DOES GENDER INFLUENCE THE PROVISION OF FRINGE BENEFITS? EVIDENCE FROM VIETNAMESE SMEs

John Rand and Finn Tarp

ABSTRACT

This contribution studies the provision of fringe benefits using a unique survey of small and medium-sized enterprises (SMEs) in Vietnam. Analysis of the survey reveals that women who own SMEs are more likely than men who own similar firms to provide employees with fringe benefits such as annual leave, social benefits, and health insurance. This gender effect exists especially with regard to mandatory social insurance and is robust to the inclusion of standard determinants of wage compensation. The study also explores whether this finding is linked to gender differences in social networks and workforce structure, worker recruitment mechanisms, and the degree of unionization. However, these factors cannot fully account for the observed differences in fringe benefits along the “gender of owner” dimension. There remains a sizable and unexplained fringe benefits premium paid to employees in women-owned firms.

KEYWORDS

Gender, fringe benefits, Vietnam

JEL Codes: J16, J31, O53

INTRODUCTION

The Vietnamese health and social insurance system has undergone dramatic change over the past 15 years. As compared to the fully government-funded structure before the early 1990s, the Doi Moi (Renovation) economic reforms, which allowed for private enterprise and ended the state’s effort to collectivize industry and agriculture, put in place a two-pronged system with a mix of employer–employee and state-budget contributions. Until 2008, the health and social insurance schemes each had two components: (i) a mandatory membership group covering civil servants, state-owned enterprise (SOE) employees, and workers in private firms with more than 10 employees; and (ii) a voluntary program offered to formal-sector employees not covered by the compulsory scheme.
Two problems with the scheme have received special attention: (i) the limited coverage and (ii) the lack of employer and employee compliance with the law. Before 2008, social fringe benefits only benefited employees in larger formal enterprises, corresponding to only 14 percent of the labor force (Henrik Hansen and Le Dang Trung 2007). To address this shortcoming, a new Labor Code was implemented in 2008, making health and social insurance payments mandatory for all formal-sector employees. Nonetheless, a substantial share of private employers and employees has evaded mandatory payments. The World Bank (2008) documents that many enterprises renege on health and social insurance payments, and the national English-language daily, Viet Nam News (2009), reported on May 11, 2009 that 6 percent of the scheduled enterprise payments to the Social Insurance Fund were not received. Moreover, interviews with firm owners in our sample indicate that noncompliance is not entirely controlled by the employer. Wage negotiation between the employer and the employee can lead to both a higher basic wage with no fringe benefits and a lower basic wage with full fringe benefits, with 5 percent employee and 10 percent employer contribution for social insurance and 1 percent employee and 2 percent employer contribution for health insurance. Proponents of compulsory participation in the fringe benefits program expect increased contributions and compliance to lead to a series of beneficial social and economic externalities; therefore, any policy changes that might promote compliance are of interest in Vietnam and elsewhere. Much literature on this topic exists in developed country contexts, but our Vietnam case provides new insight from a developing country in a rapid transition process.

In this study we specifically ask whether, in small and medium-sized enterprises (SMEs), the gender of firm owners matters per se in the provision of fringe benefits. Our descriptive data indicate that this is so. The data also suggest that support for women who own businesses may indirectly help improve the provision of employee benefits while generating added socioeconomic spillover effects. Our main aim is to investigate whether the gender effect, which appears in the descriptive analysis, is robust to the inclusion of other relevant employer determinants of the provision of fringe benefits; we carefully control for important gender differences embedded in, for example, social networks and workforce structure, alongside other more traditional firm-specific determinants of wages and fringe benefits. The gender effect is indeed robust, and our conclusions suggest the need for further research to uncover the reasons for the deep-seated roots of this effect.

We also wish to highlight that while many studies of developing countries have focused on how worker characteristics influence wage compensation and the supply of fringe benefits, we have found no prior studies of the factors on the employer side that influence the provision of fringe benefits in these contexts. Given that employers pay two-thirds of the compensation
schemes in Vietnam (Hansen and Trung 2007), this gap in the literature is unfortunate. Arguably, if key insights about the operation of critically important health and social insurance systems are missing, we can hardly expect to understand how they impact labor markets and worker welfare and how their design might be improved.

In the present study, we take the first step in filling the above gaps in the literature. We do so by uncovering firm-level differences between nonparticipating firms and contributors to health and social insurance schemes. Other fringe benefits (such as the possibility of flexible work schedules and employer-paid or subsidized daycare) are available in Vietnam. However, these programs are not yet systematically employed in the Vietnamese labor market, and most of these fringe benefits are still most common in larger firms. Our data come from a survey of non-state, Vietnamese manufacturing firms; all SMEs with detailed information on fringe benefits. We therefore focus on fringe benefits defined within the official health and social insurance policies. In addition to considering traditional determinants of wage compensation, we pay particular attention to the effect of employer characteristics, including the gender of the firm owner, on the fringe benefits provided. We ask whether gender matters, and show that women who own firms are more likely to provide their employees with fringe benefits.

DATA AND ANALYTICAL FRAMEWORK

**Analytical framework**

Firms in a conventional hedonic wage-compensating differential model offer a benefit–wage scheme that maximizes profit. Paid workers sort into jobs based on their preferences for increased wages versus non-wage benefits and thereby map out the hedonic wage curve. The hedonic wage function is the envelope of the tangencies between firm iso-profit curves and worker indifference curves, so firms end up offering contracts that provide equal utility. Accordingly, firms that provide high levels of fringe benefits offer lower basic wages, whereas high-wage firms provide relatively fewer fringe benefits. This is also expressed in the noncompliance situation. The employer may find noncompliance attractive if the benefits, such as the tax-adjusted amount saved in social contributions, exceed the costs, such as the basic wage increase to the worker and the potential fine for violating the social insurance law. Similarly, the employee may prefer the noncompliance case if the benefit of receiving a higher basic wage with no deductions for fringe benefits (5 percent for social insurance plus 1 percent for health insurance) outweighs the loss in employer contributions.
In contrast, Harald Dale-Olsen (2006) introduces a search friction into the hedonic wage framework, which may lead to a positive correlation between wages and fringe benefits in his study of Norway. Therefore, when labor market frictions exist, the association between individual wages and fringe benefits becomes an empirical question. In this study we abstract from Dale-Olsen (2006), which used employer–employee data. Instead, we focus on firm-level information and are therefore only able to capture employee heterogeneity through the inclusion of the average skill level and average wage for each firm. More specifically, the underlying, latent model for the provision of fringe benefits is the one presented in equation (1):

\[
b_i = a_0 + x_i a_1 + \bar{w}_i a_2 + \bar{s}_i a_3 + e_i
\]

where \(b_i\) is a binary variable, which takes the value 1 if employees in firm \(i\) receive fringe benefits, \(x_i\) is a vector of benefit proxies (firm and owner characteristics), \(\bar{w}_i\) is the average basic wage paid to employees in firm \(i\), \(\bar{s}_i\) is their average skill level in firm \(i\), and \(e_i\) is a random error term for firm \(i\). In what follows the underlying assumption is a traditional hedonic model in which firms and employees get to choose fringe-benefits levels, noting that this setup includes the possibility of noncompliance.

Data

The SME survey on which we rely (John Rand and Finn Tarp 2007) was conducted in 2005. It covered 2,739 enterprises in ten provinces (Ho Chi Minh City [HCMC], Ha Noi and Hai Phong, Long An, Ha Tay, Quang Nam, Phu Tho, Nghe An, Khanh Hoa, and Lam Dong). In all the areas covered by the survey, the sample was stratified by ownership form to ensure that all types of non-state enterprises, including both officially registered and non-official household (HH), private, cooperative and limited-liability firms, were represented. According to Vietnamese law, HH enterprises are defined as firms owned by one individual or household operating at a fixed premise. These firms do not initially (at the time of registration) hire regular employees, and HH firms do not have the right to copyrights and cannot be legally sued due to their products’ lack of quality. Moreover, many HH enterprises do not comply with formal requirements and do not re-register as, for example, a private or limited-liability firm under the New Enterprise Law. Both limited-liability and joint-stock
companies operate under limited liability, but joint-stock companies are allowed to issue securities. Limited-liability firms divide the capital stock into parts (not securities), which may not be treated as property in the juridical sense. Moreover, a limited-liability firm may not have more than fifty participants or members, whereas joint-stock companies have no maximum on the number of shareholders. For reasons of implementation, our SME survey (Rand and Tarp 2007) was confined to specific areas in each province or city. Subsequently, stratified random samples were drawn from a consolidated list of enterprises.

