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Abstract

Divergent interests of bank managers and financial regulators potentially compromise the efficacy of bank rescue operations. This paper analyses an agency problem encountered in a capital injection program implemented in Japan. We hypothesize that the operation's requirement to downsize lead banks to overstate the extent of downsizing by reassigning older workers to bank subsidiaries. We implement a difference-in-difference analysis using a panel of Japanese banks from 1990 through 2010. We also employ propensity score matching to control for the sample selection. The result shows that recipients of public capital exhibited workforce rejuvenation relative to non-recipient banks. Among injected banks, average worker age falls by approximately one year, which is equivalent to about seventy less 65-years-old workers. On stand-alone basis, the number of employees in injected banks decreases as a response to injection, but on consolidated basis, which accounts for subsidiary employment, the number of employees at banking does not fall. Our finding suggests that the Japanese practice of life-time employment survived, albeit in a limited form, among restructuring banks.

JEL Classification: C23, G21, G28

Keywords: Recapitalization program, lifetime employment, Japanese banks

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Introduction

The Global Financial Crisis forced governments all over the world to rescue severely affected financial institutions for the purpose of containing systemic crisis. Some nonfinancial firms, such as the General Motors, also received government assistance. These rescue operations typically entailed government purchases of senior stocks or senior debt of troubled firms. Just as in any widely-held corporations, where ownerships and controls differ, managers of government-assisted firms and the regulatory agent need not share the same interests in, for example, executive compensation and employee downsizing. As a result, the effectiveness of a rescue operation, when ill designed, could be undermined by the agency problem. AIG, which announced extravagant bonus payments to executives after receiving capital injection, is a case in point.

This paper considers the extent and nature of the agency problem to highlight issues in designing a rescue operation. We focus on the case of the Japanese capital injection program in which previous studies identify the existence of the agency problem. Japan injected capital to banks in March 1998 in response to a financial crisis outbreak. Among other provisions, the capital injection program required banks to comply with targets on workforce downsizing. To banks that receive public capital, the government becomes an active shareholder with power to punish. Hoshi and Kashyap (2005) first noted that one bank met a downsizing target by shuffling workers to its subsidiaries. Onji, Vera, and Corbett (2012) verified the pervasiveness of the personnel shuffling behavior among injected banks with a sample of regional banks. The latter study offers a nuanced interpretation on the shifting behavior, observing that the intent of the bank management may not be malicious in that, in addition to the downsizing target, banks operated in an environment where banks face restrictions on layoffs due to the existing labor law and the life-time employment practice (LTE). Onji, Vera,

and Corbett (2012) hypothesize that banks shuffled older workers, who were near their retirement age, to subsidiaries, but offer only circumstantial evidence to support their hypothesis. In this backdrop, this paper examines the demographic composition of bank employees to see whether the Japanese capital injection programs induced injected banks to shed older employees.

Aside from offering a direct test of the hypothesis suggested by Onji, Vera, and Corbett (2012), the demographic composition of bank workers is of interest for two reasons. The first is in assessing the role of active shareholders in the death or survival of the Japanese-style employment practices. The life-time employment (LTE) practice had been adopted extensively in the Japanese banking industry (Koike, 1996).[1] A corollary of the prominence of LTE is that employers shield older workers from negative productivity shocks by reducing job opening for younger workers (Genda, 2003). Therefore, the workforce would age if LTE remains intact and banks freezes hiring of fresh graduates. Genda and Rebick (2000) observe that changes in employment practices in Japan since the mid-1980s till late 1990s had been slow due in part to a lack of shareholder activism. The bank capital injection program is an interesting setting since the government becomes an active shareholder who sets targets on financial performances as well as labor costs. Our examination of employee demographic of injected banks would provide insights into how LTE has changed in response to a shareholder who demands restructuring. The second is in gauging the extent of productivity enhancing restructuring. Under the seniority-based wage practice, older workers are typically paid above their marginal product.[2] Previous studies emphasize behavioral responses to the capital injection program that can undermine its efficacy. The capital injection programs however

[1] Koike (1996) documents notably long tenures in the Japanese banking sector in the 1970s, compared with white-collar workers in manufacturing, wholesale and retail, and also with bankers in the West Germany.
[2] Further, with an advance of skill-biased technological change (Bresnahan, Brynjolfsson, and Hitt, 2002) and a requirement on injected banks to enhance mechanization, the injected banks may demand more IT-literate workers.

may have had 'real' impacts on productivity through facilitating shifts in employee composition towards younger workers away from older workers.

