Chapter 2

The Labor Market Effects of National Health Insurance: Evidence from Taiwan

2.1 Introduction

This chapter investigates the effects of national health insurance (NHI) on the labor market. NHI has been adopted in almost all developed countries.[1] Newly-industrialized countries' rapid economic growth, which has brought about vast social, economic and political changes, has led some of them to implement NHI (e.g., Korea, Singapore and Taiwan) and some others to seriously consider adopting one (e.g., China, Indonesia, Malaysia, Mongolia, The Philippines, Thailand and Vietnam).[2] The introduction of NHI systems in newly-industrialized countries not only serves the purpose of enhancing the quality of human resources, which is required to sustain high economic growth, but it is part of the social welfare expansion compelled by democratization.[3]

In the literature, the effects of NHI on the labor market is seldom investigated even though NHI is increasingly prevalent. An exception is Gruber and Hanratty (1995), which looks at the labor market effects of Canada's introduction of NHI. In Canada NHI was implemented in 1962, with its geographical coverage expanded gradually until all provinces were covered in 1971. In half of Canada's provinces NHI was partially financed by premiums assessed on individuals, while the remaining provinces (as well as the federal government) relied exclusively on general or earmarked tax revenues. The premiums are analogous to lump sum taxes for moderate and upper income individuals, whose total contribution is independent of employ-

[1]See Cutler and Johnson (2002).

[2]See Gertler (1998).

[3]See, e.g., Wong (2003) on the case of Taiwan.

ment or hours of work. Their premiums only varied between individual and family coverage. Premiums were subsidized for low-income individuals, who typically received health insurance subsidies prior to NHI, so that there was no net change in their incentives for labor supply. Since the financing of the Canadian NHI did not increase disincentive to work, it is not surprising for Gruber and Hanratty (1995) to find that the implementation of NHI did not have any impact on employment or wages. On the contrary, the empirical results in Gruber and Hanratty (1995) suggest that both nominal wages and employment increased with the introduction of NHI in Canada. This finding appears to be surprising. Gruber and Hanratty (1995) points to the possibility that NHI caused a systematic increase in labor demand due to increases in labor productivity, which is associated with the implementation of NHI. There are two possible sources of associations between the Canadian NHI and the labor productivity increases. Firstly, the Canadian NHI boost labor mobility by replacing employer provided insurance, which is found in the literature to have a job-lock effect. Secondly, NHI led to improvements in the health of the labor force.

For the purposes of policy evaluation for countries who have adopted an NHI system and those who are planning to adopt one, empirical research on the effects of NHI is much needed. In this chapter, we consider the case of Taiwan, who implemented NHI in 1995. Our empirical results should be most relevant for public policy makers in Asian newly-industrialized countries since most of whom are considering adopting an NHI system. The NHI program in Taiwan, implemented in march 1995, is financed by premiums and government subsidies. The financing of Taiwan's NHI is much different from its Canadian counterpart. The NHI premiums, which are proportional to an employee's salary, are likely to create disincentives to work and to employ.

To illustrate how NHI may affect the labor market, we begin our investigation by presenting a simple theoretical model of the labor market. The theoretical model suggests that while the sign of NHI's impact on wage rates is ambiguous, NHI has a negative effect on equilibrium work hours because in the model the financing of NHI is through premiums, which is proportional to an employee's salary.

Our theoretical analysis is followed by an empirical investigation. Our empirical analysis is based on repeated cross-sectional individual data for the years 1992-1998 from Taiwan. We examine the labor market effects of NHI using the difference-in-difference approach. Contrary to Gruber and Hanratty's (1995) findings, our empirical results suggest that both work hours and wage rates decreased with the introduction of NHI. These results are consistent with our theoretical model's predications.

The remainder of this chapter proceeds as follows. Section 2.2 contains a review of studies on NHI's effects in the economic literature. In Section 2.3, we present an overview of Taiwan's public health insurance programs. In Section 2.4, we consider a simple theoretical model in order to obtain theoretical predictions of NHI's impact on work hours and wage rates. We describe our empirical strategy and data, respectively, in Sections 2.5 and 2.6. We report and discuss our results in Section 2.7. Finally, we provide a conclusion in Section 2.8.

2.2 Literature Review

National health insurance has been adopted in many developed countries and newly-industrialized countries.[4] Taiwan's NHI is financed by premiums, which are levied on an employee and her employer, and government subsidies. An employee's total NHI premium, which is proportional to an employee's wage, is similar to a payroll tax. The effects of Taiwan's NHI on an employee's labor supply behavior largely arise from its payroll-tax-like premium. In the following we review studies in the literature pertaining to the labor market impacts of NHI and payroll taxes.[5]

NHI could affect the labor market in many ways. However, in the literature, the labor market effects of NHI are not thoroughly researched. The availability of subsidized health insurance through NHI may discourage the labor market participation of married women if subsidized health insurance was only available through employment before NHI's implementation. See Chou and Staiger (2001) on the case of Taiwan.[6] Greater accessibility to health insurance brought about by the launch of NHI may also encourage the labor market withdrawal by older workers, who may have stayed in the labor market largely because of the need to be covered by health

[4]The U.S., who does not have NHI, is a notable exception. There are studies analyzing and explaining the absence of NHI in the U.S., e.g., Blake and Adolino (2001).

[5]The commencement of NHI may also have repercussions on other aspects of the economy. For example, NHI may crowd out other items in the government budget (see Lindsay and Zycher, 1984), have a positive effect on health outcomes (see Hanratty, 1996), encourage medical care utilization (see, e.g., Cheng and Chiang, 1997, and Chi and Hsin, 1999), dampen household savings (see Chou, Liu, and Hammitt, 2003), and change the hospital market structure (Tsai and Li, 2002, and Chou, Liu, and Hammitt, 2004).

[6]Conversely, the contraction in public health insurance coverage may encourage the labor market participation by those who are likely to be affected by the contraction. See Borjas (2003).

insurance. However, studying the case of Taiwan, Mete and Schultz (2002) do not find any such effect.

The labor market effect of NHI may also arise from its financing scheme. For example, in Canada NHI was enacted in 1962. Since NHI is financed by lump sum premiums and tax revenues, the implementation of NHI did not create any disincentives to labor supply or labor demand. Because of this the implementation of NHI did not bring about much distortion to the labor market. See Gruber and Hanratty (1995). This differs from the financing of Taiwan's NHI, where premiums are proportional to an employees' salary. Because of this, Taiwan's NHI is unlikely to be neutral to the labor market. Because of the differences in the financing scheme between Taiwan and Canada NHI, it is theoretically and practically interesting to see how our results, based on Taiwan's case, differ from Gruber and Hanratty's (1995) findings on the case of Canada.

Payroll taxation is growing as a financing source of the public sector (see the figures cited by Gruber, 1997). It is often used to finance social programs. Taiwan's NHI is an example of payroll-taxation-financed social programs. The economic literature on payroll taxation is concerned mainly with its disemployment effect. The existence of an disemployment effect hinges on (a) whether or not an employer can pass the full cost of a payroll tax to its employees and (b) whether or not the employees value the payroll-tax-financed benefit as much as the cost to the employer. A payroll tax does not have any disemployment effect only if the cost can be fully shifted to the employees and the employees value the benefits brought about by the imposition of the payroll taxation at above the cost to their employer.

The workers' compensation insurance program of the U.S. imposes a payroll taxation-like cost on employers. Gruber and Krueger (1991) finds that employers pass most of the worker's compensation insurance cost to their employees such that wages are lower and there is little disemployment effect. Studying the case of social security payroll taxation in Chile, Gruber (1997) finds that the incidence of a reduction the taxation is fully on wages and there is no employment effect. Examining the effect of the U.S. unemployment insurance taxation, whose tax rate varies across firms, Anderson and Meyer (1997, 2000) obtain similar findings. That is, while at the aggregate level firms are able to fully shift the cost of the tax to workers, individual firms are not able to pass on much of its payroll tax rate in excess of the industrial average rate. In contrast, Kugler and Kugler (2003) find that Columbian manufacturing firms were able to shift a small part of payroll taxation[7] to workers and this produced a disemployment effect. They attribute these findings to the weak linkage between taxes and benefits, and the downward rigidity caused by a minimum wage.

There is a related strand of research focusing on a payroll taxation's effect on workers' occupation choice. Since payroll taxes are levied on employees only, an increase in payroll taxes may encourage an individual to switch from being an employee to being self-employed. This conjecture is supported by the findings of Moore (1993), Bruce (2000) and Stabile (2004).

To summarize, there does not exist much research on NHI's labor market effects.

[7] The payroll taxation is imposed to finance pensions for the old, disabled, and survivors; health benefits for sickness and maternity; work injury benefits in manufacturing and commerce; family allowances and in-kind transfers for low-income households; and training, paid vacations and mandatory bonuses.

While Gruber and Hanratty's (1995) finding provides us with some information regarding the impacts of NHI under a particular financing scheme, studying Taiwan's case may further enhance our understanding of NHI's impact because the financing of Taiwan's NHI, whose premiums are proportional to an employee's salary, is much different from that of Canada's NHI. Because of the differences in the financing scheme between Taiwan's and Canada's NHI, it is theoretically and practically interesting to see how NHI's impact on wage rates and work hours in Taiwan's case, which is previously unexplored, differ from Gruber and Hanratty's (1995) findings in the case of Canada.

Moreover, the literature concerning the labor market effect of payroll taxation suggests that payroll taxation imposed on employers to finance social programs in the U.S. is largely shifted to employees. There are findings indicating that when the linkage between a payroll tax and the benefits that it finances is weak, employers shoulder much of the payroll tax and there is a disemployment effect. However, there are not many studies looking at cases where the linkage is weak, such that the relationship between the cost/benefit linkage of a payroll tax and whether or not the tax can be shifted is not yet firmly established. The case of Taiwan provides an opportunity for us to study the effect of payroll taxation when the cost/benefit linkage is weak.[8] Our study also differs from previous payroll taxation studies, which focus on the employment and wage effects, by examining the impact on work hours and wage rates.

[8]Under Taiwan's NHI there is a weak cost/benefit linkage because all covered individuals enjoy the same medical benefits.

2.3 NHI in Taiwan

Taiwan's NHI was officially inaugurated on March 1, 1995. The main objective of Taiwan's NHI is to provide health insurance coverage to the entire population with uniform benefits. Citizens' participation in Taiwan's NHI is mandatory.[9] As of 1994, prior to the implementation of NHI, 57% of the population in Taiwan had health insurance under 13 public health insurance plans, which were mostly tied to employment status. Among these public insurance plans, Labor Insurance (LI hereafter) and Government Employee Insurance (GEI hereafter) covered the largest fraction of Taiwan's population.[10] They were established in 1950 and 1958, respectively, and covered 37% and 8.06% of the population, respectively, in 1994.

LI was implemented in 1950 to cover all private establishments with 5 or more employees. In addition to providing health care insurance, LI also insured against maternity, disability, injury, death, and unemployment, and provided old-age pensions. Health insurance was a major component of LI, and was financed by premiums levied on both employers and employees. In 1994 the total LI premium rate for an

[9] In Taiwan prior to the introduction of NHI, a non-working individual did not have access to any public health insurance scheme, except for government employees' dependents. Under Taiwan's NHI, a non-working individual can be covered by NHI as a dependent of an employed family member. If a non-working individual does not have an employed family member, he/she can request his/her local government to sponsor (i.e., pay for the employer-paid premium) his/her coverage and he/she will pay NT$604 (around US$18) for the premium. For a household, which is certified by the government as a low-income household, its members' NHI premium will be paid for by the government. Moreover, for the unemployed, if they do not have an employed family member to sponsor their NHI coverage, its NHI premium will also be paid for by the government.

[10] Another important social health program was Farmers' Health Insurance, which was established in 1985. It covered all farmers and fishermen in Taiwan. However, since the compensation scheme and labor supply arrangements for these workers are very different from those in the manufacturing and service sectors, we exclude them from our study.

employee was 6.3% of an employee's monthly salary, which was split between the employer and the employee. The employer-paid and employee-paid premium rates were 4.9% and 1.4%, respectively. It is noted that dependents of the insured were not covered by LI.

GEI was set up in 1958.[11] Initially, only current government employees themselves were covered. The coverage was gradually enlarged such that by 1992 dependents (i.e., spouses, parents, and children) of government employees and retired employees were covered. The premium rate was 9% of the monthly salary, of which 5.85% and 3.15%, respectively, were contributed by the employer (i.e., the government) and the employee. For a dependent to be covered, the premiums paid by both the employer and employee were 1.9%.

In the pre-NHI era, LI and GEI provided similar medical benefits, e.g., outpatient visits, inpatient care and prescription drugs. In addition to providing medical insurance, the two public insurance plans also provided other benefits, e.g., retirement pension, maternity benefit, injury and sickness benefit, disability benefit, unemployment benefit, old-age benefit, and death benefit. The different premium rates for the two programs mainly reflected different levels of generosity regarding these other benefits. Table 2.1 reports the employer-paid and employee-paid premium rates of LI and GEI.

With the introduction of NHI in Taiwan, the medical insurance components of existing public insurance programs were supplanted. Existing programs still provide benefits other than medical insurance to the insured.

[11] Government employees were covered by LI before GEI was implemented.

The financing of Taiwan's NHI takes place mainly through premiums. An employee's premiums are proportional to her monthly salary and are paid by both herself and her employer. For both the public sector and private sector, the employer-paid and employee-paid premium rates are 2.98% and 1.27%, respectively. These same premium rates (i.e., 2.98% and 1.27%) are charged to cover each non-working dependent of an employee.[12,13] The NHI premium rates are displayed in Table 2.1.

After the implementation of NHI, the premium rates of both GEI and LI were cut to reflect the fact that the medical insurance component of these insurance plans was handed over to NHI. The employer-paid and employee-paid GEI premium rates were cut from 5.85% to 3.09% and from 3.15% to 1.66%, respectively. The cuts in employer-paid and employee-paid LI premium rates were from 4.90% to 4.55% and from 1.4% to 1.3%, respectively. While the cuts in GEI and LI premium rates are different, i.e., larger for GEI than LI, employees and employers in the two sectors are levied the same employee-paid and employer-paid NHI premium rates (i.e., 1.27% and 2.98% of the monthly salary, respectively). Thus, for employees and employers under GEI and LI, the implementation of NHI led to different changes in premiums, while the benefits that an employee enjoys are almost the same as before − that

[12]The coverage of an employee was initially financed solely by premiums contributed by the employee and her employer. Starting from 2002, the government subsidized employees' NHI coverage by contributing 10% of the total premiums paid to the Bureau of National Health Insurance, while the total premium rate was raised to 4.55% of an employee's salary. In addition, part of the revenues from cigarette excise taxes, which were introduced in 2001, is also used to finance Taiwan's NHI.

[13]The NHI in Taiwan is designed to be self-sufficient. According to Article 20, Chapter 3 of the National Insurance Act, the Bureau of National Health Insurance reviews the premium rates on an actuarial basis periodically, and adjusts the premium rates to make sure that Taiwan's NHI is financially sustainable.

is, after the implementation of NHI, there is a larger increase in medical insurance premium rates for an LI-eligible employee and her employer. The increases are 1.17% (i.e., $1.3\% + 1.27\% - 1.4\%$) and 2.63% (i.e., $4.55\% + 2.98\% - 4.90\%$). For a GEI employee, the premium rates of medical insurance levied on her and her employer do not change much. While the employee-paid premium rate decreased by 0.22% (i.e., $1.66\% + 1.27\% - 3.15\%$), the employer-paid premium rate increased by 0.22% (i.e., $3.09\% + 2.98\% - 5.85\%$). The changes in premium rates are tabulated in Table 2.1.

To sum up, the introduction of NHI in Taiwan has resulted in extra costs to both employees and employers in both the private sector and the public sector. The increases in costs are much larger for both employees and employers in the private sector than those in the public sector. In the current chapter, we examine these differences in terms of the increase in medical insurance premium rates in our empirical strategy to identify the effect of NHI's implementation on private sector employees' work hours and wage rates.

2.4 Model

To illustrate how NHI affects the labor market, we set up a simple labor market model. We make assumptions concerning the financing of NHI in our model according to Taiwan's NHI. In the model NHI is financed by premiums, which are proportional to an employee's wage, and they are shared between the employer and the employee. The employer-paid and employee-paid premium rates are respectively denoted by τ and π.

An employer's hours of labor demand and an employee's hours of labor supply are respectively denoted by H^D and H^S:

$$H^D = f\Big(w(1+\tau D)\Big), \tag{2.1}$$

$$H^S = g\Big(w(1-\pi D) + \alpha(B \times D)\Big), \tag{2.2}$$

where D denotes the number of people sponsored by the employee for NHI coverage (which equals one plus the employee's number of dependents), B comprises the medical benefits of coverage under NHI, α is the employee's subjective valuation of B, and w is the wage rate.

The way in which the insurance benefit B appears in (2.1)–(2.2) reflects the institutional setting of Taiwan's NHI. The total premium for covering an employee and her dependents equals $w(\tau + \pi)D$, while the actual cost to NHI of providing health insurance is BD. The two terms do not bear a direct relationship at either the national level, the individual employer level, or the individual employee level.[14]

To a worker, the term αBD represents a lump-sum transfer, which does not depend on the actual hours of work. This may shift her labor supply curve downward if there is an income effect. On the other hand, since αBD represents a discrete jump in the return to labor supply for individuals entering the labor market, the introduction of NHI may have a positive effect on labor market participation. However,

[14]Under Taiwan's NHI the total premium collected from an employer and its employees is less than the cost of providing health insurance to the employees. The gap is subsidized by the government. However, the premium rates may be raised if the NHI system is expected to be financially unsustainable under the current rates. For a detailed description see Section 2.3.

since we do not allow a corner solution in our model, we are not able to consider the effect of αBD on individuals' labor market participation decisions.

This NHI system is different from the institutional settings of previous studies in the literature. For example, in the scenario graphically analyzed by Summers (1989) and the case investigated by Gruber and Krueger (1991), the costs of workers' compensation insurance are proportional to the benefits that its workers enjoy. It is also true for the unemployment insurance program of the U.S., as examined by Anderson and Meyer (1997, 2000), and the Canadian NHI, as studied by Gruber and Hanratty (1995). The cost of the insurance providing insurance benefit B is C, while an employee's valuation of the insurance is αB.[15] In the case of Columbia's social security system as studied by Gruber (1997), the cost borne by an employer and the valuation of the benefit by an employee are proportional, and these two terms are also proportional to the employee's wage, i.e., $B = E \times r$, where r is the social security payroll tax rate and E is the employee's total wage.

In the studies mentioned above, benefits do not extend to an employee's dependents. Because of this, the number of an employee's dependents does not appear in the models. By imposing equilibrium condition $H^D = H^S = H$ and totally differentiating (2.1) and (2.2), we obtain:

$$\mathrm{d}H = f_1(1+\tau D)\mathrm{d}w + f_1 wD\mathrm{d}\tau + f_1 w\tau\mathrm{d}D, \qquad (2.5)$$

[15] Their models are specified as

$$H^D = f(w + C), \qquad (2.3)$$
$$H^S = g(w + \alpha B), \qquad (2.4)$$

where C is the cost of providing benefits B. The equilibrium condition $C = \alpha B$ is imposed.

$$\mathrm{d}H = g_1(1-\pi D)\mathrm{d}w - g_1 wD\mathrm{d}\pi - g_1 w\pi \mathrm{d}D + g_1\alpha B\mathrm{d}D; \tag{2.6}$$

and

$$\begin{bmatrix} 1 & -f_1(1+\tau D) \\ 1 & -g_1(1-\pi D) \end{bmatrix}\begin{bmatrix} \mathrm{d}H \\ \mathrm{d}w \end{bmatrix} = \begin{bmatrix} f_1 wD & 0 \\ 0 & -g_1 wD \end{bmatrix}\begin{bmatrix} \mathrm{d}\tau \\ \mathrm{d}\pi \end{bmatrix} + \begin{bmatrix} f_1 w\tau \\ -g_1 w\pi + g_1\alpha B \end{bmatrix}\mathrm{d}D; \tag{2.7}$$

where $f_1 = \dfrac{\partial f}{\partial w} < 0$, and $g_1 = \dfrac{\partial g}{\partial w} > 0$.

From (2.7), we obtain the following:

$$\frac{\partial w}{\partial \pi} = \frac{g_1 wD}{g_1(1-\pi D) - f_1(1+\tau D)} > 0, \tag{2.8}$$

$$\frac{\partial w}{\partial \tau} = \frac{f_1 wD}{g_1(1-\pi D) - f_1(1+\tau D)} < 0, \tag{2.9}$$

$$\frac{\partial H}{\partial \pi} = \frac{f_1 g_1(1+\tau)wD}{g_1(1-\pi D) - f_1(1+\tau D)} < 0, \tag{2.10}$$

$$\frac{\partial H}{\partial \tau} = \frac{f_1 g_1(1-\pi)wD}{g_1(1-\pi D) - f_1(1+\tau D)} < 0. \tag{2.11}$$

Since $\frac{\partial w}{\partial \pi}$ and $\frac{\partial w}{\partial \tau}$ are opposite in sign, the impact of NHI on the wage rates is ambiguous. Whether NHI has a positive or negative effect on the wage rates depends on the relative magnitudes of the slopes of the labor demand curve f_1 and supply curve g_1, and the relative magnitudes of τ and π. On the contrary, the impact of NHI on work hours is unambiguous. Since both $\frac{\partial H}{\partial \pi}$ and $\frac{\partial H}{\partial \tau}$ are negative, the impact of NHI on work hours is unequivocally negative.

These theoretical results are not surprising. The imposition of NHI premiums, which are proportional to an employee's salary, creates disincentives to work and disincentives to employ. This is equivalent to a leftward shift for both the labor demand curve and labor supply curve simultaneously. While equilibrium hours will decrease, the change in the equilibrium wage rate depends on the relative magnitude of the shifts in the demand curve and supply curve (which are determined by π and τ) and the relative gradients of the demand and supply curves (i.e., f_1 and g_1, respectively).

We see from (2.8)–(2.11) that the effects of NHI premium rates $\{\pi, \tau\}$ are functions of the number of people that an employee sponsors, i.e., D. However, since (2.8)–(2.11) are nonlinear functions of D, the number of dependents has an equivocal impact on NHI's premium effect on the equilibrium wage rate and work hours.

2.5 Empirical Strategy

2.5.1 Difference-in-Differences and Ratio-of-Ratios with Log-Linear Models

This chapter aims to assess the impact of NHI on the labor market, i.e., the equilibrium work hours and wage rates. To illustrate our empirical strategy, we start with a simple model. We assume that the labor market outcome L (i.e., work hours or wage rate) of an individual who is either in the private or the public sector is generated as follows:

$$L = L_{11}^{N \cdot P_1} \times L_{10}^{(1-N) \cdot P_1} \times L_{01}^{N \cdot P_0} \times L_{00}^{(1-N) \cdot P_0}, \tag{2.12}$$

where P_1, P_0, and N are binary indicators with $P_1 = 1$ indicating that a worker belongs to the private sector and $P_0 = 1$ indicating the public sector; $N = 1$ reflects the post-NHI period and $N = 0$ is the pre-NHI period; L_{sn} is an employment outcome, for private ($s = 1$) or public ($s = 0$) sector employees, before ($n = 0$) or after ($n = 1$) the enactment of the NHI; and we suppress the individual index i for compactness of notation. It is noted that a given employee in our sample cannot be observed in both periods, i.e., before the introduction of NHI and after, or be employed in both the public and private sectors. Thus, among the four terms $\{L_{11}, L_{10}, L_{01}, L_{00}\}$, only one is actually observed and the rest are counterfactuals.

Equation (2.12) reflects the fact that our sample consists of only public sector and private sector employees. Excluded from our sample are employees in the agricultural and fishery sector, the self-employed, employers, and the labor market's non-participants, for whom $P_0 = 0$ and $P_1 = 0$. This exclusion of individuals in sectors other than the private and public sectors may lead to parameter estimates with selection bias. We explain below how sample selectivity is dealt with further.

In our empirical specification, we assume that L_{sn} is determined as follows:

$$L_{sn} = \exp\Big(f_{\ell sn}(\boldsymbol{x}) + \epsilon_s\Big), \tag{2.13}$$

where $f_{sn}(\cdot)$ is a deterministic function of $\boldsymbol{x}$, $\boldsymbol{x}$ is a vector of socioeconomic characteristics (which includes a constant term) and the previous period business cycle indicators, and ϵ_s is an unobservable random variable. This allows work hours and wage rates of private sector employees to be determined differently from those of their public sector counterparts. Implicit in this specification is an assumption that the distribution of the unobservable heterogeneity factor for employees in a given sector (i.e., ϵ_s) does not change over time.[16] We allow this unobservable heterogeneity factor to be different across sectors.

After taking the log of L and denoting $\ell = \log(L)$, we have

$$\begin{aligned} \ell = & (N \cdot P_1) \cdot f_{\ell 11}(\boldsymbol{x}) + (1 - N) \cdot P_1 \cdot f_{\ell 10}(\boldsymbol{x}) + N \cdot P_0 \cdot f_{\ell 01}(\boldsymbol{x}) \\ & +(1 - N) \cdot P_0 \cdot f_{\ell 00}(\boldsymbol{x}) + P_1 \cdot \epsilon_{\ell 1} + P_0 \cdot \epsilon_{\ell 0}. \end{aligned} \tag{2.14}$$

Substituting $P_1 = (P_0 + P_1) \cdot P_1$ and $P_0 = (P_0 + P_1) \cdot (1 - P_1)$ into (2.14) we have

$$\begin{aligned} \ell = & (P_1 + P_0) \cdot \Big\{(N \cdot P_1) \cdot f_{\ell 11}(\boldsymbol{x}) + (1 - N) \cdot P_1 \cdot f_{\ell 10}(\boldsymbol{x}) \\ & +N \cdot (1 - P_1) \cdot f_{\ell 01}(\boldsymbol{x}) + (1 - N) \cdot (1 - P_1) \cdot f_{\ell 00}(\boldsymbol{x})\Big\} \\ & +P_1 \cdot \epsilon_{\ell 1} + P_0 \cdot \epsilon_{\ell 0}. \end{aligned} \tag{2.15}$$

$$\begin{aligned} = & (P_1 + P_0) \cdot f_{\ell 00}(\boldsymbol{x}) + P_1 \cdot [f_{\ell 10}(\boldsymbol{x}) - f_{\ell 00}(\boldsymbol{x})] \\ & +(P_1 + P_0) \cdot N \cdot [f_{\ell 01}(\boldsymbol{x}) - f_{\ell 00}(\boldsymbol{x})] \\ & +P_1 \cdot N \cdot \{[f_{\ell 11}(\boldsymbol{x}) - f_{\ell 10}(\boldsymbol{x})] - [f_{\ell 01}(\boldsymbol{x}) - f_{\ell 00}(\boldsymbol{x})]\} + \epsilon_\ell, \end{aligned} \tag{2.16}$$

where we define $\epsilon_\ell = P_1 \epsilon_{\ell 1} + P_0 \epsilon_{\ell 0}$.

By parameterizing $f_{\ell sn}(\boldsymbol{x})$ to be a linear function of $\boldsymbol{x}$ and adding subscripts i and t, respectively, as indices to denote sample individuals and years, we rewrite (2.16) as

$$\begin{aligned} \ell_{it} = & (P_{1it} + P_{0it}) \cdot \boldsymbol{\beta}'_{\ell 0} \boldsymbol{x}_{it} + P_{1it} \cdot \boldsymbol{\beta}'_{\ell 1} \boldsymbol{x}_{it} + (P_{1it} + P_{0it}) \cdot N_t \cdot \boldsymbol{\beta}'_{\ell 2} \boldsymbol{x}_{it} \\ & +P_{1it} \cdot N_t \cdot \boldsymbol{\beta}'_{\ell 12} \boldsymbol{x}_{it} + \epsilon_{\ell it}, \end{aligned} \tag{2.17}$$

[16]In our empirical analysis, we have experimented with allowing the distribution of ϵ_s to vary between the pre-NHI periods and the post-NHI periods for a given sector. However, our statistical testing suggests that such a specification is over-specified. Details of the tests and the testing results are available upon request.

$$= \boldsymbol{\beta}_\ell' \boldsymbol{w}_{it} + \epsilon_{\ell it}. \tag{2.18}$$

What differentiates our specification from those in the literature is the fact that we allow the vectors of parameters $\{\boldsymbol{\beta}_{\ell 0}, \boldsymbol{\beta}_{\ell 1}, \boldsymbol{\beta}_{\ell 2}, \boldsymbol{\beta}_{\ell 12}\}$ in (2.17) to be different. In conventional difference-in-difference analyses in the literature, only the coefficients for the constant term in $\boldsymbol{\beta}_{\ell 1}$, $\boldsymbol{\beta}_{\ell 2}$, and $\boldsymbol{\beta}_{\ell 12}$ are allowed to vary. To check whether our specification is superfluous or not, in the empirical analysis we test specification (2.17) against a restricted version where only the constant term is allowed to be different across regimes, i.e.,

$$\begin{aligned} \ell_{it} \;=\; & (P_{1it} + P_{0it}) \cdot \boldsymbol{\beta}_{\ell 0}' \boldsymbol{x}_{it} + P_{1it} \cdot \beta_{\ell 10} + (P_{1it} + P_{0it}) \cdot N_t \cdot \beta_{\ell 20} \\ & + P_{1it} \cdot N_t \cdot \beta_{\ell 12} + \epsilon_{\ell it}, \end{aligned} \tag{2.19}$$

where $\{\beta_{\ell 10},\ \beta_{\ell 20},\ \beta_{\ell 12}\}$ are scalar parameters.

Based on the parameter estimates of the regression model (2.17), we can compute two measures of the effects of NHI, namely, the difference-in-differences and ratio-of-ratios (see Mullahy, 1999). In the context of our study, the difference-in-differences gauges the changes in the levels of wage rates or work hours. For employee i, the difference-in-differences, denoted by Δ_{Li}, and the ratio-of-ratios, denoted by Π_{Li}, are expressed as

$$\Delta_{Li} = \Big[(L_{11i} - L_{10i}) - (L_{01i} - L_{00i})\Big], \tag{2.20}$$

$$\Pi_{Li} = \left(\frac{L_{11i}}{L_{10i}}\right) \Big/ \left(\frac{L_{01i}}{L_{00i}}\right). \tag{2.21}$$

Utilizing the parameter estimates $\widehat{\boldsymbol{\beta}}_\ell$, we can construct estimates of the difference-in-differences and ratio-of-ratios, i.e.,

$$\widehat{\Delta}_{Li} = \Big[(\widehat{L}_{11i} - \widehat{L}_{10i}) - (\widehat{L}_{01i} - \widehat{L}_{00i})\Big], \tag{2.22}$$

$$
\begin{aligned}
&= \exp\Big(\widehat{\boldsymbol{\beta}}'_{\ell 0}\boldsymbol{x}_{it}\Big) \\
&\quad \times \Bigg[\ \exp\Big(\widehat{\boldsymbol{\beta}}'_{\ell 1}\boldsymbol{x}_{it} + \widehat{\boldsymbol{\beta}}'_{\ell 2}\boldsymbol{x}_{it} + \widehat{\boldsymbol{\beta}}'_{\ell 12}\boldsymbol{x}_{it} + \frac{\widehat{\sigma}^2_{\epsilon\ell 1}}{2}\Big) - \exp\Big(\widehat{\boldsymbol{\beta}}'_{\ell 1}\boldsymbol{x}_{it} + \frac{\widehat{\sigma}^2_{\epsilon\ell 1}}{2}\Big) \\
&\quad - \exp\Big(\widehat{\boldsymbol{\beta}}'_{\ell 2}\boldsymbol{x}_{it} + \frac{\widehat{\sigma}^2_{\epsilon\ell 0}}{2}\Big) + \exp\Big(\frac{\widehat{\sigma}^2_{\epsilon\ell 0}}{2}\Big)\Bigg]; \qquad (2.23) \\
\widehat{\Pi}_{Li} &= \left(\frac{\widehat{L}_{11}}{\widehat{L}_{10}}\right) \Big/ \left(\frac{\widehat{L}_{01}}{\widehat{L}_{00}}\right), \\
&= \exp\Big(\widehat{\boldsymbol{\beta}}'_{\ell 12}\boldsymbol{x}_{it}\Big). \qquad (2.24)
\end{aligned}
$$

In (2.23) $\sigma^2_{\epsilon\ell s}$ stands for the variance of $\epsilon_{\ell its}$. We summarize the sample information in $\widehat{\Delta}_{Li}$ and $\widehat{\Pi}_{Li}$ by replacing $\boldsymbol{x}_{it}$ with the sample average $\overline{\boldsymbol{x}}$ pertaining to private sector and public sector employees, yielding $\widetilde{\Delta}_L$ and $\widetilde{\Pi}_L$, respectively.