Reliable population statistics on HH firms without business registration do not exist in Vietnam. Appropriate weights for HH firms with a business registration license were obtained using the Establishment Census from 2002 (General Statistics Office of Vietnam [GSO] 2004). Yet our survey covers both HH firms with (formal) and without (informal) such a license, and no HH population information exists for 2005. It is therefore most appropriate to report unweighted estimates when HH firms are included in the analysis. A sample selection bias may be present in our total data set, as we cannot be sure that the numbers of such HH firms are drawn proportionately to the provincial number and different types of enterprises in the country. However, for non-HH enterprises we were able to construct appropriate weights (by province and legal ownership form) based on the census of officially registered non-HH enterprises (GSO 2007). Consequently, we report results for both the weighted (including only non-HH enterprises) and the unweighted (also including HH firms) samples. After data cleaning, we were left with 1,914 firm observations, of which 680 are non-HH firms. While a relatively large number of observations were dropped due to missing and nonsense answers, there is no systematic dropout along the sampling dimensions (firm size, age, location, legal ownership form, and sector).

Fringe benefits

According to the 2003 Vietnamese Labor Code, employees with a labor contract lasting more than 3 months are entitled to paid annual leave and social insurance. Employees contributing to the social insurance fund are entitled to benefits and allowances in the event of illness, work-related accidents and occupational disease, pregnancy, retirement, and death. Also, firms that do not contribute to the social insurance fund may choose to provide their employees with paid sick and maternity leave. We therefore analyze sick and maternity leave separately from social insurance. Social insurance includes benefits other than sick and maternity leave, including, for example, a retirement scheme. This is acknowledged in the construction of the fringe benefits index below where firms providing sick leave and maternity leave unofficially are counted as 2, whereas firms
providing social insurance according to law get the count 3 (due to the inclusion of a retirement scheme).

Moreover, contributions to the health insurance scheme are only compulsory for private-sector enterprises with more than ten workers. Firms with ten or fewer employees are also supposed to provide their employees with the basic rights and benefits stipulated in the 2003 Labor Code, but may be exempt from a number of stipulated criteria and procedures. Employees and employers in smaller firms have the possibility of either paying the full user charges in government health facilities or purchasing voluntary health insurance, under which employees in Vietnam make a co-payment of 20 percent of the total user charge (Matthew Jowett, Paul Contoyannis, and Nguyen D. Vinh 2003). Given that size (micro, small, or large) and formality (HH firm versus non-HH enterprise) play a crucial role for the fringe benefits provided by firms, we will analyze samples divided according to well-defined size and legal-structure categories (noting that the common set of HH and micro firms is quite large).

Jayachandran N. Variyam and David S. Kraybill (1998) note in their study of twenty-five rural counties in Georgia, US that the proportion of part-time and casual paid workers and the level of benefits provision are inversely related, and smaller firms often employ more part-time and casual paid workers than do larger establishments. We therefore define firm size as total number of permanent full-time employees, excluding part-time employees and casual, paid workers. Table 1 presents the unweighted share of enterprises that make the various categories of benefits available to permanent full-time employees. All variables are modeled as indicator variables representing whether the firm provides its employees with the specific fringe benefit or not. We also show an aggregated count variable (fringe benefits index). The index takes the value 0 for a firm if it does not provide any of the five benefits listed and increases to 5 if all benefits are provided. Accordingly, we rank formal health insurance and social insurance higher than informal fringe benefits.

| Benefit                          | Total | Male-owned | Female-owned | HH | Non-HH | Micro | Non-micro |
|----------------------------------|-------|------------|--------------|----|--------|-------|-----------|
| Sick leave with pay              | 0.372 | 0.337      | 0.468        | 0.226 | 0.637  | 0.249 | 0.578     |
| Maternity leave with pay         | 0.219 | 0.195      | 0.287        | 0.066 | 0.497  | 0.067 | 0.476     |
| Annual leave                     | 0.258 | 0.228      | 0.342        | 0.124 | 0.501  | 0.137 | 0.462     |
| Health insurance                 | 0.159 | 0.139      | 0.213        | 0.016 | 0.418  | 0.018 | 0.395     |
| Social insurance                 | 0.150 | 0.130      | 0.208        | 0.010 | 0.406  | 0.015 | 0.378     |
| Fringe benefits index            | 1.159 | 1.050      | 1.518        | 0.442 | 2.459  | 0.486 | 2.290     |
| Observations                     | 1,914 | 1,408      | 506          | 1,234 | 680    | 1,200 | 714       |

Note: Unweighted means.
Over one-third of the firms sampled offered paid sick leave, whereas only 22 percent did the same for maternity leave. Given that paid sick and maternity leave forms part of the social insurance scheme, it is noteworthy that only 15 percent of firms contribute to the formal social insurance scheme. Appendix Table 1 documents that 424 out of the 712 firms that made paid sick leave available (60 percent) did so without participating in the official social insurance scheme. For paid maternity leave, this figure was 132 out of 420 (31 percent). Around 15 percent of firms offered health and social insurance for their employees, but these fringe benefits went almost exclusively to employees in non-HH enterprises. Most firms providing health insurance also form part of the social insurance scheme. Only six out of the 288 firms that provided employees with social insurance in 2005 participated in a health insurance scheme. Paid annual leave was provided by 21 percent of surveyed firms, with a significantly larger share of non-HH SMEs providing the benefit as compared to their HH micro counterparts.

Finally, the response pattern in Table 1 suggests that there may be a link between the gender of the firm owner and the fringe benefits provided. Employees seem more likely to receive one or more of the five fringe benefits listed if the firm owner is female. Establishing whether this continues to be so after controlling for the impact of other explanatory variables is a key aim of the present study. As will be apparent from the analysis, the association between gender of owner and legal structure will be especially important. We therefore provide fringe benefits summary statistics by gender and legal ownership form in Appendix Table 2.

Traditional firm-specific determinants

Table 2 presents unweighted means of the key explanatory variables considered in the first section of our econometric analysis. They include gender, education, and management experience of owner, skill level of workforce, firm size, firm age, legal structure, and location.3 These variables are, as further discussed below, traditionally relied on in studies of wage determination. Arguably, fringe benefits form an integral part of total wage compensation, and we expect factors affecting fringe benefits to be largely similar to those influencing total wage compensation. To control for any differences in basic wages (defined as total wage compensation minus fringe benefits) across firms not captured by the above-mentioned control variables, we include the basic wage per employee.

Gender

Gender of the firm owner (modeled here as an indicator variable which takes the value 1 if the owner is male and 0 if female) is the focal
| Table 2 Traditional determinants – summary statistics |
|------------------------------------------------------|
| *Male-owned* | *Female-owned* | *HH* | *Non-HH* | *Micro* | *Non-micro* |
|---|---|---|---|---|---|
| Gender of owner | | | | | |
| (Men = 1) | 0.736 | 1.000 | 0.000 | 0.764 | 0.684 | 0.749 | 0.713 |
| Owner education | | | | | |
| (Educ1 = 1)*** | 0.322 | 0.294 | 0.399 | 0.414 | 0.154 | 0.388 | 0.210 |
| (Educ2 = 1)*** | 0.332 | 0.389 | 0.174 | 0.391 | 0.225 | 0.382 | 0.249 |
| (Educ3 = 1) | 0.120 | 0.112 | 0.144 | 0.097 | 0.162 | 0.099 | 0.155 |
| (Educ4 = 1)*** | 0.226 | 0.205 | 0.283 | 0.097 | 0.459 | 0.131 | 0.385 |
| Management experience | | | | | |
| (Self-employed = 1)*** | 0.295 | 0.275 | 0.352 | 0.316 | 0.257 | 0.315 | 0.262 |
| Worker education | | | | | |
| Share skilled*** | 0.149 | 0.144 | 0.165 | 0.130 | 0.185 | 0.156 | 0.138 |
| Wage compensation | | | | | |
| Wage per employee (mill VND)*** | 8,946 | 8,700 | 9,630 | 7,679 | 11,246 | 7,875 | 10,746 |
| Firm size | | | | | |
| Employees | 18.572 | 18.012 | 20.128 | 8.656 | 36.565 | 5.478 | 40.578 |
| (Micro = 1) | 0.627 | 0.638 | 0.595 | 0.810 | 0.296 | 1.000 | 0.000 |
| (Small = 1) | 0.296 | 0.288 | 0.318 | 0.183 | 0.501 | 0.000 | 0.794 |
| (Medium = 1) | 0.077 | 0.073 | 0.087 | 0.007 | 0.203 | 0.000 | 0.206 |
| Firm age | | | | | |
| Age (years)*** | 10.857 | 11.215 | 9.860 | 11.597 | 9.513 | 11.187 | 10.303 |
| (Age 1–5 = 1)*** | 0.331 | 0.309 | 0.293 | 0.263 | 0.454 | 0.308 | 0.370 |
| (Age 6–10 = 1) | 0.270 | 0.271 | 0.269 | 0.289 | 0.235 | 0.267 | 0.276 |
| (Age 11–15 = 1) | 0.204 | 0.214 | 0.174 | 0.229 | 0.157 | 0.214 | 0.186 |
| (Age 16–20 = 1) | 0.090 | 0.094 | 0.079 | 0.109 | 0.056 | 0.099 | 0.076 |
| (Age 21–30 = 1) | 0.076 | 0.080 | 0.065 | 0.083 | 0.062 | 0.086 | 0.059 |
| (Age 31 and above = 1) | 0.029 | 0.032 | 0.020 | 0.025 | 0.035 | 0.026 | 0.034 |

