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The Role of Labor Market Intermittency in Explaining Gender Wage Differentials

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Abstract: Using the Health and Retirement Survey and standard wage decomposition techniques, this paper finds that the difference in intermittent labor force participation between men and women accounts for 47 percent of the contribution to the wage gap of differences in observed characteristics. Not controlling for intermittent behavior results in too much importance being placed on gender differences in job characteristics.

JEL classification: J31, J22

Key words: gender wage differentials, Oaxaca decomposition, intermittent labor supply, time allocation

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I. Introduction and Background

It is widely accepted that there is a penalty associated with intermittent labor force participation; workers who engage in intermittent activity earn lower wages than workers who do not (for example, see Hotchkiss and Pitts 2005, Baum 2002, Stratton 1995, and Jacobsen and Levin 1995). This penalty for intermittency is often offered as one source of the lower wages observed for women relative to men. However, the importance of women's intermittent labor market behavior relative to other contributors (e.g., occupational choice, discrimination) has not been quantified. The purpose of this paper is to fill that gap by using information on lifetime labor market (and other) activity and current earnings to determine how important intermittent labor force participation and its components are in explaining observed differences in wages between men and women.

A. Labor Market Intermittency and Lower Wages

There are several theories that explain the association between lower wages and intermittent attachment. On the supply side, the basis is the theory of human capital. Workers who anticipate intermittent attachment have lower levels of investment in human capital due to a shorter period of time in which to earn a return on their investment and the human capital that is acquired may atrophy during periods of absence (Polachek and Siebert 1993). Furthermore, during periods of absence from the labor force, these individuals also forego the gains in experience and human capital that would lead to higher wages (Jacobsen and Levin 1995).

On the demand side, employers view intermittent attachment as a signal that the worker may exit the labor force again. As employers lose any hiring and training expenses incurred when workers leave, employers are less willing to provide the investment necessary for higher

paying jobs to workers they believe are not attached to the labor force (Albrecht et al. 2000).

Although empirical evidence supports the presence of an intermittent attachment penalty, the evidence is mixed on its magnitude and duration. For example, Mincer and Ofek (1982) find that the wages of the intermittent worker rebound rapidly in the first five years of reentry into the labor force, resulting in small (less than two percent) long run penalties. However, Jacobsen and Levin (1995), find that although the penalty does diminish from its initial level of 14 percent, there remains a relatively large penalty of between five to seven percent even after 20 years. Sorenson (1993) found that women with intermittent participation earned 34 percent less than women with continuous participation, after controlling for selection into intermittency as well as the labor force.

Hotchkiss and Pitts (2005) construct an index for intermittent behavior that combines the number of periods of intermittency over a woman's work life, the amount of the work life spent in spells of intermittency, and the amount of time since the last spell of intermittency. They find that women are penalized at low levels of intermittency and women categorized as intermittent experience a penalty of roughly 16 percent. This paper will make use of the index developed by Hotchkiss and Pitts to explore the magnitude of the impact intermittency has on gender wage differentials. The results indicate that it is the combination (through the index) of the components that define a woman's intermittent experience that provide a more meaningful representation of the importance of that experience than each of the pieces on their own.

B. Gender Wage Differentials

The degree to which labor market intermittency contributes to observed wage differentials has typically been thought of in terms of how the expected intermittent behavior shapes educational and occupational choices of women, and that the occupations that

accommodate such behavior (through lower atrophy of human capital, for example) are lower paying occupations than those typically held by men (see Polachek 1981). Others have found that occupational segregation--resulting from human capital considerations , preferences, or discrimination--go a long way to explaining observed wage differentials between men and women (for example, see Macpherson and Hirsch 1995, DeLeire and Levy 2004, and Winter-Ebmer and Sweimüller 1992).

In addition to identifiable differences in what women bring to the labor market (such as education, labor market experience, and occupation of employment), the way in which these endowments are valued differently by employers also poses a potential source for observed gender wage differentials. Much of the literature on the gender wage gap concerns itself with decomposing the observed gap into a component that can be explained by observed characteristics (education, etc.) and a component that is left unexplained and often attributed to discriminatory behavior on the part of the employer. Estimates vary widely as to the portion of the wage gap that can be explained by observed characteristics and the portion left unexplained. One of the most recent studies finds that the portion of the gap left unexplained has been growing as women's educational attainment and total years in the labor market have been converging to those of men (Blau and Kahn 2006).

Standard Oaxaca (1973) decomposition techniques will be applied to 2SLS wage equations that account for potential endogeneity of intermittent labor market behavior. The decomposition will allow the observed wage differential between men and women to be separated into its explained and unexplained portions, as well as the identification of the contribution of intermittent behavior to those separate portions. The results suggest that roughly

30 percent of the overall gap can be explained by differences in observable characteristics, with differences in intermittent behavior as the most important component.