A test of the effect of NHI on the level of labor market outcome L at the sample means is based on the following statistic.

$$
\begin{aligned}
\tau_L^{\Delta} &= \Bigg[\ \exp\Big(\widehat{\boldsymbol{\beta}}'_{\ell 1}\overline{\boldsymbol{x}}_{it} + \widehat{\boldsymbol{\beta}}'_{\ell 2}\overline{\boldsymbol{x}}_{it} + \widehat{\boldsymbol{\beta}}'_{\ell 12}\overline{\boldsymbol{x}}_{it} + \frac{\widehat{\sigma}^2_{\epsilon\ell 1}}{2}\Big) - \exp\Big(\widehat{\boldsymbol{\beta}}'_{\ell 1}\overline{\boldsymbol{x}}_{it} + \frac{\widehat{\sigma}^2_{\epsilon\ell 1}}{2}\Big) \\
&\quad - \exp\Big(\widehat{\boldsymbol{\beta}}'_{\ell 2}\overline{\boldsymbol{x}}_{it} + \frac{\widehat{\sigma}^2_{\epsilon\ell 0}}{2}\Big) + \exp\Big(\frac{\widehat{\sigma}^2_{\epsilon\ell 0}}{2}\Big)\Bigg], \qquad (2.25)
\end{aligned}
$$

which is distributed as χ^2_1. The null and alternative hypotheses are as follows.

$$
\begin{aligned}
\mathrm{H}^{\Delta}_{L0}: &\quad \tau^{\Delta}_L = 0, \\
\mathrm{H}^{\Delta}_{L1}: &\quad \tau^{\Delta}_L < 0; \quad L = H,\ W.
\end{aligned}
$$

In the context of the current chapter, $\widetilde{\Pi}_L$ is interpreted as the estimate of NHI's impact on the relative growth rate of wage rates and work hours between private sector employees and public sector employees at the sample means. If $\widetilde{\Pi}_W = 1$ (or $\widetilde{\Pi}_H$=1), we will conclude that NHI has no effect on the growth rates of private sector employees' wage rate (or work hours) relative to the public sector employees'.

On the contrary, if we find $\widetilde{\Pi}_L < 1$, the empirical results suggest that NHI has a negative impact on the private sector employees' relative growth rate of L; and if we find $\widetilde{\Pi}_L > 1$, the effect is positive.[17] A test of NHI's ratio-of-ratios effect involves the statistic

$$\tau_L^{\Pi} = \exp(\widehat{\boldsymbol{\beta}}'_{\ell 12}\overline{\boldsymbol{x}}), \tag{2.26}$$

which is distributed as χ_1^2. We test the following hypotheses:

$$\begin{array}{ll} \mathrm{H}_{L0}^{\Pi}: & \tau_L^{\Pi} = 1 \\ \mathrm{H}_{L1}^{\Pi}: & \tau_L^{\Pi} < 1;\ L = H, W. \end{array}$$

2.5.2 Allowing for Endogeneity

In equation (2.16), the identification of NHI's impact on work hours and wage rates hinges on the conditions that

$$\mathrm{E}\Big[P_{1it}\epsilon_{\ell 1it}\Big|\boldsymbol{x}_{it}\Big] = 0, \quad \mathrm{E}\Big[P_{0it}\epsilon_{\ell 0it}\Big|\boldsymbol{x}_{it}\Big] = 0. \tag{2.27}$$

Condition (2.27) implies that $\mathrm{cov}(P_{1it}, \epsilon_{\ell 1it}|\boldsymbol{x}_{it}) = 0$ and $\mathrm{cov}(P_{0it}, \epsilon_{\ell 0it}|\boldsymbol{x}_{it}) = 0$. These expressions imply that we observe all determinants which affect an individual's sectoral choice, i.e., sectoral choice is assumed to be exogenous in the work hours and wage rate models. However, this assumption is dubious since it is very possible that we do not observe all factors which determine an individual's labor market participation decision and her choice of sectors. Examples of such unobservable factors are an individual's degree of risk aversion and her ability. If an individual

[17] It is obvious from (2.24) that Π_L is always positive.

has a higher degree of risk aversion, then she may prefer to work in the public sector, where income is less volatile. Moreover, an individual with better ability may prefer to be a business owner.

In light of the above discussion, we allow that $\text{cov}(P_1, \epsilon_1) \neq 0$ and $\text{cov}(P_0, \epsilon_0) \neq 0$, i.e., P_1 and P_0 are endogenous.[18] The approach that we adopt is similar to that of Vella and Verbeek (1999). To proceed with the identification of the effect by NHI, we specify a model of sectoral choice. Let us denote the latent determinant of sectoral choice for individual i at time t by S^*_{sit}, where $s = 0, 1, 2$ is the index for the public sector, the private sector, and the other sectors (i.e., the agricultural and fishery sector, the self-employed, employers, and labor market non-participants), respectively. Sector s is chosen by individual i if

$$S^*_{sit} > S^*_{kit}, \quad k \neq s.$$

Determinant S^*_{sit} is unobserved and is specified as a function of demographic characteristics (denoted by $\boldsymbol{z}_{it}$), i.e.,

$$S^*_{sit} = \boldsymbol{\alpha}'_s \boldsymbol{z}_{it} + u_{sit}, \tag{2.28}$$

where $\boldsymbol{\alpha}_s$ is a vector of parameters pertaining to sector s, and $\boldsymbol{\alpha}_2$ (that for the sectors other than the private and public sectors) is normalized such that $\boldsymbol{\alpha}_2 = \mathbf{0}$.[19] Assuming that u_{si} is a mean-zero, independent, identically and standard extreme

[18] Endogeneity of P_1 and P_0 implies that private/public sectoral differences in work hours and the wage rate are endogenous and there exists sample selectivity.

[19] Since our data do not comprise variables which are correlated with sectoral choice, but uncorrelated with work hours and the wage rate, $\boldsymbol{z}_{it}$ consists of $\boldsymbol{x}_{it}$ and second-order interaction terms among individual variables in $\boldsymbol{x}_{it}$. The inclusion of second-order interaction terms follows Rosenbaum and Rubin (1983).

value distributed random variable, with variance $\sigma_{su}^2 = \frac{\pi^2}{6}$, we have a multinomial logit model for sectoral choice.[20]

By denoting the standard extreme value cumulative distribution function and the inverse normal cumulative distribution function by $F(\,\cdot\,)$ and $\Phi^{-1}(\,\cdot\,)$, respectively, let

$$\epsilon_{\ell sit} = \rho_{\ell s}\frac{\sigma_{\ell\epsilon s}}{\sigma_{su}}J\left(u_{sit}\right) + \eta_{\ell sit}, \quad \text{where } J(\,\cdot\,) = \Phi^{-1}\Big(F(\,\cdot\,)\Big), \tag{2.29}$$

where $\sigma_{\ell\epsilon s}$ and σ_{su}, respectively, are the standard errors of $\epsilon_{\ell sit}$ and u_{sit}, $\rho_{\ell s}$ is the correlation coefficient of $\epsilon_{\ell s}$ and $J\left(u_{sit}\right)$, $\eta_{\ell sit}$ is normally distributed and the covariance $\text{cov}(J\left(u_{sit}\right), \eta_{\ell sit}) = 0$. This specification follows Lee (1982, 1983). The purpose of this specification for the structure of the random variable $\epsilon_{\ell sit}$ is to allow for there to be correlation between $\epsilon_{\ell sit}$ and u_{sit}. If $\rho_{\ell s} \neq 0$, then there is a correlation between the two random variables.

With the specification of the relationship between $\epsilon_{\ell sit}$ and u_{sit}, we can address the endogeneity of P_{0it} and P_{1it}. More specifically, by taking the expectation of $P_{1it}\epsilon_{\ell 1it}$ and $P_{0it}\epsilon_{\ell 0it}$ conditional upon $\boldsymbol{x}_{it}$, $\boldsymbol{z}_{it}$ and P_{0it} and P_{1it}, we have

$$\begin{aligned}
\text{E}\Big[P_{0it}\epsilon_{\ell 0it}\Big|\boldsymbol{x}_{it}, \boldsymbol{z}_{it}, P_{0it}, P_{1it}\Big] &= P_{0it}\theta_{\ell 0}\frac{\phi\left(J(\boldsymbol{\alpha}_0'\boldsymbol{z}_{it})\right)}{1 - F(\boldsymbol{\alpha}_0'\boldsymbol{z}_{it})} \\
&= P_{0it}\theta_{\ell 0}\lambda_{0it}, \qquad (2.30) \\
\text{E}\Big[P_{1it}\epsilon_{\ell 1it}\Big|\boldsymbol{x}_{it}, \boldsymbol{z}_{it}, P_{0it}, P_{1it}\Big] &= P_{1it}\theta_{\ell 1}\frac{\phi\left(J(\boldsymbol{\alpha}_1'\boldsymbol{z}_{it})\right)}{1 - F(\boldsymbol{\alpha}_1'\boldsymbol{z}_{it})} \\
&= P_{1it}\theta_{\ell 1}\lambda_{1it}, \qquad (2.31)
\end{aligned}$$

where $\theta_{\ell s} \equiv \rho_{\ell s}\frac{\sigma_{\ell\epsilon s}}{\sigma_{su}}$. See Lee (1982, 1983) and Vella and Verbeek (1999) for the

[20]Normality for u_{si}, which results in a multinomial probit model, can also be assumed. We do not employ a multinomial probit model for sectoral choice, because it involves a high computation cost, which is especially daunting in our case given the size of our sample.

derivation. Plugging (2.29), (2.30), and (2.31) into equation (2.18) yields

$$\ell_{it} = \boldsymbol{\beta}_\ell' \boldsymbol{w}_{it} + P_{0it}(\theta_{\ell 0}\lambda_{0it} + v_{\ell 0it}) + P_{1it}(\theta_{\ell 1}\lambda_{1it} + v_{\ell 1it}), \tag{2.32}$$

where $v_{\ell sit}$ is a residual and $v_{\ell sit} = \theta_{\ell s} J(u_s) - \theta_{\ell s}\lambda_{sit} + \eta_{\ell s}$. The variable λ_{sit} is an endogeneity correction term.

Our estimation of the parameters in (2.32) is conducted via a two-stage method. In the first stage $\widehat{\lambda}_{sit} = \dfrac{\phi\left(J(\widehat{\boldsymbol{\alpha}}_s' \boldsymbol{z}_{it})\right)}{1 - F(\widehat{\boldsymbol{\alpha}}_s' \boldsymbol{z}_{it})}$ is constructed by first obtaining parameter estimates $\{\widehat{\boldsymbol{\alpha}}_0, \widehat{\boldsymbol{\alpha}}_1\}$ of the sectoral choice parameters $\{\boldsymbol{\alpha}_0, \boldsymbol{\alpha}_1\}$ by means of estimating the multinomial logit model described in (2.28). In the second stage we plug $\widehat{\lambda}_{sit}$ into (2.32), i.e.,

$$\ell_{it} = \boldsymbol{\beta}_\ell' \boldsymbol{w}_{it} + P_{0it}(\theta_{\ell 0}\widehat{\lambda}_{0it} + v_{\ell 0it}) + P_{1it}(\theta_{\ell 1}\widehat{\lambda}_{1it} + v_{\ell 1it}), \tag{2.33}$$

and the parameter estimates $\{\widehat{\boldsymbol{\beta}}_\ell, \widehat{\theta}_{\ell 0}, \widehat{\theta}_{\ell 1}\}$ are obtained by estimating model (2.33) with an ordinary linear regression. It is noted that we adjust the standard errors of coefficient estimates pertaining to (2.33) to account for the fact that $\widehat{\lambda}_{sit}$ is a generated regressor.

The difference-in-difference estimator is adjusted as follows.

$$\begin{aligned} \widehat{\Delta}_{Li} &= \exp\Big(\widehat{\boldsymbol{\beta}}_{\ell 0}' \boldsymbol{x}_{it}\Big) \\ &\quad \times \Big[\exp\Big(\widehat{\boldsymbol{\beta}}_{\ell 1}' \boldsymbol{x}_{it} + \widehat{\boldsymbol{\beta}}_{\ell 2}' \boldsymbol{x}_{it} + \widehat{\boldsymbol{\beta}}_{\ell 12}' \boldsymbol{x}_{it} + \widehat{\theta}_{\ell 1}\widehat{\lambda}_{1it} + \frac{\widehat{\sigma}_{\ell v1}^2}{2}\Big) \\ &\quad - \exp\Big(\widehat{\boldsymbol{\beta}}_{\ell 1}' \boldsymbol{x}_{it} + \widehat{\theta}_{\ell 1}\widehat{\lambda}_{1it} + \frac{\widehat{\sigma}_{\ell v1}^2}{2}\Big) \\ &\quad - \exp\Big(\widehat{\boldsymbol{\beta}}_{\ell 2}' \boldsymbol{x}_{it} + \widehat{\theta}_{\ell 0}\widehat{\lambda}_{0it} + \frac{\widehat{\sigma}_{\ell v0}^2}{2}\Big) + \exp\Big(\widehat{\theta}_{\ell 0}\widehat{\lambda}_{0it} + \frac{\widehat{\sigma}_{\ell v0}^2}{2}\Big)\Big]. \end{aligned} \tag{2.34}$$

The presence of $\{\widehat{\lambda}_{\ell 0it}\widehat{\rho_{\ell 0}}, \widehat{\sigma}_{\ell v0}^2, \widehat{\lambda}_{\ell 1it}\widehat{\rho_{\ell 1}}, \widehat{\sigma}_{\ell v1}^2\}$ in $\widehat{\Delta}_{Li}$ arises from the fact that

$$
\begin{aligned}
&\mathrm{E}(L_{it}|\boldsymbol{w}_{it}, \boldsymbol{\beta}_\ell, \lambda_{\ell 0it}, \lambda_{\ell 1it}, \theta_{\ell 0}, \theta_{\ell 1}) \\
&\quad = \exp\Big(\boldsymbol{\beta}_\ell' \boldsymbol{w}_{it} + P_{0it}\theta_{\ell 0}\lambda_{\ell 0it} + P_{1it}\theta_{\ell 1}\lambda_{\ell 1it}\Big)\times \mathrm{E}\Big[\exp(v_{\ell 0it})\Big]\times \mathrm{E}\Big[\exp(v_{\ell 1it})\Big], \\
&\quad = \exp\Big(\boldsymbol{\beta}_\ell' \boldsymbol{w}_{it} + P_{0it}\theta_{\ell 0}\lambda_{\ell 1it} + P_{1it}\theta_{\ell 1}\lambda_{\ell 1it}\Big)\times \exp\Big(\tfrac{\sigma^2_{\ell v0}}{2}\Big)\times \exp\Big(\tfrac{\sigma^2_{\ell v1}}{2}\Big).
\end{aligned} \tag{2.35}
$$

See Manning (1998).

Accounting for endogeneity of P_{0it} and P_{1it}, the statistic of the tests of the effects of NHI on the levels of wage rates and work hours at the sample means are revised as follows.

$$
\begin{aligned}
\tau_L^\Delta \;=\; & \Big[\exp\Big(\widehat{\boldsymbol{\beta}}_{\ell 1}' \overline{\boldsymbol{x}}_{it} + \widehat{\boldsymbol{\beta}}_{\ell 2}' \overline{\boldsymbol{x}}_{it} + \widehat{\boldsymbol{\beta}}_{\ell 12}' \overline{\boldsymbol{x}}_{it} + \widehat{\theta}_{\ell 1}\widehat{\lambda}_{\ell 1it} + \frac{\widehat{\sigma}^2_{\ell v1}}{2}\Big) \\
& - \exp\Big(\widehat{\boldsymbol{\beta}}_{\ell 1}' \overline{\boldsymbol{x}}_{it} + \widehat{\theta}_{\ell 1}\widehat{\lambda}_{\ell 1it} + \frac{\widehat{\sigma}^2_{\ell v1}}{2}\Big) \\
& - \exp\Big(\widehat{\boldsymbol{\beta}}_{\ell 2}' \overline{\boldsymbol{x}}_{it} + \widehat{\theta}_{\ell 0}\widehat{\lambda}_{\ell 0it} + \frac{\widehat{\sigma}^2_{\ell v0}}{2}\Big) + \exp\Big(\widehat{\theta}_{\ell 0}\widehat{\lambda}_{\ell 0it} + \frac{\widehat{\sigma}^2_{\ell v0}}{2}\Big)\Big] = 0.
\end{aligned}
$$

The variable $\widehat{\Pi}_{Li}$ associated with the ratio-of-ratios test is not affected by allowing for endogeneity.

2.5.3 Some Caveats

A potential weakness of our empirical strategy is that, in order to account for the endogeneity of occupational status, the identification of parameters in (2.33) relies mainly on the non-linearity of $\widehat{\lambda}_{sit}$ as a function of $\boldsymbol{z}_{it}$. This arises from the fact that the vector of explanatory variables $\boldsymbol{z}_{it}$ of the multinomial logit model mainly consists of $\boldsymbol{x}_{it}$ (plus second-order and interaction terms of variables there). It is possible that $\widehat{\lambda}_{sit}$ is highly correlated with $\boldsymbol{x}_{it}$. In such a case, multicollinearity will lead to the inflation of the parameter estimates' standard errors. This prevents us from precisely identifying the effects of NHI on labor market outcomes.

Our identification fails when there are omitted variables whose relative effects on private sector vs. public sector employees change over time. Potentially, there are two categories of omitted variables which lead to biased estimates of the difference-in-differences. The first pertains to macroeconomic factors affecting private/public relative work hours and wage rates. This arises, because private sector and public sector employees' work hours and wage rates may respond to economic shocks differently. For example, government employees' work hours and wage rates may not be as responsive to changes in economic conditions or tightness in the labor market as are private employees. To guard against such omitted variables, we include indicators of the business cycle and labor market tightness (i.e., the unemployment rate and the composite index of Taiwan's stock exchange) as regressors and allow them to determine private sector and public sector employees' labor market outcomes differently. In addition, we have chosen our study period carefully to make sure that there are no institutional/policy changes which may affect the structure of private/public relative work hours and wage rates.

Moreover, identification fails if we omit individual characteristics which affect one's NHI premium rate, e.g., whether or not one's spouse is employed and the number of children, etc. Since both the number of children and whether or not one's spouse is employed are not observed in our sample, our results may be subject to bias. To control for this category of omitted variables, we estimate the difference-in-differences based on a subsample of single individuals. By so doing the estimated difference-in-difference estimates are not confounded by marital status and the number of children, which affect an individual's total NHI premium rate.

2.6 Data

To investigate NHI's impact on the labor market, we use survey data obtained from the Manpower Utilization Survey (MUS), which is conducted by Taiwan's Directorate-General of Budget, Accounting, and Statistics. The MUS is an annual survey conducted in May every year since 1978. The purpose of the MUS is to collect information on Taiwan's labor force. Through the MUS data the government gains an understanding of the current situation in the labor market. In addition, the government also uses the MUS data for the purposes of designing and evaluating employment policies and job training programs.

The MUS survey adopts a two-stage random sampling method. In the first stage, villages and communities (called "*li*" which is a small administrative geographical unit) are drawn. The drawing of villages and communities in the first stage is through stratified sampling, where villages and communities are stratified based on their degree of urbanization, industrial structure, and residents' educational attainment. In the second stage, households are drawn from the sampled villages or communities.

All persons aged 15 and over in a sampled household are interviewed. The MUS interviews members of the sampled households to collect information on these individuals' demographic characteristics (e.g., age, gender, relationship to head, etc.), employment status, job characteristics (e.g., occupation, industry, and firm size, etc.), income,[21] work hours, etc.[22]

To identify NHI's effect on the labor market, we employ three pre-NHI (i.e., 1992–1994) cross-sections and two post-NHI (i.e., 1995–1996) cross-sections.[23] In order to avoid complications involving the youth's labor market entry and the elderly's retirement, our sample only includes those who are aged 26–59. We also exclude individuals who face constraints in labor supply due to health or schooling reasons. We focus on those who are employed in the private or public sector. Farmers, fishermen, employers, and the self-employed are excluded from our sample, because their health insurance premiums are determined differently. Finally, employees working less than 20 hours per week are also deleted from our sample. This is due to the fact that goverment employees are all full-time employees and in the pre-NHI era Labor Insurance covered full-time employees only. Thus, the exclusion of part-time employees makes our sample more homogeneous across time and sectors.

[21]Monthly labor income is collected by the MUS. The use of monthly labor income in our analysis may underestimate the NHI's effect.

[22]The MUS collects information on the number of children for female respondents only. Since we have information on a respondent's relationship with the head of a household, but not her relationship with everybody else in the household, we are not able to identify the spouse of every female respondent. This prevents us from obtaining information on a male respondent's number of children except when he is the head of a household.

[23]The reason why we do not use data beyond the 1996 cross-section is that the coverage of Taiwan's Labor Standard Law was extended to several previously uncovered industries in the private sector as of the beginning of 1997. The extension of the Labor Standard Law may have introduced a structural change to the pattern of labor supply and demand behavior in the affected industries.

After our sample selection, our full sample consists of 78,628 respondents. Among these sample respondents, 19.69% (15,481) are government employees and 80.31% (63,147) are private-sector employees. Government employees are over-represented in our sample due to the exclusion of the self-employed and agricultural/fishery workers, which are two large employment sectors in Taiwan.[24]

The variables used in our empirical analyses are all listed and defined in Table 2.2. In our empirical analyses we use the full sample along with subsamples stratified by the respondents' gender, marital status and quartiles of the wage rate distribution. Descriptive statistics of the full sample are displayed in Table 2.3, while those pertaining to the male and female subsamples are displayed in Table 2.4. According to Table 2.3, private sector employees worked longer hours than their public sector counterparts. In the period 1992–1994, the average work hours in the private sector were 48.19 per week, and the corresponding figure for public-sector employees was 45.81. After 1995, this pattern remained the same. For private sector employees, the average hours worked decreased by 1.91% to 47.27. Public sector employees' average work hours did not change much in the two periods, being 45.81 for the period 1992–1994 and 45.64 for 1995–1996. A comparison of average work hours for employees in the two sectors indicates that private sector employees have on average have experienced a relative reduction in the weekly work hours by 0.75.[25] These sample means suggest that, relative to public sector employees, private sector employees experienced a reduction in work hours.

[24] In Taiwan government employees account for only 8% of the civilian labor force.

[25] This figure represents a private vs. public difference-in-difference of average weekly work hours, i.e., $(47.27 - 48.19) - (45.64 - 45.81) = -0.75$.

The full sample means in Table 2.3 reveal that public sector employees' average hourly wage rate (in New Taiwanese Dollars, at 2001 constant dollars) is higher than their private sector counterparts'. Comparing the average real hourly wage rate for public sector employees and private sector employees across the periods 1992–1994 and 1995–1996, we find that relative to public sector employees, private sector employees on average have sustained a decline in the hourly wage rate, i.e., NT$2.11.[26] The changes in private/public relative work hours and wages suggest that the introduction of NHI in Taiwan had a negative effect on the work hours and real wages of private sector employees relative to public sector employees.

The descriptive statistics by gender are reported in Table 2.4. Female respondents have lower work hours and wage rates than the male ones. In Table 2.4 we find a similar pattern of public/private relative work hour and wage rate changes in both the male and female subsamples as in the full sample. Male employees in the private sector endured a 0.96 hour reduction in work hours and a NT$1.34 cut in the hourly wage rate relative to their public sector counterparts, while female employees in the private sector endured a 0.40 hour reduction in work hours and a NT$1.55 cut in the hourly wage rate relative to their public sector counterparts. These figures show that male employees in the private sector are more severely affected by the implementation of NHI than their female counterparts.

To have a preliminary examination of the effect of Taiwan's NHI on the labor market, we look at Figures 2.1–2.6.[27] Figure 2.1 shows that the public/private sector

[26] This figure represents a private vs. public difference-in-differences, i.e., $(176.35 - 165.44) - (233.99 - 220.97) = -2.11$

[27] In these figures we expand the sample period to 1990–1999 in order to have a better idea of The

inequality in real wage rates diverges slightly after 1995. The real wage rates in Figure 2.1 suggest that the wage rate differentials between public sector and private sector employees are quite stable over time until 1995. The spread in the average wage rate between public sector employees and private sector employees started to become slightly larger after 1995. This implies that private sector employees' wage rates were growing at a lower rate than their public sector counterparts. the trends of real wage rates in Figure 2.2 and Figure 2.3 indicate that the divergence in real wage rates is more salient for male employees than for female employees. Actually, there is no obvious change in the public/private relative real wage rates for female employees after 1994.

The pattern of work hour differentials between public sector and private sector employees as exhibited in Figure 2.4 is similar to that for wage rates. Public sector employees' average work hours did not change very much over time during the period 1990–1999, while those for private sector employees took a dip in 1995. Figures 2.5 and 2.6 suggest that the decline in private sector employees' relative work hours is more pronounced for male employees than for female employees.

To sum up, the graphs on real wage rates and work hours demonstrate that NHI has a negative effect on private sector employees' work hours and real wage rates relative to those of their public sector counterparts. This is especially true for male employees.

In the empirical models, we use a respondent's gender, marital status, age (and

trend of real wage rates and work hours over time. The data are from the Manpower Utilization Survey, which is described in Section 2.6. The figures draw information from employees who are aged 26–59 and working full time in the non-agricultural sector.

its square), years of education, number of non-working children in household, and whether a respondent's residence is in Northern Taiwan, in Central Taiwan, or in Southern Taiwan as control variables in our empirical model. In addition, to control for macro-economic conditions in the empirical models, we use the county unemployment rate and the composite index of the Taiwan Stock Exchange. Descriptive statistics of these variables are exhibited in Tables 2.3 and 2.4.

In the full sample, the demographic characteristics of employees in the two sectors are slightly different, as reported in Table 2.3. Public-sector employees on average have more education. Public sector employees on average have 12.88 and 13.12 years of education for the 1992–1994 and 1995–1996 periods, respectively, while their private sector counterparts have an average of 9.87 and 10.36 years of education. The public sector employees are older. On average a public sector employee is 39.88 and 40.56 years old in the 1992–1994 and 1995–1996 periods, respectively, while an average private sector employee is 36.89 and 37.16 years old. This pattern of sectoral differences in demographic characteristics extends to the male and female subsamples, as displayed in Table 2.4.

2.7 Results

In our empirical investigation we estimate the equations for work hours and wage rates. Based on the estimation results we obtain estimates of the difference-in-differences and ratio-of-ratios, which are used to gauge the impact of NHI on private sector employees' work hours and wage rates. To gain deeper insights into the impact of NHI on work hours and wage rates, we stratify our sample into subsamples by gender and marital status. In addition, we stratify the subsamples of men and women according to whether they have non-working children, whose presence is likely to affect the NHI's labor market distortion because the NHI premiums increase with the number of an employee's dependents. Since we have information on a respondent's children when he/she is the head or spouse of the household, we restrict the empirical analysis to respondents who are the head or spouse of the household.[28]

Moreover, since the impact of NHI on labor supply depends on an employee's wage rate and the elasticity of labor supply, which is likely to also depend on the wage rate, we perform additional estimations by further stratifying each subsample by quartiles of the wage rate distribution. That is, observations in each subsample are further classified into four groups according to their wage rates, namely, (1) having wage rates below the first quartile, (2) having wage rates between the first and second quartiles, (3) having wage rates between the second and third quartiles, and (4) having wage rates above the third quartile. [29]

The difference-in-difference and ratio-of-ratios estimates are reported in Tables 2.6–2.8. While reporting both the endogeneity-corrected and uncorrected results, we rely on the endogeneity-corrected ones to draw our inference.[30] This is because the endogeneity-correction terms in most cases are statistically significant,

[28]The characteristics of the sample of household heads and their spouses are reported in Table 2.5.

[29]In computing the three quartiles, we use the wage rates of all full-time employees. The values of the first, second and third quartiles are \$123.88, \$167.60, and \$220.04, respectively.

[30]The endogeneity-corrected estimation results are very similar to the ones without endogeneity correction.

and in the few cases when they are not, the differences between the endogeneity-corrected and uncorrected $\widetilde{\Delta}_L$ and $\widetilde{\Pi}_L - 1$ (i.e., estimates of difference-in-differences and ratio-of-ratios minus one) are not substantial. The quartile results are reported in Tables 2.9–2.16. The full set of parameter estimates are reported in Tables 2.17–2.25. The multinomial logit estimation results, which are used to construct endogeneity correction terms for our two-stage estimation, are displayed in Tables 2.26–2.34.

2.7.1 Work Hours

Full Sample Results

We first look at the estimation results pertaining to work hours based on the full sample. According to the endogeneity-corrected estimation results reported in Table 2.6 the difference-in-difference estimate of work hours is $\widetilde{\Delta}_H = -1.80$. This estimate suggests that a private sector employee's work hours decrease by around two hours after the introduction of NHI relative to public sector counterparts. With the p-value well below the conventional significance levels, the F-statistic (i.e., 34.69) suggests that the difference-in-difference estimate is significantly different from zero. The endogeneity-corrected ratio-of-ratios estimate suggests that, relative to public sector employees, private sector employees' work hours decreased by 3.87%, i.e., $\widetilde{\Pi}_L - 1 = -0.0387$, which, having an F-statisitic of 32.40, is statistically significant at conventional significance levels. These results suggest that NHI's implementation is likely to have an impact on private sector employees' work hours.

Stratification by Gender and Marital Status

Now we turn to the estimation results pertaining to the male subsamples, which are stratified by marital status. According to the results reported in Table 2.7, with $\left\{\widetilde{\Delta}_H = -2.63,\ \widetilde{\Pi}_H - 1 = -5.40\%\right\}$ and $\left\{\widetilde{\Delta}_H = -2.26,\ \widetilde{\Pi}_H - 1 = -4.66\%\right\}$ for married and single men, respectively, NHI has a statistically significant negative impact on the work hours of these two groups of male employees in the private sector. This negative impact is slightly larger for married employees than for the single ones. The larger impact of NHI on married employees may arise from the additional premiums that they and their employers have to pay for the dependents.