(continued)
Table 2 (continued)

| Legal ownership          | Total | Male-owned | Female-owned | HH | Non-HH | Micro | Non-micro |
|--------------------------|-------|------------|--------------|----|--------|-------|-----------|
| (HH = 1)***              | 0.645 | 0.670      | 0.575        | 1.000 | 0.000 | 0.833 | 0.329     |
| (Private = 1)            | 0.114 | 0.109      | 0.128        | 0.000 | 0.321 | 0.092 | 0.151     |
| (Collective/partnership = 1) | 0.040 | 0.039      | 0.042        | 0.000 | 0.112 | 0.014 | 0.083     |
| (Limited liability = 1)*** | 0.179 | 0.158      | 0.237        | 0.000 | 0.504 | 0.056 | 0.387     |
| (Joint stock = 1)        | 0.022 | 0.024      | 0.018        | 0.000 | 0.063 | 0.006 | 0.050     |

| Location                 |       |            |              |    |        |       |           |
|--------------------------|-------|------------|--------------|----|--------|-------|-----------|
| (Urban = 1)***           | 0.497 | 0.440      | 0.658        | 0.393 | 0.687 | 0.444 | 0.587     |
| (HCMC = 1)***            | 0.307 | 0.257      | 0.447        | 0.272 | 0.371 | 0.285 | 0.345     |
| (Ha Noi = 1)             | 0.117 | 0.110      | 0.136        | 0.074 | 0.196 | 0.097 | 0.151     |
| (Hai Phong = 1)          | 0.073 | 0.072      | 0.075        | 0.047 | 0.121 | 0.063 | 0.091     |
| (Long An = 1)            | 0.036 | 0.035      | 0.040        | 0.045 | 0.019 | 0.043 | 0.024     |
| (Quang Nam = 1)***       | 0.064 | 0.077      | 0.030        | 0.086 | 0.025 | 0.088 | 0.024     |
| (Phu Tho = 1)***         | 0.070 | 0.081      | 0.040        | 0.097 | 0.021 | 0.094 | 0.029     |
| (Ha Tay = 1)***          | 0.135 | 0.163      | 0.055        | 0.169 | 0.074 | 0.109 | 0.178     |
| (Nghe An = 1)***         | 0.117 | 0.132      | 0.075        | 0.119 | 0.113 | 0.132 | 0.092     |
| (Khanh Hoa = 1)          | 0.045 | 0.040      | 0.061        | 0.048 | 0.041 | 0.050 | 0.038     |
| (Lam Dong = 1)           | 0.035 | 0.033      | 0.042        | 0.043 | 0.021 | 0.039 | 0.028     |

Total observations 1,914 1,408 506 1,234 680 1,200 714

Notes: This table reports unweighted means. Educ1 = no professional education, Educ2 = vocational education, Educ3 = technical secondary education, Educ4 = college/university education. Micro = 1 to 10 employees, small = 11 to 50 employees, medium = 51 to 300 employees.
*** indicates significance at 1 percent level when conducting difference in means tests by gender of owner.
explanatory variable, and Table 2 shows that around 74 percent of firm owners are male. Recent literature based on economic experiments across a large range of countries has shown that women tend to be more reluctant than men to enter competitive environments (Rachel Croson and Uri Gneezy 2009), and this is so even when controlling for individual characteristics (difference in ability and time preferences) and for issues of discrimination. This helps explain why relatively fewer women become entrepreneurs.

As we have already mentioned, we hypothesize that gender differences in fringe benefits exist, even when controlling for the impact of other determinants. According to the comprehensive cross-country review article by Howard E. Aldrich (2005), individuals tend to engage in the labor market with people of the same gender, and Paula England and Nancy Folbre (2005) confirm the existence of such gender-segregated network effects in the US. Accordingly, we anticipate that women who own businesses employ a larger share of women and men employ a larger share of men. Given that female employees tend to be more risk-averse than male workers (Croson and Gneezy 2009), we also expect female employees to value job security and non-wage benefits (stability in wage payments) more than their male counterparts. Through traditional wage negotiation mechanisms, female owners (employing a larger share of female workers) will therefore provide more or greater fringe benefits than their male counterparts. Following these lines of thought, the gender of the firm owner should turn out to be statistically significant in standard estimations of the probability of the provision of fringe benefits. Other factors may influence whether a firm provides (and workers demand) fringe benefits. The tax-preferential treatment for benefit payments provided to employers in Vietnam makes this form of wage compensation more attractive for firms with a larger share of highly paid workers. The sample shows that women-owned firms on average pay higher wages (see Tables 2 and 3), which is very likely explained by sample gender differences in several of the included control variables. This finding highlights (when trying to disentangle the gender effect on the provision of fringe benefits) the importance of controlling for variables that are different from each other along the gender dimension, such as (i) average employee skill level, (ii) the share of female employees (together with the firm size control), (iii) owner education, (iv) location, and (v) legal ownership form.

**Education and management experience**

Variyam and Kraybill (1998) argue that managerial quality and experience are key determinants of strategic business choices in Georgia, US and that “skilled” owners actively use employee fringe benefits as part of their motivation toolkit. Given the differences in skills between observed in the
data (see Table 2), we include among the explanatory variables (i) owner level of schooling (divided into four categories: Educ1 = no professional education, Educ2 = vocational education, Educ3 = technical secondary education, Educ4 = college/university), and (ii) an indicator variable reflecting whether or not the firm owner had previous management experience prior to taking over the present firm. Table 2 shows that female firm owners are more likely to have no professional education (that is, 40 percent of women have no vocational or secondary technical education or university or college degree) than their male counterparts (29 percent). At the same time, there is a higher probability of female owners having a university or college degree than for their male counterparts; while a substantial number of male owners have vocational education (39 percent). Moreover, owners of SMEs have higher education than micro-firm owners. Note also that a larger share of female owners (35 percent) were self-employed prior to establishing the current firm as compared to their male counterparts (28 percent).

Worker skill level and average basic wages

We control for the overall skill level of firm workers, defined as the share of employees in management positions or with higher education (meaning people with vocational, secondary technical education, or a university/college degree). Interestingly, Table 2 shows limited mean differences in worker skills for firms owned by men and women and for micro and non-micro enterprises. Our questionnaire has a module with detailed economic accounts, including total basic wage compensation (excluding fringe benefits). Information on fringe benefits is obtained in an independent

| Workforce gender structure (women share in workforce)*** | Recruitment network (recruit new workers primarily through personal contacts = 1) | Unionization (has a local trade union = 1) |
|----------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|
| Total observations                                      | Full sample 1,914                                        | Male-owned 1,408                                          |
|                                                          | Workforce gender structure                                | Female-owned 506                                          |
|                                                          | (women share in workforce)**                             | HH 1,234                                                 |
|                                                          | 0.322                                                    | Non-HH 680                                               |
|                                                          | 0.281                                                    | Micro 1,200                                               |
|                                                          | 0.268                                                    | Non-micro 714                                             |
|                                                          | 0.436                                                    |                                                          |
|                                                          | 0.304                                                    |                                                          |
|                                                          | 0.354                                                    |                                                          |
|                                                          | 0.268                                                    |                                                          |
|                                                          | 0.412                                                    |                                                          |
|                                                          | 0.793                                                    | 0.791                                                    |
|                                                          | 0.796                                                    | 0.844                                                    |
|                                                          | 0.700                                                    | 0.853                                                    |
|                                                          | 0.692                                                    | 0.268                                                    |
|                                                          | 0.102                                                    | 0.095                                                    |
|                                                          | 0.121                                                    | 0.005                                                    |
|                                                          | 0.278                                                    | 0.003                                                    |
|                                                          | 0.268                                                    |                                                          |

Notes: This table reports unweighted means. *** indicates significance at the 1 percent level when conducting difference in means tests by gender of owner.
module. Average basic wage per employee is calculated as the total basic wage compensation divided by the total number of permanent employees. Firms hiring a very high share of temporary employees (casual, paid workers) are excluded from the analysis. The average basic wage for manufacturing firms studied here is 8.9 million Vietnamese đài (VND) per year. Non-micro enterprises provide an average yearly compensation of 10.7 million VND compared with 7.9 million VND in micro firms. These figures are below the average compensation of employees of 15.6 million VND per year (including fringe benefits) for non-state firms reported by GSO (2007), since this number includes the service sector. Moreover, our sample includes a larger share of micro and small firms, which also helps explain the lower average basic wage in the sample given a positive relationship between firm size and wages. A relatively high share of the sample (50 percent of firms) indicates that the main basis for setting wages is individual negotiations between the employer and the employee.

