The effect of parental leave policy reform on labour market outcomes and births in Japan

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Abstract

This analysis focuses on the effect of parental leave reform on labour market outcomes and births. The Japanese government in 2007 increased the cash stipend for women returning to work after childbirth to 50% of their previous earnings. Using the Keio Household Panel Survey data for 2004–2010, I conclude that this reform had no impact on the return of women to work or on female fertility, because of inadequate publicity and, more importantly, because the compensation was thought to be too small. This study suggests that drastic reform is required to give women an incentive to resume paid labour.

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1. Background and Hypothesis

This study assesses the impact of the Japanese parental leave policy reform on the decisions of women to return to work after childbearing and on their fertility rates. Seeking to promote the balance of work and life, this policy has been changed quite often since 2000. By 2017, it strives to increase 'the female's return to work rate after first childbearing to 55%' and 'the usage of parental leave by women to 80% and by men to 10%' . According to the Ministry of Health, Labour and Welfare (2007), 90.6% of women and 1.2% of men took parental leave in 2007; however, only 18.5% of the former returned to work after giving birth for the first time (Population and Social Security Research 2003). Thus, the return to work rate has remained unchanged for thirty years. In this situation, it is crucial to assess the real impact of the parental leave policy.

Several studies have estimated the effect of this policy in Japan. Abe (2005), using the JPSC 1993–2003, shows that women who work in large-scale companies and employees with high seniority are more likely to take parental leaves. Higuchi (1994), Suruga and Cho (2003) and Shigeno and Matsuura (2003) indicate that employees who work at a company with parental leave have higher marriage and fertility rates than employees who do not enjoy this benefit. Sato and Ma (2008), using KHPS 2004 data, reveal that women who are employed by firms with parental leave systems have a higher return to work rate than those who are employed by companies without them. Thus, existing literature, whatever its merits, has not estimated the policy effect of recent reforms.

The Japanese parental leave incentive program includes a cash stipend, paid during the leave, and another, paid upon return to work. The cash stipend amount, which is paid by employment insurance, is determined on the basis of a woman's average earnings for the six months before the birth of her child. In order to encourage a reengagement in the labour force, the cash stipend received by women after returning to work increased from 10% to 20% in 2007; therefore, in total, such women receive 50% of their previous earnings during and after leaves of absence. Women who remain at home only receive the cash stipend during their leaves, which equals 30% of their previous earnings. The policy changes of the last several years allow me to assess the influence of the cash stipend on the return to work decision. Table 1 is the summary of parental policy reform in Japan. In 2010, the government suppressed the return to work stipend and augmented the leave stipend to 50% of former earnings, thus perhaps increasing the disincentive of women to resume paid labour. If this is the case, the government has to alter this policy change.

[Insert table 1 here]

Whether pregnant women take a maternity/parental leave and return to work is determined by their wages (1) without such a leave, (2) with a leave and a return to work, and (3) in new jobs, found after quitting their present ones and after childbearing. The length of the leave also determines earnings after motherhood. Highly skilled high paid women confront a greater opportunity cost in terminating employment; therefore, they are more likely to reassume their previous jobs after giving birth or to avoid becoming pregnant.

After resuming work, a woman must remain at her post for six months before receiving a cash stipend. The 2007 reform may entice women re-enter the labour force, since it reduces the opportunity cost to take a leave and have a baby. The present empirical analysis draws on new Japanese panel data, the Keio University Household Panel Survey (KHPS), which includes detailed information on employment and birth histories. In order to analyse the policy effect, I use the difference in difference estimate (DID); that is, a comparison of the outcome of the people who qualify for the benefit (treatment group) to the outcome of those who do not qualify (control group).

The estimated model is as follows:

$$y_{it} = \beta_0 + \beta_1 \text{treat}_{it} + \beta_2 \text{after}_{it} + \beta_3 \text{treat}_{it} \cdot \text{after}_{it} + e_{it}$$

where, treat = 1 if in the treatment group, treat = 0 if in the control group. After = 1 if a birth occurs after the policy reform, and after = 0 if a birth occurs before the reform.