When we further stratify the subsamples of married and single men by the wage rate quartiles we find that for single men in the private sector, NHI has a statistically significant work hour impact only for those whose wage rates are between the first and second quartiles of the wage rate distribution (with $\widetilde{\Delta}_H = -3.57$, and $\widetilde{\Pi}_H - 1 = -7.23\%$, as reported in Table 2.9). The impact of NHI on married men's work hours is statistically significant in all wage rate strata. NHI's negative work hour impact is greater for married men with lower wage rates. For married men having wage rates above the third quartile in Table 2.10, we have $\left\{\widetilde{\Delta}_H = -1.78,\ \widetilde{\Pi}_H - 1 = -4.41\%\right\}$. These estimates increase to $\left\{\widetilde{\Delta}_H = -4.84,\ \widetilde{\Pi}_H - 1 = -9.03\%\right\}$ for those with wage rates below the first quartile. This pattern of a decreasing NHI work hour impact may be produced by a decrease in labor supply elasticity with the wage rate. If labor supply elasticity decreases with the wage rates, for employees with a higher wage rate, their hours of labor supply will be less sensitive to a change in the wage rate than in the case of those who have a lower wage rate.

The results pertaining to female employees in Table 2.7 exhibit a different response of work hours to NHI's implementation. The work hours of the private sector's female employees does not seem to be affected by the disincentive effect of NHI's premiums. This is true for married as well as for single women. For both groups of women neither the difference-in-difference estimates nor the ratio-of-ratios estimates are indicative of a statistically significant wage rate impact. Our estimation results with stratification of the women subsamples based on wage rate quartiles reveal that NHI does not have any statistically significant impact on the work hours of single as well as married women in the private sector (see the estimation results in Tables 2.11–2.12).

In short, we find from the gender/marital status stratified results that married men in the private sector bear the brunt of the disincentive effect of NHI's premiums. This finding implies that the dependents' NHI premiums are likely to be paid by the male breadwinner of a household. We speculate that the resilience of female employees' work hours is due to employer discrimination such that employers are unwilling to pay for the NHI premiums of their female employees' dependents.

Stratification by Gender and the Presence of Non-Working Children

Based on a sample of household heads and the heads' spouses, we investigate the variation in NHI's impact on work hours with the presence of non-working children.[31] According to the results in Table 2.8, the presence of non-working children substantially elevates the negative impact of NHI on private sector married men's

[31] The reason why our estimation is restricted to household heads and their spouses is that we have information about the number of children only for this group of respondents in the MUS data.

work hours. For married men without non-working children in the household, we have $\left\{\widetilde{\Delta}_H = -2.12,\ \ \widetilde{\Pi}_H - 1 = -4.38\%\right\}$, which are statistically significant at conventional levels. The corresponding figures for those with non-working children in the household are $\left\{\widetilde{\Delta}_H = -2.56,\ \ \widetilde{\Pi}_H - 1 = -5.25\%\right\}$, which are statistically significant at conventional levels. These estimates constitute another piece of evidence supporting our conjecture that the negative effect of NHI on work hours mainly arises from the disincentive effect of dependents' NHI premiums.

Tables 2.13–2.16 reports the estimation results when we further stratify the male and female subsamples by quartiles of the wage rate distribution. We find that the non-working children's elevation of NHI's negative work hour impact is more serious for married men in the lower quartiles of the wage rate distribution. The presence of children in the household does not have any effect on NHI's work hour impact for married men with wage rates in other wage rate ranges. The NHI impacts are statistically insignificant for these groups of married men.

The estimates in Table 2.8 indicate that the presence of non-working children in the household does not have any statistically significant impact on the work hours of married women in the private sector. We conjecture that this finding arises because the NHI premiums of dependents in a household are mostly paid by the male breadwinner such that the work hours of the household's married female workers are not much affected. Moreover, the stratification of the married women's subsamples by quartiles of the wage rates reveals that the presence of non-working children aggravates the NHI work hour impact on married women whose wage rates are above the third quartile.

The finding from the stratification of the married men's and married women's subsamples by the presence of non-working children suggests that the presence of non-working children in the household has a significant effect on the impact NHI's work hours on both married men and married women.

2.7.2 Wage Rates

Full Sample Results

According to the full sample results in Table 2.6, private sector employees have sustained a trivial reduction in their wage rate relative to their public sector counterparts, i.e., $\widetilde{\Delta}_W = -\$2.52$ and $\widetilde{\Pi}_W - 1 = -1.99\%$, which, nevertheless, are statistically insignificant at conventional levels, according to the endogeneity-corrected estimation results. Our finding concerning the wage rate impact of NHI suggests that neither private sector employers nor their employees are able to shift their premium burden to each other.

Stratification by Gender and Marital Status

According to Table 2.7, the effect of NHI on the wage rates is still statistically insignificant when we stratify the male and female subsamples by gender and marital status. There are not very significant changes in the results for single men and women and married women when we further stratify the subsamples by quartiles of the wage rates distribution, as reported in Tables 2.9, 2.11, and 2.12. For single men there is an increase in wage rates $\left(\left\{\widetilde{\Delta}_W = \$2.64,\quad \widetilde{\Pi}_W - 1 = 2.23\%\right\}\right)$ for those having wage rates between the first and second quartiles of the wage rate distribution. There is a slight increase in the wage rates $\left(\left\{\widetilde{\Delta}_W = \$1.31,\quad \widetilde{\Pi}_W - 1 = 1.71\%\right\}\right)$ for married women having wage rates between the first and second quartiles. The results suggest that NHI's implementation does not have any wage impact on single women in any of the wage categories.

With stratification by quartiles of wage rates, we discover in Table 2.10 that NHI has some salient impacts on private sector married men's wage rates. For the private sector's married men, whose wage rates are above the third quartile or between the second and third quartiles, their wage rates fall $\Big($i.e., $\left\{\widetilde{\Delta}_W = -\$4.58,\ \widetilde{\Pi}_W - 1 = -1.35\%\right\}$ and $\left\{\widetilde{\Delta}_W = -\$2.69,\quad \widetilde{\Pi}_W - 1 = -1.60\%\right\}\Big)$ with the implementation of NHI, while those having wage rates below the first quartile experience an increase in wage rates $\left(\left\{\widetilde{\Delta}_W = \$4.79,\ \widetilde{\Pi}_W - 1 = 4.57\%\right\}\right)$ relative to their public sector counterparts.[32] Table 2.10's results show that the wage rate impact of NHI is a negative function of wage rates. For private sector married men with wage rates above the third quartile, NHI's negative wage rate impact is the largest. The negative wage rate impact becomes smaller for those having a rate wage between the second and third quartiles. NHI's wage rate impact eventually becomes positive for employees below the first quartile of the wage rate distribution.

The patterns of NHI's wage rate effect and work hour effect (i.e., the negative work hour effect decreases with wage rates, as discussed above) is consistent with a decreasing elasticity of labor supply with the wage rate. If the elasticity of labor

[32]The statistical insignificance of the effects of NHI's wage rates without stratification by wage rate quartiles is likely to be due to the fact that the NHI's wage rate effects are opposite in sign for employees in different ranges of the wage rate distribution.

supply decreases with the wage rate, according to equations (2.10) and (2.11), where g_1 decreases with wage rates, we will see that the negative response of work hours to NHI's implementation shrinks with the wage rate; while, according to (2.8) and (2.9), the numerical value of NHI's wage rate impact is negatively related to the wage rate.

Stratification by Gender and the Presence of Non-Working Children

We see from Table 2.8's estimates that the stratification of the married men's subsample by the presence of children in the household does not make a substantial difference to NHI's wage rate effect. Estimates of $\widetilde{\Delta}_W$ and $\widetilde{\Pi}_W - 1$ remain statistically insignificant. However, when we further stratify the subsamples by the wage rate distribution's quartiles, we see from the results in Tables 2.9–2.16 that some groups bear a greater NHI wage rate impact than others. For married men without non-working children in the household (whose results are reported in Table 2.10), those with wage rates above the third quartile bear a (weak) statistically significant negative wage rate impact $\left(\text{i.e., } \left\{\widetilde{\Delta}_W = -\$26.69, \quad \widetilde{\Pi}_W - 1 = -7.68\%\right\}\right)$, while the impact is statistically insignificant for those having non-working children in the same wage rate range, as reported in Table 2.14. For married men with non-working children and having wage rates between the third and second quartiles, they bear a statistically significant NHI wage rate impact $\left(\text{i.e., } \left\{\widetilde{\Delta}_W = -\$7.73, \widetilde{\Pi}_W - 1 = -3.36\%\right\}\right)$, while the NHI wage rate impact on their counterparts without non-working children in the same wage rate range is statistically insignificant. The NHI wage rate impacts of married men in other wage rate categories are not affected by the presence of non-working children.

There is no change in NHI's wage rate impact for married women with or without non-working children in the household. (See the results in Table 2.8.) This is also true when we further stratify married women's subsamples by wage rate quartiles, whose results are reported in Tables 2.15–2.16.

2.8 Conclusion

This research investigates the effects of NHI on the labor market based on the case of Taiwan, which implemented NHI in 1995. Taiwan's NHI is financed by premiums, which are proportional to salaries and shared between employers and employees. The medical insurance benefits enjoyed by both government employees and private sector employees are both similar before and after the implementation of NHI, with the exception that private sector employees' dependents were not covered by public insurance. However, the premium rates charged to private sector employers and employees have increased substantially, while those charged to public sector employers and employees are almost unchanged. By exploiting these differential changes in the premium rates, we attempt to empirically identify the NHI's impact on private sector employees' work hours and wage rates.

Our empirical work is based on repeated cross-sectional individual data for the years 1992–1996. We measure the impact of NHI on work hours and wage rates by estimating difference-in-differences and ratio-of-ratios, with public sector employees being the control group and private sector employees being the treatment group. In addition to setting up a flexible empirical model, we account for the endogeneity of sectoral choice in our empirical analyses.

Our findings are broadly consistent with the predictions of our theoretical model. The financing of NHI through premiums, which are proportional to salaries, injects distortions in the labor market. There is a non-trivial reduction in the work hours of male employees in the private sector, relative to their public sector counterparts. The decline in work hours for married men, but not for married women, suggests that the dependents' NHI premiums are mainly borne by a household's male breadwinner and his employer. We speculate that this finding reflects discrimination against female employees by private sector employers, who are not paying the NHI premiums for their female employees' dependents.

We find that NHI's wage rate impact on married men depends on the employees' wage rates. For married men with wage rates above the median wage rate, the impact is negative and this negative impact increases with their wage rates, while NHI's wage rate impact is positive for those with wage rates below the first quartile. This pattern of the NHI wage rate impact for married men is consistent with a negative relationship between labor supply elasticity and the wage rate. For both married and single women, NHI's wage rate impact is not substantial.

We do not find a negative wage impact of NHI on some groups of employees, especially female employees and male employees with lower wage rates. This indicates that for a given employee in these groups the incidence of NHI premium fell more on his/her employer, who contributes a larger share of the total NHI premium.

It is noted that prior to NHI, except for dependents of a public sector employee, individuals had to be employed in order to be covered by public health insurance. Some individuals might have participated in the labor market partly for the reason of obtaining public health insurance coverage. Thus, Taiwan's NHI, which covers all citizens regardless of employment status, may have a negative employment effect. Some individuals, especially the elderly and married women, who might have been in the labor force mainly for the purpose of being covered by public health insurance, may withdraw from the labor market after the introduction of NHI. This issue is not investigated in the current study and will be left for future research.

An important policy implication derived from our empirical findings is that financing NHI by premiums tied to salaries may introduce distortions to the labor market. The government may be able to minimize or avoid these distortions by re-designing the premium scheme. One option to minimize NHI's labor market distortion is to establish a link between the amount of premium contribution and the amount of medical benefits that an individual enjoys, e.g., by means of a medical savings accounts. By doing so, to some extent, the disincentive effects of the NHI premium contribution on labor supply may be offset by the increase in medical benefits. Another option is to weaken the link between an employee's salary and the amount of NHI premium contribution, e.g., by introducing a more discrete premium contribution schedule, under which an employee and his/her employer contribute a fixed amount of NHI premium if this employee's income is within a certain range. These two options may be implemented simultaneously.

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Table 2.1: The Changes in Premium Rates

	Pre-NHI			Post-NHI			Changes	
	(A) Employers' premium rate	(B) Employees' premium rate	(A+B) Total	(A') Employers' premium rate	(B') Employees' premium rate	(A'+B') Total	(A' −A) Employers' premium rate	(B'−B) Employees' premium rate
Public Sector								
GEI	5.85%	3.15%	9%	3.09%	1.66%	4.75%	−2.76%	−1.49%
NHI	—	—	—	2.98%	1.27%	4.25%	+2.98%	+1.27%
GEI+NHI	5.85%	3.15%	9%	6.07%	2.93%	9%	+0.22%	−0.22%
Private Sector								
LI	4.90%	1.40%	6.30%	4.55%	1.30%	5.85%	−0.35%	−0.10%
NHI	—	—	—	2.98%	1.27%	4.25%	+2.98%	+1.27%
LI+NHI	4.90%	1.40%	6.30%	7.53%	2.57%	10.10%	+2.63%	+1.17%

Table 2.2: Variable Definition

Variables	Description of variables
WORK HOURS	Work hours per week.
WAGE RATE	Real hourly wage, which are deflated by CPI, at 2001 constant dollars.
$\mathtt{SEX_{it}}$	Binary indicator of gender, defined as $\mathtt{SEX_{it}}$=1 if male, $\mathtt{SEX_{it}}$=0 if female.
$\mathtt{MARRIED_{it}}$	Binary indicator of marital status, defined as $\mathtt{MARRIED_{it}}$=1 if married, $\mathtt{MARRIED_{it}}$=0 if single, divorced, or a widower.
$\mathtt{AGE_{it}}$	Age of individual.
$\mathtt{AGE^2_{it}}$	$\mathtt{AGE_{it}}$'s squared and divided by 100.
$\mathtt{EDU_{it}}$	Years of education.
$\mathtt{N_{it}}$	Post-NHI indicator, defined as $\mathtt{N_{it}}$=1 if for sample period 1995–1996, $\mathtt{N_{it}}$=0 if for sample period 1992–1994.
$\mathtt{P_{it}}$	Indicator of an individual's sector of employment, defined as $\mathtt{P_{it}}$=1 if employed in the private sector, $\mathtt{P_{it}}$=0 if employed in the public sector.
$\mathtt{C_{it}}$	Number of non-working children.
$\mathtt{URATE_{it-1}}$	Age and sex specific regional unemployment rates.
$\mathtt{NOR_{it}}$	Regional indicator, defined as $\mathtt{NOR_{it}}$=1 if living in the north of Taiwan, $\mathtt{NOR_{it}}$=0 if living in the middle, south, or east of Taiwan.
$\mathtt{MID_{it}}$	Regional indicator, defined as $\mathtt{MID_{it}}$=1 if living in the middle of Taiwan, $\mathtt{MID_{it}}$=0 if living in the north, south, or east of Taiwan.
$\mathtt{SOU_{it}}$	Regional indicator, defined as $\mathtt{SOU_{it}}$=1 if living in the south of Taiwan, $\mathtt{SOU_{it}}$=0 if living in the north, middle, or east of Taiwan.
$\mathtt{STOCK_{t-1}}$	Composite index of Taiwan Stock Exchange.
t	Year. $\mathtt{t} = 1992, 1993, ...1996$.

Table 2.3: Full Sample Descriptive Statistics†

Variables	Public Sector Pre-NHI (1992–1994)	Public Sector Post-NHI (1995–1996)	Private Sector Pre-NHI (1992–1994)	Private Sector Post-NHI (1995–1996)
WORK HOURS	45.81 (5.24)	45.64 (5.26)	48.19 (6.59)	47.27 (6.56)
WAGE RATE	220.97 (89.22)	233.99 (88.95)	165.44 (83.01)	176.35 (94.96)
SEX_{it}	0.65 (0.48)	0.63 (0.48)	0.64 (0.48)	0.62 (0.49)
$MARRIED_{it}$	0.82 (0.39)	0.82 (0.39)	0.71 (0.46)	0.69 (0.46)
AGE_{it}	39.88 (8.83)	40.56 (8.75)	36.89 (8.35)	37.16 (8.27)
AGE^2_{it}	16.69 (7.37)	17.21 (7.32)	14.31 (6.70)	14.49 (6.63)
EDU_{it}	12.88 (3.38)	13.12 (3.24)	9.87 (3.74)	10.36 (3.70)
C_{it}	0.61 (1.15)	0.62 (1.14)	0.58 (1.19)	0.54 (1.14)
$URATE_{it-1}$	1.26 (1.12)	1.77 (1.47)	1.34 (1.07)	2.02 (1.55)
NOR_{it}	0.43 (0.49)	0.43 (0.49)	0.48 (0.50)	0.47 (0.50)
MID_{it}	0.24 (0.43)	0.25 (0.43)	0.25 (0.43)	0.25 (0.43)
SOU_{it}	0.28 (0.45)	0.25 (0.43)	0.24 (0.43)	0.24 (0.43)
$STOCK_{t-1}$	4.46 (0.32)	5.89 (0.35)	4.45 (0.32)	5.90 (0.35)
Observations	9,129	6,352	37,071	26,076

†Standard errors in parentheses.

Table 2.4: Descriptive Statistics by Gender[†]

Variables	Male				Female			
	Public Sector		Private Sector		Public Sector		Private Sector	
	Pre-NHI (1992–1994)	Post-NHI (1995–1996)	Pre-NHI (1992–1994)	Post-NHI (1995–1996)	Pre-NHI (1992–1994)	Post-NHI (1995–1996)	Pre-NHI (1992–1994)	Post-NHI (1995–1996)
WORK HOURS	46.52 (5.94)	46.37 (6.03)	48.78 (6.27)	47.67 (6.33)	44.53 (3.27)	44.40 (3.23)	47.16 (7.02)	46.63 (6.88)
WAGE RATE	232.92 (91.12)	246.47 (92.11)	190.40 (84.01)	202.61 (100.57)	199.23 (81.26)	212.68 (78.85)	121.56 (59.82)	133.46 (65.28)
$\mathtt{MARRIED}_{\mathtt{it}}$	0.86 (0.35)	0.85 (0.36)	0.71 (0.46)	0.69 (0.46)	0.74 (0.44)	0.76 (0.43)	0.71 (0.45)	0.69 (0.46)
$\mathtt{AGE}_{\mathtt{it}}$	40.95 (8.99)	41.54 (8.75)	37.13 (8.54)	37.25 (8.38)	37.94 (8.17)	38.88 (8.49)	36.48 (7.98)	37.00 (8.10)
$\mathtt{AGE}^2_{\mathtt{it}}$	17.58 (7.62)	18.02 (7.43)	14.51 (6.91)	14.58 (6.75)	15.07 (6.61)	15.83 (6.93)	13.94 (6.30)	14.34 (6.42)
$\mathtt{EDU}_{\mathtt{it}}$	12.67 (3.38)	12.90 (3.29)	10.11 (3.60)	10.61 (3.51)	13.25 (3.34)	13.50 (3.10)	9.44 (3.94)	9.95 (3.95)
$\mathtt{C}_{\mathtt{it}}$	0.66 (1.22)	0.64 (1.18)	0.58 (1.20)	0.55 (1.16)	0.53 (1.02)	0.59 (1.07)	0.57 (1.17)	0.53 (1.11)
$\mathtt{URATE}_{\mathtt{it-1}}$	1.54 (1.17)	2.17 (1.43)	1.63 (1.07)	2.47 (1.48)	0.75 (0.80)	1.09 (1.27)	0.84 (0.86)	1.27 (1.38)
$\mathtt{NOR}_{\mathtt{it}}$	0.41 (0.49)	0.41 (0.49)	0.46 (0.50)	0.44 (0.50)	0.47 (0.50)	0.46 (0.50)	0.51 (0.50)	0.51 (0.50)
$\mathtt{MID}_{\mathtt{it}}$	0.25 (0.43)	0.25 (0.43)	0.25 (0.43)	0.26 (0.44)	0.23 (0.42)	0.25 (0.43)	0.23 (0.42)	0.23 (0.42)
$\mathtt{SOU}_{\mathtt{it}}$	0.29 (0.45)	0.27 (0.44)	0.24 (0.43)	0.25 (0.43)	0.25 (0.43)	0.22 (0.41)	0.24 (0.42)	0.23 (0.42)
$\mathtt{STOCK}_{\mathtt{t-1}}$	4.46 (0.32)	5.90 (0.35)	4.46 (0.32)	5.91 (0.35)	4.46 (0.32)	5.89 (0.35)	4.45 (0.32)	5.90 (0.35)
Observations	5,892	4,007	23,630	16,175	3,237	2,345	13,441	9,901

[†]Standard errors in parentheses.

Table 2.5: Descriptive Statistics of the Sample of Household Heads and Their Spouses†

Variables	Male				Female			
	Public Sector		Private Sector		Public Sector		Private Sector	
	Pre-NHI (1992–1994)	Post-NHI (1995–1996)	Pre-NHI (1992–1994)	Post-NHI (1995–1996)	Pre-NHI (1992–1994)	Post-NHI (1995–1996)	Pre-NHI (1992–1994)	Post-NHI (1995–1996)
WORK HOURS	46.46 (6.05)	46.34 (6.03)	48.84 (6.62)	47.71 (6.81)	44.50 (3.24)	44.28 (3.36)	46.82 (7.60)	46.24 (7.33)
WAGE RATE	244.73 (98.62)	257.32 (93.30)	205.95 (96.45)	222.43 (119.26)	208.80 (90.63)	223.52 (82.48)	117.79 (63.42)	129.32 (68.29)
AGE_{it}	43.62 (8.22)	44.22 (7.75)	41.31 (8.03)	41.76 (7.81)	40.17 (7.48)	41.38 (7.60)	39.12 (7.58)	39.92 (7.51)
AGE^2_{it}	19.71 (7.28)	20.15 (6.91)	17.71 (6.89)	18.05 (6.73)	16.69 (6.30)	17.70 (6.47)	15.88 (6.22)	16.50 (6.22)
EDU_{it}	12.53 (3.54)	12.77 (3.43)	9.52 (3.82)	10.06 (3.79)	13.06 (3.42)	13.27 (3.19)	8.49 (3.91)	8.91 (3.96)
C_{it}	2.60 (1.44)	2.54 (1.38)	2.65 (1.50)	2.60 (1.51)	2.24 (1.17)	2.32 (1.24)	2.76 (1.45)	2.72 (1.48)
$URATE_{it-1}$	1.50 (1.21)	1.99 (1.32)	1.45 (1.04)	2.16 (1.32)	0.59 (0.68)	0.82 (1.01)	0.65 (0.73)	0.90 (1.11)
NOR_{it}	0.43 (0.49)	0.44 (0.50)	0.50 (0.50)	0.48 (0.50)	0.48 (0.50)	0.48 (0.50)	0.53 (0.50)	0.53 (0.50)
MID_{it}	0.23 (0.42)	0.24 (0.43)	0.22 (0.42)	0.23 (0.42)	0.22 (0.41)	0.24 (0.43)	0.21 (0.41)	0.21 (0.41)
SOU_{it}	0.29 (0.45)	0.25 (0.43)	0.24 (0.43)	0.26 (0.44)	0.25 (0.43)	0.21 (0.41)	0.23 (0.42)	0.24 (0.42)
$STOCK_{t-1}$	4.47 (0.32)	5.90 (0.35)	4.46 (0.32)	5.91 (0.35)	4.46 (0.32)	5.89 (0.35)	4.45 (0.32)	5.90 (0.35)
Observations	4,062	2,728	11,495	7,715	1,987	1,652	7,399	5,287

†Standard errors in parentheses.

Table 2.6: Full Sample Results

NHI's Impact	Corrected for Endogeneity		Not Corrected for Endogeneity	
	Work Hours	**Wage Rate**	**Work Hours**	**Wage Rate**
$\widetilde{\Delta}_L$	-1.80	-2.52	-1.70	-1.40
$\widetilde{\tau}_L^{\Delta}$	34.69*** [0.00]†	0.35 [0.56]	31.10*** [0.00]	0.10 [0.76]
$\widetilde{\Pi}_L - 1(\%)$	-3.87%	-1.99%	-3.65%	-0.51%
$\widetilde{\tau}_L^{\Pi}$	32.40*** [0.00]	0.57 [0.45]	28.95*** [0.00]	0.04 [0.85]
$\widehat{\theta}_{1it}$	-0.13*** (-14.51)‡	0.29*** (8.32)	—	—
$\widehat{\theta}_{0it}$	-0.04*** (-4.04)	-0.26*** (-6.99)	—	—

†p-value in square parentheses.
‡t-statistic in parentheses.
***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.
$\widetilde{\Delta}_L$ stands for the difference-in-difference estimate evaluated at the sample means.
$\widetilde{\Pi}_L$ stands for the ratio-in-ratios estimate evaluated at the sample means.
$\widetilde{\tau}_L^{\Delta}$ stands for the F-statistic of the difference-in-difference estimate $\widetilde{\Delta}_L$.
$\widetilde{\tau}_L^{\Pi}$ stands for the F-statistic of the ratio-in-ratios estimate $\widetilde{\Pi}_L$.
$\widehat{\theta}_{jit}$ stands for the endogeneity correction term.

Table 2.7: Results by Gender and Marital Status

Subsample		NHI's Impact	Corrected for Endogeneity		Not Corrected for Endogeneity	
			Work Hours	**Wage Rate**	**Work Hours**	**Wage Rate**
Male	**Single**	$\widetilde{\Delta}_L$	-2.26	0.49	-2.40	-4.27
		$\widetilde{\tau}_L^{\Delta}$	6.00**	0.01	6.98***	0.25
			[0.01]†	[0.90]	[0.01]	[0.62]
		$\widetilde{\Pi}_L - 1(\%)$	-4.66%	0.26%	-4.95%	-2.37%
		$\widetilde{\tau}_L^{\Pi}$	6.19**	0.01	7.26***	0.24
			[0.01]	[0.90]	[0.01]	[0.62]
		$\widehat{\theta}_{1it}$	0.02	0.23***	—	—
			(0.91)‡	(3.54)		
		$\widehat{\theta}_{0it}$	0.05	0.40***	—	—
			(0.98)	(3.35)		
	Married	$\widetilde{\Delta}_L$	-2.63	2.21	-2.61	1.74
		$\widetilde{\tau}_L^{\Delta}$	40.10***	0.20	39.41***	0.05
			[0.00]	[0.66]	[0.00]	[0.82]
		$\widetilde{\Pi}_L - 1(\%)$	-5.40%	1.28%	-5.37%	0.89%
		$\widetilde{\tau}_L^{\Pi}$	42.04***	0.29	41.41***	0.05
			[0.00]	[0.59]	[0.00]	[0.82]
		$\widehat{\theta}_{1it}$	-0.01	-0.08**	—	—
			(-0.51)	(-2.07)		
		$\widehat{\theta}_{0it}$	-0.04*	0.19***	—	—
			(-1.70)	(3.61)		
Female	**Single**	$\widetilde{\Delta}_L$	-0.89	-4.03	-1.11	0.08
		$\widetilde{\tau}_L^{\Delta}$	1.00	0.27	1.64	0.01
			[0.32]	[0.60]	[0.20]	[0.90]
		$\widetilde{\Pi}_L - 1(\%)$	-1.91%	-2.92%	-2.49%	0.11%
		$\widetilde{\tau}_L^{\Pi}$	0.98	0.13	1.65	0.04
			[0.32]	[0.72]	[0.20]	[0.84]
		$\widehat{\theta}_{1it}$	-0.09***	0.60***	—	—
			(-5.27)	(12.27)		
		$\widehat{\theta}_{0it}$	0.04	-0.22***	—	—
			(1.29)	(-2.88)		
	Married	$\widetilde{\Delta}_L$	-0.30	-1.54	-0.11	-0.17
		$\widetilde{\tau}_L^{\Delta}$	0.19	0.07	0.03	0.05
			[0.66]	[0.80]	[0.85]	[0.81]
		$\widetilde{\Pi}_L - 1(\%)$	-0.63%	-1.87%	-0.21%	-0.24%
		$\widetilde{\tau}_L^{\Pi}$	0.16	0.12	0.03	0.01
			[0.69]	[0.73]	[0.87]	[0.94]
		$\widehat{\theta}_{1it}$	-0.12***	0.52***	—	—
			(-8.98)	(6.98)		
		$\widehat{\theta}_{0it}$	-0.01	-0.29**	—	—
			(-0.45)	(-2.29)		

† p-value in square parentheses.
‡ t-statistic in parentheses.
***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.
$\widetilde{\Delta}_L$ stands for the difference-in-difference estimate evaluated at the sample means.
$\widetilde{\Pi}_L$ stands for the ratio-in-ratios estimate evaluated at the sample means.
$\widetilde{\tau}_L^{\Delta}$ stands for the F-statistic of the difference-in-difference estimate $\widetilde{\Delta}_L$.
$\widetilde{\tau}_L^{\Pi}$ stands for the F-statistic of the ratio-in-ratios estimate $\widetilde{\Pi}_L$.
$\widehat{\theta}_{jit}$ stands for the endogeneity correction term.

Table 2.8: Results for Household Heads and Their Spouses by Gender and the Presence of Non-working Children — Sample of Household Heads and Their Spouses

Subsample		NHI's Impact	Corrected for Endogeneity		Not Corrected for Endogeneity	
			Work Hours	**Wage Rate**	**Work Hours**	**Wage Rate**
Married Male	**without Nonworking Children**	$\widetilde{\Delta}_L$	-2.12	-4.05	-2.13	-1.16
		$\widetilde{\tau}_L^{\Delta}$	8.30*** [0.00]†	0.26 [0.61]	8.70*** [0.00]	0.02 [0.89]
		$\widetilde{\Pi}_L - 1(\%)$	-4.38%	-1.72%	-4.42%	-0.54%
		$\widetilde{\tau}_L^{\Pi}$	8.51*** [0.00]	0.20 [0.65]	8.82*** [0.00]	0.02 [0.89]
		$\widehat{\theta}_{1it}$	-0.02 (-0.68)‡	0.23*** (2.90)	—	—
		$\widehat{\theta}_{0it}$	0.06 (1.42)	-0.10 (-0.94)	—	—
	with Nonworking Children	$\widetilde{\Delta}_L$	-2.56	2.45	-2.53	-2.69
		$\widetilde{\tau}_L^{\Delta}$	14.40*** [0.00]	0.11 [0.75]	14.04*** [0.00]	0.14 [0.71]
		$\widetilde{\Pi}_L - 1(\%)$	-5.25%	1.07%	-5.18%	-1.35%
		$\widetilde{\tau}_L^{\Pi}$	15.20*** [0.00]	0.09 [0.76]	14.84*** [0.00]	0.15 [0.70]
		$\widehat{\theta}_{1it}$	0.02 (0.96)	-0.66*** (-10.60)	—	—
		$\widehat{\theta}_{0it}$	-0.02 (0.82)	0.22*** (3.29)	—	—
Married Female	**without Nonworking Children**	$\widetilde{\Delta}_L$	-1.36	-4.90	-1.00	-3.18
		$\widetilde{\tau}_L^{\Delta}$	1.22 [0.27]	0.28 [0.59]	0.71 [0.40]	0.14 [0.71]
		$\widetilde{\Pi}_L - 1(\%)$	-2.82%	-1.72%	-2.12%	-1.43%
		$\widetilde{\tau}_L^{\Pi}$	1.15 [0.28]	0.00 [0.97]	0.67 [0.41]	0.41 [0.52]
		$\widehat{\theta}_{1it}$	-0.10*** (-3.82)	0.44*** (7.11)	—	—
		$\widehat{\theta}_{0it}$	-0.01 (-0.27)	-0.42*** (-4.39)	—	—
	with Nonworking Children	$\widetilde{\Delta}_L$	1.34	0.82	1.40	0.52
		$\widetilde{\tau}_L^{\Delta}$	1.95 [0.16]	0.00 [0.97]	2.24 [0.13]	0.08 [0.78]
		$\widetilde{\Pi}_L - 1(\%)$	2.96%	0.51%	3.13%	0.47%
		$\widetilde{\tau}_L^{\Pi}$	1.81 [0.18]	0.11 [0.74]	2.10 [0.15]	0.01 [0.92]
		$\widehat{\theta}_{1it}$	-0.16*** (-6.53)	0.81*** (4.55)	—	—
		$\widehat{\theta}_{0it}$	-0.01 (-0.17)	-0.34 (-1.24)	—	—

† p-value in square parentheses.