II. Empirical Specification

A standard linear log wage equation is specified to describe how characteristics translate into observed wages in the labor market. Human capital theory suggests that wages will vary across workers as a result of different levels of educational attainment, labor market experience, and on-the-job training. Wages will also vary as a result of different demand and supply conditions across occupations, industries, and geographic regions. Institutional factors, such as unions, internal labor markets, and compensation policies, have also been shown to affect wages. Wages may also be affected, perhaps through discrimination, by demographic characteristics, such as race and marital status.

In addition to these traditional determinants, a regressor indicating a worker's past intermittent labor market experience is included. Since decisions regarding intermittent behavior may be endogenous to the determination of wages (e.g., the decision to be absent from the labor market might be affected by the worker's expectation about how such behavior will affect future wages), an instrument will be constructed from a first-stage OLS estimation of intermittent behavior. Since job characteristics are only observed for workers, results presented here are all conditional on current labor market activity.[1]

The log wage equation, estimated separately for men and women, is specified as follows:

$$(1) \qquad W_i = X_i^{'}\beta + \varphi \hat{I}_i + \varepsilon_i ,$$

[1] Results that include a Heckman-type labor force participation selectivity correction are essentially the same as those reported here. Given the advanced age of the samples of men and women, there is not much difference in the factors that contribute to the decision to participate in the labor market, nor in the contribution of those factors to explaining the observed wage differential. In the interest of parsimony, only the conditional results are reported here.

where W_i is log hourly wage; X_i represent all demographic, geographic, and job characteristics; and $\hat{I}_i$ is the instrument for individual *i*'s intermittency experience.

The estimated parameter coefficients will be used to decompose the observed wage differential into components that are explained by differences in observed factors (the endowment effect) and accounted for by differences in the estimated coefficients (the coefficient effect). The decomposed wage differential can be expressed as follows:[2]

$$(2) \qquad \overline{\ln \hat{W}_M} - \overline{\ln \hat{W}_F} = \hat{\beta}_F' \left(\bar{X}_M - \bar{X}_F \right) + \bar{X}_M' \left(\hat{\beta}_M - \hat{\beta}_F \right).$$

Given that we are particularly interested in how different intermittent behavior translates into lower wages for women, the estimated coefficients from the female wage equation are used as the basis for the decomposition. Varying specifications are calculated with no appreciable difference in the conclusions. Each piece on the right hand side of equation (2) will be broken into the contributing components of demographics, education, job characteristics, and intermittency. The goal of this paper is to determine the relative importance of the intermittent component.

III. Measuring Intermittency

The ideal measure of intermittency should reflect the amount of time spent out of the labor force, the frequency of intermittent spells, and a measure of time since the last spell of intermittency. Others have focused almost exclusively on only one of these components at a time. One could enter each of these contributors as independent determinants of the current

[2] The are a number of different ways one can decompose the differential. The decomposition here amounts to assuming that the "male" world will prevail in the absence of any potentially discriminatory treatment of intermittent behavior. Alternative specifications can be found in Cotton 1988, Reimers 1983, Oaxaca and Ransom 1994, and Neuman and Oaxaca 2003). Varying specifications were calculated with no appreciable difference in the conclusions.

wage, however each variable would need to be treated as endogenous and there is no information that could be used to separately identify the components. In addition, doing so ignores the mutual interdependence of each factor in its contribution to the characterization of intermittency.

The use of an index allows us to synthesize and simplify the multi-dimensional impact of intermittent behavior. Combining the components that determine the characterization of intermittency is also likely to be more consistent with the way in which employers view these components in making hiring and pay decisions; it is the combination of component values that matter, not their values independent of each other. Nonetheless, in addition to using an index to characterize a worker's intermittency experience, each of the index's components will be entered into separate specifications in order to investigate which the role each component plays in determining the impact of intermittency on the observed wage differential.

The index of intermittency is constructed by combining the number of spells and the proportion of time spent absent from the labor force, which captures the average length of the spells, weighted by the proportion of time in the labor force that was accrued since the last spell:[3]

$$(3) \qquad I_i^* = \left[N_i \left(\frac{1}{T_i} \sum_{j=1}^{N_i} L_{ji} \right) \right]^{\omega_i},$$

where T_i = the total amount of time since first recorded labor market activity for person *i;*
N_i = the number of spells of absence for person *i;*
L_{ji} = the length of spell *j* for person *i;* and
ω_i = the percent of work life accumulated since last spell of absence for person *i.*

This measure will capture the penalty associated with lower investment or atrophy of skills, as well as any penalty employers place on intermittent behavior. As the number of spells and/or the length of spells increases, the measure of intermittency increases. As the total amount of time