**Firm size**

Walter Y. Oi and Todd L. Idson (1999) and Kenneth R. Troske (1999) review a series of studies on the relationship between firm size and wage compensation in the US. They note that a positive association exists, but that this may be due to not controlling for unobserved characteristics. In contrast, Troske (1999) argues that even when controlling for the above worker, owner/manager, and firm-specific characteristics, a sizable unexplained premium paid to workers of large firms remains. Table 2 shows that the average firm in the sample has around nineteen permanent full-time employees; micro firms have five and SMEs have forty-one employees, and there is a small difference in firm size by gender of owner.

**Firm age**

Charles Brown and James L. Medoff (2003), studying the US, provide two sets of reasons why we should expect older firms to pay higher wage compensation than younger counterparts. First, incumbent firms have employees with more tenure and are also likely to have more experienced workers. Given that (i) older firms tend to provide higher wage compensation, and (ii) fringe benefits are relatively more attractive for higher-paid individuals (due to the tax advantage provided to employers in Vietnam on health and social insurance contributions, whereby employers will benefit from a larger share of the total wage compensation being fringe benefits), the positive association between firm age and fringe benefits provision is straightforward. Second, the administrative burden and the fixed costs involved in setting up a fringe-benefit scheme can be significant.
This may induce new firms to postpone such initiatives until they are more certain about their future survival. Brown and Medoff (2003) also provide an argument for an expected negative relationship between firm age and fringe benefits provision. If the macro economy develops well and improves the general educational level of society, cohort-related differences in educational levels are to be expected. Older workers employed by incumbent firms may have less education on average than younger workers in newly created firms. In sum, incumbent firms may pay higher wages and fringe benefits due to worker experience and tenure effects, but the educational cohort effect will tend to pull in the opposite direction. Table 2 shows that average firm age in the sample considered is around 11 years, with only small differences across gender and firm size.

**Other controls: Legal ownership form, location, and sector**

We include three additional explanatory variables among our traditional determinants. First, in the case of Vietnam, HH firms register at the district level, whereas the government administrative unit responsible for sole proprietorships, partnerships, limited-liability companies, and joint-stock companies is at province level. HH firms are often less formal than other firm types and are subject to different legal requirements, so difference in legal structure is a potential source of variation in fringe benefits (Variyam and Kraybill 1998). For example, all nonregistered (informal) firms are at the HH level. Legal ownership form is modeled here using a set of dummy variables that represent the specific legal form of the firm (HH, private, collective/partnership, limited liability, or joint-stock enterprise). Table 2 shows that 65 percent of the firms surveyed are in the HH category. Moreover, gender differences as regards legal ownership appear within the HH firm category (relatively large male share) and limited liability companies (relatively large female share).

Second, provision of fringe benefits may differ across locations. Binh T. Nguyen, James W. Albrecht, Susan B. Vroman, and M. Daniel Westbrook (2007) highlight that Vietnamese provinces are relatively autonomous and have implemented centrally planned initiatives with different pace and enthusiasm. We model location using an indicator variable representing whether the firm is in a rural or urban area. Some 50 percent of the firms are located in urban areas (HCMC, Ha Noi, and Hai Phong).

Third, general working conditions may differ among sectors as argued by Variyam and Kraybill (1998). For example, some sectors allow for relatively flexible working hours. This limits the pressure for well-established sick leave arrangements. Other sectors are male dominated, tending to lower the pressure for paid maternity leave. We include sector dummies (based on two-digit level International Standard Industrial Classification [ISIC] codes) to control for sector effects. The three most represented sectors in
our sample are food processing (ISIC 15; 21.0 percent), fabricated metal products (ISIC 28; 18.6 percent), and furniture (ISIC 36; 14.0 percent). For exposition purposes, we do not report specific sector level results in the following.

**Additional determinants**

We hypothesized above that gender may be important through a combination of (i) female workers being more risk averse than male workers and (ii) the tendency of employers to employ a larger share of workers of their own gender. The latter factor will evidently impact the gender structure of the workforce. Other parallel mechanisms and gender-related characteristics may also be at work and need to be considered in determining the gender effect on the provision of fringe benefits.

First, owner social networks: Herbert G. Heneman, III and Robyn A. Berkley (1999) argue that the recruitment process in the US is closely linked to firm-owner social networks. This may be so for SMEs, in particular, where recruitment and selection procedures are regularly less complicated and often informal. The historical underrepresentation of women in ownership can be linked to their exclusion from male business-related networks. A consequence is that women generally have smaller business-related networks (Aldrich 2005). This in turn will influence the potential ways and extent to which informal personal contacts (strong and weak ties) can be used in the recruitment process.

Second, bargaining power: Yannis M. Ioannides and Linda Datcher Loury (2004) conclude in their cross-country review that informal personal contacts in recruitment will impact employee compensation negatively. Employment by friends and family is, in this line of thinking, associated with less attractive working conditions and lower general wage compensation for a given level of education or tenure. James R. Elliott (1999) supports this for the US and concludes that using informal contacts of any strength in the recruitment process leads to significantly lower compensation of employees than the use of formal channels.

Third, trade unions: Whether or not local trade unions are involved in the hiring process has also been shown to influence the outcome of wage compensation negotiations in, for example, the US (Richard B. Freeman 1981), and it merits attention in trying to understand how fringe benefits are determined.

Based on this background, we suggest that (i) women are likely to rely less on recruitment through personal contacts than men, (ii) male owners will tend to “exploit” a bargaining relationship and offer fewer fringe benefits than their female counterparts, and (iii) differences in fringe benefits may occur due to gender differences related to the quality and levels of trade unionization. We investigate these lines of reasoning in the second
analytical sets of regressions, and we specifically explore whether the importance of gender may be due to not controlling for gender differences in business-related networks influencing the recruitment process.

Our survey contains data on gender structure of the workforce, the degree to which firms use informal personal contacts in the recruitment process, and whether or not the workers in the firm are unionized. Table 3 reports summary statistics on these three additional determinants of the provision of fringe benefits. The following descriptive statistics stand out: First, firms with female ownership employ on average a larger share of women. Almost 44 percent of employees are women in female-owned firms, as compared to only 28 percent in male-owned enterprises. Second, only small mean differences exist in the recruitment indicator variable, which takes the value 1 if the firm mostly hires new workers through informal personal contacts and 0 otherwise. Moreover, around 79 percent of firms recruit through informal personal contacts. Friends, relatives, and close, personal contacts of the owner recommended most new workers. This can explain why some enterprises experience difficulties in recruiting workers with appropriate skills and highlights the need among larger enterprises to engage in more sophisticated recruitment processes. Third, the Vietnamese labor code stipulates that unions have to be established in all new enterprises with more than ten employees, as well as in existing enterprises that operate without trade unions. At the time of data collection, there were 5,644 private enterprises with trade unions covering 50 percent of private-sector (non-HH) employees. This shows that trade unions are concentrated among the larger enterprises. Moreover, management often directly appoints union representatives, and union officers hold management positions in the firm (Rand and Tarp 2007), suggesting that the effectiveness of trade unions in the wage bargaining process may be somewhat limited. Around 12 percent of the firms in the data have a local trade union, and in about a third of these, union officers hold management positions in the firm. This reinforces that the effectiveness of trade unions in the wage-bargaining process may be limited. Moreover, we observe small mean differences in unionization across the gender dimension.