‡ t-statistic in parentheses.

*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level.

$\widetilde{\Delta}_L$ stands for the difference-in-difference estimate evaluated at the sample means.

$\widetilde{\Pi}_L$ stands for the ratio-in-ratios estimate evaluated at the sample means.

$\widetilde{\tau}_L^{\Delta}$ stands for the F-statistic of the difference-in-difference estimate $\widetilde{\Delta}_L$.

$\widetilde{\tau}_L^{\Pi}$ stands for the F-statistic of the ratio-in-ratios estimate $\widetilde{\Pi}_L$.

$\widehat{\theta}_{jit}$ stands for the endogeneity correction term.

Table 2.9: Results for Single Male by Wage Rate Quartiles

Quartiles	NHI's Impact	Corrected for Endogeneity		Not Corrected for Endogeneity	
		Work Hours	Wage Rate	Work Hours	Wage Rate
≥the 3rd	$\widetilde{\Delta}_L$	-1.29	4.44	-1.45	3.99
	$\widetilde{\tau}_L^{\Delta}$	0.36 [0.55]†	0.82 [0.37]	0.49 [0.48]	0.19 [0.67]
	$\widetilde{\Pi}_L - 1(\%)$	-2.92%	1.42%	-3.27%	1.37%
	$\widetilde{\tau}_L^{\Pi}$	0.40 [0.53]	0.77 [0.38]	0.52 [0.47]	0.12 [0.73]
	$\widehat{\theta}_{1it}$	0.07 (0.76)‡	0.12 (0.85)	—	—
	$\widehat{\theta}_{0it}$	0.05 (0.41)	0.44*** (2.70)	—	—
≥the 2nd and ≤the 3rd	$\widetilde{\Delta}_L$	-1.98	-8.00	-2.26	-7.52
	$\widetilde{\tau}_L^{\Delta}$	1.89 [0.17]	0.26 [0.61]	2.57 [0.11]	0.15 [0.69]
	$\widetilde{\Pi}_L - 1(\%)$	-4.23%	-4.86%	-4.83%	-4.73%
	$\widetilde{\tau}_L^{\Pi}$	2.03 [0.15]	0.26 [0.61]	2.76* [0.10]	0.16 [0.69]
	$\widehat{\theta}_{1it}$	0.08 (1.52)	0.09*** (2.89)	—	—
	$\widehat{\theta}_{0it}$	0.13 (1.28)	-0.05 (-0.81)	—	—
≥the 1st and ≤the 2nd	$\widetilde{\Delta}_L$	-3.57	2.63	-3.55	4.74
	$\widetilde{\tau}_L^{\Delta}$	4.11** [0.04]	18.58*** [0.00]	4.39** [0.04]	14.25*** [0.00]
	$\widetilde{\Pi}_L - 1(\%)$	-7.23%	2.23%	-7.19%	3.72%
	$\widetilde{\tau}_L^{\Pi}$	4.56** [0.03]	21.85*** [0.00]	4.81** [0.03]	16.34*** [0.00]
	$\widehat{\theta}_{1it}$	1.4e-3 (0.03)	-0.03 (-1.02)	—	—
	$\widehat{\theta}_{0it}$	4.5e-3 (-0.04)	-0.19*** (-2.68)	—	—
≤the 1st	$\widetilde{\Delta}_L$	-3.31	1.55	-4.42	2.34
	$\widetilde{\tau}_L^{\Delta}$	1.32 [0.25]	0.11 [0.74]	2.59 [0.11]	0.04 [0.84]
	$\widetilde{\Pi}_L - 1(\%)$	-6.62%	1.27%	-8.64%	2.03%
	$\widetilde{\tau}_L^{\Pi}$	1.42 [0.23]	0.10 [0.75]	2.95* [0.09]	0.05 [0.83]
	$\widehat{\theta}_{1it}$	0.02 (0.59)	0.02 (0.60)	—	—
	$\widehat{\theta}_{0it}$	0.14 (1.00)	-0.32 (-1.33)	—	—

†p-value in square parentheses.
‡t-statistic in parentheses.
***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.
$\widetilde{\Delta}_L$ stands for the difference-in-difference estimate evaluated at the sample means.
$\widetilde{\Pi}_L$ stands for the ratio-in-ratios estimate evaluated at the sample means.
$\widetilde{\tau}_L^{\Delta}$ stands for the F-statistic of the difference-in-difference estimate $\widetilde{\Delta}_L$.
$\widetilde{\tau}_L^{\Pi}$ stands for the F-statistic of the ratio-in-ratios estimate $\widetilde{\Pi}_L$.
$\widehat{\theta}_{jit}$ stands for the endogeneity correction term.

Table 2.10: Results for Married Male by Wage Rate Quartiles

Quartiles	NHI's Impact	Corrected for Endogeneity		Not Corrected for Endogeneity	
		Work Hours	Wage Rate	Work Hours	Wage Rate
≥the 3rd	$\widetilde{\Delta}_L$	-1.78	-4.58	-1.87	-5.00
	$\widetilde{\tau}_L^{\Delta}$	7.20** [0.01]†	5.04** [0.02]	7.99*** [0.00]	3.92* [0.05]
	$\widetilde{\Pi}_L - 1(\%)$	-4.41%	-1.35%	-4.53%	-2.02%
	$\widetilde{\tau}_L^{\Pi}$	11.59*** [0.00]	3.67** [0.05]	12.29*** [0.00]	3.18* [0.07]
	$\widehat{\theta}_{1it}$	-0.06** (-2.05)‡	-0.09 (-1.57)	——	——
	$\widehat{\theta}_{0it}$	-0.01 (-0.28)	0.32*** (5.37)	——	——
≥the 2nd and ≤the 3rd	$\widetilde{\Delta}_L$	-1.23	-2.69	-1.29	-3.47
	$\widetilde{\tau}_L^{\Delta}$	2.55 [0.11]	22.25*** [0.00]	2.95* [0.09]	22.04*** [0.00]
	$\widetilde{\Pi}_L - 1(\%)$	-2.90%	-1.60%	-2.95%	-2.26%
	$\widetilde{\tau}_L^{\Pi}$	3.88* [0.05]	28.78*** [0.00]	4.07** [0.04]	28.42*** [0.00]
	$\widehat{\theta}_{1it}$	0.03 (1.02)	0.01 (0.65)	——	——
	$\widehat{\theta}_{0it}$	0.02 (0.61)	-0.01 (-0.43)	——	——
≥the 1st and ≤the 2nd	$\widetilde{\Delta}_L$	-3.84	6.02	-3.43	-1.30
	$\widetilde{\tau}_L^{\Delta}$	12.69*** [0.00]	0.90 [0.34]	10.79*** [0.00]	0.39 [0.53]
	$\widetilde{\Pi}_L - 1(\%)$	-8.38%	5.28%	-7.96%	-1.51%
	$\widetilde{\tau}_L^{\Pi}$	21.58*** [0.00]	2.41 [0.12]	19.73*** [0.00]	1.88 [0.17]
	$\widehat{\theta}_{1it}$	0.02 (0.58)	-0.02 (-1.22)	——	——
	$\widehat{\theta}_{0it}$	-0.08 (-1.52)	-0.04 (-1.52)	——	——
≤the 1st	$\widetilde{\Delta}_L$	-4.84	4.79	-2.41	5.29
	$\widetilde{\tau}_L^{\Delta}$	6.72** [0.01]	2.70 [0.10]	2.04 [0.15]	0.80 [0.37]
	$\widetilde{\Pi}_L - 1(\%)$	-9.03%	4.57%	-5.93%	5.11%
	$\widetilde{\tau}_L^{\Pi}$	10.33*** [0.00]	3.43* [0.06]	6.05** [0.01]	1.90 [0.17]
	$\widehat{\theta}_{1it}$	0.02 (0.62)	-0.05 (-1.03)	——	——
	$\widehat{\theta}_{0it}$	-0.31*** (-3.52)	-0.31** (-2.40)	——	——

† p-value in square parentheses.
‡ t-statistic in parentheses.
***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.
$\widetilde{\Delta}_L$ stands for the difference-in-difference estimate evaluated at the sample means.
$\widetilde{\Pi}_L$ stands for the ratio-in-ratios estimate evaluated at the sample means.
$\widetilde{\tau}_L^{\Delta}$ stands for the F-statistic of the difference-in-difference estimate $\widetilde{\Delta}_L$.
$\widetilde{\tau}_L^{\Pi}$ stands for the F-statistic of the ratio-in-ratios estimate $\widetilde{\Pi}_L$.
$\widehat{\theta}_{jit}$ stands for the endogeneity correction term.

Table 2.11: Results for Single Female by Wage Rate Quartiles

Quartiles	NHI's Impact	Corrected for Endogeneity		Not Corrected for Endogeneity	
		Work Hours	Wage Rate	Work Hours	Wage Rate
≥the 3rd	$\widetilde{\Delta}_L$	-1.92	2.84	-1.88	3.11
	$\widetilde{\tau}_L^{\Delta}$	2.58 [0.11]†	0.65 [0.42]	2.81* [0.09]	0.09 [0.76]
	$\widetilde{\Pi}_L - 1(\%)$	-4.19%	1.04%	-4.14%	1.25%
	$\widetilde{\tau}_L^{\Pi}$	2.67 [0.10]	0.65 [0.42]	2.91* [0.09]	0.07 [0.79]
	$\widehat{\theta}_{1it}$	-0.05* (-1.78)‡	0.22*** (3.88)	—	—
	$\widehat{\theta}_{0it}$	0.01 (0.21)	0.12 (1.12)	—	—
≥the 2nd and ≤the 3rd	$\widetilde{\Delta}_L$	-0.42	-9.18	-0.69	-7.81
	$\widetilde{\tau}_L^{\Delta}$	0.09 [0.76]	0.26 [0.61]	0.27 [0.60]	0.45 [0.50]
	$\widetilde{\Pi}_L - 1(\%)$	-0.96%	-7.85%	-1.59%	-6.00%
	$\widetilde{\tau}_L^{\Pi}$	0.10 [0.75]	0.29 [0.59]	0.30 [0.59]	0.49 [0.49]
	$\widehat{\theta}_{1it}$	-0.09*** (-3.28)	0.10*** (3.82)	—	—
	$\widehat{\theta}_{0it}$	0.07 (1.59)	-0.05 (-1.31)	—	—
≥the 1st and ≤the 2nd	$\widetilde{\Delta}_L$	1.05	4.05	-0.13	2.30
	$\widetilde{\tau}_L^{\Delta}$	0.21 [0.65]	1.00 [0.32]	0.00 [0.95]	0.34 [0.56]
	$\widetilde{\Pi}_L - 1(\%)$	2.31%	3.81%	-0.28%	2.20%
	$\widetilde{\tau}_L^{\Pi}$	0.20 [0.65]	1.01 [0.32]	0.00 [0.95]	0.37 [0.55]
	$\widehat{\theta}_{1it}$	-0.03 (-0.67)	0.06** (2.29)	—	—
	$\widehat{\theta}_{0it}$	0.14** (2.13)	0.09* (1.80)	—	—
≤the 1st	$\widetilde{\Delta}_L$	-13.86	1.87	-12.85	1.61
	$\widetilde{\tau}_L^{\Delta}$	0.21 [0.65]	0.80 [0.37]	1.83 [0.18]	1.08 [0.30]
	$\widetilde{\Pi}_L - 1(\%)$	23.10%	2.68%	-22.90%	2.38%
	$\widetilde{\tau}_L^{\Pi}$	0.20 [0.65]	0.56 [0.46]	2.98 [0.08]	0.70 [0.40]
	$\widehat{\theta}_{1it}$	0.11 (1.20)	-0.27* (-1.78)	—	—
	$\widehat{\theta}_{0it}$	-0.06 (-0.43)	-0.16 (-0.67)	—	—

$^{\dagger}p$-value in square parentheses.
$^{\ddagger}t$-statistic in parentheses.
***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.
$\widetilde{\Delta}_L$ stands for the difference-in-difference estimate evaluated at the sample means.
$\widetilde{\Pi}_L$ stands for the ratio-in-ratios estimate evaluated at the sample means.
$\widetilde{\tau}_L^{\Delta}$ stands for the F-statistic of the difference-in-difference estimate $\widetilde{\Delta}_L$.
$\widetilde{\tau}_L^{\Pi}$ stands for the F-statistic of the ratio-in-ratios estimate $\widetilde{\Pi}_L$.
$\widehat{\theta}_{jit}$ stands for the endogeneity correction term.

Table 2.12: Results for Married Female by Wage Rate Quartiles

Quartiles	NHI's Impact	Corrected for Endogeneity		Not Corrected for Endogeneity	
		Work Hours	**Wage Rate**	**Work Hours**	**Wage Rate**
≥the 3rd	$\widetilde{\Delta}_L$	-0.64	-3.31	-0.30	-6.75
	$\widetilde{\tau}_L^{\Delta}$	0.55† [0.46]†	0.17 [0.68]	0.13 [0.71]	1.87 [0.17]
	$\widetilde{\Pi}_L - 1(\%)$	-2.21%	-2.98%	-1.17%	-4.28%
	$\widetilde{\tau}_L^{\Pi}$	1.59 [0.21]	0.01 [0.94]	0.45 [0.50]	2.02 [0.16]
	$\widehat{\theta}_{1it}$	-0.16*** (-7.47)‡	0.35*** (9.07)	—	—
	$\widehat{\theta}_{0it}$	3.5-3 (0.10)	0.20*** (3.15)	—	—
≥the 2nd and ≤the 3rd	$\widetilde{\Delta}_L$	-0.73	-9.02	-0.34	-2.10
	$\widetilde{\tau}_L^{\Delta}$	0.32 [0.57]	0.11 [0.74]	0.07 [0.79]	0.50 [0.48]
	$\widetilde{\Pi}_L - 1(\%)$	-1.40%	-9.05%	-0.66%	-2.05%
	$\widetilde{\tau}_L^{\Pi}$	0.29 [0.59]	0.24 [0.62]	0.07 [0.79]	0.52 [0.47]
	$\widehat{\theta}_{1it}$	-0.02 (-0.76)	0.07*** (3.46)	—	—
	$\widehat{\theta}_{0it}$	-0.04 (-1.09)	-0.04 (-1.34)	—	—
≥the 1st and ≤the 2nd	$\widetilde{\Delta}_L$	-0.45	1.31	0.13	5.82
	$\widetilde{\tau}_L^{\Delta}$	0.03 [0.85]	4.77** [0.03]	0.00 [0.95]	3.37* [0.07]
	$\widetilde{\Pi}_L - 1(\%)$	-0.40%	1.71%	0.16%	6.65%
	$\widetilde{\tau}_L^{\Pi}$	0.01 [0.92]	7.42** [0.01]	0.02 [0.89]	6.16** [0.01]
	$\widehat{\theta}_{1it}$	-0.06** (-2.16)	0.01 (0.63)	—	—
	$\widehat{\theta}_{0it}$	-0.04 (-0.71)	0.05 (1.27)	—	—
≤the 1st	$\widetilde{\Delta}_L$	2.06	5.33	-0.28	3.78
	$\widetilde{\tau}_L^{\Delta}$	0.24 [0.62]	0.15 [0.70]	0.00 [0.94]	0.11 [0.74]
	$\widetilde{\Pi}_L - 1(\%)$	1.18%	6.33%	-1.58%	4.54%
	$\widetilde{\tau}_L^{\Pi}$	0.02 [0.89]	0.00 [0.95]	0.04 [0.84]	0.00 [0.97]
	$\widehat{\theta}_{1it}$	-0.14*** (-3.15)	-0.47 (-1.49)	—	—
	$\widehat{\theta}_{0it}$	0.14 (1.14)	0.09 (0.10)	—	—

† p-value in square parentheses.

‡ t-statistic in parentheses.

*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level.

$\widetilde{\Delta}_L$ stands for the difference-in-difference estimate evaluated at the sample means.

$\widetilde{\Pi}_L$ stands for the ratio-in-ratios estimate evaluated at the sample means.

$\widetilde{\tau}_L^{\Delta}$ stands for the F-statistic of the difference-in-difference estimate $\widetilde{\Delta}_L$.

$\widetilde{\tau}_L^{\Pi}$ stands for the F-statistic of the ratio-in-ratios estimate $\widetilde{\Pi}_L$.

$\widehat{\theta}_{jit}$ stands for the endogeneity correction term.

Table 2.13: Results for Married Male without Non-working Children by Wage Rate Quartiles — Sample of Household Heads and Their Spouses

Quartiles	NHI's Impact	Corrected for Endogeneity		Not Corrected for Endogeneity	
		Work Hours	**Wage Rate**	**Work Hours**	**Wage Rate**
≥the 3rd	$\widetilde{\Delta}_L$	-1.54	-26.69	-1.63	-20.74
	$\widetilde{\tau}_L^{\Delta}$	1.91 [0.17]†	3.59* [0.06]	2.31 [0.13]	2.35 [0.13]
	$\widetilde{\Pi}_L - 1(\%)$	-3.26%	-7.68%	-3.57%	-6.52%
	$\widetilde{\tau}_L^{\Pi}$	1.94 [0.16]	3.79** [0.05]	2.38 [0.12]	2.70 [0.10]
	$\widehat{\theta}_{1it}$	-0.12** (-1.97)‡	0.24** (2.23)	—	—
	$\widehat{\theta}_{0it}$	0.07 (0.82)	0.15 (1.05)	—	—
≥the 2nd and ≤the 3rd	$\widetilde{\Delta}_L$	-2.10	3.44	-1.76	3.80
	$\widetilde{\tau}_L^{\Delta}$	2.52 [0.11]	0.80 [0.37]	1.83 [0.18]	1.02 [0.31]
	$\widetilde{\Pi}_L - 1(\%)$	-4.51%	1.56%	-3.73%	1.73%
	$\widetilde{\tau}_L^{\Pi}$	2.72 [0.10]	0.80 [0.37]	1.87 [0.17]	0.99 [0.32]
	$\widehat{\theta}_{1it}$	0.10 (1.60)	0.01 (0.22)	—	—
	$\widehat{\theta}_{0it}$	0.08 (1.07)	0.05 (1.12)	—	—
≥the 1st and ≤the 2nd	$\widetilde{\Delta}_L$	-3.29	1.18	-3.27	1.50
	$\widetilde{\tau}_L^{\Delta}$	4.00** [0.05]	0.11 [0.74]	3.99** [0.05]	0.18 [0.67]
	$\widetilde{\Pi}_L - 1(\%)$	-6.66%	0.68%	-6.62%	0.86%
	$\widetilde{\tau}_L^{\Pi}$	4.33** [0.04]	0.11 [0.74]	4.32** [0.04]	0.18 [0.67]
	$\widehat{\theta}_{1it}$	0.01 (0.14)	0.02 (0.54)	—	—
	$\widehat{\theta}_{0it}$	3.4e-3 (0.04)	-0.06 (-1.14)	—	—
≤the 1st	$\widetilde{\Delta}_L$	-1.47	-11.02	-1.23	-11.81
	$\widetilde{\tau}_L^{\Delta}$	0.33 [0.57]	1.34 [0.25]	0.24 [0.62]	1.63 [0.20]
	$\widetilde{\Pi}_L - 1(\%)$	-2.90%	-8.30%	-2.44%	-8.90%
	$\widetilde{\tau}_L^{\Pi}$	0.33 [0.57]	1.54 [0.21]	0.24 [0.62]	1.87 [0.17]
	$\widehat{\theta}_{1it}$	-0.04 (-0.54)	-0.25*** (-2.58)	—	—
	$\widehat{\theta}_{0it}$	-0.11 (-0.76)	-0.16 (-0.78)	—	—

†p-value in square parentheses.
‡t-statistic in parentheses.
***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.
$\widetilde{\Delta}_L$ stands for the difference-in-difference estimate evaluated at the sample means.
$\widetilde{\Pi}_L$ stands for the ratio-in-ratios estimate evaluated at the sample means.
$\widetilde{\tau}_L^{\Delta}$ stands for the F-statistic of the difference-in-difference estimate $\widetilde{\Delta}_L$.
$\widetilde{\tau}_L^{\Pi}$ stands for the F-statistic of the ratio-in-ratios estimate $\widetilde{\Pi}_L$.
$\widehat{\theta}_{jit}$ stands for the endogeneity correction term.

Table 2.14: Results for Married Male with Non-working Children by Wage Rate Quartiles — Sample of Household Heads and Their Spouses

Quartiles	NHI's Impact	Corrected for Endogeneity		Not Corrected for Endogeneity	
		Work Hours	**Wage Rate**	**Work Hours**	**Wage Rate**
≥the 3rd	$\widetilde{\Delta}_L$	-1.33	-21.53	-1.42	-18.19
	$\widetilde{\tau}_L^{\Delta}$	1.66 [0.20]†	2.38 [0.12]	1.89 [0.17]	2.11 [0.15]
	$\widetilde{\Pi}_L - 1(\%)$	-2.95%	-6.12%	-3.11%	-5.70%
	$\widetilde{\tau}_L^{\Pi}$	1.73 [0.19]	2.60 [0.11]	1.95 [0.16]	2.24 [0.13]
	$\widehat{\theta}_{1it}$	-0.03 (-0.69)‡	-0.46*** (-5.70)	—	—
	$\widehat{\theta}_{0it}$	-0.02 (-0.49)	0.25*** (3.00)	—	—
≥the 2nd and ≤the 3rd	$\widetilde{\Delta}_L$	-1.12	-7.73	-1.08	-8.12
	$\widetilde{\tau}_L^{\Delta}$	1.12 [0.29]	5.18** [0.02]	1.05 [0.31]	5.85** [0.02]
	$\widetilde{\Pi}_L - 1(\%)$	-2.37%	-3.36%	-2.29%	-3.57%
	$\widetilde{\tau}_L^{\Pi}$	1.15 [0.28]	5.38** [0.02]	1.08 [0.30]	6.13** [0.01]
	$\widehat{\theta}_{1it}$	0.02 (0.51)	-0.06** (-2.00)	—	—
	$\widehat{\theta}_{0it}$	-3.3e-3 (-0.07)	0.04 (1.39)	—	—
≥the 1st and ≤the 2nd	$\widetilde{\Delta}_L$	-6.57	3.12	-6.19	2.76
	$\widetilde{\tau}_L^{\Delta}$	22.53*** [0.00]	1.17 [0.28]	20.05*** [0.00]	0.94 [0.33]
	$\widetilde{\Pi}_L - 1(\%)$	-12.79%	1.80%	-12.01%	1.59%
	$\widetilde{\tau}_L^{\Pi}$	26.88*** [0.00]	1.16 [0.28]	23.80*** [0.00]	0.93 [0.33]
	$\widehat{\theta}_{1it}$	0.06 (1.11)	-0.04 (-1.24)	—	—
	$\widehat{\theta}_{0it}$	-0.12* (-1.83)	2.8e-3 (0.08)	—	—
≤the 1st	$\widetilde{\Delta}_L$	-3.79	-0.21	-2.54	0.16
	$\widetilde{\tau}_L^{\Delta}$	2.19 [0.14]	0.00 [0.98]	1.07 [0.30]	0.00 [0.99]
	$\widetilde{\Pi}_L - 1(\%)$	-7.05%	-0.11%	-4.86%	0.18%
	$\widetilde{\tau}_L^{\Pi}$	2.45 [0.12]	0.00 [0.99]	1.14 [0.29]	0.00 [0.98]
	$\widehat{\theta}_{1it}$	-1.0e-3 (-0.02)	0.11 (1.20)	—	—
	$\widehat{\theta}_{0it}$	-0.35*** (-3.14)	0.06 (0.35)	—	—

†p-value in square parentheses.
‡t-statistic in parentheses.
***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.
$\widetilde{\Delta}_L$ stands for the difference-in-difference estimate evaluated at the sample means.
$\widetilde{\Pi}_L$ stands for the ratio-in-ratios estimate evaluated at the sample means.
$\widetilde{\tau}_L^{\Delta}$ stands for the F-statistic of the difference-in-difference estimate $\widetilde{\Delta}_L$.
$\widetilde{\tau}_L^{\Pi}$ stands for the F-statistic of the ratio-in-ratios estimate $\widetilde{\Pi}_L$.
$\widehat{\theta}_{jit}$ stands for the endogeneity correction term.

Table 2.15: Results for Married Female without Non-working Children by Wage Rate Quartiles — Sample of Household Heads and Their Spouses

Quartiles	NHI's Impact	Corrected for Endogeneity		Not Corrected for Endogeneity	
		Work Hours	**Wage Rate**	**Work Hours**	**Wage Rate**
$\geq$**the 3rd**	$\widetilde{\Delta}_L$	-2.59	-16.91	-1.20	-23.20
	$\widetilde{\tau}_L^{\Delta}$	2.04 [0.15][†]	1.07 [0.30]	0.47 [0.49]	1.95 [0.16]
	$\widetilde{\Pi}_L - 1(\%)$	-5.46%	-5.78%	-2.78%	-8.98%
	$\widetilde{\tau}_L^{\Pi}$	2.03 [0.15]	0.89 [0.35]	0.50 [0.48]	2.33 [0.13]
	$\widehat{\theta}_{1it}$	-0.18*** (-4.36)[‡]	0.22*** (3.33)	—	—
	$\widehat{\theta}_{0it}$	-0.07 (-0.95)	0.09 (0.79)	—	—
$\geq$**the 2nd and** $\leq$**the 3rd**	$\widetilde{\Delta}_L$	1.20	-7.29	1.10	-6.03
	$\widetilde{\tau}_L^{\Delta}$	0.25 [0.62]	1.70 [0.19]	0.24 [0.62]	1.34 [0.25]
	$\widetilde{\Pi}_L - 1(\%)$	2.64%	-4.61%	2.43%	-3.85%
	$\widetilde{\tau}_L^{\Pi}$	0.23 [0.63]	1.80 [0.18]	0.23 [0.63]	1.43 [0.23]
	$\widehat{\theta}_{1it}$	-0.04 (-0.80)	0.05 (1.41)	—	—
	$\widehat{\theta}_{0it}$	0.02 (0.21)	-0.05 (-0.78)	—	—
$\geq$**the 1st and** $\leq$**the 2nd**	$\widetilde{\Delta}_L$	-1.77	2.62	-1.72	1.84
	$\widetilde{\tau}_L^{\Delta}$	0.29 [0.59]	0.24 [0.62]	0.32 [0.57]	0.14 [0.71]
	$\widetilde{\Pi}_L - 1(\%)$	-3.70%	2.37%	-3.63%	1.64%
	$\widetilde{\tau}_L^{\Pi}$	0.29 [0.59]	0.23 [0.63]	0.33 [0.57]	0.13 [0.71]
	$\widehat{\theta}_{1it}$	-0.07 (-1.27)	-0.02 (-0.50)	—	—
	$\widehat{\theta}_{0it}$	0.01 (0.09)	0.02 (0.43)	—	—
$\leq$**the 1st**	$\widetilde{\Delta}_L$	0.14	-5.60	-1.14	-7.70
	$\widetilde{\tau}_L^{\Delta}$	0.00 [0.97]	0.11 [0.74]	0.04 [0.84]	0.22 [0.64]
	$\widetilde{\Pi}_L - 1(\%)$	0.42%	-7.03%	-2.41%	-8.72%
	$\widetilde{\tau}_L^{\Pi}$	0.00 [0.97]	0.13 [0.72]	0.04 [0.83]	0.24 [0.62]
	$\widehat{\theta}_{1it}$	-0.11 (-1.50)	-0.44*** (-3.63)	—	—
	$\widehat{\theta}_{0it}$	0.12 (0.70)	0.12 (0.42)	—	—

[†] p-value in square parentheses.
[‡] t-statistic in parentheses.
***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.
$\widetilde{\Delta}_L$ stands for the difference-in-difference estimate evaluated at the sample means.
$\widetilde{\Pi}_L$ stands for the ratio-in-ratios estimate evaluated at the sample means.
$\widetilde{\tau}_L^{\Delta}$ stands for the F-statistic of the difference-in-difference estimate $\widetilde{\Delta}_L$.
$\widetilde{\tau}_L^{\Pi}$ stands for the F-statistic of the ratio-in-ratios estimate $\widetilde{\Pi}_L$.
$\widehat{\theta}_{jit}$ stands for the endogeneity correction term.