[3] This index was developed by Hotchkiss and Pitts (2005).

since the woman first entered the labor force increases, or the time since the last intermittent spell increases, the measure of intermittency decreases.[4] A spell of absence, N_i, is defined as any period of consecutive years with no labor market activity sandwiched between years with some employment, and is scaled by the maximum number of periods observed in the data set, ensuring that each component of the index ranges between zero and one.[5] Requiring complete absence from the labor market in a given year to be considered part of an intermittent spell protects against short term leave, such as maternity leave or seasonal employment, or short periods of involuntary absences from the labor force being counted as a spell of intermittency.[6]

In equation (1), $\hat{I}_i$ will take on one of four values:

$$\hat{I}_i = \begin{cases} \text{Intermittency Index } (I_i^*) \\ \text{Proportion of Potential Work Life Spent Absent } \left(\dfrac{1}{T_i} \sum_{j=1}^{N_i} L_{ji} \right) \\ \text{Number of Periods of Absence } (N_i) \\ \text{Proportion of Work Life Since Most Recent Spell } (\omega^i) \end{cases}$$

The intermittency index and each of its components will be instrumented (separately) using the same set of regressors. Instruments for intermittency were chosen from a set of spousal chronic health conditions and individual life history characteristics that were significantly related to the intermittency measures (which gives us some confidence of their quality). The instruments also pass the test for over-identifying restrictions (which gives us some confidence of their validity). The instruments included the percent of adult life spent married; an indicator if the person ever smoked; and indicators for if the spouse (if married) suffers from chronic back, pain, nervous system, or hypertension health conditions. 2SLS is used to correct the standard errors in the

[4] A worker with no spell of absence would have a value of 100% of work life since last spell.
[5] This index does not account for delays in entrance into the labor force, only the penalty associated with intermittent attachment once the individual has chosen to enter the labor force.
[6] See Baum (2002) for an analysis of the impact of maternity leave on wages exclusively.

wage equation for the presence of a generated regressor.

IV. The Data

The data sets used for the empirical analysis include the 1992 Health and Retirement Survey (HRS) public release and the HRS Covered Earnings, Version 3.1. The HRS is a nationally representative panel survey of 12,645 individuals who were either born in the period of 1931-1941 or are the spouse of an individual who is age-eligible. The first wave was administered in 1992, with follow up surveys every two years. The Covered Earnings database includes annual data on quarters of coverage and earnings for the years 1951-1991. Only the 1992 wave of the HRS is utilized in the analysis.[7] The advantage of the HRS is the exhaustive detail on lifetime labor market activity and health conditions. Details of lifetime activities and health conditions help to instrument for the measures of intermittency.

The sample (with non-missing regressor values) contains 1,852 working men and 2,404 working women. The sample means are presented in Table 1. The demographic and job characteristic differences across males and females are to be expected for the cohort represented in these data. Men are more likely to be employed in blue collar and managerial occupations and blue collar industries. They are also more likely to be represented by a union, have a college degree, be married, spent more of their adult life married, more likely to have ever smoked, and less likely to be part-time employed. The average ages of both men and women reflect the sampling design of the survey.

[Table 1 here]

The information on past work histories was obtained from the HRS Covered Earnings

[7] We are in the process of obtaining the more recent 2003 wave in order to compare results across two cohorts of workers.

file, which contains information on quarters of covered earnings and the amount of covered earnings per year for individual years beginning in 1951 and continuing through 1991. This was used to calculate the index of intermittency (and its components). The index average is 0.30 for women and 0.16 for men and ranges from zero (those who have worked continuously since first entering the labor market) to 1. Regarding the components of the index, women have a greater number of spells of absence (1.43 years versus 0.62 years for men), have spent a greater proportion of their working life absent (23 percent versus 8 percent for men), and have been absent more recently than men (shorter time since last spell).

V. Estimation Results

Table 2 contains the results from decomposing the observed wage differential between men and women into the endowment and coefficient effects, along with groups of individual regressor contributors. Briefly, each of the typical regressors in the wage equation estimation performs as expected. Wages increase with education, union representation, non-wage benefits, and tenure with one's employer. Men earn a marriage premium, women a marriage penalty, and there is evidence of a concave age/earnings profile.[8]

[Table 2 here]

The first row of Table 2 contains the observed wage differential between men and women that is decomposed. On average, men are observed to earn an hourly wage that is 38 percent higher than the hourly wage earned by women. This is in the ball park of the gap reported by others, particularly for this age cohort (see Blau and Kahn 2006). The endowment effect is reported in the second row of bold numbers in Table 2. This effect is broken into the

[8] First-stage OLS estimation results for the intermittent measures and 2SLS estimates of the log wage equations are contained in the appendix.

components contributed by demographics, education, job characteristics, and intermittency. The first column presents the results obtained when using the intermittency index. The difference in intermittency experience between men and women, as measured by the index, accounts for almost 61 percent of the total impact of differences in endowments. This translates into approximately 19 percent of the total wage differential.