**ECONOMIC RESULTS**

**First step**

Using the traditional determinants identified as explanatory variables in the previous sections, Table 4 contains our first-step empirical results for the unweighted full sample including HH firms (1,914 observations), while Table 5 reports results for the restricted non-HH sample applying
### Table 4 Probability of fringe benefits provision

|                      | 1 Sick leave probit | 2 Maternity leave probit | 3 Annual leave probit | 4 Social insurance probit | 5 Health index probit | 6 Index 1 (0–5) Poisson |
|----------------------|---------------------|--------------------------|-----------------------|--------------------------|----------------------|-------------------------|
| Gender of owner      | -0.028              | -0.021                   | -0.031                | -0.018*                  | -0.018               | 0.880***                |
| (Men = 1)            | (0.028)             | (0.021)                  | (0.023)               | (0.011)                  | (0.013)              | (0.050)                 |
| Owner education 2    | 0.029               | -0.036                   | -0.003                | -0.022*                  | -0.026*              | 0.908                   |
| (Vocational = 1)     | (0.032)             | (0.024)                  | (0.026)               | (0.012)                  | (0.014)              | (0.084)                 |
| Owner education 3    | 0.045               | 0.010                    | 0.006                 | -0.007                   | 0.011                | 1.103                   |
| (Technical = 1)      | (0.044)             | (0.033)                  | (0.035)               | (0.013)                  | (0.021)              | (0.117)                 |
| Owner education 4    | 0.120***            | 0.057**                  | 0.094***              | 0.028*                   | 0.046**              | 1.283***                |
| (College/university = 1) | (0.040)         | (0.030)                  | (0.033)               | (0.018)                  | (0.022)              | (0.117)                 |
| Management experience| 0.001               | -0.038*                  | -0.020                | -0.017*                  | -0.020*              | 0.920                   |
| (Previously self-employed = 1) | (0.028)  | (0.020)                  | (0.022)               | (0.009)                  | (0.011)              | (0.058)                 |
| Firm size            | 0.003***            | 0.003***                 | 0.002***              | 0.001***                 | 0.002***             | 1.004***                |
| (No. of employees)   | (0.001)             | (0.001)                  | (0.001)               | (0.000)                  | (0.000)              | (0.001)                 |
| Firm age             | -0.004***           | -0.002                   | -0.001                | 0.000                    | 0.001                | 0.995                   |
| (Years)              | (0.002)             | (0.001)                  | (0.001)               | (0.001)                  | (0.001)              | (0.004)                 |
| Legal structure      | 0.192***            | 0.211***                 | 0.146***              | 0.299***                 | 0.287***             | 2.737***                |
| (Private = 1)        | (0.042)             | (0.040)                  | (0.039)               | (0.043)                  | (0.042)              | (0.269)                 |
| Legal structure      | 0.188***            | 0.297***                 | 0.251***              | 0.362***                 | 0.328***             | 3.255***                |
| (Collective/partnership = 1) | (0.074)       | (0.072)                  | (0.070)               | (0.078)                  | (0.075)              | (0.436)                 |
| Legal structure      | 0.211***            | 0.316***                 | 0.196***              | 0.357***                 | 0.336***             | 3.303***                |
| (Limited liability = 1) | (0.045)         | (0.042)                  | (0.039)               | (0.043)                  | (0.042)              | (0.295)                 |
| Legal structure      | 0.286***            | 0.449***                 | 0.250***              | 0.626***                 | 0.544***             | 4.052***                |
| (Joint stock = 1)    | (0.097)             | (0.089)                  | (0.086)               | (0.090)                  | (0.093)              | (0.526)                 |
| Location             | 0.346***            | 0.100***                 | 0.241***              | 0.000                    | -0.004               | 1.856***                |
| (Urban = 1)          | (0.024)             | (0.020)                  | (0.021)               | (0.009)                  | (0.011)              | (0.144)                 |

(continued)
|                | 1   | 2   | 3   | 4   | 5   | 6   |
|----------------|-----|-----|-----|-----|-----|-----|
|                | Sick leave probit | Maternity leave probit | Annual leave probit | Social insurance probit | Health insurance probit | Index 1 (0–5) Poisson |
| Wage per employee (Logarithm) | 0.109*** | 0.047*** | 0.107*** | 0.035*** | 0.048*** | 1.432*** |
| Worker skill (Share of skilled workers) | -0.067 | 0.002 | -0.104 | -0.052 | -0.076* | 0.586** |
| Observations   | 1,914 | 1,914 | 1,914 | 1,914 | 1,914 | 1,914 |
| Pseudo R-squared | 0.28 | 0.35 | 0.30 | 0.49 | 0.47 | .. |
| Wald chi sq (14) | 512.1 | 444.7 | 461.0 | 367.9 | 419.9 | 1,379.6 |

Notes: Columns 1–5 report probit estimates with marginal effects. Column 6 reports Poisson estimates (coefficients are reported as incidence-rate ratios). All regressions include a constant term. Including sector dummies does not change the overall conclusions reported. Robust standard errors are reported in parentheses. ***, **, * denote statistical significance at the 1, 5, and 10 percent level, respectively.
appropriate weights (680 observations). Excluding HH firms from the sample (Table 5) is justified because businesses in this category are often family owned and operated. It is possible that decisions regarding fringe benefits are different when employees are family members (Variyam and Kraybill 1998). Moreover, only non-HH enterprises are subject to several of the compulsory fringe benefits in Vietnam. Both tables include probit (columns 1–5) and Poisson (column 6) regressions of the probability of firms providing fringe benefits. The probit coefficients are marginal effects evaluated at the mean of the independent variable, while the Poisson estimates are reported as incident-rate ratios.

Tables 4 and 5 confirm many of the results from existing literature reviewed above. Firm size is positively associated with the provision of fringe benefits. Larger firms make more fringe benefits available even controlling for average basic wage payments, employee ability, and owner ability. Moreover, firms paying a higher wage on average are also more likely to provide their employees with more fringe benefits. Average worker skill is generally not well determined, but health insurance seems more likely to be provided the lower the average skill level of the employees. This suggests that the Vietnamese health insurance scheme has been relatively successful (given the limited coverage) in capturing employees in the lower part of the education distribution. All coefficients on our legal structure indicators are positive and highly significant; and (as expected) the probability that HH establishments offer fringe benefits is therefore relatively low. Location seems to play a crucial role with a much higher probability of fringe benefits being provided in urban areas than in rural provinces. This association diminishes in Table 5 where only non-HH firm are considered (using appropriate weights). A similar conclusion emerges for owner education. In the full sample (Table 4), owners with a university or college degree are more likely to provide fringe benefits than owners with no professional education. However, this correlation is generally not well determined in Table 5. We also included a set of gender–education interactions (not reported), but we found no differential effect of education by gender.

The central result in Tables 4 and 5 from the perspective of the present study is that we obtain a well-determined and below 1 coefficient estimate on the gender indicator, controlling for owner education, firm size, firm age, legal structure, location, within-firm average wage per employee, and within-firm average employee skill. The Poisson coefficient on gender of owner implies \textit{ceteris paribus} that the expected number of fringe benefits provided by a male owner is 12 percent (Table 4: 100\*\[0.880–1\]) to 16.2 percent (Table 5: 100\*\[0.838–1\]) lower than that of a female owner, with all other characteristics (including basic wages and average skill level) being the same. Moreover, there is a negative coefficient on the gender indicator within the specific benefit category, and it is well determined in the case of
Table 5 Probability of fringe benefits provision – non-HH enterprises only

|                      | 1 Sick leave probit | 2 Maternity leave probit | 3 Annual leave probit | 4 Social insurance probit | 5 Health insurance probit | 6 Index 1 (0–5) Poisson |
|----------------------|---------------------|--------------------------|-----------------------|----------------------------|----------------------------|-------------------------|
| Gender of owner      | -0.060              | -0.075                   | -0.118**              | -0.107**                   | -0.077                     | 0.838***                |
| (Men = 1)            | (0.043)             | (0.051)                  | (0.051)               | (0.054)                    | (0.054)                    | (0.056)                 |
| Owner education 2    | 0.037               | -0.135*                  | -0.003                | -0.044                     | -0.068                     | 0.928                   |
| (Vocational = 1)     | (0.067)             | (0.081)                  | (0.080)               | (0.084)                    | (0.087)                    | (0.128)                 |
| Owner education 3    | 0.012               | 0.014                    | 0.050                 | 0.063                      | 0.034                      | 1.099                   |
| (Technical = 1)      | (0.074)             | (0.092)                  | (0.088)               | (0.095)                    | (0.098)                    | (0.159)                 |
| Owner education 4    | 0.118*              | 0.098                    | 0.124                 | 0.124                      | 0.106                      | 1.238*                  |
| (College/university = 1) | 0.066            | (0.076)                  | (0.075)               | (0.078)                    | (0.083)                    | (0.147)                 |
| Management experience| 0.036               | -0.013                   | 0.033                 | -0.076                     | -0.079                     | 0.982                   |
| (Previously self-employed = 1) | 0.046          | (0.058)                  | (0.058)               | (0.063)                    | (0.064)                    | (0.073)                 |
| Firm size            | 0.003***            | 0.006***                 | 0.002**               | 0.005***                   | 0.005***                   | 1.003***                |
| (No. of employees)   | (0.001)             | (0.001)                  | (0.001)               | (0.001)                    | (0.001)                    | (0.000)                 |
| Firm age             | -0.006**            | -0.003                   | 0.000                 | 0.000                      | 0.001                      | 0.997                   |
| (Years)              | (0.003)             | (0.003)                  | (0.003)               | (0.003)                    | (0.003)                    | (0.006)                 |
| Legal structure      | 0.067               | 0.121                    | 0.174*                | -0.025                     | -0.048                     | 1.249                   |
| (Collective/partnership = 1) | 0.082           | (0.102)                  | (0.090)               | (0.112)                    | (0.111)                    | (0.208)                 |
| Legal structure      | 0.010               | 0.148**                  | 0.177***              | 0.140**                    | 0.129**                    | 1.364***                |
| (Limited liability = 1) | 0.053           | (0.059)                  | (0.063)               | (0.058)                    | (0.059)                    | (0.126)                 |
| Legal structure      | 0.096               | 0.268***                 | 0.263***              | 0.353***                   | 0.319***                   | 1.664***                |
| (Joint stock = 1)    | (0.074)             | (0.080)                  | (0.082)               | (0.094)                    | (0.096)                    | (0.208)                 |
| Location             | 0.157***            | 0.051                    | 0.152**               | -0.076                     | -0.051                     | 1.092                   |
| (Urban = 1)          | (0.049)             | (0.053)                  | (0.053)               | (0.054)                    | (0.055)                    | (0.089)                 |