Table 2.16: Results for Married Female with Non-working Children by Wage Rate Quartiles — Sample of Household Heads and Their Spouses

Quartiles	NHI's Impact	Corrected for Endogeneity		Not Corrected for Endogeneity	
		Work Hours	Wage Rate	Work Hours	Wage Rate
≥the 3rd	$\widetilde{\Delta}_L$	-2.27	3.42	-1.74	-4.47
	$\widetilde{\tau}_L^{\Delta}$	3.15* [0.08]†	0.09 [0.77]	2.22 [0.14]	0.13 [0.72]
	$\widetilde{\Pi}_L - 1(\%)$	-4.75%	2.08%	-3.88%	-2.28%
	$\widetilde{\tau}_L^{\Pi}$	3.38* [0.07]	0.17 [0.68]	2.31 [0.13]	0.23 [0.63]
	$\widehat{\theta}_{1it}$	-0.24*** (-6.77)‡	0.54*** (8.14)	—	—
	$\widehat{\theta}_{0it}$	0.08 (1.50)	0.02 (0.18)	—	—
≥the 2nd and ≤the 3rd	$\widetilde{\Delta}_L$	1.72	-5.12	2.02	-4.98
	$\widetilde{\tau}_L^{\Delta}$	1.46 [0.23]	1.43 [0.23]	2.11 [0.15]	1.41 [0.23]
	$\widetilde{\Pi}_L - 1(\%)$	3.92%	-3.16%	4.61%	-3.06%
	$\widetilde{\tau}_L^{\Pi}$	1.36 [0.24]	1.47 [0.23]	1.97 [0.16]	1.46 [0.23]
	$\widehat{\theta}_{1it}$	-0.03 (-0.78)	0.07* (1.80)	—	—
	$\widehat{\theta}_{0it}$	-0.04 (-0.79)	-0.02 (-0.34)	—	—
≥the 1st and ≤the 2nd	$\widetilde{\Delta}_L$	2.88	-4.02	3.55	-3.71
	$\widetilde{\tau}_L^{\Delta}$	1.38 [0.24]	0.81 [0.37]	2.28 [0.13]	0.73 [0.39]
	$\widetilde{\Pi}_L - 1(\%)$	6.73%	-3.43%	8.53%	-3.19%
	$\widetilde{\tau}_L^{\Pi}$	1.24 [0.27]	0.86 [0.35]	2.01 [0.16]	0.77 [0.38]
	$\widehat{\theta}_{1it}$	-0.12** (-2.43)	0.03 (0.88)	—	—
	$\widehat{\theta}_{0it}$	-0.13 (-1.39)	-0.02 (-0.29)	—	—
≤the 1st	$\widetilde{\Delta}_L$	1.61	7.00	0.55	3.66
	$\widetilde{\tau}_L^{\Delta}$	0.05 [0.82]	0.13 [0.72]	0.01 [0.94]	0.10 [0.75]
	$\widetilde{\Pi}_L - 1(\%)$	3.42%	7.18%	1.14%	4.09%
	$\widetilde{\tau}_L^{\Pi}$	0.04 [0.84]	0.00 [0.95]	0.00 [0.94]	0.00 [0.95]
	$\widehat{\theta}_{1it}$	-0.08 (-0.95)	-0.42 (-0.48)	—	—
	$\widehat{\theta}_{0it}$	0.23 (0.91)	0.11 (0.04)	—	—

†p-value in square parentheses.
‡t-statistic in parentheses.
***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.
$\widetilde{\Delta}_L$ stands for the difference-in-difference estimate evaluated at the sample means.
$\widetilde{\Pi}_L$ stands for the ratio-in-ratios estimate evaluated at the sample means.
$\widetilde{\tau}_L^{\Delta}$ stands for the F-statistic of the difference-in-difference estimate $\widetilde{\Delta}_L$.
$\widetilde{\tau}_L^{\Pi}$ stands for the F-statistic of the ratio-in-ratios estimate $\widetilde{\Pi}_L$.
$\widehat{\theta}_{jit}$ stands for the endogeneity correction term.

Table 2.17: Full Sample Estimation Results[†]

		Dependent Variables							
		Endogeneity Corrected				Not Corrected for Endogeneity			
Coefficients	**Variables**	log(WORK HOURS)		log(WAGE RATE)		log(WORK HOURS)		log(WAGE RATE)	
		Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
$\boldsymbol{\beta}_{\ell 0}$	Constant	4.1233***	(69.62)	5.1768***	(23.07)	3.9445***	(99.99)	4.0057***	(26.82)
	$\mathtt{SEX_{it}}$	0.0470***	(12.57)	0.2071***	(14.61)	0.0395***	(12.16)	0.1577***	(12.83)
	$\mathtt{MARRIED_{it}}$	-0.0007	(-0.18)	0.0436***	(2.81)	0.0036	(0.90)	0.0720***	(4.80)
	$\mathtt{AGE_{it}}$	-0.0039**	(-2.39)	0.0134**	(2.16)	-0.0025	(-1.54)	0.0229***	(3.78)
	$\mathtt{AGE^2_{it}}$	0.0020	(1.08)	-0.0073	(-1.02)	0.0015	(0.77)	-0.0111	(-1.56)
	$\mathtt{EDU_{it}}$	-0.0094***	(-6.45)	0.0290***	(5.27)	-0.0038***	(-8.54)	0.0656***	(39.14)
	$\mathtt{NOR_{it}}$	-0.0090	(-1.44)	-0.0186	(-0.78)	-0.0087	(-1.38)	-0.0161	(-0.68)
	$\mathtt{MID_{it}}$	-0.0060	(-0.92)	-0.0398	(-1.60)	-0.0057	(-0.87)	-0.0376	(-1.51)
	$\mathtt{SOU_{it}}$	0.0006	(0.09)	0.0009	(0.04)	0.0006	(0.09)	0.0012	(0.05)
	$\mathtt{URATE_{it-1}}$	0.0019	(1.34)	0.0054	(1.00)	0.0013	(0.89)	0.0012	(0.23)
	$\mathtt{STOCK_{t-1}}$	-0.0078**	(-1.77)	-0.0968***	(-5.83)	-0.0061	(-1.41)	-0.0863***	(-5.21)
	$\mathtt{C_{it}}$	0.0002	(0.23)	-0.0006	(-0.23)	-0.0001	(-0.20)	-0.0025	(-0.97)
$\boldsymbol{\beta}_{\ell 1}$	$\mathtt{P_{it}}$	-0.2548***	(-4.08)	-1.4286***	(-6.04)	-0.0613	(-1.39)	-0.2895*	(-1.73)
	$\mathtt{P_{it}}\times\mathtt{SEX_{it}}$	-0.0024	(-0.58)	0.2344***	(15.18)	0.0006	(0.16)	0.2937***	(21.47)
	$\mathtt{P_{it}}\times\mathtt{MARRIED_{it}}$	0.0226***	(4.69)	-0.0610***	(-3.35)	-0.0091**	(-2.13)	-0.0298*	(-1.83)
	$\mathtt{P_{it}}\times\mathtt{AGE_{it}}$	0.0051***	(2.77)	0.0347***	(5.02)	0.0034*	(1.91)	0.0257***	(3.78)
	$\mathtt{P_{it}}\times\mathtt{AGE^2_{it}}$	-0.0007	(-0.35)	-0.0517***	(-6.35)	-0.0036*	(-1.70)	-0.0404***	(-5.00)
	$\mathtt{P_{it}}\times\mathtt{EDU_{it}}$	0.0099***	(6.67)	0.0074	(1.32)	0.0019***	(3.94)	-0.0242***	(-12.99)
	$\mathtt{P_{it}}\times\mathtt{NOR_{it}}$	-0.0007	(-0.10)	0.0382	(1.37)	0.0004	(0.05)	0.0326	(1.16)
	$\mathtt{P_{it}}\times\mathtt{MID_{it}}$	0.0115	(1.50)	-0.0284	(-0.98)	0.0122	(1.59)	-0.0329	(-1.13)
	$\mathtt{P_{it}}\times\mathtt{SOU_{it}}$	0.0006	(0.08)	-0.0742***	(-2.58)	0.0020	(0.27)	-0.0776***	(-2.69)
	$\mathtt{P_{it}}\times\mathtt{URATE_{it-1}}$	-0.0083***	(-5.01)	0.0172***	(2.73)	-0.0033**	(-2.02)	0.0118*	(1.91)
	$\mathtt{P_{it}}\times\mathtt{STOCK_{t-1}}$	0.0068	(1.39)	-0.0153	(-0.82)	0.0013	(0.27)	-0.0174	(-0.94)
	$\mathtt{P_{it}}\times\mathtt{C_{it}}$	0.0002	(0.28)	-0.0057**	(-2.00)	0.0004	(0.50)	-0.0035	(-1.22)
$\boldsymbol{\beta}_{\ell 2}$	$\mathtt{N_{it}}$	0.0732	(1.10)	-0.3705	(-1.47)	0.0969	(1.46)	-0.2154	(-0.86)
	$\mathtt{N_{it}}\times\mathtt{SEX_{it}}$	-0.0004	(-0.07)	-0.0136	(-0.69)	0.0013	(0.25)	-0.0027	(-0.14)
	$\mathtt{N_{it}}\times\mathtt{MARRIED_{it}}$	0.0073	(1.17)	-0.0255	(-1.08)	0.0083	(1.33)	-0.0189	(-0.80)
	$\mathtt{N_{it}}\times\mathtt{AGE_{it}}$	-0.0026	(-1.02)	0.0001	(0.01)	-0.0032	(-1.29)	-0.0044	(-0.46)
	$\mathtt{N_{it}}\times\mathtt{AGE^2_{it}}$	0.0028	(0.93)	0.0000	(0.00)	0.0035	(1.19)	0.0050	(0.44)
	$\mathtt{N_{it}}\times\mathtt{EDU_{it}}$	0.0004	(0.62)	0.0032	(1.20)	0.0003	(0.39)	0.0022	(0.81)
	$\mathtt{N_{it}}\times\mathtt{NOR_{it}}$	0.0049	(0.53)	0.0369	(1.06)	0.0046	(0.50)	0.0355	(1.02)
	$\mathtt{N_{it}}\times\mathtt{MID_{it}}$	-0.0013	(-0.13)	0.0382	(1.05)	-0.0013	(-0.13)	0.0384	(1.05)
	$\mathtt{N_{it}}\times\mathtt{SOU_{it}}$	-0.0035	(-0.36)	0.0124	(0.34)	-0.0037	(-0.39)	0.0107	(0.29)
	$\mathtt{N_{it}}\times\mathtt{URATE_{it-1}}$	-0.0009	(-0.43)	0.0042	(0.54)	-0.0014	(-0.67)	0.0009	(0.11)
	$\mathtt{N_{it}}\times\mathtt{STOCK_{t-1}}$	-0.0025	(-0.38)	0.0889***	(3.55)	-0.0047	(-0.70)	0.0750***	(3.00)
	$\mathtt{N_{it}}\times\mathtt{C_{it}}$	-0.0004	(-0.37)	-0.0058	(-1.41)	-0.0005	(-0.42)	-0.0061	(-1.49)
$\boldsymbol{\beta}_{\ell 12}$	$\mathtt{P_{it}}\times\mathtt{N_{it}}$	-0.1293*	(-1.74)	-0.2512	(-0.89)	-0.2049***	(-2.76)	-0.2936	(-1.05)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{SEX_{it}}$	-0.0178***	(-3.08)	-0.0286	(-1.31)	-0.0192***	(-3.33)	-0.0399*	(-1.83)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{MARRIED_{it}}$	-0.0046	(-0.68)	0.0317	(1.23)	-0.0064	(-0.94)	0.0268	(1.04)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{AGE_{it}}$	0.0009	(0.30)	-0.0029	(-0.27)	0.0022	(0.77)	0.0001	(0.01)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{AGE^2_{it}}$	-0.0005	(-0.16)	0.0054	(0.43)	-0.0021	(-0.64)	0.0022	(0.18)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{EDU_{it}}$	0.0013*	(1.66)	-0.0012	(-0.39)	0.0017**	(2.21)	-0.0007	(-0.23)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{NOR_{it}}$	-0.0017	(-0.16)	-0.0193	(-0.47)	-0.0026	(-0.24)	-0.0155	(-0.38)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{MID_{it}}$	0.0049	(0.43)	0.0179	(0.42)	0.0037	(0.33)	0.0201	(0.47)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{SOU_{it}}$	0.0015	(0.13)	0.0371	(0.87)	0.0008	(0.07)	0.0409	(0.96)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{URATE_{it-1}}$	0.0065***	(2.79)	-0.0148*	(-1.68)	0.0048	(2.06)	-0.0066	(-0.75)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{STOCK_{t-1}}$	0.0115	(1.55)	0.0537*	(1.91)	0.0219***	(2.97)	0.0496*	(1.78)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{C_{it}}$	-0.0005	(-0.42)	0.0065	(1.47)	-0.0005	(-0.42)	0.0070	(1.58)
$\theta_{\ell 1}$	$\widehat{\lambda}_{1it}$	-0.1328***	(-14.51)	0.2885***	(8.32)	—	—	—	—
$\theta_{\ell 0}$	$\widehat{\lambda}_{0it}$	-0.0402***	(-4.04)	-0.2635***	(-6.99)	—	—	—	—
	$\tau_F^{‡‡}$	12.02***	[0.00]	33.32***	[0.00]	8.31***	[0.00]	47.65***	[0.00]
	Adjusted R^2	0.04		0.26		0.04		0.26	

[†] Number of observations is 78,628.

[‡] p-value in parentheses.

[‡‡] F-statistic of the test of specification (2.17) against (2.19).

*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level.

Table 2.18: Estimation Results for Single Male†

Coefficients	Variables	Dependent Variables							
		Endogeneity Corrected				Not Corrected for Endogeneity			
		log(WORK HOURS)		log(WAGE RATE)		log(WORK HOURS)		log(WAGE RATE)	
		Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
$\boldsymbol{\beta}_{\ell 0}$	Constant	3.7287***	(15.42)	2.5385***	(4.13)	3.9380***	(35.31)	4.3648***	(15.38)
	AGE_{it}	0.0080	(1.55)	0.0383***	(2.90)	0.0059	(1.25)	0.0192	(1.61)
	AGE^2_{it}	-0.0102*	(-1.68)	-0.0233	(-1.51)	-0.0087	(-1.48)	-0.0101	(-0.68)
	EDU_{it}	-0.0014	(-0.23)	0.1075***	(6.94)	-0.0071***	(-4.59)	0.0574***	(14.52)
	NOR_{it}	-0.0173	(-0.93)	-0.0228	(-0.48)	-0.0172	(-0.93)	-0.0221	(-0.47)
	MID_{it}	-0.0336*	(-1.75)	0.0595	(1.22)	-0.0337*	(-1.76)	0.0583	(1.19)
	SOU_{it}	-0.0116	(-0.61)	0.0443	(0.92)	-0.0117	(-0.62)	0.0431	(0.90)
	$URATE_{it-1}$	0.0033	(0.71)	-0.0105	(-0.90)	0.0049	(1.13)	0.0034	(0.31)
	$STOCK_{t-1}$	-0.0188	(-1.43)	-0.0842**	(-2.51)	-0.0202	(-1.54)	-0.0960***	(-2.88)
$\boldsymbol{\beta}_{\ell 1}$	P_{it}	0.2114	(0.86)	1.6158***	(2.59)	0.0037	(0.03)	-0.1948	(-0.64)
	$P_{it}\times AGE_{it}$	-0.0070	(-1.28)	0.0228	(1.63)	-0.0049	(-0.98)	0.0413***	(3.24)
	$P_{it}\times AGE^2_{it}$	0.0067	(1.02)	-0.0522***	(-3.14)	0.0058	(0.93)	-0.0587***	(-3.66)
	$P_{it}\times EDU_{it}$	-0.0019	(-0.31)	-0.0821***	(-5.27)	0.0042***	(2.59)	-0.0282***	(-6.78)
	$P_{it}\times NOR_{it}$	-0.0010	(-0.05)	0.0394	(0.79)	-0.0012	(-0.06)	0.0381	(0.76)
	$P_{it}\times MID_{it}$	0.0330	(1.63)	-0.1286**	(-2.49)	0.0332	(1.64)	-0.1273**	(-2.47)
	$P_{it}\times SOU_{it}$	0.0033	(0.17)	-0.1101**	(-2.17)	0.0033	(0.17)	-0.1101**	(-2.17)
	$P_{it}\times URATE_{it-1}$	-0.0042	(-0.85)	0.0262**	(2.08)	-0.0066	(-1.43)	0.0046	(0.39)
	$P_{it}\times STOCK_{t-1}$	0.0137	(0.98)	-0.0557	(-1.57)	0.0156	(1.12)	-0.0385	(-1.09)
$\boldsymbol{\beta}_{\ell 2}$	N_{it}	0.2707	(1.39)	-0.1149	(-0.23)	0.2420	(1.26)	-0.3659	(-0.75)
	$N_{it}\times AGE_{it}$	-0.0154*	(-2.00)	-0.0221	(-1.13)	-0.0136*	(-1.82)	-0.0065	(-0.34)
	$N_{it}\times AGE^2_{it}$	0.0190**	(1.97)	0.0263	(1.07)	0.0167*	(1.79)	0.0064	(0.27)
	$N_{it}\times EDU_{it}$	0.0004	(0.16)	-0.0104*	(-1.67)	0.0011	(0.45)	-0.0046	(-0.76)
	$N_{it}\times NOR_{it}$	-0.0034	(-0.13)	0.0418	(0.60)	-0.0019	(-0.07)	0.0547	(0.79)
	$N_{it}\times MID_{it}$	0.0133	(0.47)	-0.0081	(-0.11)	0.0143	(0.51)	0.0004	(0.01)
	$N_{it}\times SOU_{it}$	0.0093	(0.34)	-0.0005	(-0.01)	0.0108	(0.39)	0.0131	(0.19)
	$N_{it}\times URATE_{it-1}$	-0.0052	(-0.88)	0.0159	(1.07)	-0.0066	(-1.16)	0.0037	(0.26)
	$N_{it}\times STOCK_{t-1}$	0.0055	(0.28)	0.1382***	(2.72)	0.0043	(0.21)	0.1274**	(2.51)
$\boldsymbol{\beta}_{\ell 12}$	$P_{it}\times N_{it}$	-0.5570***	(-2.68)	-0.4235	(-0.80)	-0.5237***	(-2.55)	-0.1282	(-0.25)
	$P_{it}\times N_{it}\times AGE_{it}$	0.0167**	(2.04)	0.0103	(0.49)	0.0151*	(1.89)	-0.0039	(-0.19)
	$P_{it}\times N_{it}\times AGE^2_{it}$	-0.0205	(-1.97)	-0.0104	(-0.40)	-0.0183	(-1.82)	0.0080	(0.31)
	$P_{it}\times N_{it}\times EDU_{it}$	0.0035	(1.37)	0.0103	(1.56)	0.0028	(1.11)	0.0034	(0.54)
	$P_{it}\times N_{it}\times NOR_{it}$	0.0150	(0.52)	-0.0395	(-0.54)	0.0133	(0.46)	-0.0551	(-0.75)
	$P_{it}\times N_{it}\times MID_{it}$	-0.0050	(-0.17)	0.0401	(0.53)	-0.0060	(-0.20)	0.0311	(0.41)
	$P_{it}\times N_{it}\times SOU_{it}$	-0.0109	(-0.37)	0.0451	(0.61)	-0.0126	(-0.43)	0.0302	(0.41)
	$P_{it}\times N_{it}\times URATE_{it-1}$	0.0104*	(1.66)	-0.0307*	(-1.94)	0.0121**	(2.00)	-0.0150	(-0.97)
	$P_{it}\times N_{it}\times STOCK_{t-1}$	0.0248	(1.17)	0.0314	(0.58)	0.0246	(1.17)	0.0288	(0.54)
$\theta_{\ell 1}$	$\widehat{\lambda}_{1it}$	0.0236	(0.91)	0.2333***	(3.54)	—	—	—	—
$\theta_{\ell 0}$	$\widehat{\lambda}_{0it}$	0.0454	(0.98)	0.3965***	(3.35)	—	—	—	—
	$\tau_F^{\text{‡}}$	3.94***	[0.00]	9.76***	[0.00]	4.86***	[0.00]	10.96***	[0.00]
	Adjusted R^2	0.03		0.15		0.03		0.15	

† Number of observations is 13,347.
‡ p-value in parentheses.
‡‡ F-statistic of the test of specification (2.17) against (2.19).
*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level.

Table 2.19: Estimation Results for Married Male†

Coefficients	Variables	Dependent Variables							
		Endogeneity Corrected				Not Corrected for Endogeneity			
		log(WORK HOURS)		log(WAGE RATE)		log(WORK HOURS)		log(WAGE RATE)	
		Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
	Constant	4.2920***	(42.34)	3.3085***	(13.07)	4.1460***	(76.52)	4.0806***	(30.14)
	$\mathtt{AGE_{it}}$	-0.0092***	(-4.12)	0.0400***	(7.15)	-0.0081***	(-3.78)	0.0341***	(6.38)
	$\mathtt{AGE^2_{it}}$	0.0078***	(3.13)	-0.0281***	(-4.52)	0.0074***	(2.97)	-0.0258***	(-4.17)
	$\mathtt{EDU_{it}}$	-0.0095***	(-3.60)	0.0803***	(12.18)	-0.0051***	(-9.13)	0.0571***	(40.87)
$\boldsymbol{\beta}_{\ell 0}$	$\mathtt{NOR_{it}}$	-0.0087	(-1.04)	-0.0261	(-1.26)	-0.0092	(-1.11)	-0.0230	(-1.11)
	$\mathtt{MID_{it}}$	-0.0026	(-0.30)	-0.0470**	(-2.18)	-0.0031	(-0.36)	-0.0441**	(-2.04)
	$\mathtt{SOU_{it}}$	0.0032	(0.38)	0.0037	(0.18)	0.0026	(0.30)	0.0070	(0.33)
	$\mathtt{URATE_{it-1}}$	0.0023	(1.44)	0.0016	(0.40)	0.0019	(1.22)	0.0037	(0.92)
	$\mathtt{STOCK_{t-1}}$	-0.0103*	(-1.81)	-0.0668***	(-4.69)	-0.0094*	(-1.65)	-0.0718***	(-5.06)
	$\mathtt{C_{it}}$	-0.0002	(-0.18)	-0.0048**	(-2.03)	-0.0004	(-0.42)	-0.0036	(-1.55)
	$\mathtt{P_{it}}$	-0.3415***	(-3.24)	0.8016***	(3.04)	-0.1962***	(-3.19)	0.0237	(0.15)
	$\mathtt{P_{it}}\times\mathtt{AGE_{it}}$	0.0092***	(3.66)	0.0217***	(3.44)	0.0081***	(3.33)	0.0273***	(4.49)
	$\mathtt{P_{it}}\times\mathtt{AGE^2_{it}}$	-0.0087***	(-3.03)	-0.0374***	(-5.20)	-0.0085***	(-2.98)	-0.0416***	(-5.86)
	$\mathtt{P_{it}}\times\mathtt{EDU_{it}}$	0.0077***	(2.87)	-0.0476***	(-7.13)	0.0031***	(4.93)	-0.0258***	(-16.24)
$\boldsymbol{\beta}_{\ell 1}$	$\mathtt{P_{it}}\times\mathtt{NOR_{it}}$	0.0061	(0.59)	0.0470*	(1.84)	0.0068	(0.66)	0.0453*	(1.77)
	$\mathtt{P_{it}}\times\mathtt{MID_{it}}$	0.0138	(1.30)	-0.0195	(-0.73)	0.0145	(1.36)	-0.0213	(-0.80)
	$\mathtt{P_{it}}\times\mathtt{SOU_{it}}$	0.0115	(1.10)	-0.0630**	(-2.40)	0.0123	(1.17)	-0.0649**	(-2.48)
	$\mathtt{P_{it}}\times\mathtt{URATE_{it-1}}$	-0.0055***	(-2.80)	0.0070	(1.42)	-0.0049***	(-2.58)	0.0075	(1.58)
	$\mathtt{P_{it}}\times\mathtt{STOCK_{t-1}}$	0.0028	(0.43)	-0.0367**	(-2.25)	0.0016	(0.24)	-0.0344**	(-2.12)
	$\mathtt{P_{it}}\times\mathtt{C_{it}}$	0.0007	(0.68)	-0.0051**	(-1.98)	0.0009	(0.88)	-0.0065***	(-2.54)
	$\mathtt{N_{it}}$	0.1296	(1.39)	-0.0911	(-0.39)	0.1370	(1.47)	-0.1302	(-0.56)
	$\mathtt{N_{it}}\times\mathtt{AGE_{it}}$	-0.0053	(-1.54)	-0.0072	(-0.83)	-0.0050	(-1.44)	-0.0092	(-1.07)
	$\mathtt{N_{it}}\times\mathtt{AGE^2_{it}}$	0.0056	(1.40)	0.0088	(0.89)	0.0051	(1.29)	0.0113	(1.15)
	$\mathtt{N_{it}}\times\mathtt{EDU_{it}}$	0.0007	(0.81)	0.0026	(1.15)	0.0006	(0.63)	0.0035	(1.55)
$\boldsymbol{\beta}_{\ell 2}$	$\mathtt{N_{it}}\times\mathtt{NOR_{it}}$	0.0110	(0.91)	0.0501*	(1.66)	0.0110	(0.91)	0.0502*	(1.66)
	$\mathtt{N_{it}}\times\mathtt{MID_{it}}$	-0.0045	(-0.36)	0.0463	(1.47)	-0.0041	(-0.32)	0.0440	(1.39)
	$\mathtt{N_{it}}\times\mathtt{SOU_{it}}$	-0.0014	(-0.11)	0.0160	(0.51)	-0.0013	(-0.10)	0.0155	(0.50)
	$\mathtt{N_{it}}\times\mathtt{URATE_{it-1}}$	0.0003	(0.12)	-0.0069	(-1.09)	-0.0005	(-0.22)	-0.0024	(-0.38)
	$\mathtt{N_{it}}\times\mathtt{STOCK_{t-1}}$	-0.0004	(-0.04)	0.0518**	(2.34)	-0.0027	(-0.31)	0.0640***	(2.93)
	$\mathtt{N_{it}}\times\mathtt{C_{it}}$	-0.0005	(-0.35)	-0.0062*	(-1.68)	-0.0006	(-0.42)	-0.0056	(-1.53)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}$	-0.3296***	(-3.11)	-0.5628**	(-2.13)	-0.3402***	(-3.22)	-0.5561**	(-2.11)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{AGE_{it}}$	0.0046	(1.16)	0.0066	(0.67)	0.0042	(1.07)	0.0087	(0.89)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{AGE^2_{it}}$	-0.0049	(-1.08)	-0.0057	(-0.51)	-0.0044	(-0.98)	-0.0085	(-0.75)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{EDU_{it}}$	0.0017*	(1.69)	-0.0023	(-0.89)	0.0019*	(1.88)	-0.0029	(-1.15)
$\boldsymbol{\beta}_{\ell 12}$	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{NOR_{it}}$	0.0003	(0.02)	-0.0302	(-0.80)	0.0002	(0.01)	-0.0312	(-0.83)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{MID_{it}}$	0.0135	(0.86)	-0.0067	(-0.17)	0.0130	(0.83)	-0.0053	(-0.13)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{SOU_{it}}$	-0.0040	(-0.25)	0.0221	(0.57)	-0.0042	(-0.27)	0.0214	(0.55)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{URATE_{it-1}}$	0.0060**	(2.06)	0.0036	(0.50)	0.0067**	(2.35)	-0.0022	(-0.30)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{STOCK_{t-1}}$	0.0294***	(2.88)	0.0808***	(3.17)	0.0323***	(3.23)	0.0752***	(3.01)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{C_{it}}$	-0.0018	(-1.10)	0.0083**	(2.08)	-0.0017	(-1.04)	0.0077*	(1.93)
$\theta_{\ell 1}$	$\widehat{\lambda}_{1it}$	-0.0081	(-0.51)	-0.0820**	(-2.07)	—	—	—	—
$\theta_{\ell 0}$	$\widehat{\lambda}_{0it}$	-0.0358*	(-1.70)	0.1895***	(3.61)	—	—	—	—
	$\tau_F^{‡‡}$	7.76***	[0.00]	15.85***	[0.00]	10.48***	[0.00]	37.43***	[0.00]
	Adjusted R^2	0.04		0.23		0.04		0.23	

† Number of observations is 36,357.

‡ p-value in parentheses.

‡‡ F-statistic of the test of specification (2.17) against (2.19).

*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level.

Table 2.20: Estimation Results for Single Female†

Coefficients	Variables	Dependent Variables							
		Endogeneity Corrected				Not Corrected for Endogeneity			
		log(WORK HOURS)		log(WAGE RATE)		log(WORK HOURS)		log(WAGE RATE)	
		Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
$\boldsymbol{\beta}_{\ell 0}$	Constant	3.7400***	(25.72)	4.8399***	(12.16)	3.8577***	(33.93)	4.1225***	(13.15)
	$\mathtt{AGE}_{\mathtt{it}}$	-0.0017	(-0.35)	0.0108	(0.79)	-0.0002	(-0.05)	0.0016	(0.12)
	$\mathtt{AGE}^2_{\mathtt{it}}$	0.0032	(0.49)	-0.0016	(-0.09)	0.0000	(-0.01)	0.0184	(1.09)
	$\mathtt{EDU}_{\mathtt{it}}$	0.0041	(0.98)	0.0465***	(4.12)	-0.0009	(-0.59)	0.0768***	(18.25)
	$\mathtt{NOR}_{\mathtt{it}}$	-0.0328*	(-1.80)	-0.0035	(-0.07)	-0.0325*	(-1.79)	-0.0050	(-0.10)
	$\mathtt{MID}_{\mathtt{it}}$	-0.0339*	(-1.80)	-0.0411	(-0.80)	-0.0333*	(-1.76)	-0.0446	(-0.86)
	$\mathtt{SOU}_{\mathtt{it}}$	-0.0223	(-1.16)	-0.0284	(-0.54)	-0.0225	(-1.17)	-0.0274	(-0.52)
	$\mathtt{URATE}_{\mathtt{it}-1}$	-0.0001	(-0.01)	0.0116	(0.69)	0.0006	(0.10)	0.0074	(0.44)
	$\mathtt{STOCK}_{\mathtt{t}-1}$	0.0005	(0.04)	-0.0845**	(-2.31)	-0.0030	(-0.23)	-0.0633*	(-1.75)
$\boldsymbol{\beta}_{\ell 1}$	$\mathtt{P}_{\mathtt{it}}$	0.1153	(0.74)	-1.1568***	(-2.72)	0.0031	(0.02)	-0.4744	(-1.36)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{AGE}_{\mathtt{it}}$	0.0061	(1.10)	0.0394***	(2.60)	0.0057	(1.04)	0.0419***	(2.80)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{AGE}^2_{\mathtt{it}}$	-0.0088	(-1.20)	-0.0754***	(-3.76)	-0.0101	(-1.47)	-0.0662***	(-3.51)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{EDU}_{\mathtt{it}}$	-0.0067	(-1.58)	-0.0127	(-1.10)	-0.0042***	(-2.56)	-0.0267***	(-5.84)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{NOR}_{\mathtt{it}}$	0.0195	(0.92)	0.0564	(0.98)	0.0181	(0.85)	0.0653	(1.12)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{MID}_{\mathtt{it}}$	0.0428**	(1.96)	-0.0013	(-0.02)	0.0411*	(1.88)	0.0090	(0.15)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{SOU}_{\mathtt{it}}$	0.0302	(1.36)	-0.0302	(-0.50)	0.0292	(1.31)	-0.0237	(-0.39)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{URATE}_{\mathtt{it}-1}$	-0.0070	(-1.04)	0.0150	(0.82)	-0.0045	(-0.68)	-0.0008	(-0.05)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{STOCK}_{\mathtt{t}-1}$	0.0013	(0.09)	0.0055	(0.14)	0.0029	(0.20)	-0.0042	(-0.11)
$\boldsymbol{\beta}_{\ell 2}$	$\mathtt{N}_{\mathtt{it}}$	0.1057	(0.53)	-0.9761*	(-1.80)	0.0175	(0.09)	-0.4386	(-0.85)
	$\mathtt{N}_{\mathtt{it}}\times\mathtt{AGE}_{\mathtt{it}}$	-0.0012	(-0.15)	0.0376*	(1.73)	0.0024	(0.33)	0.0156	(0.76)
	$\mathtt{N}_{\mathtt{it}}\times\mathtt{AGE}^2_{\mathtt{it}}$	0.0007	(0.07)	-0.0448*	(-1.66)	-0.0035	(-0.38)	-0.0192	(-0.75)
	$\mathtt{N}_{\mathtt{it}}\times\mathtt{EDU}_{\mathtt{it}}$	0.0000	(-0.01)	-0.0023	(-0.32)	-0.0007	(-0.28)	0.0019	(0.26)
	$\mathtt{N}_{\mathtt{it}}\times\mathtt{NOR}_{\mathtt{it}}$	0.0251	(0.88)	0.0140	(0.18)	0.0247	(0.86)	0.0164	(0.21)
	$\mathtt{N}_{\mathtt{it}}\times\mathtt{MID}_{\mathtt{it}}$	0.0296	(1.01)	0.0658	(0.82)	0.0291	(0.99)	0.0688	(0.85)
	$\mathtt{N}_{\mathtt{it}}\times\mathtt{SOU}_{\mathtt{it}}$	0.0057	(0.19)	0.0491	(0.60)	0.0063	(0.21)	0.0456	(0.56)
	$\mathtt{N}_{\mathtt{it}}\times\mathtt{URATE}_{\mathtt{it}-1}$	-0.0058	(-0.73)	0.0266	(1.23)	-0.0034	(-0.44)	0.0120	(0.56)
	$\mathtt{N}_{\mathtt{it}}\times\mathtt{STOCK}_{\mathtt{t}-1}$	-0.0149	(-0.74)	0.0634	(1.15)	-0.0095	(-0.48)	0.0304	(0.56)
$\boldsymbol{\beta}_{\ell 12}$	$\mathtt{P}_{\mathtt{it}}\times\mathtt{N}_{\mathtt{it}}$	-0.0179	(-0.08)	0.3625	(0.61)	0.0310	(0.15)	0.0760	(0.13)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{N}_{\mathtt{it}}\times\mathtt{AGE}_{\mathtt{it}}$	-0.0032	(-0.36)	-0.0358	(-1.50)	-0.0060	(-0.72)	-0.0189	(-0.83)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{N}_{\mathtt{it}}\times\mathtt{AGE}^2_{\mathtt{it}}$	0.0045	(0.42)	0.0484	(1.63)	0.0080	(0.78)	0.0272	(0.95)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{N}_{\mathtt{it}}\times\mathtt{EDU}_{\mathtt{it}}$	-0.0008	(-0.30)	0.0154**	(2.01)	0.0003	(0.13)	0.0081	(1.06)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{N}_{\mathtt{it}}\times\mathtt{NOR}_{\mathtt{it}}$	-0.0471	(-1.42)	0.0175	(0.19)	-0.0464	(-1.40)	0.0135	(0.15)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{N}_{\mathtt{it}}\times\mathtt{MID}_{\mathtt{it}}$	-0.0526	(-1.56)	-0.0060	(-0.07)	-0.0526	(-1.56)	-0.0060	(-0.06)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{N}_{\mathtt{it}}\times\mathtt{SOU}_{\mathtt{it}}$	-0.0276	(-0.81)	0.0165	(0.18)	-0.0268	(-0.78)	0.0114	(0.12)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{N}_{\mathtt{it}}\times\mathtt{URATE}_{\mathtt{it}-1}$	0.0083	(0.97)	-0.0367	(-1.56)	0.0044	(0.52)	-0.0122	(-0.53)
	$\mathtt{P}_{\mathtt{it}}\times\mathtt{N}_{\mathtt{it}}\times\mathtt{STOCK}_{\mathtt{t}-1}$	0.0179	(0.81)	0.0208	(0.34)	0.0160	(0.74)	0.0315	(0.53)
$\theta_{\ell 1}$	$\widehat{\lambda}_{1it}$	-0.0935***	(-5.27)	0.5956***	(12.27)	—	—	—	—
$\theta_{\ell 0}$	$\widehat{\lambda}_{0it}$	0.0356	(1.29)	-0.2170***	(-2.88)	—	—	—	—
	$\tau_F^{\ddagger\ddagger}$	1.06	[0.38]	7.26***	[0.00]	1.43	[0.18]	3.39***	[0.00]
	Adjusted R^2	0.06		0.35		0.06		0.34	

† Number of observations is 8,358.
‡ p-value in parentheses.
‡‡ F-statistic of the test of specification (2.17) against (2.19).
*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level.

Table 2.21: Estimation Results for Married Female†

		Dependent Variables							
		Endogeneity Corrected				Not Corrected for Endogeneity			
Coefficients	Variables	log(WORK HOURS)		log(WAGE RATE)		log(WORK HOURS)		log(WAGE RATE)	
		Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
	Constant	3.8554***	(24.10)	5.9262***	(6.79)	3.7985***	(38.54)	4.3537***	(8.10)
	$\mathtt{AGE}_{it}$	-0.0015	(-0.36)	-0.0134	(-0.59)	-0.0010	(-0.24)	0.0012	(0.06)
	$\mathtt{AGE}^2_{it}$	0.0011	(0.22)	0.0266	(1.03)	0.0009	(0.18)	0.0207	(0.80)
	$\mathtt{EDU}_{it}$	-0.0023	(-0.54)	0.0323	(1.38)	-0.0004	(-0.42)	0.0844***	(15.37)
$\boldsymbol{\beta}_{\ell 0}$	$\mathtt{NOR}_{it}$	0.0015	(0.11)	-0.0439	(-0.58)	0.0017	(0.12)	-0.0382	(-0.50)
	$\mathtt{MID}_{it}$	0.0087	(0.59)	-0.0892	(-1.11)	0.0089	(0.60)	-0.0861	(-1.07)
	$\mathtt{SOU}_{it}$	0.0072	(0.50)	-0.0465	(-0.59)	0.0075	(0.52)	-0.0399	(-0.50)
	$\mathtt{URATE}_{it-1}$	-0.0003	(-0.05)	-0.0079	(-0.27)	-0.0002	(-0.04)	-0.0068	(-0.23)
	$\mathtt{STOCK}_{t-1}$	0.0038	(0.39)	-0.1359***	(-2.56)	0.0044	(0.45)	-0.1194**	(-2.27)
	$\mathtt{C}_{it}$	0.0000	(-0.01)	0.0005	(0.06)	-0.0002	(-0.11)	-0.0041	(-0.44)
	$\mathtt{P}_{it}$	-0.0644	(-0.39)	-1.9953**	(-2.19)	-0.0019	(-0.02)	-0.4468	(-0.75)
	$\mathtt{P}_{it}\times\mathtt{AGE}_{it}$	0.0050	(1.09)	0.0384	(1.54)	0.0035	(0.79)	0.0281	(1.16)
	$\mathtt{P}_{it}\times\mathtt{AGE}^2_{it}$	-0.0021	(-0.39)	-0.0620**	(-2.14)	-0.0040	(-0.76)	-0.0470	(-1.63)
	$\mathtt{P}_{it}\times\mathtt{EDU}_{it}$	0.0035	(0.81)	0.0134	(0.57)	-0.0004	(-0.38)	-0.0300***	(-4.92)
$\boldsymbol{\beta}_{\ell 1}$	$\mathtt{P}_{it}\times\mathtt{NOR}_{it}$	-0.0044	(-0.25)	0.0491	(0.52)	-0.0041	(-0.23)	0.0410	(0.43)
	$\mathtt{P}_{it}\times\mathtt{MID}_{it}$	0.0003	(0.01)	0.0045	(0.05)	0.0001	(0.01)	0.0015	(0.02)
	$\mathtt{P}_{it}\times\mathtt{SOU}_{it}$	-0.0161	(-0.89)	-0.0721	(-0.73)	-0.0162	(-0.90)	-0.0791	(-0.80)
	$\mathtt{P}_{it}\times\mathtt{URATE}_{it-1}$	-0.0010	(-0.17)	0.0571*	(1.77)	0.0038	(0.64)	0.0358	(1.11)
	$\mathtt{P}_{it}\times\mathtt{STOCK}_{t-1}$	-0.0010	(-0.09)	0.0280	(0.47)	-0.0055	(-0.50)	0.0281	(0.48)
	$\mathtt{P}_{it}\times\mathtt{C}_{it}$	0.0009	(0.45)	-0.0100	(-0.97)	0.0002	(0.11)	-0.0019	(-0.19)
	$\mathtt{N}_{it}$	0.1075	(0.68)	-0.7195	(-0.84)	0.1120	(0.71)	-0.5942	(-0.69)
	$\mathtt{N}_{it}\times\mathtt{AGE}_{it}$	-0.0033	(-0.53)	0.0174	(0.52)	-0.0035	(-0.56)	0.0118	(0.35)
	$\mathtt{N}_{it}\times\mathtt{AGE}^2_{it}$	0.0038	(0.52)	-0.0223	(-0.57)	0.0040	(0.56)	-0.0158	(-0.40)
	$\mathtt{N}_{it}\times\mathtt{EDU}_{it}$	0.0000	(0.03)	0.0015	(0.17)	0.0001	(0.03)	0.0016	(0.18)
$\boldsymbol{\beta}_{\ell 2}$	$\mathtt{N}_{it}\times\mathtt{NOR}_{it}$	-0.0101	(-0.50)	0.0219	(0.20)	-0.0101	(-0.50)	0.0207	(0.19)
	$\mathtt{N}_{it}\times\mathtt{MID}_{it}$	-0.0138	(-0.65)	0.0470	(0.40)	-0.0138	(-0.64)	0.0487	(0.42)
	$\mathtt{N}_{it}\times\mathtt{SOU}_{it}$	-0.0157	(-0.73)	0.0102	(0.09)	-0.0158	(-0.73)	0.0077	(0.07)
	$\mathtt{N}_{it}\times\mathtt{URATE}_{it-1}$	-0.0004	(-0.05)	0.0071	(0.19)	-0.0004	(-0.06)	0.0047	(0.13)
	$\mathtt{N}_{it}\times\mathtt{STOCK}_{t-1}$	-0.0064	(-0.46)	0.1056	(1.37)	-0.0068	(-0.48)	0.0950	(1.24)
	$\mathtt{N}_{it}\times\mathtt{C}_{it}$	0.0002	(0.09)	-0.0080	(-0.56)	0.0003	(0.11)	-0.0067	(-0.47)
	$\mathtt{P}_{it}\times\mathtt{N}_{it}$	0.0774	(0.44)	0.1663	(0.17)	0.0165	(0.09)	0.2804	(0.29)
	$\mathtt{P}_{it}\times\mathtt{N}_{it}\times\mathtt{AGE}_{it}$	-0.0040	(-0.59)	-0.0155	(-0.41)	-0.0022	(-0.32)	-0.0168	(-0.45)
	$\mathtt{P}_{it}\times\mathtt{N}_{it}\times\mathtt{AGE}^2_{it}$	0.0051	(0.63)	0.0226	(0.51)	0.0031	(0.38)	0.0235	(0.53)
	$\mathtt{P}_{it}\times\mathtt{N}_{it}\times\mathtt{EDU}_{it}$	0.0013	(0.74)	-0.0019	(-0.20)	0.0013	(0.75)	-0.0020	(-0.21)
$\boldsymbol{\beta}_{\ell 12}$	$\mathtt{P}_{it}\times\mathtt{N}_{it}\times\mathtt{NOR}_{it}$	-0.0073	(-0.29)	0.0173	(0.12)	-0.0082	(-0.32)	0.0222	(0.16)
	$\mathtt{P}_{it}\times\mathtt{N}_{it}\times\mathtt{MID}_{it}$	0.0017	(0.06)	0.0621	(0.43)	0.0006	(0.02)	0.0648	(0.44)
	$\mathtt{P}_{it}\times\mathtt{N}_{it}\times\mathtt{SOU}_{it}$	0.0155	(0.57)	0.0847	(0.58)	0.0155	(0.58)	0.0874	(0.59)
	$\mathtt{P}_{it}\times\mathtt{N}_{it}\times\mathtt{URATE}_{it-1}$	-0.0020	(-0.26)	-0.0321	(-0.78)	-0.0045	(-0.61)	-0.0183	(-0.45)
	$\mathtt{P}_{it}\times\mathtt{N}_{it}\times\mathtt{STOCK}_{t-1}$	-0.0031	(-0.20)	0.0079	(0.09)	0.0025	(0.16)	-0.0039	(-0.04)
	$\mathtt{P}_{it}\times\mathtt{N}_{it}\times\mathtt{C}_{it}$	-0.0012	(-0.41)	0.0084	(0.54)	-0.0011	(-0.39)	0.0067	(0.44)
$\theta_{\ell 1}$	$\widehat{\lambda}_{1it}$	-0.1229***	(-8.98)	0.5212***	(6.98)	—	—	—	—
$\theta_{\ell 0}$	$\widehat{\lambda}_{0it}$	-0.0106	(-0.45)	-0.2928**	(-2.29)	—	—	—	—
	$\tau_F^{‡‡}$	2.30***	[0.00]	2.88***	[0.00]	0.78	[0.78]	2.95***	[0.00]
	Adjusted R^2	0.02		0.14		0.01		0.13	

† Number of observations is 20,566.
‡ p-value in parentheses.
‡‡ F-statistic of the test of specification (2.17) against (2.19).
*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level.

Table 2.22: Estimation Results for Married Male without Non-working Children†

Coefficients	Variables	Dependent Variables							
		Endogeneity Corrected				Not Corrected for Endogeneity			
		log(WORK HOURS)		log(WAGE RATE)		log(WORK HOURS)		log(WAGE RATE)	
		Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
$\boldsymbol{\beta}_{\ell 0}$	Constant	3.8719***	(26.68)	4.4290***	(12.29)	3.9261***	(43.82)	4.1504***	(18.64)
	$\mathtt{AGE_{it}}$	0.0021	(0.58)	0.0316***	(3.52)	0.0017	(0.48)	0.0337***	(3.87)
	$\mathtt{AGE^2_{it}}$	-0.0045	(-1.14)	-0.0231**	(-2.33)	-0.0044	(-1.11)	-0.0238**	(-2.40)
	$\mathtt{EDU_{it}}$	-0.0028	(-0.82)	0.0506***	(5.87)	-0.0044***	(-5.66)	0.0588***	(30.13)
	$\mathtt{NOR_{it}}$	0.0094	(0.76)	-0.0765**	(-2.52)	0.0094	(0.77)	-0.0768**	(-2.52)
	$\mathtt{MID_{it}}$	0.0141	(1.11)	-0.0934***	(-2.96)	0.0144	(1.13)	-0.0947***	(-3.00)
	$\mathtt{SOU_{it}}$	0.0139	(1.10)	-0.0515	(-1.64)	0.0140	(1.11)	-0.0520*	(-1.65)
	$\mathtt{URATE_{it-1}}$	0.0010	(0.44)	0.0071	(1.24)	0.0011	(0.49)	0.0065	(1.14)
	$\mathtt{STOCK_{t-1}}$	-0.0072	(-0.79)	-0.0912***	(-4.05)	-0.0075	(-0.83)	-0.0895***	(-3.98)
$\boldsymbol{\beta}_{\ell 1}$	$\mathtt{P_{it}}$	0.0048	(0.03)	-0.3732	(-0.98)	-0.0446	(-0.44)	-0.1521	(-0.60)
	$\mathtt{P_{it}}\times\mathtt{AGE_{it}}$	0.0012	(0.29)	0.0273***	(2.64)	0.0012	(0.31)	0.0296***	(2.97)
	$\mathtt{P_{it}}\times\mathtt{AGE^2_{it}}$	0.0000	(0.00)	-0.0435***	(-3.79)	-0.0001	(-0.02)	-0.0436***	(-3.81)
	$\mathtt{P_{it}}\times\mathtt{EDU_{it}}$	0.0019	(0.55)	-0.0191**	(-2.18)	0.0033***	(3.54)	-0.0246***	(-10.58)
	$\mathtt{P_{it}}\times\mathtt{NOR_{it}}$	-0.0074	(-0.49)	0.1053***	(2.78)	-0.0073	(-0.48)	0.1030***	(2.72)
	$\mathtt{P_{it}}\times\mathtt{MID_{it}}$	0.0002	(0.01)	0.0366	(0.93)	0.0001	(0.01)	0.0355	(0.91)
	$\mathtt{P_{it}}\times\mathtt{SOU_{it}}$	0.0106	(0.68)	0.0061	(0.16)	0.0107	(0.68)	0.0042	(0.11)
	$\mathtt{P_{it}}\times\mathtt{URATE_{it-1}}$	-0.0067	(-2.36)	0.0049	(0.70)	-0.0064	(-2.34)	0.0001	(0.01)
	$\mathtt{P_{it}}\times\mathtt{STOCK_{t-1}}$	-0.0005	(-0.05)	-0.0254	(-0.97)	-0.0004	(-0.04)	-0.0245	(-0.94)
$\boldsymbol{\beta}_{\ell 2}$	$\mathtt{N_{it}}$	0.1404	(0.89)	-0.3584	(-0.91)	0.1438	(0.91)	-0.3761	(-0.96)
	$\mathtt{N_{it}}\times\mathtt{AGE_{it}}$	-0.0086	(-1.46)	-0.0015	(-0.10)	-0.0089	(-1.53)	0.0003	(0.02)
	$\mathtt{N_{it}}\times\mathtt{AGE^2_{it}}$	0.0105	(1.59)	0.0023	(0.14)	0.0108*	(1.65)	0.0004	(0.03)
	$\mathtt{N_{it}}\times\mathtt{EDU_{it}}$	0.0007	(0.55)	0.0032	(1.03)	0.0007	(0.57)	0.0031	(1.00)
	$\mathtt{N_{it}}\times\mathtt{NOR_{it}}$	0.0044	(0.24)	0.0592	(1.28)	0.0043	(0.23)	0.0596	(1.29)
	$\mathtt{N_{it}}\times\mathtt{MID_{it}}$	-0.0011	(-0.06)	0.0157	(0.33)	-0.0014	(-0.07)	0.0173	(0.36)
	$\mathtt{N_{it}}\times\mathtt{SOU_{it}}$	0.0138	(0.72)	0.0184	(0.38)	0.0137	(0.71)	0.0192	(0.40)
	$\mathtt{N_{it}}\times\mathtt{URATE_{it-1}}$	0.0017	(0.43)	-0.0048	(-0.48)	0.0021	(0.54)	-0.0068	(-0.70)
	$\mathtt{N_{it}}\times\mathtt{STOCK_{t-1}}$	0.0017	(0.12)	0.0823**	(2.36)	0.0027	(0.19)	0.0772**	(2.24)
$\boldsymbol{\beta}_{\ell 12}$	$\mathtt{P_{it}}\times\mathtt{N_{it}}$	-0.3208*	(-1.79)	-0.4299	(-0.96)	-0.3255*	(-1.82)	-0.3973	(-0.89)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{AGE_{it}}$	0.0054	(0.81)	0.0058	(0.35)	0.0056	(0.85)	0.0058	(0.35)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{AGE^2_{it}}$	-0.0064	(-0.84)	-0.0072	(-0.38)	-0.0065	(-0.87)	-0.0072	(-0.39)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{EDU_{it}}$	0.0020	(1.36)	-0.0054	(-1.47)	0.0020	(1.32)	-0.0049	(-1.32)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{NOR_{it}}$	-0.0231	(-1.00)	-0.0394	(-0.69)	-0.0231	(-1.00)	-0.0385	(-0.67)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{MID_{it}}$	-0.0096	(-0.40)	0.0271	(0.46)	-0.0093	(-0.39)	0.0259	(0.44)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{SOU_{it}}$	-0.0456*	(-1.90)	0.0207	(0.35)	-0.0455*	(-1.90)	0.0202	(0.34)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{URATE_{it-1}}$	0.0070	(1.49)	0.0010	(0.09)	0.0064	(1.40)	0.0050	(0.44)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{STOCK_{t-1}}$	0.0317*	(1.93)	0.0719*	(1.77)	0.0317**	(1.96)	0.0646	(1.61)
$\theta_{\ell 1}$	$\widehat{\lambda}_{1it}$	-0.0215	(-0.68)	0.2287***	(2.90)	—	—	—	—
$\theta_{\ell 0}$	$\widehat{\lambda}_{0it}$	0.0595	(1.42)	-0.0983	(-0.94)	—	—	—	—
	$\tau_F^{⧻}$	2.99***	[0.00]	6.24***	[0.00]	4.48***	[0.00]	16.29***	[0.00]
	Adjusted R^2	0.04		0.26		0.04		0.26	

† Number of observations is 13,441.

‡ p-value in parentheses.

⧻ F-statistic of the test of specification (2.17) against (2.19).

*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level.

Table 2.23: Estimation Results for Married Male with Non-working Children†

Coefficients	**Variables**	**Dependent Variables**							
		Endogeneity Corrected				**Not Corrected for Endogeneity**			
		log(WORK HOURS)		log(WAGE RATE)		log(WORK HOURS)		log(WAGE RATE)	
		Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
$\boldsymbol{\beta}_{\ell 0}$	Constant	4.4751***	(41.04)	3.1490***	(11.53)	4.3187***	(61.65)	4.0081***	(22.79)
	$\mathtt{AGE_{it}}$	-0.0170***	(-5.95)	0.0422***	(5.88)	-0.0159***	(-5.68)	0.0359***	(5.11)
	$\mathtt{AGE^2_{it}}$	0.0168***	(5.15)	-0.0320***	(-3.91)	0.0163***	(5.01)	-0.0292***	(-3.58)
	$\mathtt{EDU_{it}}$	-0.0101***	(-3.70)	0.0816***	(11.99)	-0.0052***	(-6.51)	0.0549***	(27.43)
	$\mathtt{NOR_{it}}$	-0.0214*	(-1.88)	0.0210	(0.74)	-0.0226**	(-1.99)	0.0280	(0.98)
	$\mathtt{MID_{it}}$	-0.0172	(-1.45)	0.0003	(0.01)	-0.0181	(-1.53)	0.0050	(0.17)
	$\mathtt{SOU_{it}}$	-0.0061	(-0.53)	0.0544*	(1.87)	-0.0074	(-0.64)	0.0611**	(2.10)
	$\mathtt{URATE_{it-1}}$	0.0024	(1.08)	-0.0001	(-0.01)	0.0020	(0.88)	0.0025	(0.44)
	$\mathtt{STOCK_{t-1}}$	-0.0104	(-1.42)	-0.0585	(-3.18)	-0.0096	(-1.31)	-0.0627	(-3.41)
	$\mathtt{C_{it}}$	-0.0002	(-0.15)	-0.0066**	(-2.22)	-0.0006	(-0.48)	-0.0045	(-1.53)
$\boldsymbol{\beta}_{\ell 1}$	$\mathtt{P_{it}}$	-0.4927***	(-4.28)	1.0971***	(3.80)	-0.3336***	(-4.22)	0.0773	(0.39)
	$\mathtt{P_{it}}\times\mathtt{AGE_{it}}$	0.0157***	(4.86)	0.0147*	(1.82)	0.0144***	(4.57)	0.0271***	(3.42)
	$\mathtt{P_{it}}\times\mathtt{AGE^2_{it}}$	-0.0165***	(-4.37)	-0.0197**	(-2.08)	-0.0157***	(-4.26)	-0.0416***	(-4.49)
	$\mathtt{P_{it}}\times\mathtt{EDU_{it}}$	0.0075***	(2.71)	-0.0433***	(-6.27)	0.0027***	(3.12)	-0.0247***	(-11.15)
	$\mathtt{P_{it}}\times\mathtt{NOR_{it}}$	0.0137	(0.98)	-0.0087	(-0.25)	0.0149	(1.07)	-0.0089	(-0.25)
	$\mathtt{P_{it}}\times\mathtt{MID_{it}}$	0.0246*	(1.70)	-0.0726**	(-2.01)	0.0254*	(1.76)	-0.0739**	(-2.04)
	$\mathtt{P_{it}}\times\mathtt{SOU_{it}}$	0.0127	(0.89)	-0.1234***	(-3.46)	0.0138	(0.97)	-0.1237***	(-3.47)
	$\mathtt{P_{it}}\times\mathtt{URATE_{it-1}}$	-0.0031	(-1.14)	0.0014	(0.20)	-0.0028	(-1.08)	0.0123*	(1.86)
	$\mathtt{P_{it}}\times\mathtt{STOCK_{t-1}}$	0.0029	(0.35)	-0.0245	(-1.17)	0.0024	(0.29)	-0.0386*	(-1.86)
	$\mathtt{P_{it}}\times\mathtt{C_{it}}$	0.0003	(0.25)	-0.0046	(-1.40)	0.0007	(0.56)	-0.0070**	(-2.18)
$\boldsymbol{\beta}_{\ell 2}$	$\mathtt{N_{it}}$	0.1005	(0.85)	-0.0025	(-0.01)	0.1061	(0.89)	-0.0328	(-0.11)
	$\mathtt{N_{it}}\times\mathtt{AGE_{it}}$	-0.0008	(-0.18)	-0.0115	(-1.03)	-0.0003	(-0.07)	-0.0144	(-1.28)
	$\mathtt{N_{it}}\times\mathtt{AGE^2_{it}}$	0.0003	(0.06)	0.0120	(0.93)	-0.0005	(-0.09)	0.0162	(1.25)
	$\mathtt{N_{it}}\times\mathtt{EDU_{it}}$	-0.0001	(-0.10)	0.0030	(0.94)	-0.0005	(-0.38)	0.0050	(1.56)
	$\mathtt{N_{it}}\times\mathtt{NOR_{it}}$	0.0147	(0.91)	0.0311	(0.77)	0.0143	(0.89)	0.0332	(0.82)
	$\mathtt{N_{it}}\times\mathtt{MID_{it}}$	-0.0050	(-0.30)	0.0509	(1.20)	-0.0050	(-0.30)	0.0510	(1.20)
	$\mathtt{N_{it}}\times\mathtt{SOU_{it}}$	-0.0112	(-0.68)	0.0010	(0.02)	-0.0114	(-0.69)	0.0022	(0.05)
	$\mathtt{N_{it}}\times\mathtt{URATE_{it-1}}$	-0.0011	(-0.32)	-0.0048	(-0.59)	-0.0018	(-0.57)	-0.0005	(-0.07)
	$\mathtt{N_{it}}\times\mathtt{STOCK_{t-1}}$	-0.0064	(-0.56)	0.0523*	(1.84)	-0.0080	(-0.71)	0.0615**	(2.16)
	$\mathtt{N_{it}}\times\mathtt{C_{it}}$	-0.0029	(-1.59)	-0.0028	(-0.61)	-0.0029	(-1.58)	-0.0029	(-0.63)
$\boldsymbol{\beta}_{\ell 12}$	$\mathtt{P_{it}}\times\mathtt{N_{it}}$	-0.3384**	(-2.52)	-0.3376	(-1.00)	-0.3399***	(-2.54)	-0.5541*	(-1.65)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{AGE_{it}}$	0.0020	(0.39)	0.0027	(0.21)	0.0014	(0.28)	0.0076	(0.61)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{AGE^2_{it}}$	-0.0023	(-0.39)	0.0027	(0.19)	-0.0015	(-0.25)	-0.0048	(-0.33)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{EDU_{it}}$	0.0025	(1.71)	-0.0043	(-1.20)	0.0028	(1.95)	-0.0031	(-0.87)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{NOR_{it}}$	0.0198	(0.99)	-0.0144	(-0.29)	0.0203	(1.01)	-0.0187	(-0.37)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{MID_{it}}$	0.0316	(1.51)	-0.0148	(-0.28)	0.0317	(1.52)	-0.0183	(-0.35)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{SOU_{it}}$	0.0276	(1.34)	0.0350	(0.68)	0.0279	(1.35)	0.0290	(0.56)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{URATE_{it-1}}$	0.0054	(1.42)	0.0054	(0.56)	0.0063*	(1.68)	-0.0065	(-0.69)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{STOCK_{t-1}}$	0.0337***	(2.60)	0.0487	(1.50)	0.0347***	(2.71)	0.0773**	(2.40)
	$\mathtt{P_{it}}\times\mathtt{N_{it}}\times\mathtt{C_{it}}$	0.0003	(0.17)	0.0030	(0.58)	0.0003	(0.15)	0.0049	(0.97)
$\theta_{\ell 1}$	$\widehat{\lambda}_{1it}$	0.0246	(0.96)	-0.6649***	(-10.60)	—	—	—	—
$\theta_{\ell 0}$	$\widehat{\lambda}_{0it}$	-0.0219	(-0.82)	0.2150***	(3.29)	—	—	—	—
	$\tau_F^{\dagger\dagger\dagger}$	6.54***	[0.00]	12.10***	[0.00]	7.88***	[0.00]	20.08***	[0.00]
	Adjusted R^2	0.04		0.22		0.04		0.21	

† Number of observations is 22,916.

‡ p-value in parentheses.

‡‡ F-statistic of the test of specification (2.17) against (2.19).

*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level.

Table 2.24: Estimation Results for Married Female without Non-working Children†

Coefficients	**Variables**	**Dependent Variables**							
		Endogeneity Corrected				**Not Corrected for Endogeneity**			
		log(WORK HOURS)		log(WAGE RATE)		log(WORK HOURS)		log(WAGE RATE)	
		Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
	Constant	3.8336***	(14.39)	5.9011***	(8.94)	3.7403***	(21.24)	3.9660***	(9.05)
	AGE_{it}	-0.0013	(-0.17)	-0.0020	(-0.11)	-0.0004	(-0.06)	0.0153	(0.86)
	AGE^2_{it}	0.0005	(0.06)	0.0106	(0.51)	0.0003	(0.03)	0.0053	(0.26)
	EDU_{it}	-0.0037	(-0.57)	0.0269*	(1.68)	-0.0007	(-0.49)	0.0879***	(24.00)
$\boldsymbol{\beta}_{\ell 0}$	NOR_{it}	-0.0116	(-0.57)	0.0143	(0.28)	-0.0113	(-0.55)	0.0217	(0.42)
	MID_{it}	0.0060	(0.27)	-0.0358	(-0.65)	0.0065	(0.29)	-0.0257	(-0.47)
	SOU_{it}	-0.0087	(-0.40)	0.0091	(0.17)	-0.0082	(-0.37)	0.0205	(0.38)
	$URATE_{it-1}$	-0.0051	(-0.49)	-0.0066	(-0.26)	-0.0045	(-0.44)	0.0055	(0.22)
	$STOCK_{t-1}$	0.0163	(0.99)	-0.1546***	(-3.79)	0.0175	(1.08)	-0.1289***	(-3.19)
	P_{it}	-0.1758	(-0.63)	-1.6110	(-2.32)	-0.0281	(-0.14)	0.0491	(0.10)
	$P_{it}\times AGE_{it}$	0.0101	(1.23)	0.0220	(1.09)	0.0061	(0.76)	0.0208	(1.05)
	$P_{it}\times AGE^2_{it}$	-0.0096	(-1.02)	-0.0422*	(-1.82)	-0.0075	(-0.80)	-0.0462**	(-1.98)
	$P_{it}\times EDU_{it}$	0.0032	(0.48)	0.0119	(0.74)	-0.0009	(-0.55)	-0.0433***	(-10.39)
$\boldsymbol{\beta}_{\ell 1}$	$P_{it}\times NOR_{it}$	-0.0034	(-0.13)	0.0340	(0.51)	-0.0030	(-0.11)	0.0229	(0.34)
	$P_{it}\times MID_{it}$	-0.0120	(-0.43)	-0.0055	(-0.08)	-0.0125	(-0.44)	-0.0155	(-0.22)
	$P_{it}\times SOU_{it}$	-0.0220	(-0.78)	-0.0206	(-0.30)	-0.0217	(-0.77)	-0.0363	(-0.52)
	$P_{it}\times URATE_{it-1}$	0.0115	(1.01)	0.0491*	(1.74)	0.0144	(1.28)	0.0193	(0.69)
	$P_{it}\times STOCK_{t-1}$	-0.0031	(-0.17)	0.0252	(0.56)	-0.0070	(-0.38)	0.0128	(0.28)
	N_{it}	0.2836	(1.00)	-0.8764	(-1.25)	0.2973	(1.05)	-0.5921	(-0.84)
	$N_{it}\times AGE_{it}$	-0.0041	(-0.37)	0.0159	(0.58)	-0.0046	(-0.41)	0.0059	(0.21)
	$N_{it}\times AGE^2_{it}$	0.0055	(0.43)	-0.0246	(-0.77)	0.0062	(0.48)	-0.0114	(-0.36)
	$N_{it}\times EDU_{it}$	-0.0008	(-0.33)	0.0056	(0.96)	-0.0007	(-0.31)	0.0066	(1.11)
$\boldsymbol{\beta}_{\ell 2}$	$N_{it}\times NOR_{it}$	-0.0069	(-0.21)	-0.0439	(-0.55)	-0.0074	(-0.23)	-0.0556	(-0.69)
	$N_{it}\times MID_{it}$	-0.0207	(-0.61)	-0.0028	(-0.03)	-0.0215	(-0.63)	-0.0196	(-0.23)
	$N_{it}\times SOU_{it}$	-0.0311	(-0.90)	-0.0330	(-0.38)	-0.0320	(-0.92)	-0.0517	(-0.60)
	$N_{it}\times URATE_{it-1}$	0.0058	(0.43)	0.0064	(0.19)	0.0054	(0.40)	-0.0017	(-0.05)
	$N_{it}\times STOCK_{t-1}$	-0.0364	(-1.52)	0.1496**	(2.53)	-0.0378	(-1.60)	0.1204**	(2.04)
	$P_{it}\times N_{it}$	-0.0521	(-0.16)	0.5197	(0.66)	-0.1271	(-0.40)	0.5457	(0.70)
	$P_{it}\times N_{it}\times AGE_{it}$	-0.0038	(-0.30)	-0.0385	(-1.25)	-0.0012	(-0.10)	-0.0388	(-1.26)
	$P_{it}\times N_{it}\times AGE^2_{it}$	0.0027	(0.19)	0.0569	(1.58)	0.0002	(0.01)	0.0535	(1.48)
	$P_{it}\times N_{it}\times EDU_{it}$	0.0023	(0.88)	-0.0031	(-0.48)	0.0024	(0.91)	-0.0047	(-0.71)
$\boldsymbol{\beta}_{\ell 12}$	$P_{it}\times N_{it}\times NOR_{it}$	-0.0105	(-0.26)	0.0550	(0.55)	-0.0111	(-0.27)	0.0723	(0.72)
	$P_{it}\times N_{it}\times MID_{it}$	0.0101	(0.24)	0.1110	(1.06)	0.0103	(0.24)	0.1310	(1.24)
	$P_{it}\times N_{it}\times SOU_{it}$	0.0365	(0.85)	0.0595	(0.56)	0.0368	(0.86)	0.0811	(0.76)
	$P_{it}\times N_{it}\times URATE_{it-1}$	-0.0152	(-1.03)	-0.0196	(-0.53)	-0.0156	(-1.05)	-0.0075	(-0.20)
	$P_{it}\times N_{it}\times STOCK_{t-1}$	0.0215	(0.81)	0.0104	(0.16)	0.0258	(0.98)	0.0250	(0.38)
$\theta_{\ell 1}$	$\widehat{\lambda}_{1it}$	-0.0966***	(-3.82)	0.4406***	(7.11)	—	—	—	—
$\theta_{\ell 0}$	$\widehat{\lambda}_{0it}$	-0.0106	(-0.27)	-0.4235***	(-4.39)	—	—	—	—
	$\tau_F^{⧻}$	0.84	[0.68]	5.45***	[0.00]	0.81***	[0.72]	12.95***	[0.00]
	Adjusted R^2	0.02		0.42		0.02		0.41	

† Number of observations is 8,034.
ǂ p-value in parentheses.
⧻ F-statistic of the test of specification (2.17) against (2.19).
*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level.

Table 2.25: Estimation Results for Married Female with Non-working Children[†]

		Dependent Variables							
		Endogeneity Corrected				**Not Corrected for Endogeneity**			
Coefficients	**Variables**	log(WORK HOURS)		log(WAGE RATE)		log(WORK HOURS)		log(WAGE RATE)	
		Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
$\boldsymbol{\beta}_{\ell 0}$	Constant	3.7572***	(20.13)	5.8474***	(4.60)	3.7934***	(31.16)	4.5557***	(5.51)
	AGE_{it}	0.0001	(0.01)	-0.0156	(-0.45)	-0.0003	(-0.05)	-0.0040	(-0.12)
	AGE^2_{it}	0.0001	(0.02)	0.0302	(0.75)	0.0002	(0.04)	0.0256	(0.64)
	EDU_{it}	0.0012	(0.24)	0.0371	(1.08)	0.0000	(-0.01)	0.0814***	(8.61)
	NOR_{it}	0.0131	(0.69)	-0.0976	(-0.75)	0.0130	(0.68)	-0.0942	(-0.73)
	MID_{it}	0.0136	(0.68)	-0.1418	(-1.04)	0.0136	(0.68)	-0.1415	(-1.04)
	SOU_{it}	0.0202	(1.02)	-0.1014	(-0.76)	0.0200	(1.01)	-0.0965	(-0.72)
	$URATE_{it-1}$	0.0015	(0.23)	-0.0101	(-0.24)	0.0015	(0.24)	-0.0113	(-0.27)
	$STOCK_{t-1}$	-0.0022	(-0.18)	-0.1256	(-1.53)	-0.0025	(-0.21)	-0.1143	(-1.40)
	C_{it}	0.0011	(0.48)	-0.0002	(-0.02)	0.0013	(0.57)	-0.0064	(-0.42)
$\boldsymbol{\beta}_{\ell 1}$	P_{it}	0.1834	(0.93)	-1.8627	(-1.39)	0.1103	(0.81)	-0.4139	(-0.45)
	$P_{it}\times AGE_{it}$	-0.0034	(-0.59)	0.0270	(0.70)	-0.0020	(-0.36)	0.0108	(0.29)
	$P_{it}\times AGE^2_{it}$	0.0072	(1.09)	-0.0471	(-1.04)	0.0023	(0.34)	-0.0218	(-0.48)
	$P_{it}\times EDU_{it}$	0.0010	(0.19)	0.0174	(0.50)	0.0001	(0.04)	-0.0177*	(-1.72)
	$P_{it}\times NOR_{it}$	-0.0078	(-0.34)	0.0832	(0.53)	-0.0070	(-0.30)	0.0766	(0.49)
	$P_{it}\times MID_{it}$	0.0058	(0.24)	0.0278	(0.17)	0.0053	(0.22)	0.0298	(0.18)
	$P_{it}\times SOU_{it}$	-0.0147	(-0.62)	-0.0850	(-0.52)	-0.0148	(-0.62)	-0.0892	(-0.55)
	$P_{it}\times URATE_{it-1}$	-0.0061	(-0.88)	0.0572	(1.21)	-0.0017	(-0.25)	0.0394	(0.84)
	$P_{it}\times STOCK_{t-1}$	-0.0022	(-0.16)	0.0374	(0.41)	-0.0058	(-0.43)	0.0430	(0.47)
	$P_{it}\times C_{it}$	-0.0012	(-0.47)	-0.0045	(-0.26)	-0.0013	(-0.51)	0.0013	(0.08)
$\boldsymbol{\beta}_{\ell 2}$	N_{it}	0.0701	(0.36)	-0.7994	(-0.61)	0.0697	(0.36)	-0.7839	(-0.60)
	$N_{it}\times AGE_{it}$	-0.0051	(-0.67)	0.0244	(0.47)	-0.0051	(-0.67)	0.0228	(0.44)
	$N_{it}\times AGE^2_{it}$	0.0054	(0.61)	-0.0280	(-0.46)	0.0054	(0.60)	-0.0266	(-0.44)
	$N_{it}\times EDU_{it}$	0.0004	(0.17)	-0.0014	(-0.09)	0.0004	(0.17)	-0.0018	(-0.12)
	$N_{it}\times NOR_{it}$	-0.0150	(-0.56)	0.0707	(0.39)	-0.0151	(-0.57)	0.0762	(0.42)
	$N_{it}\times MID_{it}$	-0.0131	(-0.47)	0.0940	(0.50)	-0.0134	(-0.48)	0.1053	(0.56)
	$N_{it}\times SOU_{it}$	-0.0104	(-0.37)	0.0520	(0.27)	-0.0105	(-0.37)	0.0564	(0.29)
	$N_{it}\times URATE_{it-1}$	-0.0025	(-0.31)	0.0106	(0.20)	-0.0024	(-0.31)	0.0099	(0.18)
	$N_{it}\times STOCK_{t-1}$	0.0094	(0.54)	0.0844	(0.71)	0.0095	(0.54)	0.0815	(0.68)
	$N_{it}\times C_{it}$	-0.0021	(-0.64)	-0.0064	(-0.28)	-0.0022	(-0.66)	-0.0040	(-0.17)
$\boldsymbol{\beta}_{\ell 12}$	$P_{it}\times N_{it}$	0.0542	(0.25)	0.1060	(0.07)	0.0138	(0.06)	0.2638	(0.18)
	$P_{it}\times N_{it}\times AGE_{it}$	0.0000	(0.00)	-0.0049	(-0.08)	0.0004	(0.05)	-0.0051	(-0.09)
	$P_{it}\times N_{it}\times AGE^2_{it}$	0.0016	(0.16)	0.0059	(0.09)	0.0011	(0.11)	0.0067	(0.10)
	$P_{it}\times N_{it}\times EDU_{it}$	0.0007	(0.31)	-0.0022	(-0.13)	0.0007	(0.31)	-0.0018	(-0.11)
	$P_{it}\times N_{it}\times NOR_{it}$	-0.0002	(-0.01)	-0.0275	(-0.12)	0.0005	(0.02)	-0.0354	(-0.15)
	$P_{it}\times N_{it}\times MID_{it}$	0.0011	(0.03)	0.0087	(0.04)	0.0022	(0.06)	-0.0063	(-0.03)
	$P_{it}\times N_{it}\times SOU_{it}$	0.0090	(0.26)	0.0790	(0.33)	0.0101	(0.29)	0.0704	(0.29)
	$P_{it}\times N_{it}\times URATE_{it-1}$	0.0033	(0.38)	-0.0371	(-0.63)	0.0003	(0.04)	-0.0237	(-0.40)
	$P_{it}\times N_{it}\times STOCK_{t-1}$	-0.0156	(-0.79)	-0.0023	(-0.02)	-0.0088	(-0.45)	-0.0288	(-0.21)
	$P_{it}\times N_{it}\times C_{it}$	0.0008	(0.22)	0.0053	(0.21)	0.0009	(0.24)	0.0028	(0.11)
$\theta_{\ell 1}$	$\widehat{\lambda}_{1it}$	-0.1563***	(-6.53)	0.8100***	(4.55)	—	—	—	—
$\theta_{\ell 0}$	$\widehat{\lambda}_{0it}$	-0.0063	(-0.17)	-0.3409	(-1.24)	—	—	—	—
	τ_F[‡‡]	1.82	[0.10]	1.29	[0.14]	0.65	[0.92]	0.81	[0.75]
	Adjusted R^2	0.01		0.09		0.01		0.09	

[†] Number of observations is 12,532.
[‡] p-value in parentheses.
[‡‡] F-statistic of the test of specification (2.17) against (2.19).
*** Significant at 1% level. ** Significant at 5% level. * Significant at 10% level.

Table 2.26: Full Sample Estimation of Multinomial Logit

	Regime 1: Private Sector Workers		**Regime 2: Public Sector Workers**	
	Coefficient	t-statistics	Coefficient	t-statistics
Constant	-4.3482	(-0.39)	-66.7477^{***}	(-3.77)
$\mathtt{SEX_{it}}$	-0.7941^{*}	(-1.86)	0.5437	(0.79)
$\mathtt{SEX_{it}\times AGE_{it}}$	0.0376^{**}	(2.21)	0.0747^{***}	(2.71)
$\mathtt{SEX_{it}\times AGE^2_{it}}$	-0.0575^{***}	(-2.87)	-0.1285^{***}	(-3.94)
$\mathtt{SEX_{it}\times MARRIED_{it}}$	0.2985^{***}	(7.18)	0.3931^{***}	(6.01)
$\mathtt{SEX_{it}\times URATE_{it-1}}$	0.0183	(1.05)	-0.0249	(-0.91)
$\mathtt{SEX_{it}\times STOCK_{t-1}}$	0.0622	(1.34)	-0.0979	(-1.32)
$\mathtt{SEX_{it}\times EDU_{it}}$	-0.0604^{***}	(-12.11)	-0.1596^{***}	(-19.4)
$\mathtt{SEX_{it}\times N_{it}}$	-0.0335	(-0.44)	0.3612^{***}	(2.97)
$\mathtt{SEX_{it}\times C_{it}}$	0.0087	(1.35)	0.0269^{**}	(2.37)
$\mathtt{AGE_{it}}$	0.2891^{***}	(2.84)	0.4811^{***}	(2.91)
$\mathtt{AGE^2_{it}}$	-0.3884^{***}	(-3.24)	-0.4064^{**}	(-2.11)
$\mathtt{AGE_{it}\times MARRIED_{it}}$	-0.0110	(-0.59)	0.1146^{***}	(3.79)
$\mathtt{AGE_{it}\times URATE_{it-1}}$	-0.0237^{***}	(-3.59)	-0.0146	(-1.46)
$\mathtt{AGE_{it}\times STOCK_{t-1}}$	-0.0240	(-1.09)	-0.0032	(-0.09)
$\mathtt{AGE_{it}\times EDU_{it}}$	-0.0213^{***}	(-9.88)	-0.0428^{***}	(-11.66)
$\mathtt{AGE_{it}\times N_{it}}$	0.0574	(1.60)	-0.0082	(-0.15)
$\mathtt{AGE_{it}\times C_{it}}$	0.0073^{***}	(4.38)	-0.0056^{*}	(-1.84)
$\mathtt{AGE^2_{it}\times MARRIED_{it}}$	0.0407^{*}	(1.79)	-0.1131^{***}	(-3.03)
$\mathtt{AGE^2_{it}\times URATE_{it-1}}$	0.0269^{***}	(3.42)	0.0137	(1.17)
$\mathtt{AGE^2_{it}\times STOCK_{t-1}}$	0.0263	(1.01)	-0.0007	(-0.02)
$\mathtt{AGE^2_{it}\times EDU_{it}}$	0.0259^{***}	(10.38)	0.0441^{***}	(10.59)
$\mathtt{AGE^2_{it}\times N_{it}}$	-0.0676	(-1.60)	0.0150	(0.23)
$\mathtt{AGE^2_{it}\times C_{it}}$	-0.0137^{***}	(-6.24)	0.0054	(1.37)
$\mathtt{MARRIED_{it}}$	-0.9677^{**}	(-2.14)	-3.4408^{***}	(-4.66)
$\mathtt{MARRIED_{it}\times URATE_{it-1}}$	-0.0263	(-1.54)	0.0181	(0.67)
$\mathtt{MARRIED_{it}\times STOCK_{t-1}}$	-0.0063	(-0.12)	-0.0153	(-0.18)
$\mathtt{MARRIED_{it}\times EDU_{it}}$	0.0115^{**}	(1.98)	0.0429^{***}	(4.28)
$\mathtt{MARRIED_{it}\times N_{it}}$	0.0109	(0.13)	0.0469	(0.33)
$\mathtt{MARRIED_{it}\times C_{it}}$	-0.0505^{***}	(-4.03)	-0.0400^{**}	(-2.02)
$\mathtt{URATE_{it-1}}$	0.8632^{***}	(5.13)	0.5318^{**}	(2.08)
$\mathtt{URATE_{it-1}}^2$	-0.0131^{***}	(-5.57)	0.0044	(1.48)
$\mathtt{URATE_{it-1}\times STOCK_{t-1}}$	-0.0452^{**}	(-2.29)	0.0193	(0.64)
$\mathtt{URATE_{it-1}\times EDU_{it}}$	-0.0017	(-0.86)	-0.0183^{***}	(-6.37)
$\mathtt{URATE_{it-1}\times N_{it}}$	0.0135	(0.44)	-0.1085^{**}	(-2.35)
$\mathtt{URATE_{it-1}\times C_{it}}$	0.0009	(0.37)	-0.0072^{*}	(-1.77)
$\mathtt{STOCK_{t-1}}$	0.4916	(0.10)	21.4088^{***}	(2.80)
$\mathtt{STOCK_{t-1}}^2$	0.0164	(0.03)	-2.2698^{***}	(-2.74)
$\mathtt{STOCK_{t-1}\times EDU_{it}}$	-0.0103^{*}	(-1.73)	-0.0271^{***}	(-2.78)
$\mathtt{STOCK_{t-1}\times N_{it}}$	0.1529	(0.11)	5.9243^{***}	(2.72)
$\mathtt{STOCK_{t-1}\times C_{it}}$	-0.0213^{***}	(-3.08)	-0.0050	(-0.42)
$\mathtt{EDU_{it}}$	0.3669^{***}	(6.66)	1.4219^{***}	(14.78)
$\mathtt{EDU_{it}}^2$	0.0097^{***}	(20.67)	0.0064^{***}	(7.19)
$\mathtt{EDU_{it}\times N_{it}}$	0.0121	(1.24)	0.0421^{***}	(2.68)
$\mathtt{EDU_{it}\times C_{it}}$	-0.0018^{*}	(-1.91)	0.0098^{***}	(5.86)
$\mathtt{N_{it}}$	-2.2326	(-0.31)	-31.8210^{***}	(-2.77)
$\mathtt{N_{it}\times C_{it}}$	0.0303^{***}	(2.64)	0.0054	(0.27)
$\mathtt{C_{it}}$	0.0368^{***}	(3.14)	0.0486^{***}	(2.66)
$\mathtt{C_{it}}^2$	0.0016^{***}	(3.37)	-0.0014	(-1.18)
Log-likelihood function	-108808.61***			
χ^2-statistic	10796.15***			

Number of Observations=128137.

***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.

Table 2.27: Multinomial Logit Estimation for Single Male

	Regime 1: Private Sector Workers		Regime 2: Public Sector Workers	
	Coefficient	t-statistics	Coefficient	t-statistics
Constant	5.0564	(0.16)	−12.1295	(-0.22)
$\mathtt{AGE_{it}}$	0.3850	(1.39)	0.2899	(0.59)
$\mathtt{AGE_{it}^2}$	−0.4919	(-1.45)	−0.1967	(-0.33)
$\mathtt{AGE_{it}}\times\mathtt{URATE_{it-1}}$	−0.0141	(-0.80)	0.0231	(0.78)
$\mathtt{AGE_{it}}\times\mathtt{STOCK_{t-1}}$	−0.0098	(-0.16)	0.0729	(0.70)
$\mathtt{AGE_{it}}\times\mathtt{EDU_{it}}$	−0.0316***	(-5.31)	−0.0443***	(-4.10)
$\mathtt{AGE_{it}}\times\mathtt{N_{it}}$	−0.0167	(-0.17)	−0.2467	(-1.45)
$\mathtt{AGE_{it}^2}\times\mathtt{URATE_{it-1}}$	0.0197	(0.90)	−0.0276	(-0.76)
$\mathtt{AGE_{it}^2}\times\mathtt{STOCK_{t-1}}$	0.0049	(0.07)	−0.0877	(-0.69)
$\mathtt{AGE_{it}^2}\times\mathtt{EDU_{it}}$	0.0371***	(5.12)	0.0418***	(3.23)
$\mathtt{AGE_{it}^2}\times\mathtt{N_{it}}$	0.0261	(0.22)	0.3069	(1.47)
$\mathtt{URATE_{it-1}}$	0.6685	(1.50)	−0.2297	(-0.30)
$\mathtt{URATE_{it-1}}^2$	−0.0236***	(-3.71)	−0.0022	(-0.22)
$\mathtt{URATE_{it-1}}\times\mathtt{STOCK_{t-1}}$	−0.0701	(-1.37)	−0.0195	(-0.22)
$\mathtt{URATE_{it-1}}\times\mathtt{EDU_{it}}$	0.0093*	(1.65)	−0.0080	(-0.83)
$\mathtt{URATE_{it-1}}\times\mathtt{N_{it}}$	0.1154	(1.42)	0.0786	(0.56)
$\mathtt{STOCK_{t-1}}$	−4.5304	(-0.33)	−2.7525	(-0.11)
$\mathtt{STOCK_{t-1}}^2$	0.5361	(0.36)	0.2113	(0.08)
$\mathtt{STOCK_{t-1}}\times\mathtt{EDU_{it}}$	−0.0074	(-0.40)	−0.0436	(-1.29)
$\mathtt{STOCK_{t-1}}\times\mathtt{N_{it}}$	−1.0618	(-0.27)	−0.2636	(-0.04)
$\mathtt{EDU_{it}}$	0.4673***	(3.01)	1.6830***	(5.69)
$\mathtt{EDU_{it}}^2$	0.0102***	(6.43)	−0.0035	(-1.05)
$\mathtt{EDU_{it}}\times\mathtt{N_{it}}$	0.0077	(0.25)	0.0515	(0.93)
$\mathtt{N_{it}}$	5.4045	(0.26)	4.9161	(0.14)
Log-likelihood function	-13614.43***			
χ^2-statistic	1018.71***			

Number of Observations=18,124.

***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.

Table 2.28: Multinomial Logit Estimation for Married Male

	Regime 1: Private Sector Workers		**Regime 2: Public Sector Workers**	
	Coefficient	*t*-statistics	Coefficient	*t*-statistics
Constant	-20.2525	(-1.33)	-81.5088^{***}	(-3.48)
$\mathtt{AGE_{it}}$	0.2063	(1.44)	0.7600^{***}	(3.34)
$\mathtt{AGE^2_{it}}$	-0.2822^{*}	(-1.70)	-0.7595^{***}	(-2.91)
$\mathtt{AGE_{it}}\times\mathtt{URATE_{it-1}}$	-0.0144^{*}	(-1.69)	-0.0319^{**}	(-2.52)
$\mathtt{AGE_{it}}\times\mathtt{STOCK_{t-1}}$	-0.0071	(-0.23)	-0.0094	(-0.19)
$\mathtt{AGE_{it}}\times\mathtt{EDU_{it}}$	-0.0217^{***}	(-6.82)	-0.0502^{***}	(-9.58)
$\mathtt{AGE_{it}}\times\mathtt{N_{it}}$	0.0259	(0.51)	0.0761	(0.98)
$\mathtt{AGE_{it}}\times\mathtt{C_{it}}$	0.0087^{***}	(3.66)	-0.0034	(-0.82)
$\mathtt{AGE^2_{it}}\times\mathtt{URATE_{it-1}}$	0.0160	(1.61)	0.0327^{**}	(2.23)
$\mathtt{AGE^2_{it}}\times\mathtt{STOCK_{t-1}}$	0.0069	(0.19)	0.0076	(0.14)
$\mathtt{AGE^2_{it}}\times\mathtt{EDU_{it}}$	0.0264^{***}	(7.31)	0.0528^{***}	(9.02)
$\mathtt{AGE^2_{it}}\times\mathtt{N_{it}}$	-0.0354	(-0.60)	-0.0850	(-0.95)
$\mathtt{AGE^2_{it}}\times\mathtt{C_{it}}$	-0.0148^{***}	(-4.88)	0.0043	(0.84)
$\mathtt{URATE_{it-1}}$	0.8615^{***}	(3.92)	1.1141^{***}	(3.36)
$\mathtt{URATE_{it-1}}^2$	-0.0107^{***}	(-3.99)	0.0026	(0.75)
$\mathtt{URATE_{it-1}}\times\mathtt{STOCK_{t-1}}$	-0.0863^{***}	(-3.49)	-0.0156	(-0.42)
$\mathtt{URATE_{it-1}}\times\mathtt{EDU_{it}}$	-0.0044^{*}	(-1.89)	-0.0209^{***}	(-6.22)
$\mathtt{URATE_{it-1}}\times\mathtt{N_{it}}$	0.0711^{*}	(1.84)	-0.0807	(-1.43)
$\mathtt{URATE_{it-1}}\times\mathtt{C_{it}}$	0.0014	(0.43)	-0.0113^{**}	(-2.18)
$\mathtt{STOCK_{t-1}}$	7.4653	(1.14)	25.7000^{***}	(2.55)
$\mathtt{STOCK_{t-1}}^2$	-0.7646	(-1.08)	-2.7339^{**}	(-2.51)
$\mathtt{STOCK_{t-1}}\times\mathtt{EDU_{it}}$	-0.0148^{*}	(-1.81)	-0.0269^{**}	(-2.14)
$\mathtt{STOCK_{t-1}}\times\mathtt{N_{it}}$	2.2778	(1.22)	7.1453^{**}	(2.49)
$\mathtt{STOCK_{t-1}}\times\mathtt{C_{it}}$	-0.0294^{***}	(-3.03)	-0.0058	(-0.35)
$\mathtt{EDU_{it}}$	0.3359^{***}	(4.15)	1.5603^{***}	(11.40)
$\mathtt{EDU_{it}}^2$	0.0103^{***}	(15.89)	0.0022^{*}	(1.84)
$\mathtt{EDU_{it}}\times\mathtt{N_{it}}$	0.0221^{*}	(1.67)	0.0458^{**}	(2.26)
$\mathtt{EDU_{it}}\times\mathtt{C_{it}}$	-0.0023^{*}	(-1.79)	0.0068^{***}	(3.09)
$\mathtt{N_{it}}$	-12.8992	(-1.31)	-39.5887^{***}	(-2.62)
$\mathtt{N_{it}}\times\mathtt{C_{it}}$	0.0403^{**}	(2.49)	0.0047	(0.17)
$\mathtt{C_{it}}$	-0.0088	(-1.46)	0.0116	(1.21)
$\mathtt{C_{it}}^2$	0.0029^{***}	(3.45)	-0.0011	(-0.69)
Log-likelihood function		-57902.67^{***}		
χ^2-statistic		3792.52^{***}		

Number of Observations=64,265.

***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.

Table 2.29: Multinomial Logit Estimation for Single Female

	Regime 1: Private Sector Workers		**Regime 2: Public Sector Workers**	
	Coefficient	*t*-statistics	Coefficient	*t*-statistics
Constant	-16.8677	(-0.35)	-125.9355^{*}	(-1.88)
$\mathtt{AGE_{it}}$	0.4912	(1.24)	0.8195	(1.44)
$\mathtt{AGE^2_{it}}$	-0.6583	(-1.40)	-0.9202	(-1.34)
$\mathtt{AGE_{it}}\times\mathtt{URATE_{it-1}}$	-0.0707^{*}	(-1.79)	-0.0588	(-1.11)
$\mathtt{AGE_{it}}\times\mathtt{STOCK_{t-1}}$	-0.0835	(-0.96)	-0.0835	(-0.68)
$\mathtt{AGE_{it}}\times\mathtt{EDU_{it}}$	-0.0096	(-1.20)	-0.0409^{***}	(-3.41)
$\mathtt{AGE_{it}}\times\mathtt{N_{it}}$	0.0827	(0.59)	-0.1395	(-0.72)
$\mathtt{AGE^2_{it}}\times\mathtt{URATE_{it-1}}$	0.0935^{*}	(1.75)	0.0985	(1.37)
$\mathtt{AGE^2_{it}}\times\mathtt{STOCK_{t-1}}$	0.1068	(1.03)	0.1227	(0.82)
$\mathtt{AGE^2_{it}}\times\mathtt{EDU_{it}}$	0.0072	(0.77)	0.0373^{***}	(2.68)
$\mathtt{AGE^2_{it}}\times\mathtt{N_{it}}$	-0.1053	(-0.64)	0.1330	(0.57)
$\mathtt{URATE_{it-1}}$	1.4823	(1.62)	0.5067	(0.41)
$\mathtt{URATE_{it-1}}^2$	-0.0155	(-0.88)	0.0213	(0.93)
$\mathtt{URATE_{it-1}}\times\mathtt{STOCK_{t-1}}$	0.0142	(0.13)	0.1395	(1.00)
$\mathtt{URATE_{it-1}}\times\mathtt{EDU_{it}}$	-0.0064	(-0.56)	-0.0212	(-1.17)
$\mathtt{URATE_{it-1}}\times\mathtt{N_{it}}$	-0.1710	(-0.97)	-0.4942^{**}	(-2.16)
$\mathtt{STOCK_{t-1}}$	5.3254	(0.26)	47.0918	(1.62)
$\mathtt{STOCK_{t-1}}^2$	-0.4046	(-0.18)	-4.9899	(-1.58)
$\mathtt{STOCK_{t-1}}\times\mathtt{EDU_{it}}$	-0.0019	(-0.08)	0.0111	(0.28)
$\mathtt{STOCK_{t-1}}\times\mathtt{N_{it}}$	1.0438	(0.18)	12.6610	(1.53)
$\mathtt{EDU_{it}}$	0.2560	(1.19)	1.1554^{***}	(3.44)
$\mathtt{EDU_{it}}^2$	0.0052^{***}	(2.68)	0.0109^{***}	(3.47)
$\mathtt{EDU_{it}}\times\mathtt{N_{it}}$	0.0164	(0.41)	0.0301	(0.48)
$\mathtt{N_{it}}$	-7.1721	(-0.23)	-63.4779	(-1.45)
Log-likelihood function	-7645.77^{***}			
χ^2-statistic	997.23^{***}			

Number of Observations=10,452.