The relative importance of each of the index's components can be seen in the results presented in columns two through four. The contribution to the endowment effect is 41 percent for the number of spells of absence, 63 percent for the proportion of work life since the most recent spell, and 65 percent for the proportion of work life absent. The smaller contribution (and lack of significance) of intermittency when measured only by number of spells suggests that this component of the index is not as important as the other two.

It's not surprising that the proportion of work life absent would be particularly important in determining the influence of endowments on observed wages, since it is essentially a measure of (the inverse of) total labor market experience. Its impact, however, is somewhat mitigated by how much time has passed since the last spell of absence, which is captured by the intermittency index. In other words, just controlling for labor market experience, and not for its pattern of accumulation, overstates that contribution of experience to gender wage differentials.

The coefficient effect is also broken into each of its contributing factors, including the intercept. Men are penalized more than women for intermittent experience, as indicated by the negative sign on the contribution of intermittency to the coefficient effect. While the negative sign is consistent with other findings of a higher penalty for men for behavior related to weak labor market attachment, such as part-time employment (e.g., see Averett and Hotchkiss 1996 and Hotchkiss 1991), in this case, the contribution to explaining the gender wage gap is

insignificantly different from zero. This emphasizes the importance of gender differences in intermittent behavior, rather than differences in treatment of that behavior across gender, in explaining the gap.

The last column in Table 2 presents the estimates from a specification in which the regressor for intermittency is omitted. The primary consequence of omitting a measure of intermittency is that the endowment effect is now dominated by differences in job characteristics (such as occupation and industry), suggesting that intermittent activity, or anticipated intermittent activity, may play a role in occupational (or other job-type) choices (see Pitts 2003). Thus, not controlling for intermittent activity places inappropriate importance on job characteristics when explaining wage differentials between men and women.

VI. Concluding Remarks

This paper quantifies the importance of intermittent labor market behavior of women in explaining observed wage differentials between older men and women. In explaining the wage gap, it was found that 61 percent of the contribution of differences in observed characteristics, or 19 percent of the overall wage differential, between men and women is accounted for by the differences in intermittent behavior. In addition, not controlling for intermittent behavior results in inappropriate weight being placed on differences in job characteristics between men and women in explaining wage differentials. To the extent that intermittent labor market behavior on the part of women is the result of (typically) joint or family utility maximization, earnings parity should not be expected. On the other hand, the fact that the coefficient effect (or differential treatment of worker endowments in the labor market) still accounts for 70 percent of the total observed wage differential indicates that there is still room for improvement.

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Table 1: Sample means of male and female workers.

Variable	Males	Females
Log Wage	2.592 (0.617)	2.217 (0.553)
Age	56.61 (3.91)	54.51 (5.13)
Black = 1	0.120 (0.325)	0.179 (0.384)
Married = 1	0.860 (0.347)	0.707 (0.455)
Number of Children currently under 18	0.328 (0.716)	0.241 (0.601)
Non-labor income	41,362 (36,409)	31,623 (34,929)
Acute health condition = 1	0.221 (0.415)	0.207 (0.405)
Spouse acute health condition = 1	0.180 (0.384)	0.214 (0.410)
Spouse physical limitation index	10.294 (10.638)	7.187 (10.382)
Spouse suffers chronic back condition = 1	0.26 (0.44)	0.23 (0.42)
Spouse suffers chronic pain = 1	0.03 (0.16)	0.01 (0.11)
Spouse suffers chronic nervous system condition = 1	0.01 (0.08)	0.01 (0.10)
Spouse suffers chronic hypertension = 1	0.17 (0.38)	0.20 (0.40)
Percent of adult life spent married	0.779 (0.324)	0.675 (0.419)
Ever smoked = 1	0.749 (0.434)	0.527 (0.499)
Less then HS = 1	0.165 (0.371)	0.147 (0.354)
College graduate = 1	0.225 (0.417)	0.194 (0.396)
Northeast	0.174 (0.380)	0.193 (0.395)
West	0.148 (0.355)	0.132 (0.338)
Midwest	0.258 (0.438)	0.262 (0.440)
Job tenure	16.421 (11.828)	12.199 (9.375)