(continued)
Table 5 (continued)

|       | 1                      | 2                      | 3                      | 4                      | 5                      | 6                      |
|-------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|       | Sick leave probit      | Maternity leave probit | Annual leave probit    | Social insurance probit| Health insurance probit| Index 1 (0–5) Poisson |
| Wage per employee (Logarithm) | 0.128***               | 0.122**                | 0.257***               | 0.242***               | 0.228***               | 1.399***               |
|       | (0.043)                | (0.052)                | (0.056)                | (0.058)                | (0.054)                | (0.102)                |
| Worker skill (Share of skilled workers) | -0.130                 | -0.297                 | -0.556***              | -0.524***              | -0.423**               | 0.398***               |
|       | (0.170)                | (0.187)                | (0.197)                | (0.192)                | (0.188)                | (0.106)                |
| Observations | 680                    | 680                    | 680                    | 680                    | 680                    | 680                    |
| Pseudo R-squared | 0.14                   | 0.24                   | 0.18                   | 0.27                   | 0.25                   | 0.18                   |
| Wald chi sq (13) | 65.2                   | 81.2                   | 89.5                   | 98.6                   | 96.1                   | 212.5                  |

Notes: Columns 1–5 report probit estimates with marginal effects. Column 6 reports Poisson estimates (coefficients are reported as incidence-rate ratios). All regressions include a constant term. Including sector dummies does not change the overall conclusions reported. Robust standard errors are reported in parentheses.

***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively.
social insurance and annual leave (Table 5), meaning that female owners have a higher probability of providing employees with formal social insurance as compared to their male counterparts.

The non-HH, non–micro firm segment, where fringe benefits are mandatory, drives the negative gender coefficient. No gender effect is found in the sample including HH or micro firms only (see Appendix Table 3 for details). Adding interaction terms between gender and legal structure in the restricted sample shows that the gender of the owner has different impacts on the provision of fringe benefits across non-HH legal structure categories (not reported). Coefficients on these interaction terms are positive and in some cases statistically significant. Nonetheless, the combined effect of gender on fringe benefits remains negative (probit) or below 1 (Poisson), although not well determined in a few specifications. Moreover, Poisson estimates by legal structure category show that the coefficient on gender of owner is below one in all specifications but only well determined in the case of private or sole proprietorships and joint-stock companies. This means that even within legal structure categories we find a positive association between women business owners and the provision of fringe benefits. Given that differences in education, firm size, firm age, legal structure, and location do not fully explain the observed gender differences in the fringe benefits provided, we next investigate whether the importance of gender may be due to not controlling for gender differences in business-related networks influencing the recruitment process and the degree of unionization.

**Second step**

Table 6 contains the second-step empirical results. The table brings out the effects of the firm owner’s gender and of three additional determinants (workforce structure, personal recruitment, and unionization), using both the unweighted full sample and the weight-adjusted non-HH segment. The dependent variable in all estimations is the fringe benefits index. All regressions include a constant term as well as the traditional determinants introduced in the previous section. Columns 1, 3, 5, and 7 use the full sample (1,914 observations), whereas columns 2, 4, 6, and 8 refer to the reduced non-HH firm sample (680 observations).

Columns 1–6 include the three additional controls one at a time. This does not change the gender result, and we find that workforce structure, recruitment network, and unionization do seem to matter. As hypothesized, firms that have a larger share of female employees are more likely to provide fringe benefits. An analysis of fringe benefits in detail (results not reported) shows that the positive association works through a higher probability of providing paid maternity leave, social insurance, and health insurance. Recruitment through personal contacts is associated with fewer
Table 6 Gender and fringe benefits

|                         | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|                         | Index | Index | Index | Index | Index | Index | Index | Index |
|                         | (0–5) | (0–5) | (0–5) | (0–5) | (0–5) | (0–5) | (0–5) | (0–5) |
| Gender of owner         | 0.910*| 0.856**| 0.885**| 0.851**| 0.887**| 0.867**| 0.911*| 0.883**|
| (Men = 1)               | (0.052)| (0.057)| (0.050)| (0.054)| (0.048)| (0.054)| (0.051)| (0.054)|
| Owner education 2       | 0.927 | 0.949 | 0.927 | 0.951 | 0.913 | 0.938 | 0.938 | 0.961 |
| (Vocational = 1)        | (0.086)| (0.131)| (0.086)| (0.129)| (0.080)| (0.113)| (0.085)| (0.115)|
| Owner education 3       | 1.110 | 1.101 | 1.102 | 1.069 | 1.118 | 1.127 | 1.121 | 1.099 |
| (Technical = 1)         | (0.117)| (0.160)| (0.116)| (0.151)| (0.113)| (0.145)| (0.113)| (0.137)|
| Owner education 4       | 1.286***| 1.252*| 1.294***| 1.265**| 1.247**| 1.188 | 1.254***| 1.203*|
| (College/university = 1)| (0.116)| (0.147)| (0.118)| (0.151)| (0.109)| (0.125)| (0.109)| (0.127)|
| Management experience   | 0.913 | 0.980 | 0.932 | 1.008 | 0.937 | 1.007 | 0.943 | 1.029 |
| (Previously self-employed = 1) | (0.057)| (0.072)| (0.058)| (0.071)| (0.057)| (0.070)| (0.056)| (0.069)|
| Firm size               | 1.003***| 1.003***| 1.003***| 1.003***| 1.002***| 1.001**| 1.001***| 1.001**|
| (No. of employees)      | (0.001)| (0.000)| (0.000)| (0.000)| (0.001)| (0.000)| (0.000)| (0.000)|
| Firm age                | 0.995 | 0.997 | 0.995 | 0.997 | 0.992 | 0.994 | 0.992 | 0.994 |
| (Years)                 | (0.004)| (0.006)| (0.004)| (0.005)| (0.004)| (0.005)| (0.004)| (0.004)|
| Legal structure         | 2.745***| 2.712***| 2.569***| 2.558***|         |       |       |       |
| (Private = 1)           | (0.268)| (0.264)| (0.249)| (0.246)|         |       |       |       |
| Legal structure         | 3.203***| 1.210 | 3.180***| 1.229 | 2.604***| 1.003 | 2.565***| 1.007 |
| (Collective/partnership = 1) | (0.425)| (0.202)| (0.427)| (0.210)| (0.346)| (0.153)| (0.341)| (0.140)|
| Legal structure         | 3.233***| 1.334***| 3.147***| 1.274***| 2.809***| 1.248***| 2.699***| 1.181**|
| (Limited liability = 1) | (0.288)| (0.123)| (0.287)| (0.113)| (0.261)| (0.107)| (0.254)| (0.099)|