The outcome variable that we examine is the average age of bank employees retrieved from financial statements. We also examine the number of workers in conjunction with the average age to infer how demographic composition may have changed. The panel dataset covers financial year (FY) 1990-2010. We account for mergers by treating banks before and after mergers as separate units, and the number of panel units in the base analysis is 172. The idea of the empirical analysis is to see how banks with larger capital injection react relative to banks with no injection and lower capital injection, accounting for bank-specific observables and common macroeconomic shocks. As is well recognized in the literature (Onji, Vera, Corbett, 2012; Duchin and Sosyura, 2012), banks do not receive capital injection randomly. The sample selection bias is thus a concern. We address this concern in two ways. First, we explicitly account for bank performance in the regression. Second, we use propensity score matching to identify a sample of non-injected banks that are similar to injected banks across many different dimensions, allowing us to determine more accurately the effects on banks demographics and employment.

Our result suggests that injected banks exhibited workforce rejuvenation relative to non-injected banks. The estimated coefficients roughly translates to one year reduction in average age, equivalent to about seventy less 65-years old workers, for an average injected bank. Upon repayment of injected capital, the average age at injected banks falls further by 1.7 years, which is equivalent to about extra two hundred 22-years old workers. We also examine the number of employees using both consolidated and unconsolidated data. Consistent with the previous studies, on parent bank's stand-alone basis, we find that capital injection is

associated with a reduction in employment while repayment of the capital injection increases employment. In contrast with this finding, on consolidated basis, we do not detect the impacts of injection, while repayment is weakly associated with an increase in employment. The contrast between unconsolidated and consolidated further supports the hypothesis that employees were shifted to subsidiaries (Onji, Vera, and Corbett, 2012). This analysis suggests that older workers lost their position at parent banks but were still not made completely redundant as they were transferred to subsidiaries.

No study to our knowledge has examined how capital injection programs induce changes in the demographic compositions of bank workers. Importantly, our results suggest that the capital injection program in Japan might have facilitated changes in the labor force in injected banks in a way that potentially improves productivity. Our analysis employs a longer time series than those used in the previous studies, and therefore can examine the impacts of repayments, which have not been considered in the previous studies. Third, we employ a higher frequency data than data employed by Onji, Vera, and Corbett (2012), who draws from subsidiary-level data on employment at biennial frequency.

Our study also relates more broadly to other types of behavioral responses to capital injection programs. One type of responses that have received attention is the risk taking by banks. The main objective of capital injection programs is to contain financial system meltdowns, but policy makers explicitly or implicitly expect business lending to continue. Such expectations lead banks to meet targets by extending loans to risky lenders or to induce moral hazard by creating the perception that recipient banks are "too-important-to-fail." Studies have examined loan-level data on risk rating, and have found that the riskiness of loans increased for TARP banks (Duchin and Sosyura, 2012; Black and Hazelwood, 2012).

Our study is also relevant in understanding the transformation of the LTE practice. Despite popular discussion about the collapse of the Japanese-style employment practices, a number of recent studies have documented the resilience of LTE using employee-level data across industries (e.g. Kambayashi and Kato, 2011). Our research presents a case study from the banking industry, and shows that even among firms under strict supervision, the practice of LTE survived in a transformed form, rather than being completely abandoned.

The rest of the paper is organized as follows. Section 1 describes the capital injection programs in Japan. Section 2 describes the data. Section 3 describes the regression analysis. Section 4 presents the results of the regression analysis based on a matched sample of injected and non-injected banks.

1. Institution

1.1 Capital injection and the labor laws

The Japanese government administered capital injection programs since 1998 in response to the collapses of several prominent financial institutions in 1997 (Hoshi and Kashyap, 2010). The Financial Function Stabilization Act (FFSA) injected total of 1.8 trillion yen on March 1998 to 21 large banks. The Prompt Recapitalization Act administered 8.6 trillion yen to 32 banks (1999-2002). Injected banks develop a business improvement plan with the Financial Services Agency and lay out targets on financial outcomes (e.g. tire 1 ratio) as well as restructuring targets such as the number of workers and board members, compensations, overhead costs, and mechanization expenses (Onji, Vera, and Corbett, 2012). The target on workforce downsizing tend to be quite aggressive. In 2001, the Ashikaga Bank for example targeted a reduction of 26.3% in its workforce by 2005. If outcomes diverge from the targeted

figures, the regulator can invoke an administrative order which prohibits banks from paying dividend and managerial bonuses. The possibility of punitive measures provides an incentive for management to meet the personnel reduction target. The regulator monitors the bank's stock in assessing its performance, so the management also face incentives to implement an economically meaningful personnel restructuring.