The parental leave law indicates that persons with (1) less than one year of continuous employment, (2) a contract that will terminate in less than a year, and (3) work of less than two days per week (does not apply the employment insurance) are ineligible. Not all those covered by the above three conditions are qualified to receive the cash stipend, unless granted this right under a collective agreement; thus, they are in the control group. The two groups are identified in Table 2.

The issue of whether birth dates have been influenced by the anticipated policy reform is crucial. According to information from the Health, Labour and Welfare Ministry, the 2007 reform was discussed until right before the day of its passage on 29 January 2007. Since the parliament discussion was lengthy, the government enforced the law right after passage, an action that is quite unusual in Japan, where laws are normally enforced six months to one year after parliamentary approval. For this reason, women could not anticipate the day of the reform and were thus unable to control the timing of births. However, the possibility exists that some women could have influenced the timing of births. To assess this likelihood, I have examined the number of children born from April 2005 to March 2007 and found no evidence of a spike in births during

this period (Figure1).

The identification of the treatment group and control group is described in the Table 2. In the estimate, I define the length of the leave as one year, since the number of women who could take one and a half year of leave is limited, given that they must fulfil special conditions, such as not having a childcare centre for their children. According to the Ministry of Health, Labour and Welfare (2005) only 16% of women took leaves of more than twelve months. Also, longer work stoppages make it difficult for women reoccupy their previous positions; consequently, most women absent themselves from employment for just a year. Therefore, the definition is appropriate.[2] Figure2 shows the durations of leaves for women who gave birth from April 2005 to March 2007. It reveals that not many women took more than one year off from work; thus, these findings confirm the suppositions used for my estimate.

[Insert figure 1 here]

[Insert table 2 here]

2. Data and Empirical Strategy

For data, I use the Keio Household Panel Survey (KHPS) of Keio University, Japan. The KHPS surveyed about 4000 people, aged 20 to 69, from 2004 to 2010. A questionnaire was sent out in January of each year so that the answers contained in it relate to the situation of the previous year. For this reason, I describe the data of the 2004 panel as 2003 and so forth. In the analysis below, I limit my attention to women who were 20 to 49 years old when they gave birth. I also include data on wives in order to further refine the sample. The dependent variable is formed from the question, 'Do you have the same job as in the previous year?' I coded '1' if a respondent answered that she worked at the same company and '0' if she answered that she changed her job or resigned. Table 3 presents the proportion of women who gave birth. The findings reveal that 3–6% of the panel gave birth each year. Among these women, 1–3% gave birth to a first child and 2–4% to more than a second child. It seems like the number of births is increasing, although I find no spike birth around the time of the reform. I also look at the number of women returning to work after childbearing and find no evidence of a spike in the return to work rate (Table 4). Figure2 is the number of women returning to work around the moment of the reform, and again I find no birth surge in this case.

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[2] According to the Ministry of Health, Labour and Welfare's Basic Survey of Gender Equality in Employment Management (2008), return to work after childbearing varies by the length of leave. For instance, 32.0% of women who take 10 to 12 months return to work, while only 16.9% who take 12 to 18 months leave return.

[Insert tables 3 and 4 here]

[Insert figure 2 here]

Using the DID, I find that the reform did not influence the return to work and fertility rates. Tables 6 and 7 present the DID estimate on return to work after either 1 year or 2 years of women who gave birth during survey years. The estimates, run separately for all children and two or more children, reveal the impact of the number of children. To control the cohort effect, I limit the sample to women between 20 to 49 years of age. Work status is taken from the information of the previous years, and those who were unemployed during these years were excluded from the analysis. All the models in Tables 6 and 7 reveal that the reform has no effect; therefore, I conclude the 2007 reform did not influence the resumption of work after childbearing.