(continued)
|                           | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|                           | Poisson | Poisson | Poisson | Poisson | Poisson | Poisson | Poisson | Poisson |
| Legal structure (Joint stock = 1) | 4.043*** | 1.675*** | 3.765*** | 1.472*** | 3.105*** | 1.349*** | 3.012*** | 1.258** |
| (0.521)                   | (0.204) | (0.496) | (0.177) | (0.402) | (0.163) | (0.390) | (0.143) |       |
| Location (Urban = 1)      | 1.829*** | 1.099 | 1.865*** | 1.137*  | 1.769*** | 1.000 | 1.787*** | 1.041 |
| (0.143)                   | (0.089) | (0.147) | (0.088) | (0.137) | (0.088) | (0.139) | (0.089) |       |
| Wage per employee (Logarithm) | 1.461*** | 1.416*** | 1.417*** | 1.356*** | 1.411*** | 1.363*** | 1.427*** | 1.350*** |
| (0.086)                   | (0.102) | (0.082) | (0.095) | (0.081) | (0.092) | (0.082) | (0.088) |       |
| Worker skill (Share of skilled workers) | 0.631** | 0.432*** | 0.570*** | 0.396*** | 0.627**  | 0.467*** | 0.652**  | 0.478*** |
| (0.137)                   | (0.115) | (0.124) | (0.101) | (0.132) | (0.112) | (0.138) | (0.115) |       |
| Workforce structure       | 1.400*** | 1.331**  | 1.279**  | 1.155 | 1.297**  | 1.155 | 1.329**  | 1.155 |
| (0.144)                   | (0.159) | (0.144) | (0.159) | (0.144) | (0.159) | (0.144) | (0.159) |       |
| Personal recruitment      | 0.780*** | 0.683*** | 0.780*** | 0.683*** | 0.829*** | 0.737*** | 0.829*** | 0.737*** |
| (0.044)                   | (0.041) | (0.044) | (0.041) | (0.044) | (0.041) | (0.044) | (0.041) |       |
| Unionization              | 1.904*** | 1.931*** | 1.824*** | 1.827**  | 1.901*** | 1.932*** | 1.826*** | 1.827**  |
| (0.128)                   | (0.131) | (0.128) | (0.131) | (0.128) | (0.131) | (0.128) | (0.131) |       |
| Weights used              | No | Yes | No | Yes | No | Yes | No | Yes |
| Observations              | 1,914 | 680 | 1,914 | 680 | 1,914 | 680 | 1,914 | 680 |
| Wald chi sq (14–17)       | 1,421.4 | 226.6 | 1,491.5 | 232.5 | 1,815.8 | 354.4 | 1,838.4 | 366.0 |

Notes: This table reports Poisson estimates (coefficients are reported as incidence-rate ratios). All regressions include a constant term. Including sector dummies does not change the overall conclusions reported. Robust standard errors are reported in parentheses. 
***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively.
benefits to employees. Moreover, trade unions have a clear effect on securing benefit rights for employees. Firms with a local trade union are more likely to provide employees with fringe benefits. Importantly, including all of the three additional controls in the regressions (columns 7 and 8) leaves the gender effect on fringe benefits unaffected, although the workforce structure effect is no longer well determined. This confirms that gender matters for the provision of fringe benefits, and the results in Table 5 indicate that this is especially associated with female employers in non-HH firms being more likely to provide the mandatory social insurance than their male counterparts. This result is robust to the inclusion of the extra determinants introduced in Table 6 (not reported). One problem faced in Vietnam during the introduction of the mandatory social insurance scheme was lack of inspections and administrative sanctions against violations of the social insurance law. So our results could suggest that men have been better at taking advantage of this lack of law enforcement or, alternatively, that enforcement has differed by the gender of the firm owner. However, neither the World Bank (2008) nor the Vietnam Country Gender Assessment (World Bank 2006) identify this as an important issue. This suggests that the gender effects identified in our analysis do indeed have other deeper roots associated with differences in the roles, responsibilities, and status of men and women in Vietnam, or that factors affecting the provision of fringe benefits that are not controlled for in our empirical specification differ significantly by gender of firm owner.

CONCLUSIONS

We started out in this study asking whether gender matters for the provision of fringe benefits in Vietnamese SMEs. Our descriptive statistics suggest that this is so. We proceeded to identify a set of traditional explanatory variables, as well as three additional gender-related determinants to set up our two-step analytical framework. Step one of the econometric analysis provided confirmation that gender is indeed important, especially regarding compliance with and provision of mandatory social insurance. In step two, we went further and explored whether the gender result is linked to gender differences in social networks and workforce structure, worker recruitment mechanisms, and the degree of unionization. While all are statistically significant, none of these factors can account for the observed gender-benefit premium in mandatory social insurance, adding further empirical weight to our key conclusion. Female employers are, ceteris paribus, more likely to provide fringe benefits and comply with the mandatory social insurance law than their male counterparts. So, there remains a sizable and unexplained fringe-benefits premium paid to workers in firms with female owners.
Turning to policy implications, we suggest that policy makers should consider how to help ensure that private-sector employees effectively participate in fringe benefits systems. Fringe benefits form an important part of the overall wage compensation package, and fringe benefits have beneficial social implications. Our study indicates that support to female entrepreneurs may indirectly help improve the provision of employee fringe benefits. Female firm owners are more likely to provide their employees with mandatory social insurance independent of educational level, firm size and age, legal ownership form, and location.

Finally, while we have suggested that expanding fringe benefits should be promoted, we emphasize that incentive effects related to fringe-benefits systems must be kept in mind throughout. Such systems may decrease the flexibility of the labor market and reduce labor mobility. They can also induce a suboptimal share of temporary and casual workers in SMEs. Increasing social and healthcare insurance coverage and streamlining these fringe benefits systems so they include temporary employees is a key to helping to reduce the negative effects of such schemes on general labor market conditions. This was explicitly recognized in the most recent update of the Vietnamese Labor Code by making social and health insurance mandatory for all formal-sector employees.

John Rand
Department of Economics, University of Copenhagen
Øster Farimagsgade 5, DK-1353 Copenhagen, Denmark
e-mail: John.Rand@econ.ku.dk

Finn Tarp
UNU-WIDER
Katajanokanlaituri 6 B, FI-00160 Helsinki, Finland
e-mail: Finn.Tarp@econ.ku.dk

ACKNOWLEDGMENTS

The authors are grateful for productive and stimulating collaboration with the survey teams from the Vietnamese Institute of Labor Science and Social Affairs (ILSSA) and staff at Central Institute for Economic Management (CIEM). Financial support from Danida is appreciated. The usual caveats apply.

NOTES

1 The World Bank SME department currently operates with three groups of SMEs: micro-, small-, and medium-scale firms. Micro-enterprises have between 1 and 10 employees, small-scale enterprises between 11 and 50 employees, and medium-size enterprises between 51 and 300 employees. The Vietnamese government broadly
accepts these definitions (see Government of Vietnam [2001]). In what follows, we apply these definitions.

2 Additional information on rules on fringe benefits can be found in the Vietnamese Labor Code (see Government of Vietnam [2007]) and in John Rand, Finn Tarp, Tran Tien Cuong, and Nguyen Thanh Tam (2008).

3 David Berstein (2002) shows that race/ethnicity is also important for the provision of fringe benefits in the US. As most firm owners in our sample are within the same ethnic group (Kinh), we do not include this variable in the analysis.

4 To test the difference between HH and non-HH enterprises formally, we allowed for an intercept difference between HH and non-HH firms by including an HH firm dummy and all HH interaction terms and tested joint significance of the interaction terms only, resulting in a rejection of the null. Interaction terms turned out statistically significant along the following dimensions: (i) firm size, (ii) average wage per employee, and (iii) average worker skill.

REFERENCES

Aldrich, Howard E. 2005. “Entrepreneurship,” in Neil J. Smelser and Richard Swedberg, eds. The Handbook of Economic Sociology. 2nd ed., pp. 451–77. Princeton, NJ: Princeton University Press.

Berstein, David. 2002. “Fringe Benefits and Small Businesses: Evidence from the Federal Reserve Board Small Business Survey.” Applied Economics 34(16): 2063–7.

Brown, Charles and James L. Medoff. 2003. “Firm Age and Wages.” Journal of Labor Economics 21(3): 677–97.

Croson, Rachel and Uri Gneezy. 2009. “Gender Differences in Preferences.” Journal of Economic Literature 47(2): 448–74.

Dale-Olsen, Harald. 2006. “Wages, Fringe Benefits and Worker Turnover.” Labour Economics 13(1): 87–105.

Elliott, James R. 1999. “Social Isolation and Labor Market Insulation: Network and Neighborhood Effects on Less-Educated Urban Workers.” Sociological Quarterly 40(2): 199–216.

England, Paula and Nancy Folbre. 2005. “Gender and Economic Sociology,” in Neil J. Smelser and Richard Swedberg, eds. Handbook of Economic Sociology. 2nd ed., pp. 627–49. Princeton, NJ: Princeton University Press.

Freeman, Richard B. 1981. “The Effect of Unionism on Fringe Benefits.” Industrial and Labor Relations Review 34(4): 489–509.

General Statistics Office of Vietnam (GSO). 2004. Results of Establishment Census of Vietnam 2002: Volume 2 – Business Establishments. Hanoi: Statistical Publishing House.