Injected banks however need to downsize workforce under a legal system that discourages layoffs. OECD evaluates Japan as the third most difficult country to lay off workers in among 27 countries (OECD, 1999). Firms are only permitted to lay off workers after exhausting alternative means for downsizing, such as hiring freeze, soliciting early retirement, and permanent transfer to subsidiaries. In addition to the legal system, employment practices in Japan discourage layoffs. Under the life-time employment and seniority wage practices, workers and firms expects their relationship to last long. Young workers take wages below their marginal products in exchange for a secure employment and future compensation. Thus, a firm that breaks the implicit contract risk damage to its reputation as a reliable employer. Therefore, the difficulties of conducting layoffs create incentives for banks to resort to other means to achieve downsizing targets.

The injection program leave open the definition of 'regular workers' and how to account for a reduction of workers. The number on reduction may or may not include workers re-hired by bank subsidiaries. The lack of a precise definition leaves leeway to reshuffle personnel to subsidiaries so that the target can be met at parent bank level but not on a consolidated basis. As a point of comparison, consider another public support program for non-financial businesses enacted just two years after FFSA.[3] Firms under this other program report targets

[3] The Law on Special Measures for Industrial Revitalization of 1999. The past reports for individual cases are reported in http://www.meti.go.jp/sankatsuhou/nintei/past_result.html (accessed 25 January 2013).

on the number of employees, breaking it down by temporary transfer (*shukkou*), permanent transfer (*tenseki*) as well as the number of new hires. Onji, Vera, and Corbett (2012) argue that the ambiguity in the reporting requirement under the Japanese capital injection program, in conjunction with the tight restriction on layoffs in Japan, lead banks to reshuffle workers, particularly older workers. The reasons for reshuffling older workers are many. First, under the seniority wage practice, workers on average are paid below their productivity when young and are paid above their productivity when old. Given profitability target, banks face incentives to shed "overpaid" workers. The target on overall payroll reinforces such incentives. Second, the business restructuring included mechanization of operations, which increases demand for younger IT literate workers.

1.2 Preliminary examination

As a preliminary examination, we plot the time series of average age for the three largest regional banks since the late 1970s (Figure 1). Regional banks did not go through as extensive merger process as the larger banks in Japan, so regional banks provide a convenient sample. We also show the Sumitomo Trust Bank in the figure since it did not merge with other banks during the sample period. This sample is not meant to be a representative sample or a group of most influential banks in Japan, but is a sample of important banks in the economy.

For banks that did not receive capital injection, the Chiba Bank and Shizuoka Bank, the average age increased generally steadily from around 30 years old in the late 1970s to around 40 years old by 2010, suggesting that the lifetime employment practice remained generally intact over time. Contrastingly, the average age at the Yokohama Bank fell sharply in 2001, 2 years after receiving capital injection, probably reflecting early retirement of older workers. The average age also falls sharply again few years after the repayment. This time, the fall is

attributable to an increased hiring of fresh graduates. The average age at the Sumitomo Trust Bank fell since 1999, when the bank received capital, and generally declined thereafter. While yet tentative, the difference in the time series pattern of average age is indicative of the impact of capital injection program on the retention rate of older employees. We turn to a regression analysis employing all the Japanese banks to see if this pattern holds for a broader set of banks.

2. Description of the data

The main data source used in this paper is Nikkei Economic Electronic Databank Systems' (NEEDS) financial statements data CD-ROM (version 2011), which includes not only accounting and employee characteristics data. We retrieved the fiscal-year-end data of all the Japanese commercial banks that existed between FY 1990 and FY2010. The number of banks varies over time, mostly due to mergers: 140 banks in FY1990 to 114 banks in FY2010. Banks that have experienced mergers during a particular fiscal year are treated as new banks from the following fiscal year. Overall, our dataset constitutes an unbalanced panel covering the period between March 1991 and March 2011.

The main dependent variable is the bank employee's average age.[4] In regression analysis we control for bank specific characteristics. All variables are from NEEDS and on unconsolidated basis (i.e. standalone figures for parent banks not including subsidiary outcomes).

To control for the differences among regional labor markets, we used two regional variables from e-Stat (Regional Government Statistics for Japan site): the number of effective job

[4] We made an adjustment to the original NEEDS data on age. For example, if the average age was 40 years and 11 months, NEEDS records the data as "40.11", our modified data records it as "40.92"(=40+11/12).

seekers in a region, and the average cash wage in the finance and insurance industry.[5] The average mean of each variable is available for each prefecture and fiscal year for the sample period. Table 1 provides the summary statistics.