***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.

Table 2.30: Multinomial Logit Estimation for Married Female

	Regime 1: Private Sector Workers		**Regime 2: Public Sector Workers**	
	Coefficient	*t*-statistics	Coefficient	*t*-statistics
Constant	25.1025	(1.23)	-45.6069	(-1.26)
$\mathtt{AGE_{it}}$	0.1714	(0.85)	0.2681	(0.74)
$\mathtt{AGE_{it}^2}$	-0.2559	(-1.09)	-0.1251	(-0.30)
$\mathtt{AGE_{it}}\times\mathtt{URATE_{it-1}}$	-0.0480^{***}	(-2.60)	-0.0150	(-0.49)
$\mathtt{AGE_{it}}\times\mathtt{STOCK_{t-1}}$	-0.0066	(-0.15)	0.0252	(0.32)
$\mathtt{AGE_{it}}\times\mathtt{EDU_{it}}$	-0.0156^{***}	(-3.68)	-0.0192^{**}	(-2.39)
$\mathtt{AGE_{it}}\times\mathtt{N_{it}}$	0.0721	(1.00)	-0.0586	(-0.47)
$\mathtt{AGE_{it}}\times\mathtt{C_{it}}$	0.0061^{*}	(1.71)	-0.0135^{*}	(-1.85)
$\mathtt{AGE_{it}^2}\times\mathtt{URATE_{it-1}}$	0.0518^{**}	(2.19)	0.0148	(0.37)
$\mathtt{AGE_{it}^2}\times\mathtt{STOCK_{t-1}}$	0.0138	(0.27)	-0.0392	(-0.43)
$\mathtt{AGE_{it}^2}\times\mathtt{EDU_{it}}$	0.0204^{***}	(4.15)	0.0189^{**}	(2.08)
$\mathtt{AGE_{it}^2}\times\mathtt{N_{it}}$	-0.0864	(-1.02)	0.0887	(0.60)
$\mathtt{AGE_{it}^2}\times\mathtt{C_{it}}$	-0.0146^{***}	(-3.07)	0.0084	(0.85)
$\mathtt{URATE_{it-1}}$	0.8166^{*}	(1.74)	-0.2971	(-0.37)
$\mathtt{URATE_{it-1}}^2$	-0.0245^{***}	(-2.90)	0.0030	(0.22)
$\mathtt{URATE_{it-1}}\times\mathtt{STOCK_{t-1}}$	0.0773	(1.47)	0.1906^{**}	(2.14)
$\mathtt{URATE_{it-1}}\times\mathtt{EDU_{it}}$	0.0021	(0.36)	-0.0095	(-0.90)
$\mathtt{URATE_{it-1}}\times\mathtt{N_{it}}$	-0.1332	(-1.57)	-0.3279^{**}	(-2.29)
$\mathtt{URATE_{it-1}}\times\mathtt{C_{it}}$	0.0067	(1.07)	0.0003	(0.02)
$\mathtt{STOCK_{t-1}}$	-12.0427	(-1.37)	13.8088	(0.88)
$\mathtt{STOCK_{t-1}}^2$	1.3202	(1.38)	-1.5132	(-0.89)
$\mathtt{STOCK_{t-1}}\times\mathtt{EDU_{it}}$	-0.0072	(-0.63)	-0.0281	(-1.36)
$\mathtt{STOCK_{t-1}}\times\mathtt{N_{it}}$	-3.3938	(-1.35)	3.8973	(0.87)
$\mathtt{STOCK_{t-1}}\times\mathtt{C_{it}}$	-0.0128	(-0.88)	0.0202	(0.72)
$\mathtt{EDU_{it}}$	0.2468^{**}	(2.22)	0.7089^{***}	(3.34)
$\mathtt{EDU_{it}}^2$	0.0090^{***}	(10.04)	0.0163^{***}	(9.28)
$\mathtt{EDU_{it}}\times\mathtt{N_{it}}$	0.0040	(0.22)	0.0376	(1.13)
$\mathtt{EDU_{it}}\times\mathtt{C_{it}}$	-0.0059^{***}	(-3.06)	0.0108^{***}	(2.66)
$\mathtt{N_{it}}$	16.2631	(1.23)	-20.1461	(-0.86)
$\mathtt{N_{it}}\times\mathtt{C_{it}}$	0.0270	(1.13)	-0.0078	(-0.17)
$\mathtt{C_{it}}$	-0.0153^{*}	(-1.89)	0.0128	(0.80)
$\mathtt{C_{it}}^2$	0.0046^{***}	(3.29)	0.0061^{***}	(3.45)
Log-likelihood function	-29442.78^{***}			
χ^2-statistic	2060.21^{***}			

Number of Observations=35,296.

***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.

Table 2.31: Multinomial Logit Estimation for Married Male without Non-working Children

	Regime 1: Private Sector Workers		**Regime 2: Public Sector Workers**	
	Coefficient	*t*-statistics	Coefficient	*t*-statistics
Constant	-30.3295	(-1.24)	-105.5528^{***}	(-2.83)
$\mathtt{AGE_{it}}$	0.4678^{*}	(1.93)	1.1967^{***}	(3.10)
$\mathtt{AGE^2_{it}}$	-0.5546	(-2.01)	-1.2369	(-2.86)
$\mathtt{AGE_{it}}\times\mathtt{URATE_{it-1}}$	-0.0047	(-0.33)	-0.0621^{***}	(-2.96)
$\mathtt{AGE_{it}}\times\mathtt{STOCK_{t-1}}$	-0.0620	(-1.19)	-0.1147	(-1.42)
$\mathtt{AGE_{it}}\times\mathtt{EDU_{it}}$	-0.0300^{***}	(-5.39)	-0.0462^{***}	(-5.13)
$\mathtt{AGE_{it}}\times\mathtt{N_{it}}$	0.0724	(0.85)	0.2749^{***}	(2.12)
$\mathtt{AGE^2_{it}}\times\mathtt{URATE_{it-1}}$	0.0016	(0.10)	0.0628^{***}	(2.66)
$\mathtt{AGE^2_{it}}\times\mathtt{STOCK_{t-1}}$	0.0682	(1.14)	0.1232	(1.35)
$\mathtt{AGE^2_{it}}\times\mathtt{EDU_{it}}$	0.0344^{***}	(5.59)	0.0489^{***}	(5.01)
$\mathtt{AGE^2_{it}}\times\mathtt{N_{it}}$	-0.0822	(-0.85)	-0.2877^{**}	(-1.97)
$\mathtt{URATE_{it-1}}$	0.7841^{**}	(2.15)	2.1566^{***}	(3.97)
$\mathtt{URATE_{it-1}}^2$	-0.0063^{*}	(-1.70)	-0.0066	(-1.27)
$\mathtt{URATE_{it-1}}\times\mathtt{STOCK_{t-1}}$	-0.1043^{***}	(-2.82)	-0.0612	(-1.13)
$\mathtt{URATE_{it-1}}\times\mathtt{EDU_{it}}$	-0.0039	(-1.15)	-0.0224^{***}	(-4.78)
$\mathtt{URATE_{it-1}}\times\mathtt{N_{it}}$	0.0841	(1.47)	-0.0448	(-0.54)
$\mathtt{STOCK_{t-1}}$	10.1875	(0.97)	34.5930^{**}	(2.17)
$\mathtt{STOCK_{t-1}}^2$	-0.9199	(-0.81)	-3.4536^{**}	(-2.00)
$\mathtt{STOCK_{t-1}}\times\mathtt{EDU_{it}}$	-0.0200	(-1.60)	-0.0189	(-1.06)
$\mathtt{STOCK_{t-1}}\times\mathtt{N_{it}}$	2.6343	(0.88)	8.9677^{**}	(1.98)
$\mathtt{EDU_{it}}$	0.6183^{***}	(4.42)	1.2860^{***}	(5.61)
$\mathtt{EDU_{it}}^2$	0.0076^{***}	(7.94)	0.0082^{***}	(5.06)
$\mathtt{EDU_{it}}\times\mathtt{N_{it}}$	0.0152	(0.75)	0.0226	(0.79)
$\mathtt{N_{it}}$	-15.7502	(-1.00)	-53.4986^{**}	(-2.23)
Log-likelihood function	-23053.23^{***}			
χ^2-statistic	1144.43^{***}			

Number of Observations=25,511.

***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.

Table 2.32: Multinomial Logit Estimation for Married Male with Non-working Children

	Regime 1: Private Sector Workers		**Regime 2: Public Sector Workers**	
	Coefficient	*t*-statistics	Coefficient	*t*-statistics
Constant	-15.5083	(-0.79)	-68.5850^{**}	(-2.26)
$\mathtt{AGE_{it}}$	0.1617	(0.87)	0.6255^{**}	(2.09)
$\mathtt{AGE^2_{it}}$	-0.2418	(-1.11)	-0.5914	(-1.71)
$\mathtt{AGE_{it}}\times\mathtt{URATE_{it-1}}$	-0.0355^{***}	(-3.11)	-0.0264	(-1.54)
$\mathtt{AGE_{it}}\times\mathtt{STOCK_{t-1}}$	0.0149	(0.37)	0.0474	(0.75)
$\mathtt{AGE_{it}}\times\mathtt{EDU_{it}}$	-0.0205^{***}	(-4.94)	-0.0574^{***}	(-8.08)
$\mathtt{AGE_{it}}\times\mathtt{N_{it}}$	0.0308	(0.46)	0.0017	(0.02)
$\mathtt{AGE_{it}}\times\mathtt{C_{it}}$	0.0087	(2.71)	-0.0020	(-0.36)
$\mathtt{AGE^2_{it}}\times\mathtt{URATE_{it-1}}$	0.0406^{***}	(3.02)	0.0268	(1.34)
$\mathtt{AGE^2_{it}}\times\mathtt{STOCK_{t-1}}$	-0.0184	(-0.39)	-0.0556	(-0.76)
$\mathtt{AGE^2_{it}}\times\mathtt{EDU_{it}}$	0.0263^{***}	(5.54)	0.0586^{***}	(7.34)
$\mathtt{AGE^2_{it}}\times\mathtt{N_{it}}$	-0.0429	(-0.55)	-0.0066	(-0.05)
$\mathtt{AGE^2_{it}}\times\mathtt{C_{it}}$	-0.0152	(-3.68)	0.0028	(0.41)
$\mathtt{URATE_{it-1}}$	1.3052^{***}	(4.38)	0.7569^{*}	(1.68)
$\mathtt{URATE_{it-1}}^2$	-0.0175^{***}	(-4.18)	0.0103^{**}	(2.16)
$\mathtt{URATE_{it-1}}\times\mathtt{STOCK_{t-1}}$	-0.0833^{**}	(-2.47)	0.0198	(0.39)
$\mathtt{URATE_{it-1}}\times\mathtt{EDU_{it}}$	-0.0044	(-1.36)	-0.0202^{***}	(-4.14)
$\mathtt{URATE_{it-1}}\times\mathtt{N_{it}}$	0.0919^{*}	(1.71)	-0.1226	(-1.55)
$\mathtt{URATE_{it-1}}\times\mathtt{C_{it}}$	-0.0040	(-0.90)	-0.0097	(-1.40)
$\mathtt{STOCK_{t-1}}$	5.6077	(0.66)	19.5860	(1.50)
$\mathtt{STOCK_{t-1}}^2$	-0.6188	(-0.68)	-2.1887	(-1.55)
$\mathtt{STOCK_{t-1}}\times\mathtt{EDU_{it}}$	-0.0112	(-1.03)	-0.0378^{**}	(-2.11)
$\mathtt{STOCK_{t-1}}\times\mathtt{N_{it}}$	1.9459	(0.81)	5.7576	(1.55)
$\mathtt{STOCK_{t-1}}\times\mathtt{C_{it}}$	-0.0321^{**}	(-2.50)	-0.0184	(-0.84)
$\mathtt{EDU_{it}}$	0.2313^{***}	(2.18)	1.9371^{***}	(10.36)
$\mathtt{EDU_{it}}^2$	0.0124^{***}	(13.86)	-0.0034^{**}	(-2.01)
$\mathtt{EDU_{it}}\times\mathtt{N_{it}}$	0.0260	(1.45)	0.0723^{**}	(2.48)
$\mathtt{EDU_{it}}\times\mathtt{C_{it}}$	-0.0033^{*}	(-1.89)	0.0023	(0.75)
$\mathtt{N_{it}}$	-11.3914	(-0.90)	-31.0196	(-1.58)
$\mathtt{N_{it}}\times\mathtt{C_{it}}$	0.0680^{***}	(3.15)	0.0517	(1.42)
$\mathtt{C_{it}}$	-0.0115	(-1.50)	0.0171	(1.39)
$\mathtt{C_{it}}^2$	0.0060^{***}	(4.34)	0.0053^{**}	(2.41)
Log-likelihood function	-34727.13^{***}			
χ^2-statistic	2383.49^{***}			

Number of Observations=38,754.

***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.

Table 2.33: Multinomial Logit Estimation for Married Female without Non-working Children

	Regime 1: Private Sector Workers		Regime 2: Public Sector Workers	
	Coefficient	t-statistics	Coefficient	t-statistics
Constant	23.7168	(0.75)	-62.0034	(-1.01)
$\mathtt{AGE_{it}}$	0.5617	(1.48)	0.7840	(1.20)
$\mathtt{AGE^2_{it}}$	-0.7017	(-1.60)	-0.7578	(-0.99)
$\mathtt{AGE_{it}}\times\mathtt{URATE_{it-1}}$	-0.0539	(-1.49)	-0.1160^{**}	(-2.06)
$\mathtt{AGE_{it}}\times\mathtt{STOCK_{t-1}}$	-0.0937	(-1.12)	-0.0938	(-0.67)
$\mathtt{AGE_{it}}\times\mathtt{EDU_{it}}$	-0.0261^{***}	(-3.32)	-0.0260^{*}	(-1.79)
$\mathtt{AGE_{it}}\times\mathtt{N_{it}}$	0.2819^{**}	(2.07)	0.2250	(1.01)
$\mathtt{AGE^2_{it}}\times\mathtt{URATE_{it-1}}$	0.0406	(0.90)	0.1272^{*}	(1.83)
$\mathtt{AGE^2_{it}}\times\mathtt{STOCK_{t-1}}$	0.1216	(1.25)	0.0990	(0.60)
$\mathtt{AGE^2_{it}}\times\mathtt{EDU_{it}}$	0.0307^{***}	(3.40)	0.0312^{*}	(1.89)
$\mathtt{AGE^2_{it}}\times\mathtt{N_{it}}$	-0.3241^{**}	(-2.06)	-0.2177	(-0.83)
$\mathtt{URATE_{it-1}}$	1.4040	(1.54)	2.3176	(1.55)
$\mathtt{URATE_{it-1}}^2$	-0.0505^{**}	(-2.45)	-0.0193	(-0.59)
$\mathtt{URATE_{it-1}}\times\mathtt{STOCK_{t-1}}$	0.0840	(0.89)	0.1525	(0.95)
$\mathtt{URATE_{it-1}}\times\mathtt{EDU_{it}}$	-0.0049	(-0.48)	-0.0222	(-1.25)
$\mathtt{URATE_{it-1}}\times\mathtt{N_{it}}$	-0.1337	(-0.89)	-0.2313	(-0.92)
$\mathtt{STOCK_{t-1}}$	-13.5714	(-1.01)	18.7335	(0.71)
$\mathtt{STOCK_{t-1}}^2$	1.6861	(1.16)	-1.7340	(-0.61)
$\mathtt{STOCK_{t-1}}\times\mathtt{EDU_{it}}$	-0.0166	(-0.94)	-0.0601	(-1.96)
$\mathtt{STOCK_{t-1}}\times\mathtt{N_{it}}$	-4.4058	(-1.15)	4.3472	(0.58)
$\mathtt{EDU_{it}}$	0.5828^{***}	(2.96)	0.8498^{**}	(2.32)
$\mathtt{EDU_{it}}^2$	0.0067^{***}	(5.31)	0.0191^{***}	(7.44)
$\mathtt{EDU_{it}}\times\mathtt{N_{it}}$	0.0194	(0.68)	0.0745	(1.52)
$\mathtt{N_{it}}$	16.8762	(0.83)	-29.2394	(-0.74)
Log-likelihood function	-12028.11^{***}			
χ^2-statistic	599.08^{***}			

Number of Observations=14,621.

***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.

Table 2.34: Multinomial Logit Estimation for Married Female with Non-working Children

	Regime 1: Private Sector Workers		Regime 2: Public Sector Workers	
	Coefficient	*t*-statistics	Coefficient	*t*-statistics
Constant	25.4046	(0.94)	−40.5876	(-0.89)
$\mathtt{AGE_{it}}$	−0.0373	(-0.14)	0.2695	(0.58)
$\mathtt{AGE^2_{it}}$	−0.0300	(-0.10)	−0.1129	(-0.21)
$\mathtt{AGE_{it}}\times\mathtt{URATE_{it-1}}$	-0.0661^{***}	(-2.88)	0.0136	(0.34)
$\mathtt{AGE_{it}}\times\mathtt{STOCK_{t-1}}$	0.0378	(0.65)	0.0316	(0.31)
$\mathtt{AGE_{it}}\times\mathtt{EDU_{it}}$	−0.0081	(-1.47)	−0.0159	(-1.50)
$\mathtt{AGE_{it}}\times\mathtt{N_{it}}$	−0.0263	(-0.28)	−0.1090	(-0.67)
$\mathtt{AGE_{it}}\times\mathtt{C_{it}}$	0.0027	(0.57)	−0.0087	(-0.90)
$\mathtt{AGE^2_{it}}\times\mathtt{URATE_{it-1}}$	0.0797^{***}	(2.71)	−0.0218	(-0.42)
$\mathtt{AGE^2_{it}}\times\mathtt{STOCK_{t-1}}$	−0.0398	(-0.58)	−0.0431	(-0.36)
$\mathtt{AGE^2_{it}}\times\mathtt{EDU_{it}}$	0.0134^{**}	(2.10)	0.0120	(1.00)
$\mathtt{AGE^2_{it}}\times\mathtt{N_{it}}$	0.0255	(0.23)	0.1389	(0.72)
$\mathtt{AGE^2_{it}}\times\mathtt{C_{it}}$	−0.0087	(-1.41)	0.0021	(0.16)
$\mathtt{URATE_{it-1}}$	0.9843^{*}	(1.71)	−0.9940	(-1.01)
$\mathtt{URATE_{it-1}}^2$	-0.0178^{*}	(-1.85)	0.0079	(0.51)
$\mathtt{URATE_{it-1}}\times\mathtt{STOCK_{t-1}}$	0.0748	(1.17)	0.1969^{*}	(1.82)
$\mathtt{URATE_{it-1}}\times\mathtt{EDU_{it}}$	0.0089	(1.28)	−0.0026	(-0.20)
$\mathtt{URATE_{it-1}}\times\mathtt{N_{it}}$	−0.1415	(-1.37)	-0.3557^{**}	(-2.01)
$\mathtt{URATE_{it-1}}\times\mathtt{C_{it}}$	0.0098	(1.28)	0.0065	(0.46)
$\mathtt{STOCK_{t-1}}$	−10.9072	(-0.93)	11.5354	(0.59)
$\mathtt{STOCK_{t-1}}^2$	1.1011	(0.87)	−1.3248	(-0.62)
$\mathtt{STOCK_{t-1}}\times\mathtt{EDU_{it}}$	−0.0051	(-0.34)	0.0016	(0.06)
$\mathtt{STOCK_{t-1}}\times\mathtt{N_{it}}$	−2.7682	(-0.83)	3.4930	(0.63)
$\mathtt{STOCK_{t-1}}\times\mathtt{C_{it}}$	−0.0193	(-1.01)	−0.0042	(-0.12)
$\mathtt{EDU_{it}}$	0.0141	(0.10)	0.6313^{**}	(2.24)
$\mathtt{EDU_{it}}^2$	0.0107^{***}	(8.39)	0.0132^{***}	(5.44)
$\mathtt{EDU_{it}}\times\mathtt{N_{it}}$	−0.0008	(-0.03)	0.0023	(0.05)
$\mathtt{EDU_{it}}\times\mathtt{C_{it}}$	-0.0045^{*}	(-1.77)	0.0076	(1.36)
$\mathtt{N_{it}}$	15.0334	(0.85)	−16.5025	(-0.56)
$\mathtt{N_{it}}\times\mathtt{C_{it}}$	0.0348	(1.12)	0.0449	(0.76)
$\mathtt{C_{it}}$	-0.0181^{*}	(-1.69)	0.0100	(0.50)
$\mathtt{C_{it}}^2$	0.0114^{***}	(5.18)	0.0100^{**}	(2.29)
Log-likelihood function	-17346.65^{***}			
χ^2-statistic	1426.58^{***}			

Number of Observations=20,675.

***Significant at 1% level. **Significant at 5% level. *Significant at 10% level.

Figure 2.1: Real Wage Rates of Public Sector and Private Sector Employees

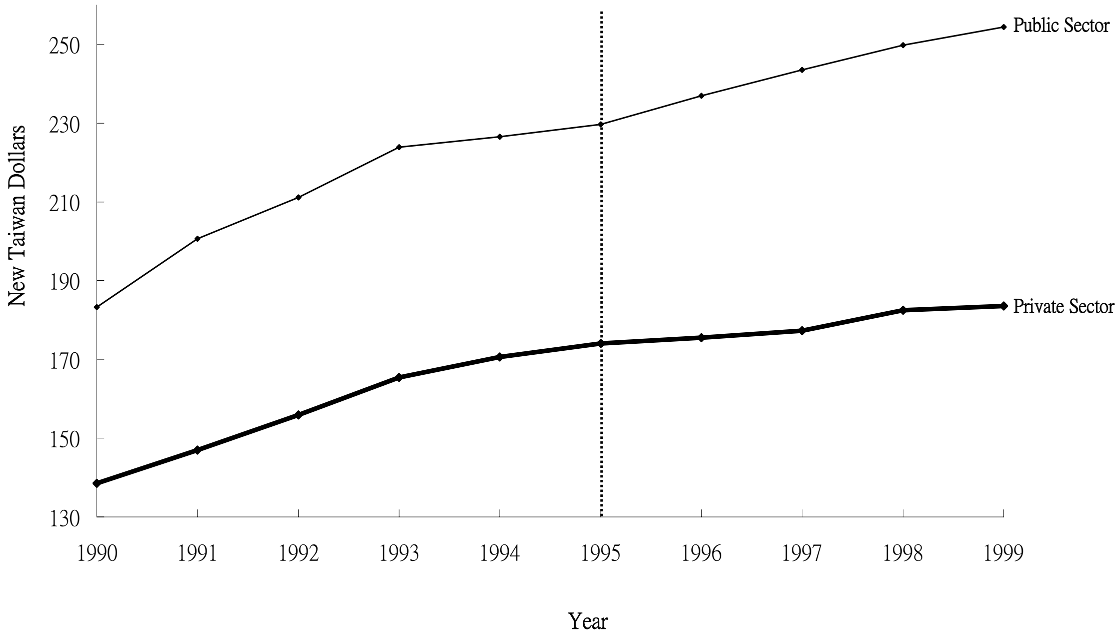

Figure 2.2: Real Wage Rates of Public Sector and Private Sector Male Employees

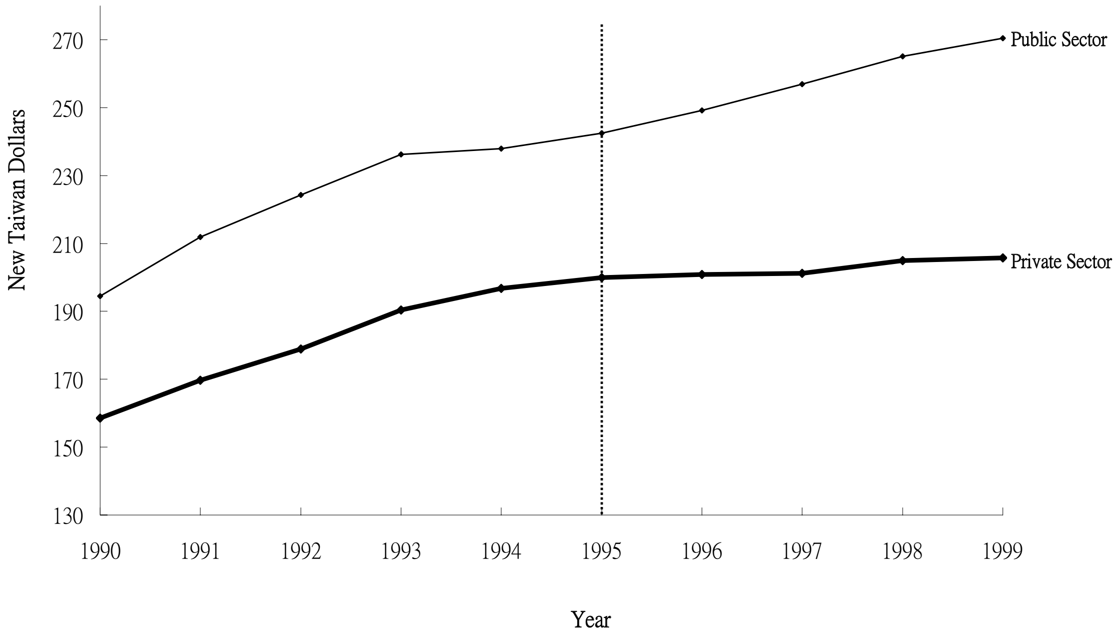

Figure 2.3: Real Wage Rates of Public Sector and Private Sector Female Employees

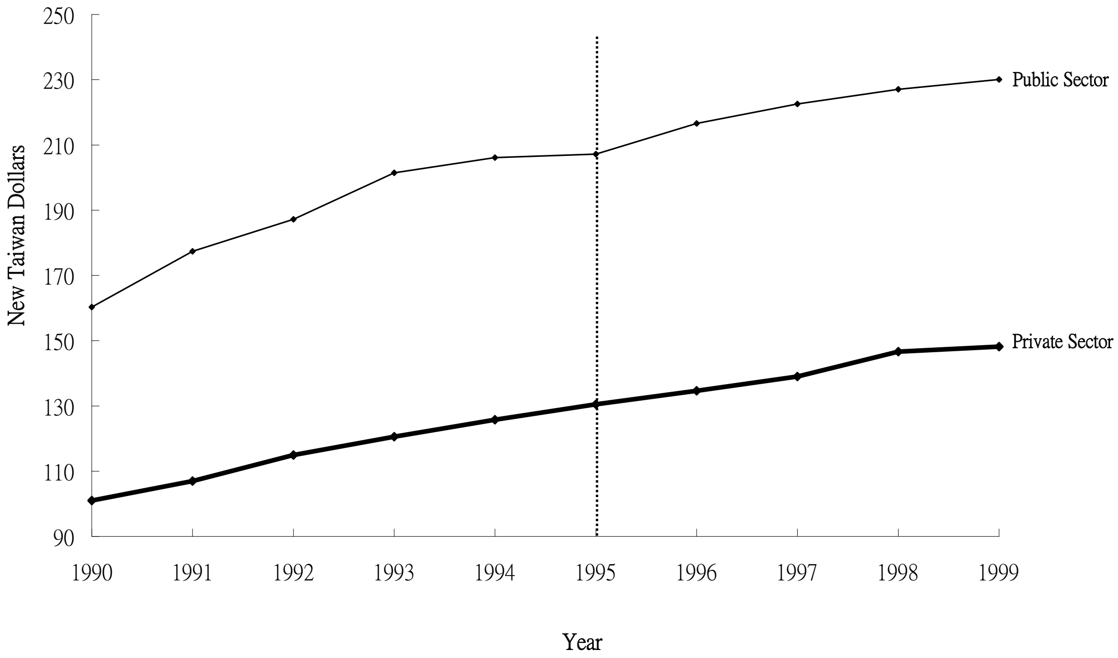

Figure 2.4: Work Hours of Public Sector and Private Sector Employees

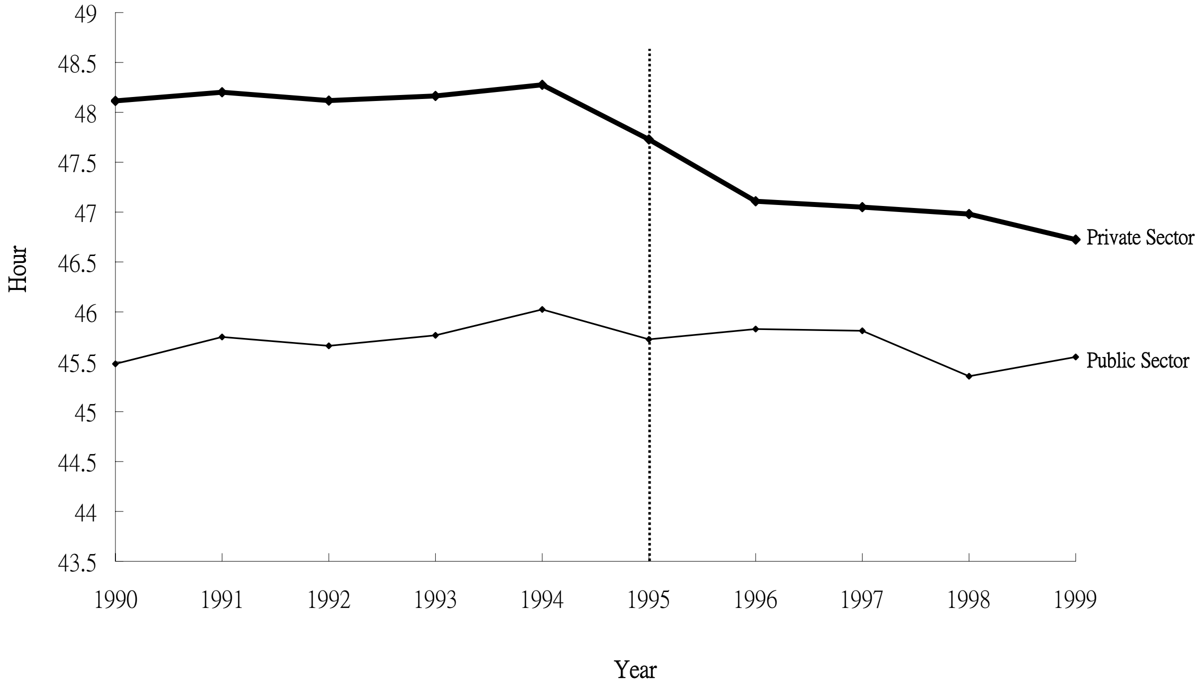

Figure 2.5: Work Hours of Public Sector and Private Sector Male Employees

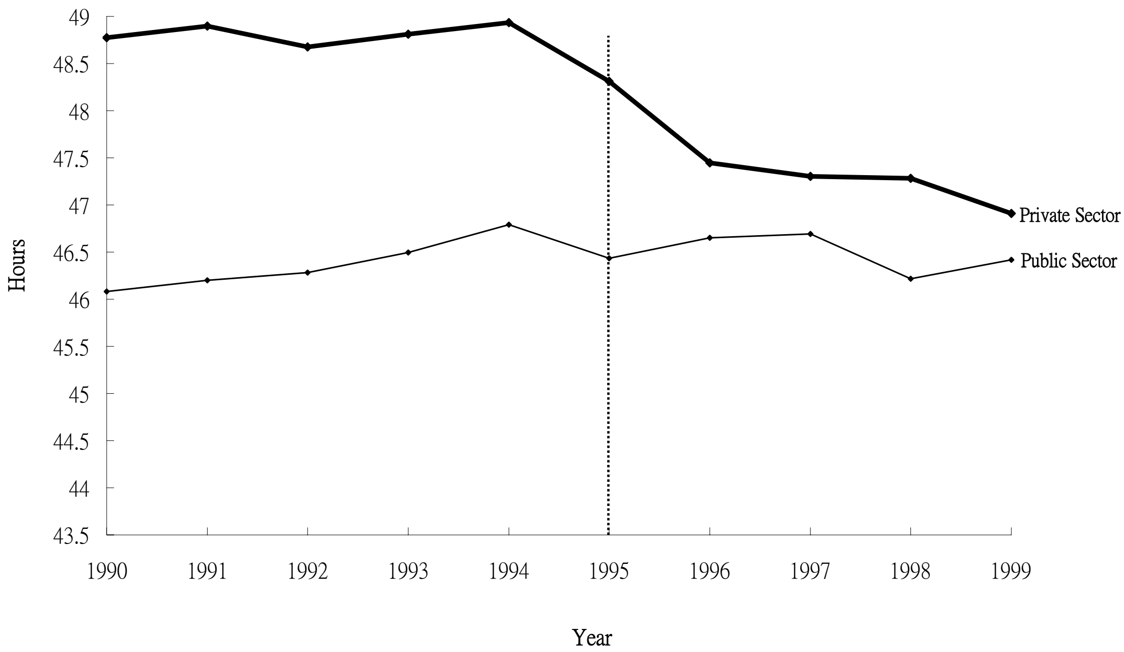

Figure 2.6: Work Hours of Public Sector and Private Sector Female Employees