[Insert tables 6 and 7 here]

The reform had no influence for two reasons: First, the Japanese government did not discuss the new law until right before its passage. Therefore, most women did not know about it and had little incentive to reengage in paid labour. Second, the increase in the stipend was only 10%, which was too small to compensate for the opportunity cost of women to have a baby and remain inactive. The previous studies on DID estimates also show no effect if the increase of the stipend is small. Specifically, small increases do not give incentives to women with high incomes and statuses, since the opportunity costs to have a baby for such women is too high. Table 8 and 9 show no effect on fertility after one year and two years. Thus, the change in policy did not give women any incentive to return to work after childbearing or to have a baby. Further analysis is needed to see the influence of the 2010 reform on the former, since it may have a negative impact.

[Insert tables 8 and 9 here]

3. Conclusion

This findings of this study suggest that the Japanese government must take drastic adopt drastic reform measures if its hopes to increase the percentage of woman returning to the labour force after childbearing. It is essential to alter policy so that women will not be penalized for taking leaves. In this regard, the Ministry of Health,

Labour and Welfare (2007) indicates that only 24.5% of workplaces count leave periods as 'worked'; thus, they are not counted in calculating seasonal salary increases. Also, women in most firms are at a disadvantage for promotion if they absent themselves to give birth. Their severance pay is also affected, since 36.3% of workplaces indicate that employees who take leaves receive reduced severance compensations. For future analysis, I propose to examine the 2007 reform using additional data and take a detailed look at the changes passed in 2010.

Full paper (Yukiko Asai)

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Table 1: Summary of the reforms

Year	Cash stipend during the leave	Cash stipend after returning to work	People who qualify for the benefit	Duration of the leave
1 April 1992	Up to each workplace	Up to each workplace	Workplace with more than 30 regular employees	1 year
1 April 1995	20%	5%	Only regular employees	1 year
1 January 2001	30%	10%	Only regular employees	1 year
1 April 2005	30%	10%	Regular and non-regular employees	1 and a half year
1 April 2007	30%	20%	Regular and non-regular employees	1 and a half year
1 April 2010	50%	0%	Regular and non-regular employees	1 and a half year

Table 2: Identification of the treatment and control groups

	March 31 2006 or before (after = 0)	April 1st 2006 or after (after = 1)
Treatment group (eligible to receive the cash stipend) (Treat = 1)	No effect	Effect
Control group (ineligible to receive the cash stipend) (Treat = 0)	No effect	No effect

Table 3:　Proportion of women who gave birth (%)　Ages 20–49

	2003	2004	2005	2006	2007	2008	2009
Any child	6.28	5.64	4.03	5.04	3.87	4.98	3.03
First child	2.98	1.79	0.89	1.29	1.60	1.87	1.09
Second or more child	3.30	3.78	3.13	3.70	2.27	3.11	1.94
Sample size (women aged 20–49)	1880	1561	1341	1866	1629	1446	1286

Table 4: Proportion of women who returned to work after giving birth (%) Ages 20–49

		2003	2004	2005	2006	2007	2008
First Child	Return to work after 1 year（%）	15.91	15.79	25.00	39.13	26.09	25.93
	Sample size	44	19	12	23	23	27
	Return to work after 2 years（%）	16.22	31.25	33.33	45.45	36.36	-
	Sample size	37	16	12	22	22	-
Second or more	Return to work after 1 year（%）	20.75	15.09	21.05	22.58	13.89	21.43
	Sample size	53	53	38	62	36	42
	Return to work after 2 years（%）	24.00	31.37	33.33	22.95	25.00	-
	Sample size	50	51	33	61	36	-

Table 5: Summary statistics (mean and standard deviation)

	Women&Wives				Women only			
	Return-to-work After one year (n=219)		Return-to-work After two years (n=179)		Return-to-work After one year (n=115)		Return-to-work After two years (n=89)	
Return-to-work(=1)	0.25	0.44	0.32	0.47	0.25	0.43	0.35	0.48
Work more than 2 days a week (t-1)(A)	0.29	0.46	0.29	0.45	0.32	0.47	0.32	0.47
Childbearing after April 2006(B)	0.44	0.50	0.36	0.48	0.48	0.50	0.38	0.49
Treatment dummy(A*B)	0.14	0.35	0.12	0.33	0.17	0.38	0.15	0.36
Age	33.15	4.07	33.01	4.14	32.58	4.08	32.36	3.98
Work status（t-1): non-regular employment	0.14	0.34	0.13	0.34	0.12	0.32	0.11	0.31
regular employment	0.16	0.37	0.17	0.37	0.18	0.38	0.20	0.40
self-employed	0.01	0.11	0.01	0.10	0.02	0.12	0.01	0.10
unemployed	0.60	0.49	0.61	0.49	0.60	0.49	0.58	0.50
Years of continuous employment	8.34	18.66	7.97	18.30	2.02	4.27	2.05	4.10
Education: university more above	0.18	0.39	0.20	0.40	0.16	0.37	0.19	0.39
junior college	0.31	0.46	0.29	0.45	0.30	0.46	0.27	0.45
high school graduate or under	0.33	0.47	0.33	0.47	0.42	0.49	0.42	0.50
others	0.11	0.31	0.11	0.31	0.12	0.33	0.12	0.32
Firm size(t-1): 99 or less	0.19	0.40	0.21	0.41	0.18	0.39	0.23	0.42
100〜499	0.05	0.23	0.05	0.22	0.05	0.23	0.05	0.22
500 or more	0.12	0.32	0.10	0.30	0.12	0.32	0.09	0.29
civil service	0.03	0.16	0.02	0.14	0.02	0.15	0.01	0.10
not applicable	0.51	0.50	0.51	0.50	0.62	0.49	0.61	0.49
Sex of respondent	0.49	0.50	0.52	0.50				

Table 6: Difference in difference estimate on return to work 1 year/2 years after childbearing (women's and wives' samples)

	Any child						second or more child					
	Return-to-work after one year			Return-to-work after two years			Return-to-work after one year			Return-to-work after two years		
	Coef	Z	marginal effect	Coef	Z	marginal effect	Coef	Z	marginal effect	Coef	Z	marginal effect
Work more than 2 days a week (t-1)(A)	0.421	0.92	0.113	0.594	0.38	0.081	0.474	0.77	0.122	0.320	0.55	0.110
Childbearing after April 2006(B)	0.156	0.49	0.039	0.289	0.32	0.035	0.116	0.33	0.027	0.011	0.03	0.004
Treatment dummy(A*B)	-0.24	-0.5	-0.055	-3.31	-1.7 *	-0.116	-0.105	-0.16	-0.227	-0.697	-0.97	-0.181
Age	0.081	2.49 **	0.020	0.004	0.04	0.000	0.055	1.33	0.013	-0.022	-0.60	-0.007
Work status(t-1): non-regular employment	-0.31	-0.74	-0.068	-2.59	-1.54	-0.104	-0.301	-0.56 **	-0.060	-0.278	-0.52 *	-0.084
regular employment	1.035	2.43 **	0.329	4.281	2.25 **	0.965	2.114	2.72	0.697	1.503	1.81	0.547
self-employed	0.575	0.69	0.178	24.05	0	0.967	-0.154	-0.15	-0.032	5.015	0.00	0.749
unemployed												
Years of continuous employment	0.032	4.5 ***	0.008	0.119	3.79 ***	0.013	0.022	2.58 **	0.005	0.028	3.02 **	0.009
Sex of respondent	-0.54	-1.95 *	-0.134	-1.43	-1.65 *	-0.186	-0.18	-0.54	-0.041	-0.367	-1.21	-0.119
Education	Included			Included			Included			Included		
Firm size (t-1)	Included			Included			Included			Included		
Constant	-4.516			-4.488			-3.719			-0.474		
Log likelihood	-72.81			-63.98			-50.93			-53.94		
Sample size	219			179			169			137		

***:1%, **:5%, *;10%

Table 7: Difference in difference estimate on return to work 1 year/2 years after childbearing (women's sample only)

	Any child					
	Return-to-work after one year			Return-to-work after two years		
	Coef	Z	marginal effect	Coef	Z	marginal effect
Work more than 2 days a week (t-1)(A)	-0.45	-0.35	-0.059	-1.57	-1.29	-0.489
Childbearing after April 2006(B)	1.665	1.25	0.277	-0.36	-0.63	-0.133
Treatment dummy(A*B)	-0.22	-0.16	-0.030	0.727	0.63	0.283
Age	0.088	1.21	0.013	0.037	0.65	0.014
Work status(t-1): non-regular employment	-0.53	-0.58	-0.058	-1.12	-1.28	-0.328
regular employment	1.236	1.23	0.295	1.226	1.30	0.459
self-employed	-2.62	-1.28	-0.085	4.838	0.00	0.643
unemployed						
Years of continuous employment	0.65	3.27 ***	0.096	0.308	1.83 *	0.117
Education	Included			Included		
Firm size (t-1)	Included			Included		
Constant	-6.44			-2.52		
Log likelihood	-16.47			-26.24		
Sample size	115			89		

***:1%, **:5%, *;10%

Table 8:　Difference in difference estimate on fertility 1 year/2 years after childbearing (women's and wives' samples)

	Any child						second or more child					
	Fertility after one year			Fertility after two years			Fertility after one year			Fertility after two years		
	Coef	Z	marginal effect	Coef	Z	marginal effect	Coef	Z	marginal effect	Coef	Z	marginal effect
Work more than 2 days a week (t-1)(A)	0.083	0.67	0.003	0.054	0.34	0.001	-0.099	-0.41	-0.001	-0.119	-0.4	0.000
After April 2006(B)	-0.039	-0.34	-0.001	0.134	0.93	0.003	0.136	0.67	0.001	0.078	0.32	0.000
Treatment dummy(A*B)	-0.016	-0.12	-0.001	-0.161	-0.93	-0.003	-0.040	-0.17	0.000	-0.113	-0.37	0.000
Age	-0.080	-10.63 ***	-0.003	-0.088	-8.47 ***	-0.002	-0.124	-6.67 ***	-0.001	-0.138	-5.71 ***	0.000
Work status(t-1): non-regular employment	-0.335	-2.38 **	-0.011	-0.310	-1.64	-0.006	0.003	0.01	0.000	-0.226	-0.71	-0.001
regular employment	-0.199	-1.31	-0.006	-0.116	-0.58	-0.002	0.556	1.66	0.007	-0.894	-1.55	-0.002
self-employed	0.205	0.71	0.009	0.695	2.22 **	0.035	0.819	1.64	0.018	0.545	0.92	0.005
unemployed												
Years of continuous employment	-0.002	-0.75	0.000	0.00	-0.11	0.000	-0.012	-2.58 **	0.000	-0.004	-0.76	0.000
Sex of respondent	0.478	4.09 ***	0.021	0.507	3.37 ***	0.01397	0.700	3.37 ***	0.006	0.624	2.61 ***	0.003
Education		Included			Included			Included			Included	
Firm size (t-1)		Included			Included			Included			Included	
Constant		0.82			0.85			1.92			2.45	
Log likelihood		-736.26			-495.17			-244.95			-158.48	
Sample size		1622			1468			1039			942	

***:1%, **:5%, *;10%

Table 9:　Difference in difference estimate on fertility 1 year/2 years after childbearing (women's sample only)

	Any child						second or more child					
	Fertility after one year			Fertility after two years			Fertility after one year			Fertility after two years		
	Coef	Z	marginal effect	Coef	Z	marginal effect	Coef	Z	marginal effect	Coef	Z	marginal effect
Work more than 2 days a week (t-1)(A)	0.022	0.12	0.001	0.033	0.16	0.001	-0.282	-0.65	-0.002	0.100	0.24	0.000
After April 2006(B)	-0.06	-0.49	-0.003	0.168	1.04	0.004	0.041	0.20	0.000	0.003	0.01	0.000
Treatment dummy(A*B)	0.235	1.21	0.011	-0.179	-0.74	-0.004	0.379	0.86	0.004	-0.458	-0.74	0.000
Age	-0.06	-7.35 ***	-0.003	-0.074	-6.04 ***	-0.002	-0.108	-5.66 ***	-0.001	-0.126	-4.62 ***	0.000
Work status(t-1): non-regular employment	-0.49	-2.74 ***	-0.017	-0.229	-0.98	-0.005	-0.481	-1.38	-0.004	0.046	0.11	0.000
regular employment	-0.32	-1.77	-0.011	-0.144	-0.60	-0.003	0.142	0.36	0.001	-6.178	0	0.000
self-employed	-0.03	-0.09	-0.001	0.651	1.82 *	0.034	0.536	0.89	0.010	0.993	1.36	0.001
unemployed												
Years of continuous employment	0.005	0.39	0.000	0.02	1.32	0.001	-0.039	-1.00	0.000	-0.1	-1.28	0.000
Education		Included			Included			Included			Included	
Firm size (t-1)		Included			Included			Included			Included	
Constant		0.52			0.42			1.77			2.30	
Log likelihood		-425.17			-290.25			-113.62			-66.28	
Sample size		977			885			573			521	

***:1%, **:5%, *;10%
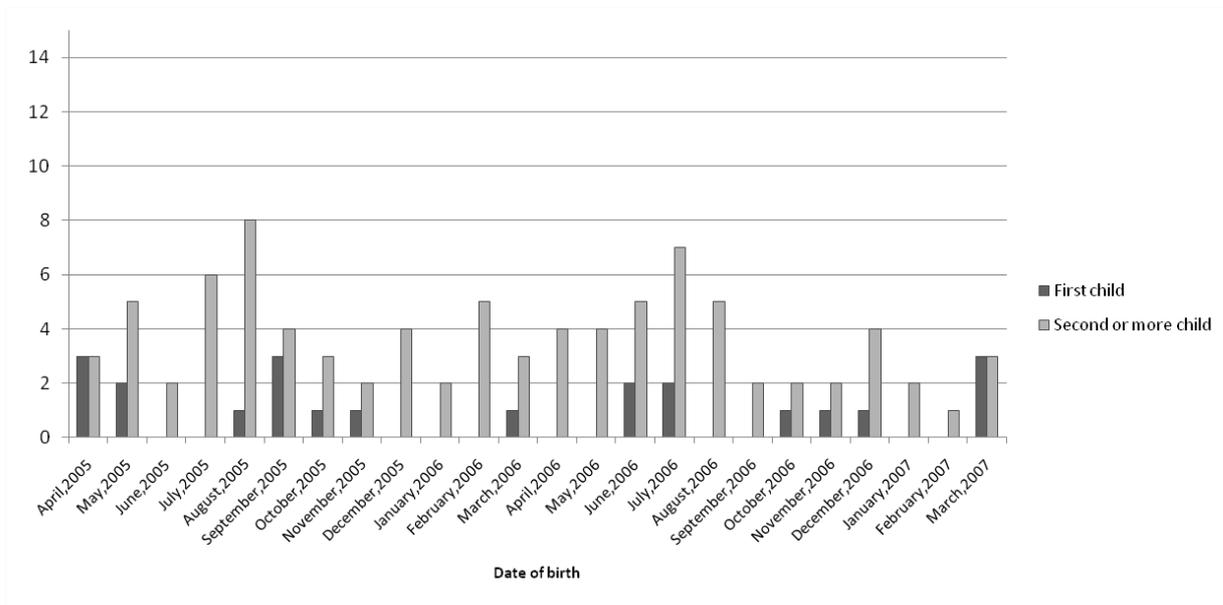
Figure 1: Number of births from April 2005 to April 2007
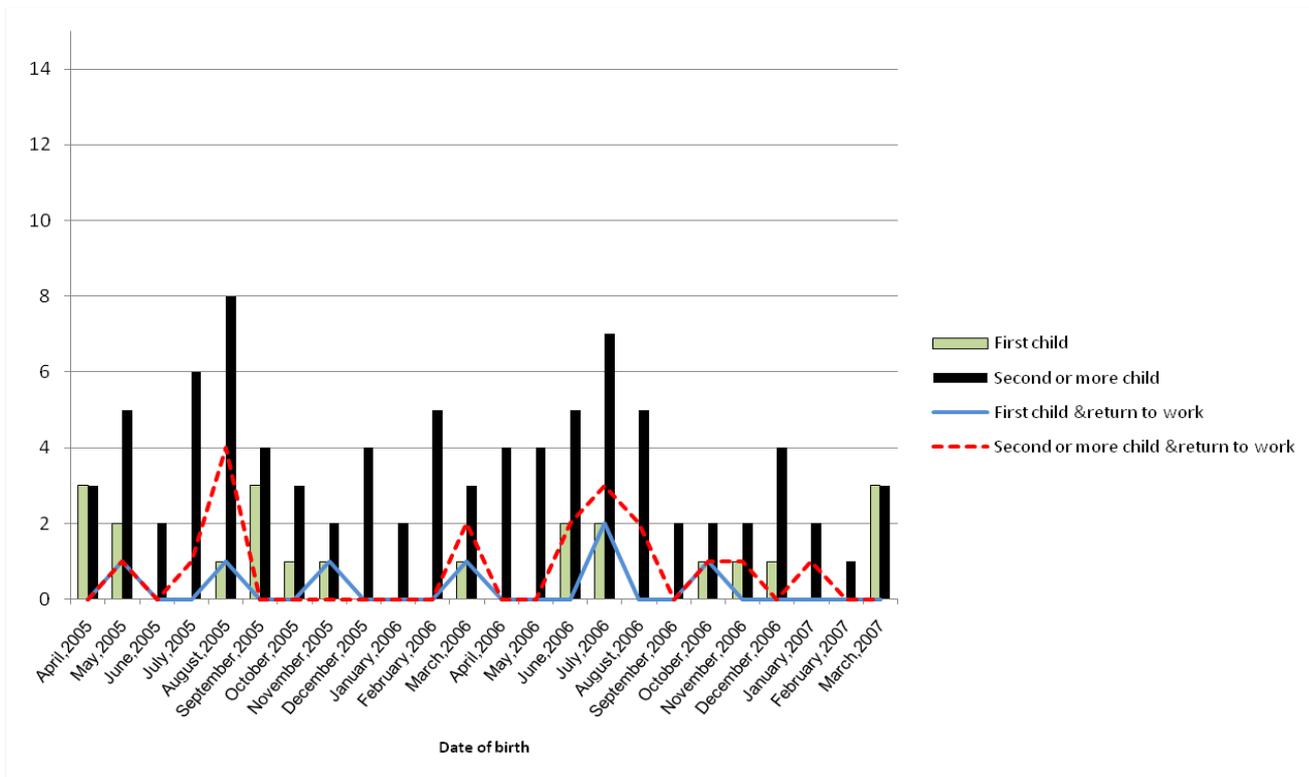
Figure 2: Number of women returning to work (Women who gave birth from April 2005 to April 2007)