———. 2007. The Real Situation of Enterprises: Through the Results of Surveys Conducted in 2004, 2005, 2006. Hanoi: Statistical Publishing House.

Government of Vietnam. 2001. “Supporting the Development of Small and Medium Enterprises.” Government decree No. 90/2001/CP-NĐ. Hanoi: Vietnam.

———. 2007. “The Labor Code of the Socialist Republic of Vietnam.” Hanoi: Vietnam.

Hansen, Henrik and Le Dang Trung. 2007. “Better Than its Reputation? The Incidence of Social Transfers and Education Fee Exemption in Vietnam.” Working Paper 9, Development and Policies Research Center, Vietnam. http://www.depocenwp.org/upload/pubs/LeDangTrung/Social%20Transfers%20in%20Vietnam_DEPOCENWP.pdf (accessed November 2010).

Heneman, Herbert G., III and Robyn A. Berkley. 1999. “Applicant Attraction Practices and Outcomes among Small Businesses.” Journal of Small Business Management 37(1): 53–74.
THE PROVISION OF FRINGE BENEFITS

Ioannides, Yannis M. and Linda Datcher Loury. 2004. “Job Information Networks, Neighborhood Effects, and Inequality.” *Journal of Economic Literature* 42(4): 1056–93.

Jowett, Matthew, Paul Contoyannis, and Nguyen D. Vinh. 2003. “The Impact of Public Voluntary Health Insurance on Private Health Expenditures in Vietnam.” *Social Science and Medicine* 56(2): 333–42.

Nguyen, Binh T., James W. Albrecht, Susan B. Vroman, and M. Daniel Westbrook. 2007. “A Quantile Regression Decomposition of Urban–Rural Inequality in Vietnam.” *Journal of Development Economics* 83(2): 466–90.

Oi, Walter Y. and Todd L. Idson. 1999. “Firm Size and Wages,” in Orley C. Ashenfelter and David Card, eds. *Handbook of Labor Economics*, Vol. 3B, pp. 2165–214. San Diego, CA: Elsevier.

Rand, John and Finn Tarp. 2007. “Characteristics of the Vietnamese Business Environment: Evidence from a SME Survey in 2005.” Central Institute for Economic Management (CIEM), Hanoi.

Rand, John, Finn Tarp, Tran Tien Cuong, and Nguyen Thanh Tam. 2008. “SME Fringe Benefits Provision.” *Vietnam Economic Management Review* 3(1): 53–60.

Troske, Kenneth R. 1999. “Evidence on the Employer Size-Wage Premium from Worker-Establishment Matched Data.” *Review of Economics and Statistics* 81(1): 15–26.

Variyam, Jayachandran N. and David S. Kraybill. 1998. “Fringe Benefits Provision by Rural Small Business.” *American Journal of Agricultural Economics* 80(2): 360–8.

Viet Nam News. 2009. “Firms Renege on Social Insurance Payments, Obligations to Workers.” http://vietnamnews.vnagency.com.vn/Opinion/187860/Firms-renege-on-social-insurance-payments-obligations-to-workers.html (accessed November 2010).

World Bank. 2006. “Vietnam Country Gender Assessment.” Working Paper 38445. http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/01/24/000310607_20070124141846/Rendered/PDF/384450ENGLISH0VN0Gender01_PUBLIC1.pdf (accessed November 2010).

———. 2008. “Vietnam Development Report 2008: Social Protection.” http://sitere sources.worldbank.org/INTVIETNAM/Resources/socialprotectioninaleng.pdf (accessed November 2010).

85
### Appendix Table 1 Sick and maternity leave versus social insurance

| Firm provides social insurance | Yes | No | Total |
|--------------------------------|-----|----|-------|
| Firm provides sick leave with pay |     |    |       |
| Yes                             | 288 | 424| 712   |
| No                              | 0   | 1,202 | 1,202 |
| Total                           | 288 | 1,626 | 1,914 |
| Firm provides maternity leave with pay |     |    |       |
| Yes                             | 288 | 132| 420   |
| No                              | 0   | 1,494| 1,494 |
| Total                           | 288 | 1,626 | 1,914 |

**Note:** This table includes data for the total number of firms in our sample.

### Appendix Table 2 Fringe benefits – by gender and legal structure

|                     | HH firm | Private | Collective/ partnership | Limited liability | Joint stock |
|---------------------|---------|---------|-------------------------|-------------------|-------------|
| **Male owners only**|         |         |                         |                   |             |
| Sick leave with pay | 0.205   | 0.484   | 0.582                   | 0.682             | 0.706       |
| Maternity leave with pay | 0.060   | 0.275   | 0.436                   | 0.583             | 0.647       |
| Vacation with pay   | 0.112   | 0.333   | 0.455                   | 0.538             | 0.559       |
| Health insurance    | 0.014   | 0.229   | 0.345                   | 0.489             | 0.588       |
| Social insurance    | 0.007   | 0.216   | 0.309                   | 0.471             | 0.618       |
| Fringe benefits index | 0.399   | 1.536   | 2.127                   | 2.762             | 3.118       |
| Observations        | 943     | 153     | 55                      | 223               | 34          |
| **Female owners only**|         |         |                         |                   |             |
| Sick leave with pay | 0.296   | 0.631   | 0.524                   | 0.767             | 0.778       |
| Maternity leave with pay | 0.086   | 0.400   | 0.476                   | 0.642             | 0.778       |
| Vacation with pay   | 0.162   | 0.415   | 0.619                   | 0.667             | 0.667       |
| Health insurance    | 0.024   | 0.323   | 0.381                   | 0.542             | 0.778       |
| Social insurance    | 0.017   | 0.292   | 0.381                   | 0.550             | 0.778       |
| Fringe benefits index | 0.584   | 2.062   | 2.381                   | 3.167             | 3.778       |
| Observations        | 291     | 65      | 21                      | 120               | 9           |

**Note:** This table reports unweighted means.
# THE PROVISION OF FRINGE BENEFITS

## Appendix Table 3 Probability of fringe benefits provision – HH enterprises only

|                | 1 Sick leave probit | 2 Maternity leave probit | 3 Annual leave probit | 6 Index 1 (0–3) Poisson |
|----------------|---------------------|--------------------------|-----------------------|-------------------------|
| Gender of owner | -0.003              | -0.002                   | 0.007                 | 1.007                   |
| (Male = 1)      | (0.027)             | (0.014)                  | (0.017)               | (0.112)                 |
| Owner education 2 | 0.046*              | -0.001                   | 0.006                 | 1.094                   |
| (Vocational = 1) | (0.027)             | (0.014)                  | (0.018)               | (0.129)                 |
| Owner education 3 | 0.042               | 0.021                    | 0.012                 | 1.107                   |
| (Technical = 1)  | (0.047)             | (0.025)                  | (0.030)               | (0.207)                 |
| Owner education 4 | 0.068*              | 0.003                    | 0.061**               | 1.280*                  |
| (College/university = 1) | (0.044) | (0.019)                  | (0.033)               | (0.188)                 |
| Management experience | -0.005       | -0.031**                 | -0.013                | 0.879                   |
| (Previously self-employed = 1) | (0.025) | (0.012)                  | (0.016)               | (0.097)                 |
| Firm size       | 0.002*              | 0.001***                 | 0.001**               | 1.055***                |
| (No. of employees) | (0.001)           | (0.000)                  | (0.001)               | (0.001)                 |
| Firm age        | -0.002              | -0.001                   | -0.002*               | 0.988*                  |
| (Years)         | (0.002)             | (0.001)                  | (0.001)               | (0.006)                 |
| Location        | 0.371***            | 0.081***                 | 0.220***              | 5.893***                |
| (Urban = 1)     | (0.027)             | (0.016)                  | (0.022)               | (0.906)                 |
| Wage per employee | 0.067***            | 0.016                    | 0.027**               | 1.361***                |
| (Logarithm)     | (0.021)             | (0.010)                  | (0.013)               | (0.121)                 |
| Worker skill    | -0.032              | 0.062                    | 0.018                 | 1.068                   |
| (Share of skilled workers) | (0.094) | (0.048)                  | (0.058)               | (0.430)                 |
| Observations    | 1,234               | 1,234                    | 1,234                 | 1,234                   |
| Pseudo Rsquared | 0.22                | 0.12                     | 0.20                  | ..                      |
| Wald chi sq (10) | 253.4               | 59.1                     | 160.1                 | 269.1                   |

Notes: Columns 1–3 report probit estimates with marginal effects. Column 4 reports Poisson estimates (coefficients are reported as incidence-rate ratios). All regressions include a constant term. Including sector dummies does not change the overall conclusions reported. Robust standard errors are reported in parentheses.

***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively.