Brunello *et al* 2000: table 15). More recently Lucifora and Meurs (2004) find that, although the pay advantage from working in the public sector diminishes considerably for highly educated women, it remains positive (while turning negative for highly educated/skilled men).

In other words, the econometric evidence strikes us as not being so solidly in favour of a significant enough differential in monetary returns to education for women in public employment as to satisfactorily account for the disproportionate representation of highly educated women in this sector. There are additional reasons for caution (see also Bardasi 1998). Monetary returns are usually estimated on the basis of hourly wages, not weekly or monthly earnings. At the theoretical level the assumption is that individuals do not choose the wage rate but have sufficient choice in regard to their working hours, and the extent to which they exploit higher returns is up to them: thus, for example, a female college graduate working a mere 20 hours per week at a very high hourly wage, has low overall returns to education because she has chosen to work less, despite the fact that her pro-rata returns are high. In our view this assumption is problematic when analysis concerns the public sector. While limitations on the choice of reducing working hours are widely recognized and perhaps overemphasized by studies stressing the role that the limited availability of part-time has in low female employment in Italy (Del Boca 2002; Saraceno 2003), limitations on the choice of increasing hours of work are frequently overlooked. Yet they are relevant in several public sector jobs: as documented in Table 3 below, the combination of hours and hourly earnings that maximize labour income for highly educated men has traditionally been offered by the private, not the public sector. Given restrictions on overtime, a public sector employee resorts to moonlighting or combines two jobs in order to increase overall earnings, but these options are not feasible for all. Think for example of a medium level administrative position in a school or hospital, where limitations on the choice of the desired amount of hours are strong and opportunities for moonlighting may not be readily available. In this case hourly returns may be comparatively high, but monthly or yearly returns are likely to be comparatively lower.

A second assumption underlies the practice of using hourly wages to measure returns: namely that measurement errors are negligible. Since household surveys typically report weekly or monthly earnings and hours of work, hourly wages are calculated by dividing period earnings by the corresponding hours and are thus sensitive to errors in the reporting of hours of work. Take school teaching: it is known, and plausible, that teachers have difficulty in quantifying their hours of work, and they sometime respond by giving minimum 'institutional' commitments to resolve these difficulties, i.e. their actual hours of teaching at school, which may underestimate the actual working hours. Teachers are not an isolated example of the difficulty of measuring working hours in public sector jobs, and this kind of measurement error is rarely taken into account in the literature on returns. ok

Some basic calculations using 2000 SHIW microdata lend support to the above remarks. Sections A and B of Table 3 report, respectively, yearly and hourly earnings for female and male employees by level of education and sector of employment, restricting observation to year-round full-timers in order to enhance comparability. Section C further restricts calculations to individuals in their forties (40-50) and excludes teachers.

The findings are as follows:

- On an annual basis, and among all employees aged under 55, women with college education earn less in the public sector compared to their private-sector counterparts, while the opposite holds for women with low or intermediate education. The pattern is different for men: they earn considerably less in the public sector at the top of the education scale, nearly the same at the middle, and more at the bottom.
- On an hourly basis, and among employees aged under 55, women in the public sector earn more than women in the private sector at all levels of education, and the positive differential in favour of the public sector tends to increase with the educational level. The same is true for men, except that the hourly pay advantage offered by public sector employment is highest among the least educated. Comparison with the figures on yearly earnings indicates that highly educated men in private employment earn much more than do their public sector counterparts because they put in longer hours.
- If we control for age by computing average figures separately by age class (30-40, 40-50 and 50-60), the hourly advantage of the public sector for women reduces considerably at intermediate and high levels of education but does not disappear (figures not reported). It only disappears among female graduates when teachers are excluded from the calculations, as shown in Table 3 for the 40-50 age group. This loss of advantage for the public sector in terms of hourly earnings is also found among men if teachers are excluded and age is controlled for, and concerns those with intermediate education as well as graduates.

Summing up, highly educated female employees in the public sector earn more in hourly terms than their counterparts in the private sector only if teachers are included in the calculations. This suggests that short hours of work for teachers may significantly contribute to the finding of higher returns for women in this sector. Yet, as argued, this is where measurement errors may be important. Furthermore, highly educated women appear to forgo the opportunity to increase overall (monthly or yearly) earnings when they decide to work in the public sector.

Of course, the data in Table 3 are purely indicative, since they do not ‘control’ for experience and other individual characteristics that may influence earnings. Nevertheless they add cogency to the contention that the reasons why highly educated women are disproportionately attracted by the public sector should be rethought. One obvious reason, at least in the Italian context, is a package of working conditions that substantially lowers the monetary and non-monetary costs of reconciling work and family. Although this package is common knowledge in the country, it may nevertheless be useful to briefly recall its advantages:

- maternity and parental leave provisions are more generous for public sector employees in terms of both coverage rate and length of absence
- with the major exception of the health sector, the scheduling of working hours leaves sufficient room for individual choice; where this is combined with a 36-hour weekly schedule, the advantages for reconciling work and family are akin to those of a ‘long part-time’
- access to jobs is through educational credentials; while this may reduce discrimination it also diminishes the role of actual experience, past achievement etc.
- because seniority is the main factor determining wage progression, periods of leave or other forms of weak work attachment are not penalized
- in the past the public sector has been especially generous in granting early retirement.

**Table 3: Net earnings by level of education**

A.	NET ANNUAL EARNINGS OF EMPLOYEES, FULL-TIMERS (thousands of liras) <sup>a</sup>			
	Women		Men	
	Public sector	Private sector	Public sector	Private Sector
Up to Lower Secondary	23096	20291	28524	25158
Upper Secondary	27136	24289	31087	31954
Tertiary	30685	34310	42630	48638

B.	NET HOURLY EARNINGS OF EMPLOYEES, FULL TIMERS (thousands of liras) <sup>b</sup>			
	Women		Men	
	Public sector	Private sector	Public sector	Private sector
Up to Lower Secondary	13.74	11.33	16.02	12.98
Upper Secondary	17.04	13.21	17.8	16.31
Tertiary	22.28	17.91	25.7	23.9

C.	NET HOURLY EARNINGS OF EMPLOYEES AGED 40-50; EXCLUDING TEACHERS (thousands of liras)			
	Women		Men	
	Public sector	Private sector	Public sector	Private sector
Up to Lower Secondary	13.7	11.97	16.04	13.88
Upper Secondary	16.04	15.62	17.64	20.26
Tertiary	20.9	21.5	24.23	25.81

Notes: <sup>a</sup> Annual labour income or *yl* in the terminology of the survey; *yl* is an original variable in the data base;

<sup>b</sup> Obtained by dividing annual labour income *yl* by annual hours (average number of hours p.w. for the individual, including overtime \* 47 weeks)

Source: SHIW, 2000

We would argue, in fact, that public employment is the main public ‘resource’ that the Italian variety of welfare regime offers women to reconcile work and family. As well documented in the literature, (Bettio and Plantenga 2004; Del Boca and Saraceno 2005; Plantenga and Remery 2005) public childcare services for children under three years of age are scarce, the opening hours of nursery and elementary schools are relatively unfriendly, and financial transfers targeted on families with children are modest, although they have recently been increased. Employment and career protection in the public sector have been used as a surrogate for a wider and a more universal package of reconciliation policies, thus generating a strong divide with the private sector. Access to public employment is necessarily limited, but education is one important way to gain access. *We accordingly contend that investment in education is both investment in human capital and ‘investment in reconciliation’* in the Italian context (Saraceno 1987; Bimbi 1992). This raises the possibility that well educated women are *willing to forgo chances of maximizing period (monthly or yearly) earnings (in the private sector) in order to reap the returns on reconciliation that the public sector offers*. In a lifetime perspective these returns include both a monetary and non-monetary component. The monetary component relates to higher job security and includes forgone costs due to depreciation of human and social capital when out of the labour force as well as forgone costs of job search on re-entry (Davies and Joshi 2001, 2002; Anderson *et al* 2002; Jacobs 1999). Although these costs tend to increase with time out of paid work, they start to be significant at low levels of labour-market intermittency (Hotchkiss and Pitts 2003).

The monetary component, however, should not be overemphasized in regard to reconciliation. First, it is well documented that in the period of interest here – until 1997 – the age-earnings profile in the public sector was generally flatter (Dell’Arling 1994; Vignocchi 1996; Bardasi 1998). Being in the public sector, indeed, seems to prevent downward mobility and employment interruptions more than offering chances of upward mobility (Gonzalez, 2006). Moreover, the psychological and informational gains attached to employment and career security may be equally or even more important than strictly monetary gains. The adverse impact of unemployment or precarious labour market positions on fertility is now well recognized in the literature (Del Bono 2002; Blossfeld et al 2005) and we share the view that what matters in this case is not so much low income as the overall uncertainty surrounding future work (location, duration, working schedule, as well as earnings). For a woman, therefore, greater individual certainty that her present job is likely to remain for as long as she chooses facilitates the kind of advance planning that a decision to have a child requires. In addition, public sector jobs have traditionally offered more ‘own time flexibility’. Greater tolerance of absenteeism, lower pressure to work long hours, higher incidence of flexitime, better opportunities to take unpaid or paid leave without penalties on re-entry all contribute to reducing the psychological and physical effort required to reconcile the schedule of domestic and care activities with the paid work schedule.<sup>7</sup>

*Our second contention is that education can also represent investment in ‘legitimacy to work’.* Traditional gender roles are still pronounced in Italy (especially in the South: Brown and Scott 1998) and there is evidence that unconditional approval of the “modern roles” for women does not yet amount to a generalized cultural shift but is limited to the well educated segments of the population or to those contexts where female labour market participation has been traditionally high. In both older and younger cohorts, it is mainly highly educated individuals or couples where the wife works that are in favour of keeping married women in employment even when children are small (Scott 1999; Kunzler 2002). The fact that the standard nuclear family, with its gender division of labour and extended network of intergenerational and kin solidarity, still represents the main welfare institution tends to slow down the pace of change, especially where labour demand is weak. In this context, we argue, the pressure of social norms can tip decisions in favour of giving priority to the family whenever the net economic advantages of higher commitment to paid work are weak. Education often raises such advantages insofar as it gives legitimacy to the choice of market work, and, in so doing, increases the bargaining power of women. As argued by Solera and Negri (forthcoming), moreover, education also entails non-economic advantages via what sociologists call value rationality (Weber 1921) or, more recently, subjective or cognitive rationality (Boudon 1989; 1996). The value of paid work is not only instrumental - a means to acquire income for “consumption” - as standard economic rational choice theory assumes. Investing in education and in the labour market may depend on - and, along the way, get reinforced by - the interiorisation of a cultural model that considers working as a central dimension of the identity and conception of welfare and can be used to overcome traditional prescriptions.<sup>8</sup> *Because of this ‘legitimacy and identity effect’, we may expect to find that the degree of commitment to market work increases with education beyond what would be expected in light of the combined effect of strictly monetary returns and “reconciliation returns” to education.*

#### **4. The effect of education and public employment on women's labour-market transitions: econometric evidence**

How strong is the evidence that education represents for women an investment in “reconciliation” and “legitimacy”, above and beyond strictly monetary returns? In the next part of the paper we address this question by reporting multivariate cross-sectional and event history analyses that model women's labour market behaviour over the life course.

The initial step was investigation of first entry into paid work. Here we were interested in participation decisions, rather than the duration of job search, and the analysis was cross-sectional. We first investigated the probability of entering employment by using logit and probit models and by distinguishing between women who had never worked and those who had experienced at least one job episode. The regressors comprised variables that were either time-constant (like cohort and characteristics of the family of origin or of the partner when the woman get her first job after marriage) or varied with time, in which case they were measured on completion of full-time education (level of education and region of residence). Subsequently we also looked at the sectoral allocation of the first job, specifically the probability or otherwise of a woman starting her labour market career as a public employee. Here too we drew on cross-sectional data, logit and probit estimations, and on the same set of regressors used to estimate the probability of entering employment, with the addition of first job occupational score.

The following steps in the analysis concerned the timing of women's exit from and re-entry into paid work. Here we resorted to event-history methods; and in addition to the time-constant variables used in previous tables, we included time-varying covariates in order to capture whether and when changes over the life course in women's labour supply are linked to changes in other spheres: the family (marital and fertility history), the labour market (employment status, type of contract, part-time/full-time employment, occupational score, sector and firm size), and the economic environment (unemployment rate). In order to capture the partner's income effect we restricted our event-history analyses to married/cohabiting women, by opening the observational window one year before marriage, in line with Blossfeld and Drobnic (2001). A detailed description of the variables used is given in the Appendix, as noted.

Our theoretical framework combines the fundamental insights of mainstream labour supply theory with those from institutional theory. According to the former, crucial determinants of choices concerning one's working life are (non-own) income and (own) wages; also education is thought to primarily reflect rational decisions on how much to invest in one human's capital in order to increase future labour income. According to the latter, social norms as well as labour market and welfare institutions play an independent role, influencing choices directly and not only via prices and incomes. With specific reference to women, cultural role models, availability, costs and quality of welfare provisions, and variables that capture the segmentation of the labour market into sub-markets with different rules for entry, wage setting, career, and lay-offs, are all thought to strongly influence outcomes. We view institutional theory as enriching traditional economic theory rather than competing with it, provided that unrealistic assumptions about perfect competition, information and instrumental rationality are dropped.

Methodological issues in our estimations concern selection bias, possible endogeneity of some of the regressors, and the use of proxies for income variables. As regards sample selection bias we checked for the latter where relevant and feasible using Heckman's procedure. Concerning endogeneity, more than one explanatory variable may suffer from it, including education. However, we took what economists would consider a radical stand but is common practice among

sociologists, namely we did not explicitly model or control for it. The main reason is that modelling endogeneity in event history analysis is a very complex undertaking that was beyond the scope of our inquiry. An additional reason is that the risk of bias on account of endogeneity can be considerably reduced by including among the covariates most of the factors that may drive the correlation between endogenous covariates and the error term. Our ‘insurance policy’ in this respect is that ILFI data offer a very rich set of relevant covariates.<sup>9</sup>

Such richness, however, has a price, because ILFI does not collect retrospective data on earnings or other sources of income. Since information on earnings is important for our purposes, we resorted to proxies. With ILFI data the choice is between occupational class and occupational score and, although some have chosen to use the former (Bernardi and Nazio 2005), we opted for the latter because occupational score is a metric variable, unlike occupational class, and metric variables tend to perform better than categorical variables affording higher variance.<sup>10</sup> The ILFI occupational score ranks occupations according to their ‘desirability’ expressed by a representative sample of (Italian) individuals: desirability concerns monetary, in kind and immaterial rewards from employment in each occupation and is measured along an 93 grades scale (de Lillo and Schizzerotto 1985). The construction of the DESC (De Lillo-Schizzerotto) scale follows the logic of the well-know Hope-Goldthorpe occupational desirability scale, which is primarily influenced by job rewards and job requirements, that is, by earnings and necessary skills/qualifications (Goldthorpe and Hope 1974). Other authoritative contributions support the use of occupational score to proxy earnings. In their study of the statistical relation between earnings and occupational class, occupational score, occupational self-direction, and education, Schooler and Schoenbach (1994: 445) find that, for the USA, occupational score accounts for as much variance in personal job income as social class, and that adding education to occupational class and occupational score leaves the explained income variance practically unchanged. For Japan the results are similar but even more sharply in favour of occupational score (Ibid.: 447). According to Williams and Collins (1995) and Goldthorpe and McKnight (2005), moreover, occupational status is a better proxy for permanent earnings than one shot earnings data because income can be volatile in the short run and because age-earnings profiles tend to vary across occupations. This is especially important for our purposes since we are looking at choices over a lifetime. Last but not least, our analysis of earnings at the time of interview from the ILFI survey indicates that occupational score is a better proxy for earnings than education: despite a non negligible share of missing data, the correlation between occupational score and earnings (log transformed) for the subsample of female employees is 0.31, significant at more than 0.1 level and higher than the correlation between education and earnings (0.23).

In the case of men (as partners or fathers) we used occupational score to proxy the overall level of potential earnings – i.e. their overall earnings capacity – since very few men work part-time, and differences in hours reflect institutional factors (contractual hours) at least as much as individual choice (overtime). In the case of women, occupational score is likely to be a better proxy of hourly earnings because differences in hours worked are greater. In view of higher female discontinuity, moreover, we used occupational score in conjunction with work experience whenever relevant, in order to capture the actual hourly wage better. Since occupational score is defined only for people in employment, we could not resort to this proxy to estimate the decision on first entry into paid work. In this case we let (her) level of education capture overall potential returns to investment in schooling, monetary and non-monetary.

## 4.1 First entry into paid work

In the first model that we consider, namely the one on the decision to participate in the labour market for the first time, *education* was therefore meant to capture (overall) potential returns to schooling for women – those who will eventually enter, as well as those who stay out. In line with previous research (Schizzerotto *et al* 1995; Schizzerotto and Cobalti 1998; Bettio and Villa 2000, Rossetti and Tanda 2003), education proves to be one the most important factors involved. If we express in odds the results of the logit estimation reported in Tables 4, the odds of having ever worked are seven times higher for female graduates than for poorly educated females. Education has an even larger role in influencing the sectoral allocation of participating women: for highly educated women the odds of having the first job in the public sector are sixteen times higher than those for low-educated women (Table 5). Overall, our two sets of results on the role of education in the first labour market decisions confirm that, controlling for family background, cohort and region, highly educated Italian women are over represented not only in the workforce but also in public employment. Both sets of estimates reported refer to a binary LOGIT specification, but do not change significantly if a probit specification is used. Moreover, the second set is robust to controls on sample selection bias.<sup>11</sup>

Differences between *cohorts* prove to be only slightly significant for the probability of entering paid work, which supports our earlier contention that increasing female participation in Italy mainly reflects compositional factors. However, our three cohorts differ more in terms of the propensity to enter public employment. This propensity displays a significant decline in the 1980s and 1990s which especially affected the last cohort and may also have been due to progressively shrinking opportunities in this sector.

Other things being equal, women in the *South of Italy* have a lower propensity to start a labour-market career. We are not able exactly to identify the factors that this variable may have captured: they may range from fewer employment opportunities (especially in the private sector) to a cultural environment that shapes ‘preferences’ or exercises pressures in favour of traditional gender roles.

The importance of gender-role models is also evident in the effect attributable to mother’s work experience (*mother having ever worked*). Women whose mothers have worked are more likely to participate in the labour market, and they are also more likely to find jobs. An explanation commonly put forward for this finding is that growing up in a family where gender roles are less traditional (or at least in a family where the mother’s work other than housework has been part of everyday “normal” life) transmits positive attitudes toward women’s paid work, thus reinforcing the daughter’s determination to enter a labour-market career.

Once education has been controlled for, the *occupational score of the father or the husband* does not matter either for entry into work or for allocation to the public sector, once entered. By contrast, the higher the woman’s occupational score, the greater the chances that she will start as a public employee. As noted, occupational score of father or husband is used here as a proxy for their respective earnings capacities, i.e. for the largest component of family income. Our results therefore indicate that family income other than the woman’s own earnings does not have an independent, significant influence on her choice to first enter work, or on the employment sector at first entry. Despite the caution warranted by our use of a proxy for male earnings, this last result echoes and indeed reinforces one of the most common findings in the female labour supply literature, namely that his income tends to weigh less than her wage or education on her choices about work (e.g. Di Tommaso 1999; Addabbo 1999; Bratti 2003).<sup>12</sup>

**Table 4 Women's first entry into paid work: effects on the probability of having ever worked<sup>^</sup>**

<i>Baseline birth cohort: 1935-1944</i>	
- 1945-1954	0.24*
- 1955-1964	0.28**
<i>Baseline: Mother has never worked</i>	
-Mother has worked	0.69***
<i>Father's or partner's occupational score</i>	
	-0.001
<i>Baseline Region: North-West</i>	
- North-East	0.32
- Centre	-0.06
- South-Islands	-1.72***
<b><i>Baseline education: up to Lower Secondary</i></b>	
- <b>Upper Secondary</b>	<b>0.99***</b>
- <b>Tertiary</b>	<b>1.95***</b>
<i>Constant</i>	1.72***
LOG-LIKELIHOOD	-931.7
NUMBER OF WOMEN	2378
<i>Notes: ^ Robust Standard Errors; * p&lt; .10; ** p&lt; .05 ***p&lt; .01</i>	
<i>Source: ILFI, 1997</i>	

**Table 5: Women's first job: effects on the probability of starting as a public employee<sup>^</sup>**

<i>Baseline birth cohort: 1935-1944</i>	
- 1945-1954	-0.06
- 1955-1964	-0.60***
<i>Duration 1<sup>st</sup> job search</i>	0.03***
<i>Baseline: Mother has never worked</i>	
-Mother has worked	-0.16
<i>Father's or partner's occupational score</i>	
	0.005
<i>Woman's occupational score</i>	
	0.01*
<i>Baseline Region: North-West</i>	
- North-East	0.05
- Centre	0.24
- South-Islands	0.14
<b><i>Baseline education: up to Lower Secondary</i></b>	
- <b>Upper Secondary</b>	<b>2.33***</b>
- <b>Tertiary</b>	<b>3.22***</b>
<i>Constant</i>	-2.76***
LOG-LIKELIHOOD	-704.6
NUMBER OF WOMEN	1783
<i>Notes: ^ Robust Standard Errors ; * p&lt; .10; ** p&lt; .05 ***p&lt; .01</i>	
<i>Source: ILFI, 1997</i>	



## 4.2 First transition out of paid work

Our evidence on transitions out of paid work is summarized by Table 6, where four discrete event-history models for married women's first labour market exit are reported. We restricted our investigation to married women who had experienced only one marriage or cohabitation over the observed life course, so that we could use the partner's occupational score to proxy family income in addition to her own earnings. Since divorce is still relatively low and employment interruptions overwhelmingly concern married women, and are the main policy targets in this respect, this is not a serious restriction.

The baseline for all the four models includes the same set of family, individual and contextual variables, the difference between models being in the additional covariates. Model 1 estimates the effect of education, controlling for employment experience ("duration in current status" plus "previous time spent in employment"<sup>13</sup>) but not for other labour market conditions, including earnings. Model 2 adds women's own occupational score, which, in combination with employment experience, proxies her wage. Model 3 further adds sectoral employment allocation (self-employment, public sector and private sector), and Model 4 completes the set of covariates by adding industrial branch (working in agriculture versus elsewhere), type of contract (permanent, fixed term or without regular contract) and part-time vs full-time status. As mentioned earlier, the purpose of using these nested models is to test whether and to what extent being well educated and working in the public sector retain a significant impact when the labour market position is controlled for with progressive degree of accuracy. Put otherwise: are highly-educated women less likely to have discontinuous work histories just because education gives easier access to better paid jobs, or do they tend to remain in employment for other reasons as well? And which of these additional reasons matter more?

Two key findings in this respect are that (i) the coefficient for education shrinks progressively from Model 1 to 4, but a statistically significant and negative effect on married women's risk of exiting paid work remains after controlling for own wage (Model 2), for wage and employment conditions in the public sector (Model 3) and for other job characteristics (Model 4); (ii) working in the public sector retains significance after controlling for wage and all other employment conditions (Models 3 and 4). We take these findings to indicate that education influences employment continuity by favouring access to the protective public sector environment and by adding legitimacy to the choice of work

We now look at the public sector story in greater detail. The fact that education loses part of its influence in favour of public sector employment (Model 3 versus 2) suggests that part of the reason why educated women are more likely to have continuous careers is that they work in the public sector, where they enjoy working conditions that can be more easily reconciled with motherhood. As noted earlier (section 3), one such condition is security of employment coupled with own time flexibility. This is especially important in the Italian institutional context where re-entry into the labour market has been (and still is) more problematic than, say, in the UK, because of the known rigidities of labour market regulations.

At the same time, the fact that education loses strength when the sector of employment is added (model 3) but retains significance when extra labour market variables are introduced (model 4) suggests that something more than wage and employment conditions is needed to account for this 'residual' effect. One could argue that *this residual captures preferences, i.e. highly educated women may have acquired stronger work attitudes ("taste for work") through education.*<sup>14</sup> The difference with our argument here is subtle: namely, we contend that education affects behaviour not only by changing preferences but also by adding legitimacy to such preferences and increasing women's bargaining power. Thus, in labour market settings where re-entry is difficult, well

educated women will be more adverse to exit not only because they earn more and they like working more but also because, as they feel especially entitled to work, the “psychological” cost of permanent exclusion is higher. This legitimising effect of education is likely to play a larger role where traditional gender norms are stronger (as in Southern Italy: Brown and Scott 1998). In these contexts education can act as a *passpartout* for acceptance of a “modern role” for women, helping them circumvent traditional stereotypes and let their preferences prevail.<sup>15</sup>

An additional finding to be noted is that the part-time coefficient is not significant. Here we are interested in part-time from an institutional rather than a choice perspective, i.e. as an opportunity granted by employers which women may exploit to enhance continuity of employment. We experimented with two variables, respectively self-classification into part-time or full-time worker, and a dummy identifying part-timers with all those reporting less than 26 hours of work per week (EU Labour Force Sample Definition). Both variables reflect supply factors (choice of hours) and institutional and demand factors (availability of part-time contracts), although, arguably, self-classification into part-time/full-time is more likely to reflect contractual conditions. The results in Table 6 refer to self-classification between part-time/full-time worker, but neither variable proved to be significant. Although caution is necessary in view of the fact that we did not adequately isolate the institutional component, this result indicates that one should not overemphasize labour market exits on account of insufficient opportunities for part-time jobs, partly because many female public sector employees already enjoy short and somewhat flexible hours (see also Pescarolo 2007).

The final result worth noting concerns gender roles. Having (had) a working mother does not differentiate the chances of exit, while, as we saw, it makes a difference in the first entry into paid work. As argued by Solera (2005), this follows from the characteristics of the labour market and the welfare system in Italy, and is best understood by comparing Italy with the UK. In the Italian context where (i) employment opportunities are uneven and locally very poor (South), (ii) exit from the labour market is potentially costly because of the difficulties of re-entering, and (iii) the option of informal childcare from family members is still widespread, values and social norms do not have a large influence on work histories over the family course. Difficult re-entry, in particular, implies that crucial decisions are taken before entry into the labour market. Thus values and social norms – including those that a working mother can transmit - are more likely to affect decisions regarding education, perseverance in job search (especially in the South) or the process of family formation than are subsequent work history patterns. By contrast, a liberal welfare regime like Britain’s, with its relatively poor welfare provisions and weaker family networks, pushes more women out of paid work while providing greater opportunities to go back thanks to a de-regulated labour market. In the British context, therefore, sex-role preferences and work orientations are stronger discriminants for work histories: crucial decisions about entry into or exit from the labour market are not anticipated and are taken when they can no longer be postponed, each of them being thus more susceptible to influence by values.

**Table 6: Estimated rate of married-cohabiting women's first transition from paid work to housework (Discrete time hazard rate models)**

	Model 1	Model 2	Model 3	Model 4
<i>Baseline birth cohort: 1935-1944</i>				
- 1945-1954	-0.09	-0.08	-0.08	-0.19
- 1955-1964	-0.34**	-0.33**	-0.41**	-0.46***
<i>Age</i>	-0.25***	-0.23***	-0.20***	-0.19***
<i>Age squared</i>	0.003***	0.003***	0.003***	0.003**
<i>Previous time spent in employment</i>	0.003***	0.003***	0.003***	0.003***
<i>Duration in current status</i>	-0.004***	-0.004***	-0.004***	-0.004***
<i>Partner's occupational score</i>	0.005*	0.007**	0.008***	0.008**
<i>Baseline age children: no children</i>				
- pregnant	1.28***	1.26***	1.23***	1.24***
- youngest child aged 0-3	0.51***	0.51***	0.55***	0.47***
- youngest child aged 4+	-0.10	-0.12	-0.09	-0.2
<i>Number of children</i>	-0.01	-0.03	-0.03	0.05
<i>Baseline: Mother has never worked</i>				
-Mother has worked	0.07	0.07	0.08	0.10
<i>Yearly regional unemployment rate</i>	0.05***	0.05***	0.05***	0.06***
<i>Baseline Region: North-West</i>				
- North-East	0.33***	0.36***	0.38***	0.39***
- Centre	-0.21*	-0.18	-0.11	-0.13
- South-Islands	-0.37*	-0.40*	-0.41	-0.34
<b><i>Baseline education: up to Lower Secondary</i></b>				
- Upper Secondary	<b>-1.03***</b>	<b>-0.80***</b>	<b>-0.47***</b>	<b>-0.43**</b>
- Tertiary	<b>-2.13***</b>	<b>-1.76***</b>	<b>-1.21***</b>	<b>-0.99**</b>
<i>Occupational score</i>				
		-0.01***	-0.01***	-0.02***
<i>Baseline employee status and firm size:</i>				
<i>self-employed</i>				
- public employee			-0.90***	-1.27***
- private employee, firm size 1-14			0.17	-0.17
- private employee, firm size 15+			0.07	-0.20
<i>Baseline agricultural sector: no</i>				
- yes				-1.23***
<i>Baseline time: full-time</i>				
- part-time				0.02
<i>Baseline type of contract: permanent contract</i>				
- employee with fixed-term contract				0.12
- employee without contract				0.81***
<i>Constant</i>	-1.65*	-1.68*	-2.24**	-2.01**
LOG-LIKELIHOOD	-3205.1	-3196.9	-3168.5	-3087.4
NUMBER OF WOMAN-MONTHS	206814	206814	206814	206814
NUMBER OF TRANSITIONS	492	492	492	492

Notes: STATA estimates using option « cluster »

\* p< .10; \*\* p< .05 \*\*\*p< .01

Source: ILFI, 1997

### 4.3 First transition back into paid work

The last step in our analysis was estimation of the probability of re-entering paid work. The analysis was restricted to married, potential re-entrants, i.e. all married women who had previously exited the labour force. The results have been checked for sample selection, of which we found no evidence.<sup>16</sup>

**Table 7: Estimated rate of married-cohabiting women's first transition from housework to paid work (Discrete time hazard rate models)**

	Model 1	Model 2
<i>Baseline birth cohort: 1935-1944</i>		
- 1945-1954	0.48**	0.50**
- 1955-1964	0.23	0.23
<i>Age</i>	-0.16	-0.19
<i>Agesq</i>	0.001	0.001
<i>Duration in current status</i>	-0.004*	-0.002
<i>Previous time spent in employment</i>	0.001	0.001
<i>Partner's occupational score</i>	-0.01***	-0.02***
<i>Baseline age children: no children</i>		
- pregnant	-1.25***	-1.21**
- youngest child aged 0-3	-0.62*	-0.57
- youngest child aged 4+	-0.05	-0.001
<i>Number of children</i>	0.42***	0.43***
<i>Baseline: mother did not work</i>		
-mother worked	0.06	0.03
<i>Yearly Unemployment Rate</i>	-0.03	-0.03
<i>Baseline Region: North-West</i>		
- North-East	0.06	0.09
- Centre	0.61***	0.60***
- South-Islands	-0.15	-0.15
<b><i>Level of education<sup>a</sup></i></b>	<b>0.14</b>	<b>0.02</b>
<i>Occupational score before exiting</i>		0.02***
Constant	-2.49	-2.27
LOG-LIKELIHOOD	-1008.1	-1004.8
NUMBER OF WOMAN-MONTHS	66152	66152
NUMBER OF TRANSITIONS	156	156

Notes: \* p< .10; \*\* p< .05 \*\*\*p< .01

<sup>a</sup> education is introduced here as a 4-level ordinal variable in order to reduce the parameters to be estimated .

Source: ILFI, 1997

Our previous results indicate that, in Italy, education differentiates women's chances of starting to work, entering the public sector, and exiting employment during family formation. According to the evidence summarized in Table 7, however, its influence on re-entry disappears. While this latter finding may not appear in line with the previous ones, they are all part of the same story, namely self-selection into employment and non-employment. Italian women who exit the labour market or stay out of it comprise a dominant segment of poorly educated women, and a tiny segment of educated females with strong preferences for housework (and sufficient family income to indulge their preferences). Lack of statistical variance within the dominant segment and unusually strong

preferences in the second segment weaken the influence of education. In other words, precisely because education plays such a major role in enhancing employment continuity, it is bound to be of little importance in favouring re-entry.

Other factors prove to be important (Table 7): own earnings expectations (proxied by *occupational score before exiting*), the partner's earnings, the number of children, and pregnancy. The higher the occupational status of women before exiting, the higher their chances of re-entering, no matter how long their previous work experience has been. Also, the higher the occupational status of husbands, the less likely women are to re-enter paid work - a clear income effect. Finally, becoming pregnant and having to care for young children decreases women's chances of re-entry, while having more children, and thus needing more money, has the opposite effect. All these findings suggest that Italian women who have exited the labour market are a very selective group who are induced to re-enter primarily by the need to earn more. These findings are not entirely new and can easily be interpreted in light of prevailing economic or sociological theories.

A relatively unexpected finding concerns regional differentiation. Women from the Northeast are more likely to exit employment than are women from the Northwest, just as likely as those in Central Italy, and slightly less likely than Southern women (Table 6 above). This regional pattern partly hides a selection effect. Compared to the rest of Italy, fewer women work in the South, but those who do so are in sectors where continuity of work is less costly – including the public sector: when a dummy is introduced for the public and the agricultural sectors, the coefficient of the dummy for the South of Italy loses significance. In contrast, the North-South divide does not matter for re-entry, while it is women from Central Italy that are more likely to restart (Table 7). One possible reason for this latter result is the large number of “female intensive” family firms in Central Italy, which tend to exhibit high turnover, making it easier to enter and exit employment.

## 5. Conclusions

Cross-sectional evidence on the role of education shows that low-educated Italian women have one of the lowest rates of participation in Europe, and their gap vis à vis the highly educated is still very wide. Moreover, educated Italian women are over-represented in the public sector. Education and the public/private sector divide are therefore especially important in differentiating Italian women's employment decisions and outcomes over the life course. The existing research on the role of education is biased in favour of easily quantifiable effects. With few exceptions, studies on the matter either conceptualise and measure monetary returns to education, with the focus on current wages rather than on annual and lifetime incomes, or they conceive education as a factor contributing to one or other labour market transition – entry, career, exit, re-entry - without adopting a comprehensive, life-long perspective.

In this paper we have used the first wave of ILFI data and applied multivariate analysis techniques in order empirically to investigate the extent to which education and public employment concur in shaping three crucial transitions in the lifetime employment pattern, namely entry into first job, exit to housework or care work, and re-entry. Our overall results confirm that, besides exerting a strong influence on the probability of starting a labour market career, education increases the chances of pursuing this career within the public sector and of experiencing employment continuity. Employment continuity is enhanced by adding legitimacy to the choice of work and by favouring access to the protective public sector environment. This is what we have termed returns in ‘legitimacy to work’ and in ‘reconciliation’. Despite our use of proxies for earnings, our evidence is sufficiently solid to imply that these returns to education also include a non-monetary component.

Precisely because education plays such a major role in employment continuity, it loses this role when re-entry to employment occurs. Italian women who stay outside or exit the labour market tend, in fact, to be uniformly poorly educated, so that education plays a very limited role in their labour market outcomes.

Explanations of these findings must refer to the Italian variety of welfare regime. Until very recently public child-care support and financial transfers aimed at reducing the cost of children were rather inadequate in Italy, while educational credentials are still crucial in securing access and advancement in occupations where period earnings capacity may be limited but reconciliation entails lower physical and psychological costs as well as lower forgone earnings. These occupations are found primarily in the public sector, and the conditions that they offer have been used as a surrogate for a more universal package of reconciliation policies. Favourable conditions include extensive and effective rights to parental leave as well as to short/temporary leaves of absence, the widespread use of educational credentials to guarantee access to jobs at all levels, widespread use of seniority for career advancement, and relatively short working hours. The difficulties in re-entering the Italian labour market makes such favourable conditions all the more attractive. Our evidence that education favours access to these occupations can thus be read as evidence that education also represents investment in reconciliation.

Moreover, traditional gender-role norms still persist in Italy, although this is more true in some parts of the country than in others. Women with stronger preferences for paid work and professional career can use education to overcome traditional prescriptions and to legitimise attachment to the labour market especially during family formation. Our evidence that education enhances continuity *per se*, as well as via securing public employment, indicates that, for some women, investment in education pays off in terms of greater legitimacy to work as well.

The paper has been analysis-oriented rather than policy-oriented, but an overall policy consideration is in order. In the Italian context, public sector employment has served as a surrogate reconciliation policy for a privileged minority of women – however large and highly qualified. Arguably, the gains in fertility that public sector employment conditions have yielded for highly educated are too limited to increase fertility levels in the country substantially, and they may therefore not justify the loss in equity implied by the differential treatment of public and private female employees. (Female) public employment, therefore, should no longer be used as a surrogate of proper reconciliation policies, and must be replaced by more universal measures in order to ensure across-the-board increases in fertility, as well as greater incentives to work for the less educated supplies. Since more women in employment and more children improve (actual or future) fiscal revenue, investment in universal measures of reconciliation also makes macroeconomic sense.

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## Appendix: data and variables

### Data

The empirical analyses draw on the Italian Household Longitudinal Survey (ILFI) started in 1997 by the University of Trento, Istituto Trentino di Cultura and ISTAT (Italian Office of National Statistics) on a national representative sample of 9,770 individuals belonging to 4,714 households throughout Italy. The survey combines a retrospective with a prospective panel design and uses standardised interviews that include questions about the life courses of respondents across a number of different areas (such as education, family events, work and job histories). Here we use the first wave, although the other waves are also now available (1999, 2001, 2003, 2005).

The focus of this paper is on women born between 1935 and 1954, for whom we could observe a relatively large span of their life courses. Table A1 shows the absolute numbers of observations on which the analyses reported were based, also taking into consideration missing values and restrictions adopted so that we could test all the effects in which we were interested.

**Table A.1: Sample sizes by cohort and transition**

	1 <sup>st</sup> cohort 1935-44	2 <sup>nd</sup> cohort 1945-54	3 <sup>rd</sup> cohort 1955-64	All Cohorts
All women	804	990	1020	2814
Women with missing info on employment and family career	35	37	51	123
Never-working women	179	169	161	509
Never-married women	44	57	105	206
Women with only one marriage-cohabitation experience	728	881	870	2479
<i>For women with only one marriage-cohabitation experience</i>				
1st transition out (observational window starts one year before marriage/cohabitation)				
- n. of transitions	150	195	147	492
- n. of woman-months	57820	87200	61794	206814
1st transition back				
- n. of transitions	43	76	37	156
- n. of woman-months	23886	27590	15676	66152

Source: ILFI, 1997

### Variables

The dependent variable was constructed from the variable “employment status”, which specifies three categories: “employment”, “housework”, “other”. A woman was defined “employed” when she was working, when she was on maternity leave or other forms of paid or unpaid leave, and when she was on a benefits scheme called “Cassa integrazione guadagni ordinaria” (Wages Supplementation Fund) that preserves employment status during periods of temporary lay-off. She was defined as “housewife” when she was entirely out of the labour market and devoted herself to unpaid domestic and care work on a full-time basis. “Other” includes the following statuses: unemployed (including those on “Cassa integrazione guadagni straordinaria” and on “mobility list”), retired, full-time student, unable to work.

The estimates reported in Tables 4 and 5 refer to cross-sectional logistic regressions where the dependent variable is, respectively, the log-odds of the probability of having experienced at least a job episode over the observed life course or, if having done so, the probability of having had the first job in the public sector. The

estimates in Tables 6 and 7 refer to discrete-time hazard rate models with the logistic link function. To be able to fit logit regressions, we transformed the original data from the ILFI into a “person-month file”, where for each person there are as many observations as the number of months elapsed from first job up to age 45 for the first and second cohort, and up to age 33-42 for the last cohort. Thus, the unit of analysis is the woman-month and the dependent variable is *the log-odds of the monthly conditional probability of making the transition over the observed life course*. Hence, when studying the transition out from employment, the dependent variable is the conditional probability of leaving employment within a particular month, given that the person has worked until the month before. For the converse transition, the dependent variable is the conditional probability of re-entering paid work, given the fact that the person has been a housewife until that time. Since we are not interested in transitions involving ‘other’ statuses, e.g. student, the months spent in these statuses are censored.

*The independent variables* are illustrated in tables A2 and A3.

**Table A.2 Definition of the independent variables of cross-sectional analyses**

		Mean	s.d
<i>Birth cohort</i>		%	
- 1st	Reference category: woman was born between 1935-1944	28	
- 2 <sup>nd</sup>	Dummy=1 if woman was born between 1945 and 1954	35	
- 3 <sup>rd</sup>	Dummy=1 if woman was born between 1955 and 1964	37	
<i>Mother’s work experience</i>	Dummy=1 if woman has (had) a mother with at least one job episode	43	
<i>Duration 1<sup>st</sup> job search (for those who have started to work)</i>	N. months spent looking for first job	5.1	11.2
<i>Father’s or partner’s occupational score</i>	De Lillo-Schizzerotto occupational score: <ul style="list-style-type: none"> <li>• of the father (when the daughter was 14 years old) for never-married women or women that started to work before marriage</li> <li>• of the partner (at first job) for married women who have never started to work or have done so after marriage</li> </ul>	33.8	17.5
<i>Region (at end of fulltime education)</i>		%	
- North-West	Reference category: woman lives in north-west Italy	26	
- North-East	Dummy=1 if woman lives in north-east Italy	17	
- Centre	Dummy=1 if woman lives in central Italy	17	
- South-Islands	Dummy=1 if woman lives in the South or Islands	40	
<i>Level of Education (at end of fulltime education)</i>		%	
- Up to Lower Secondary	Reference category: woman has “licenza scuola elementare o media”	68	
- Upper Secondary	Dummy=1 if woman has “diploma scuola secondaria superiore”	24	
- Tertiary	Dummy=1 if woman is “laureata”	8	
<i>Woman’s occupational score (at first job)</i>	De Lillo-Schizzerotto occupational score (table 5)	32.8	17.6

**Table A.3 Definition of the independent variables of longitudinal analyses**

		Time-constant	Mean	s.d
<i>Birth cohort</i>			%	
- 1st	Reference category: woman was born between 1935-1944		27	
- 2 <sup>nd</sup>	Dummy=1 if woman was born between 1945 and 1954		36	
- 3 <sup>rd</sup>	Dummy=1 if woman was born between 1955 and 1964		37	
<i>Mother's work experience</i>	Dummy=1 if woman has (had) a mother with at least one job episode		46	
<i>Partner's occupational score (at first job)</i>	De Lillo-Schizzerotto occupational score		33.2	20.8
<i>Woman's occupational score (before exiting)</i>	De Lillo-Schizzerotto occupational score (at last job before making the first transition from paid work to housework -in table 7)		28.9	14.8
<i>Previous time spent in employment</i>	Time (in months) spent in employment: - up to 1 year before marriage/cohab (table 6) - before exiting (table 7)		58.8 117.3	57.4 74
<i>Region (at end of fulltime education)</i>			%	
- North-West	Reference category: woman lives in north-west Italy		30	
- North-East	Dummy=1 if woman lives in north-east Italy		18	
- Centre	Dummy=1 if woman lives in central Italy		20	
- South-Islands	Dummy=1 if woman lives in the South or Islands		32	
		Time-varying <sup>a</sup>		
<i>Age</i>	Woman's age, increasing monthly		36.8	8.3
<i>Duration in current status</i>	Women's time spent, increasing monthly - in employment since 1 year before marr/cohab (table 6) - in housework, having exited employment (table 7),		136.2 135.6	95.1 87.2
<i>Age children</i>			%	
- no children	Reference category: woman is childless and not pregnant		19	
- pregnant	Dummy=1 in the months when woman is pregnant		9	
- youngest child aged 0-3	Dummy=1 when the woman has at least one child aged under 3		14	
- youngest child aged 4+	Dummy=1 when the woman's youngest child is aged over 3.		58	
<i>Number of children</i>	Number of children, increasing after each birth		1.3	1.1
<i>Yearly regional unemployment rate</i>	Unemployment rate in North-Centre and South of Italy, on yearly basis		12.3	7.7
<i>Level of Education</i>			%	
- Up to Lower Secondary	Reference category: woman has "licenza scuola elementare o media"		64	
- Upper Secondary	Dummy=1 if woman has "diploma scuola secondaria superiore"		27	
- Tertiary	Dummy=1 if woman is "laureata"		9	
<i>Occupational score</i>	De Lillo-Schizzerotto occupational score, changing at any change of job		37.1	18.6

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<i>Employee status and firm size</i>		%
- self-employed	Reference category: in the months when woman is self-employed	20
- public employee	Dummy=1 in the months when woman works in the public sector	37
- private employee, firm size 1-14	Dummy=1 in the months when woman works in a small private firm	18
- private employee, firm size 15+	Dummy=1 in the months when woman works in a large private firm	25
<i>Agricultural sector</i>	Dummy=1 in the months when woman works in agriculture	6
<i>Time:</i>		%
- full-time	Reference category: in the months when woman works full-time	90
- part-time	Dummy=1 in the months when woman works part-time (self-classification)	10
<i>Type of contract:</i>		%
- permanent contract	Reference category: in the months when woman has a permanent contract	84
- employee with fixed-term contract	Dummy=1 in the months when woman has a non permanent contract	9
- employee without contract	Dummy=1 in the months when woman works without contract	7

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Notes: <sup>a</sup> The descriptive statistics for the time-varying variables refer to the values at the time of interview (1997) or at the time of first exiting paid work

## Notes

<sup>1</sup> For the EU fifteen group of countries, the Pearson correlation coefficient between the overall female employment rate and the employment rate gap for women at Isced level 1 compared to level 3 was 60% in 2004, with statistical significance ranging from 5 to 1% for two tails and one tail test, respectively. The Rank correlation coefficient (Spearman) yields very similar results (Labour Force Survey: Eurostat data)

<sup>2</sup> The Pearson coefficient between the share of women in public sector employment and the overall female employment rate was 64.3 in 2000 for EU15 countries (Eurostat: Labour Force Sample survey data).

<sup>3</sup> Activity rate figures are drawn from the European Labour Force Survey. The figures on the distribution of working women between the public and the private sectors are drawn from the 2000 Bank of Italy Household Survey or the 8<sup>th</sup> wave of the European Household Survey (2001).

<sup>4</sup> More recent waves are available, but we opted in favour of the first one, because 1997 marks a divide between decades of relatively stable labour market regulation and a period of reforms, some of them radical, which are beginning to modify people's behaviour. Since these changes are still ongoing, we chose to give a comprehensive account of work histories for the vast majority of women who faced a rather clear set of opportunities and constraints, in which education and the public sector played a very important role. While, in our view, this account fills a gap in the literature, we leave the task of examining recent changes to future research.

<sup>5</sup> Choosing 35 as our upper observational age limit for these charts may have led to underestimation of transitions among women in the younger cohorts, given the steady rise in the age of first child. However, we verified that this was the case only for highly educated women in the youngest cohort. The median age at first birth for graduates has risen from between 27.4 and 27.9 among first and second cohorts female graduates to 30 years among those from the third cohort.

<sup>6</sup> The same trend is observable if one uses prevalent sector over the observed life course, instead of sector of first job, and it is stronger in the South than in the rest of Italy. Note that the higher fertility of low-educated private sector employees largely reflects the behaviour of women working in the agriculture sector or in small family firms.

<sup>7</sup> See, for example Nazio and MacInnes (forthcoming) on the increase in what they call 'time stress' associated with child bearing and child rearing under certain working conditions. Note that, while "own time flexibility" is generally more favourable in the public sector, much depends on the job line. Thus nurses may be able to work shorter hours but are asked to take night shifts. University teachers, on the other hand, may enjoy high working time flexibility but long hours may be required to ensure an adequate stream of publications.

<sup>8</sup> This does not rule out that paid work may have a "non economic" dimension for low-educated women as well. As documented by historical studies (Groppi 1996, Scott 1991), for low-educated, low-class women the decision to work has been driven by income needs rather than the need to legitimise non-traditional gender roles and to gain personal emancipation. However, the opportunity to earn an independent wage has offered these women new forms of identity as well as greater bargaining power within the family.

<sup>9</sup> In particular, we were able to use information to partially control for individual heterogeneity. Like most retrospective longitudinal surveys, ILFI does not measure women's beliefs, expectations, and attitudes. However, information on the working status of the mother can be used to proxy women's attitudes towards work. Previous studies using this variable find that it has a positive significant effect on female participation (Bernardi 1999), and so does ours. At the same time the role that this variable can play should not be overemphasized. Attitudes are the outcomes of a complex process of primary and secondary socialisation and may not only lag but also lead changes in women's behaviour. They are structured by cultural models, but also by existing options. Hence, in our models some heterogeneity in "tastes" is likely to remain unobserved.

<sup>10</sup> However, we also ran models with a 7 or 5 class-schema variable instead of the occupational score and we obtained nearly the same results for all our important covariates.

<sup>11</sup> We checked for the presence of sample selection by running a Heckman's bivariate probit model and by using mother's work experience as selection variable. We got no evidence of sample selection ( $\rho = -0.21$ , with  $P = 0.58$ ). Probit estimates, with and without correction, are not reported but are available on request

<sup>12</sup> The positive effect of the duration of first job search is in line with the literature, which shows that access to public jobs entails a longer search (Boeri and Pagani 1998; Pagani 2003).

<sup>13</sup> Here both duration in origin state (women's time spent in employment since 1 year before marriage/cohabitation) and previous labour market experience (time spent in employment up to 1 year before marriage/cohabitation) are introduced in a linear form. The same is true for the transition back into paid work. The assumption is the simplest one: accumulation or depreciation of human capital increases as time passes, regardless of the type of job one has or had. We have also tried other functional forms, but, since estimates of our key variables (education, occupational score, public sector, and other job characteristics) do not change, we have opted for the most parsimonious solution.

<sup>14</sup> The residual could also capture differences in abilities to act upon preferences and overcome macro constraints. However, the institutional setting, including labour market rules and regulations, is the same for all the women in our sample. Moreover as we control for income and region, we are indirectly controlling for systematic differences in public and private child care resources. The same is true for different formal or informal maternity protections, which

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are captured by sector, firm size and type of contract. Finally the regional unemployment rate is meant to control for differences in local employment perspectives, at least in part, while differences in perceptions and evaluation of the risks and costs of permanent exclusion from paid work, once exited, can be considered as being “psychological” or “attitudinal”. With all these controls we feel that it is justified to view the residual effect of education as reflecting legitimacy of non-traditional gender roles or preferences.

<sup>15</sup> In order to check whether the estimated residual effect of education is different from the North to the South of Italy, we added to model 3 interaction dummies for education and region. While education and region retained individual significance, the coefficients of the interaction dummies proved not to be significant, indicating that regional differences in what we have identified as legitimacy effect are not particularly important. Note that using interaction dummies instead of running separate estimations for the North and the South has the advantage of keeping the sample sufficiently large.

<sup>16</sup> To control for sample selection we estimated a bivariate probit in lieu of EHA and ran the usual Heckman procedure (maximum likelihood) using as selection variable either mother ever worked or occupational score before interrupting (both should influence the choice to interrupt more than that of re-entry). In both cases  $\rho$  was not significant (around – 0.12, with  $P=0.40$ )