Occupation1 = 1	0.311 (0.463)	0.287 (0.452)
Occupation2 = 1	0.127 (0.333)	0.371 (0.483)
Occupation3 = 1	0.094 (0.292)	0.211 (0.408)
Occupation4 = 1	0.468 (0.499)	0.130 (0.337)
Industry1 =1	0.544 (0.498)	0.193 (0.394)
Industry2 =1	0.329 (0.470)	0.647 (0.478)
Industry3 = 1	0.126 (0.332)	0.161 (0.367)
Union = 1	0.308 (0.462)	0.215 (0.411)
Part-time = 1	0.110 (0.312)	0.312 (0.464)
Employer pension plan = 1	0.693 (0.461)	0.594 (0.491)
Employer health insurance = 1	0.718 (0.450)	0.693 (0.462)
Physical limitation index	7.862 (7.632)	10.839 (8.413)
Intermittency Index (I_i^*)	0.160 (0.307)	0.299 (0.322)
Proportion of Potential Work Life Spent Absent $\left(\frac{1}{T_i}\sum_{j=1}^{N_i} L_{ji}\right)$	0.081 (0.183)	0.234 (0.250)
Number of Periods of Absence (N_i)	0.618 (1.044)	1.426 (1.288)
Proportion of Work Life Since Most Recent Spell of Absence (ω^i)	0.771 (0.362)	0.571 (0.351)
Number of Observations	1,852	2,404

Notes: Standard Errors are in parentheses. All means are significantly different from each other except percent with less than a high school degree, availability of employer-provided health insurance, and regional indicators.
Industry1 (omitted) = 1 if Agriculture, Forestry, Fishing; Mining and Construction; Manufacturing; Transportation
Industry2 = 1 if Wholesale; Retail
Industry3 = 1 if Finance, Insurance, and Real Estate; Business and Repair Services; Personal Services; Entertainment and Recreation; Professional and Related Services; Public Administration
Occupation1 (omitted) = 1 if Managerial specialty operation; Professional specialty operation and technical support
Occupation2 = 1 if Sales; Clerical, administrative support
Occupation3 = 1 if Service
Occupation4 = 1 if Farming, forestry, fishing; Precision production and repair; Operators; Armed Forces
The index of physical limitation is on a scale from 1 to 100 and represents the degree of difficulty an individual has in performing seventeen activities of daily living and instrumental activities of daily living.

Table 2. Decomposition of Male/Female Log Wage Differential

	Measure of Intermittency				
	Intermittency Index I_i^*	Proportion Work Life Absent $\left(\frac{1}{T_i}\sum_{j=1}^{N_i} L_{ji}\right)$	Number of Periods N_i	Proportion of Work Life Since Most Recent Absence ω^i	No Control for Intermittency
Log Wage Differential $\left(\overline{\ln \hat{W}_M} - \overline{\ln \hat{W}_F}\right)$	**0.375**	**0.375**	**0.375**	**0.375**	**0.375**
Endowment Effect	**0.115**	**0.155**	**0.113**	**0.131**	**0.077**
	(0.022)*	**(0.037)***	**(0.032)***	**(0.030)***	**(0.012)***
Demographics	0.001	0.006	-0.003	0.002	-0.007
	(0.007)	(0.008)	(0.007)	(0.008)	(0.006)
Education	0.007	0.007	0.006	0.007	-0.017
	(0.001)*	(0.001)*	(0.001)*	(0.001)*	(0.001)*
Job Characteristics	0.037	0.042	0.065	0.038	0.078
	(0.022)^	(0.020)*	(0.015)*	(0.023)^	(0.011)*
Intermittency	*0.070*	*0.100*	*0.046*	*0.083*	--
	*(0.033)**	*(0.045)**	*(0.037)*	*(0.041)**	
Coefficient Effect	**0.260**	**0.220**	**0.262**	**0.245**	**0.299**
	(0.026)*	**(0.040)***	**(0.035)***	**(0.033)***	**(0.018)***
Demographics	-0.635	-0.825	-0.782	-0.788	-0.384
	(1.238)	(1.217)	(1.147)	(1.217)	(1.104)
Education	-0.026	-0.022	-0.013	-0.023	-0.017
	(0.014)^	(0.014)	(0.013)	(0.013)^	(0.012)
Job Characteristics	0.167	0.164	0.104	0.160	0.082
	(0.088)^	(0.067)*	(0.073)	(0.089)^	(0.055)
Intermittency	*-0.005*	*-0.041*	*-0.012*	*-0.129*	--
	(0.098)	*(0.086)*	*(0.066)*	*(0.313)*	
Intercept	0.760	0.944	0.965	1.024	0.617
	(0.610)	(1.197)	(1.133)	(1.324)	(1.101)

Notes: Demographics includes the combined contribution of age, race, education, physical limitation, and region. Job characteristics includes the combined contribution of industry, occupation, part-time, job tenure, and health and pension benefits. 2SLS estimation results can be found in the appendix. Approximate standard errors are obtained via the delta method (see Oaxaca and Michael Ransom 1998). *Significantly different from zero at the 95% confidence level. ^Significantly different from zero at the 90% confidence level.

Appendix

Table A1. First-stage OLS Estimation of Predicted Values of Intermittency Measures

Dep. Variable=	Intermittency Index I_i^*		Proportion of Potential Work Life Spent Absent $\left(\frac{1}{T_i}\sum_{j=1}^{N_i} L_{ji}\right)$		Number of Periods of Absence N_i		Proportion of Work Life Since Most Recent Spell of Absence ω^i	
Variable	Males	Females	Males	Females	Males	Females	Males	Females
Age/10	0.229	0.291^	0.032	0.152	-0.407	1.582*	-0.354	-0.404+
	(0.225)	(0.153)	(0.135)	(0.118)	(0.754)	(0.605)	(0.262)	(0.160)
Age^2/1000	-0.178	-0.214*	-0.012	-0.088+	0.656	-1.096^	0.282	0.300+
	(0.203)	(0.145)	(0.121)	(0.112)	(0.681)	(0.576)	(0.236)	(0.153)
Black	0.026	-0.019	0.008	-0.038*	0.216*	-0.149+	-0.051^	0.030^
	(0.022)	(0.017)	(0.013)	(0.014)	(0.076)	(0.069)	(0.026)	(0.018)
Married	-0.011	-0.083*	0.017	-0.074*	0.166	-0.467*	0.012	0.081*
	(0.035)	(0.030)	(0.021)	(0.023)	(0.118)	(0.118)	(0.041)	(0.031)
Less than HS	-0.001	0.013	-0.005	-0.006	-0.009	-0.011	0.002	0.000
	(0.020)	(0.019)	(0.012)	(0.015)	(0.068)	(0.078)	(0.024)	(0.020)
College Grad	0.022	0.095+	0.023^	0.081*	0.259*	0.113^	-0.036	-0.087*
	(0.021)	(0.020)	(0.012)	(0.015)	(0.070)	(0.078)	(0.024)	(0.021)
Northeast	-0.042+	-0. 045*	-0.022^	-0.017+	-0.067	-0.143+	0.049^	0.036+
	(0.020)	(0.017)	(0.012)	(0.013)	(0.067)	(0.069)	(0.023)	(0.018)
West	0.022	0. 061+	0.021^	0.045*	0.030	0.077	-0.016	-0.058*
	(0.021)	(0.020)	(0.013)	(0.015)	(0.071)	(0.080)	(0.025)	(0.021)
Midwest	0.028	.002	0.019^	0.016	-0.041	0.031	0.029	-0.009
	0.017	(0.016)	(0.010)	(0.012)	0.059	(0.062)	(0.020)	(0.016)
Tenure/10	-0.026	-0.158*	0.017	-0.052*	-0.043	-0.404*	0.040	0.144*
	(0.024)	(0.023)	(0.014)	(0.018)	(0.080)	(0.091)	(0.028)	(0.024)
Tenure^2/1000	0.044	0.274*	-0.016	0.066	-0.058	0.205	-0.025	-0.173+
	(0.059)	(0.066)	(0.036)	(0.051)	(0.199)	(0.263)	(0.069)	(0.070)
Occupation2	0.018	-0.008	0.014	0.015	0.115	-0.134^	-0.024	0.007
	(0.025)	(0. 018)	(0.015)	(0.014)	(0.085)	(0.072)	(0.030)	(0.019)
Occupation3	0.014	0.015	-0.005	0.014	0.019	-0.003	-0.018	0.002
	(0.029)	(0.022)	(0.017)	(0.017)	(0.098)	(0.087)	(0.034)	(0.023)
Occupation4	-0.060*	-0.083*	-0.036*	-0.052+	-0.101	-0.178	0.066*	0.090*
	(0.021)	(0.028)	(0.012)	(0.021)	(0.070)	(0.110)	(0.024)	(0.029)
Industry2	0.082*	0.035^	0.063*	0.023	0.234*	0.135^	-0.090*	-0.042+
	(0.018)	(0.020)	(0.011)	(0.016)	(0.062)	(0.080)	(0.021)	(0.021)
Industry3	-0.031	0.002	-0.015	0.005	-0.048	0.010	0.043	-0.019
	(0.023)	(0.024)	(0.014)	(0.018)	(0.078)	(0.093)	(0.027)	(0.025)
Union	0.059*	0.061*	0.035*	0.052*	0.186*	0.138+	-0.060*	-0.058*
	(0.017)	(0.016)	(0.010)	(0.013)	(0.057)	(0.065)	(0.020)	(0.017)
Part-time	0.084*	0.101*	0.025^	0.067*	0.130^	0.165*	-0.082*	-0.087*
	(0.023)	(0.014)	(0.014)	(0.011)	(0.078)	(0.057)	(0.027)	(0.015)
Pension	-0.068*	-0.076*	-0.025+	-0.037*	-0.267*	-0.148+	0.095*	0.082*
	(0.018)	(0.015)	(0.011)	(0.012)	(0.063)	(0.061)	(0.022)	(0.016)
Health Ins.	-0.030^	-0.051*	-0.010	-0.034*	-0.190*	-0.129+	0.036+	0.046*
	(0.016)	(0.015)	(0.010)	(0.011)	(0.055)	(0.058)	(0.019)	(0.015)
Phys Limitation	0.001	-0.001	0.000	-0.000	0.006+	0.003	-0.002+	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)	(0.003)	(0.001)	(0.001)

Percent of adult life spent married	**-0.079**$^{+}$ **(0.037)**	**0. 135* (0.031)**	**-0.046**$^{+}$ **(0.022)**	**0.133* (0.024)**	**-0.544* (0.124)**	**0.521* (0.124)**	**0.109**$^{+}$ **(0.043)**	**-0.150* (0.033)**
Ever smoked	**0.006 (0.016)**	**0. 029**$^{+}$ **(0.013)**	**-0.004 (0.010)**	**0.011 (0. 001)**	**0.055 (0.054)**	**0.272* (0.050)**	**-0.016 (0.019)**	**-0.042* (0.013)**
Sp suffers chronic back condition	**-0.020 (0.016)**	**-0.036**$^{+}$ **(0.016)**	**-0.013 (0.009)**	**-0.013 (0.012)**	**-0.050 (0.055)**	**-0.041 (0.063)**	**0.030 (0.019)**	**0.032**$^{\wedge}$ **(0.017)**
Sp suffers chronic pain	**-0.007 (0.043)**	**0.120**$^{+}$ **(0.059)**	**0.021 (0.026)**	**0.056 (0.045)**	**-0.065 (0.146)**	**0.418 (0.232)**	**0.006 (0.051)**	**-0.118**$^{\wedge}$ **(0.062)**
Sp suffers chronic nervous sys cond	**0.009 0.090**	**0.046 (0.066)**	**0.010 (0.054)**	**0.080 (0.051)**	**-0.037 (0.301)**	**0.076 (0.261)**	**0.009 (0.104)**	**-0.030 (0.069)**
Sp suffers chronic hypertension	**-0.024 (0.019)**	**-0.009 (0.016)**	**-0.009 (0.011)**	**0.009 (0.013)**	**-0.072 (0.063)**	**0.011 (0.065)**	**0.044**$^{+}$ **(0.022)**	**0.013 (0.017)**
Intercept	-0.445 (0.624)	-0.561* (0.398)	-0.048 (0.374)	-0.340^{+} (0.308)	1.269 (2.092)	-3.559^{+} (1.580)	1.688^{+} (0.726)	1.790* (0.419)

Notes: * indicates significant at the 99% confidence level; $^{+}$ indicates significant at the 95% confidence level; $^{\wedge}$ indicates significant at the 90% confidence level. Regressors unique to these estimations are in bold.

Table A2: 2SLS estimates of log wage for different measures of intermittency

	Intermittency Index I_i^*		Proportion of Potential Work Life Spent Absent $\left(\frac{1}{T_i}\sum_{j=1}^{N_i} L_{ji}\right)$		Number of Periods of Absence N_i		Proportion of Work Life Since Most Recent Spell of Absence ω^i	
Variable	Males	Females	Males	Females	Males	Females	Males	Females
I*	-0.539 (0.562)	-0.507^{+} (0.235)	--	--	--	--	--	--
$\left(\frac{1}{T_i}\sum_{j=1}^{N_i} L_{ji}\right)$	--	--	-1.156 (1.017)	-0.657^{+} (0.291)	--	--	--	--
N_i	--	--	--	--	-0.075 (0.097)	-0.056 (0.046)	--	--
ω^i	--	--		--	--	--	0.249 (0.350)	0.416^{+} (0.206)
Age/10	0.128 (0.386)	0.352* (0.225)	0.032 (0.381)	0.318 (0.219)	0.030 (0.354)	0.271 (0.217)	0.095 (0.373)	0.370 (0.229)
Age^2/1000	-0.152 (0.344)	-0.328* (0.209)	-0.061 (0.343)	-0.290 (0.204)	-0.003 (0.324)	-0.261 (0.200)	-0.128 (0.333)	-0.342 (0.210)
Black	-0.065$^{\wedge}$ (0.039)	0.026 (0.024)	-0.069$^{\wedge}$ (0.039)	0.010 (0.026)	-0.062 (0.041)	0.026 (0.024)	-0.066$^{\wedge}$ (0.039)	0.022 (0.024)
Married	0.099^{+} (0.047)	-0.030* (0.020)	0.104^{+} (0.041)	-0.018 (0.021)	0.110* (0.042)	-0.040^{+} (0.019)	0.109^{+} (0.044)	-0.025 (0.020)
Less than HS	-0.193* (0.033)	-0.078* (0.027)	-0.197* (0.035)	-0.090* (0.027)	-0.191* (0.032)	-0.086* (0.026)	-0.192* (0.032)	-0.085* (0.026)
College Grad	0.255* (0.036)	0.285* (0.034)	0.271* (0.043)	0.290* (0.034)	0.263* (0.041)	0.245* (0.026)	0.252* (0.035)	0.274* (0.031)
Northeast	0.115* (0.040)	0.158* (0.025)	0.111* (0.041)	0.169* (0.024)	0.132* (0.032)	0.172* (0.023)	0.125* (0.036)	0.166* (0.024)
West	0.195* (0.037)	0.181* (0.031)	0.208* (0.042)	0.179* (0.031)	0.185* (0.033)	0.155* (0.027)	0.187* (0.034)	0.174* (0.030)
Midwest	0.026 (0.033)	0.028 (0.021)	0.020 (0.035)	0.038$^{\wedge}$ (0.022)	0.039 (0.028)	0.029 (0.021)	0.034 (0.029)	0.031 0.021
Tenure/10	0.154* (0.041)	0.129* (0.049)	0.187* (0.044)	0.176* (0.035)	0.164* (0.037)	0.187* (0.036)	0.158* (0.040)	0.149* (0.043)
Tenure^2/1000	-0.232^{+} (0.099)	-0.166 (0.111)	-0.275* (0.102)	-0.265* (0.093)	-0.259* (0.093)	-0.293* (0.088)	-0.249* (0.093)	-0.233^{+} (0.964)
Occupation2	-0.243* (0.042)	-0.291* (0.025)	-0.237* (0.045)	-0.277* (0.025)	-0.244* (0.041)	-0.295* (0.025)	-0.246* (0.041)	-0.290* (0.025)
Occupation3	-0.528* (0.048)	-0.509* (0.030)	-0.543* (0.050)	-0.507* (0.030)	-0.534* (0.046)	-0.516* (0.029)	-0.531* (0.046)	-0.516* (0.030)
Occupation4	-0.371* (0.048)	-0.449* (0.042)	-0.381* (0.052)	-0.441* (0.041)	-0.347* (0.035)	-0.417* (0.037)	-0.355* (0.040)	-0.444* (0.041)
Industry2	-0.013 (0.055)	-0.022 (0.029)	0.015 (0.071)	-0.025 (0.029)	-0.041 (0.036)	-0.033 (0.027)	-0.036 (0.043)	-0.023 (0.029)
Industry3	-0.089^{+} (0.041)	-0.173* (0.032)	-0.089^{+} (0.041)	-0.171* (0.032)	-0.076^{+} (0.037)	-0.175* (0.031)	-0.084^{+} (0.039)	-0.167* (0.032)
Union	0.151* (0.043)	0.143* (0.026)	0.160* (0.046)	0.147* (0.027)	0.133* (0.032)	0.120* (0.022)	0.134* (0.034)	0.136* (0.025)

Part-time	0.061 (0.061)	0.046 (0.031)	0.045* (0.047)	0.040 (0.028)	0.025 (0.038)	0.003 (0.020)	0.036 (0.047)	0.031 (0.027)
Pension	0.198* (0.050)	0.138* (0.027)	0.206* (0.041)	0.153* (0.024)	0 215* (0.040)	0.168* (0.021)	0.211* (0.045)	0.143* (0.027)
Health Ins.	0.092* (0.031)	0.017 (0.024)	0.096* (0.029)	0.020 (0.023)	0.093* (0.031)	0.037^ (0.020)	0.099* (0.028)	0.024 (0.022)
Phys Limitation	-0.005* (0.002)	-0.002^ (0.001)	-0.006* (0. 001)	-0.002+ (0.001)	-0.005* (0.001)	-0.002+ (0.001)	-0.005* (0.002)	-0.002+ (0.001)
Intercept	2.182+ (1.039)	1.42+ (0.568)	2.387+ (1.055)	1.443+ (0.566)	2.528+ (0.987)	1.562 (0.553)	-1.997^ (1.141)	0.973 (0.672)

Notes: Estimates were obtained via 2SLS to account for the presence of generated regressors in the estimation (see Pagan 1984 and Wooldridge 2002). Each measure of intermittency is instrumented using the same sets of instruments. Instruments chosen were those exhibiting the highest level of explanatory power in the first-stage regression and those that could pass the test for over-identifying restrictions. * indicates significant at the 99% confidence level; + indicates significant at the 95% confidence level; ^ indicates significant at the 90% confidence level.