3. Empirical models and results

3.1. Method: Demographic composition

Our aim is to analyze the response of banks' worker demographic after both the injections and the pay-backs of public capital. Under the capital injection program, banks that received capital injection were expected to implement personnel changes to reduce banks' payroll. If injected banks shed middle-aged and older employees, who tend to receive higher salaries, the average age of employees at those banks would fall. After paying back injected capital, banks' personnel decisions are no longer constrained by the government monitoring. If in fact banks started to hire younger workers after repaying the capital injection, we should also expect to see a decline in employees' average age. Therefore both capital injection and pay-back should affect banks' demographic composition. To examine this hypothesis, we estimate the following model where the average age of a bank's employees is the dependent variable:

$$Age_{it} = \sum_{j=0}^{3} \alpha_j INJcross_{i\,t-j} + \sum_{j=0}^{3} \beta_j PAIDcross_{i\,t-j} + \gamma Age_{i,t-1} + X_{i,t}{}'\theta + \kappa + \mu_i + \phi_t + \varepsilon_{i,t}, \quad (1)$$

where:

$$INJcross_{i\,t-j} = INJ_{i\,t-j}\frac{InjCap_i}{Asset_{it}} \qquad PAIDcross_{i\,t-j} = PAID_{i\,t-j}\frac{InjCap_i}{Asset_{it}}$$

Age_{it} is the employees' average age of bank *i* at the end of financial year *t*. The lagged dependent variable on the right-hand side captures the sluggishness in making annual

[5] The data source for wage is the Basic Survey on Wage published by the Ministry of Health, Labor and Welfare (MoHLW). The number of job seekers is from ''Employment Referrals Statistics'' reported in Labor Market Annals also published by the MoHLW.

adjustments to an existing pool of employees who are typically under indefinite term contracts.

Main explanatory variables are $INJcross_{i\,t-j}$ and $PAIDcross_{i\,t-j}$. $\frac{InjCap_i}{Asset_{it}}$ is the ratio of total amount of capital injection to total asset. This term allows for differences in the intensity of treatment, which should matter if banks with larger government support are under more stringent restructuring plans. This formulation follows Onji, Vera, and Corbett (2012) whose analyses show the importance of accounting for the intensity of treatment. $INJ_{i\,t-j}$ is a dummy for banks that received capital in *t-j*. For banks that received multiple injections, we employed the first injection to define this variable. $PAID_{i\,t-j}$ is also a dummy for banks that paid back all of their injected capital in *t-j*. In practice, banks gradually paid back injected capital over the years, but only after all of the injected funds are paid off banks' personnel decisions become independent from government monitoring. $PAIDcross_{i\,t-j}$ therefore captures the removal of constrains imposed under capital injection programs.

The effects of capital injection and pay-back on banks' demographic composition can last over time. To capture lagged effects, we include the explanatory variables at time t and up to three-year lags. The lag length is chosen to balance a trade-off in modelling. The adjustment is likely to be gradual, so the model should allow for a sufficiently long lagged response. However, a long lag would create an overlap of a period when the injection effects take place with a period when the repayment effects take place. The average time to repayment is 7 years and 6 month (Table 2), and the lag of three years is sufficiently short to limit overlaps.

Vector $X_{i,t}$ denotes a vector of control variables for bank specific factors and regional labor market factors. As is well recognized in the literature (Onji, Vera, Corbett, 2012; Duchin and Sosyura, 2012), banks do not receive capital injection randomly so the sample selection

process can bias the estimated coefficients. Coefficients on the injection dummies and repayment dummies may capture the average effects of employment reduction at poorly performing banks, rather than the direct effects of capital injection programs. To remove this selection bias, we include the return on assets (ROA) in the regression as a control for performance. In addition, we included the total amount of salaries and allowances, the total number of employees, and the total assets, as other bank specific controls. The number of effective job seekers and the average cash wage of finance and insurance industry are included as regional factors.[6] μ_i and ϕ_t are fixed effects and $\varepsilon_{i,t}$ is a heteroskedastic error with no serial correlation. κ represents the constant term in a regression.

We estimated the model (1) with the fixed effects regression. The right-hand-side variables include a lagged dependent variable so that the dynamic panel bias may appear to be a concern with the fixed effect estimator. The dynamic panel bias is not likely to be of a concern in the present setting. First, the fixed effects estimators generate large bias when the time series dimension is small (Judson & Owen, 1999). The time series dimension in our data is of a reasonable size (T=20) and the cross section dimension is large (N=173). Second, the coefficient on lagged dependent variable suffers more severely than those on other covariates. Our main interest is on the coefficient on the injection and repayment variables, and not that on the lagged dependent variable. Therefore the key inference should not be affected by the choice of estimator.

3.2. Personnel shuffling hypothesis

In addition to examining the effects on average ages, we examine the banks' personnel 'shifting behavior' with longer time series data than that employed in Onji, Vera, and Corbett

[6] Except for ROA, the other control variables are logarithmic values.

(2012). The inclusion of latter time period allows us to account for effects of repayments. We estimate the following equation (2) and (3);

$$Employee^{UN}{}_{it} = \sum_{j=0}^{3} \alpha_j INJcross_{i\,t-j} + \sum_{j=0}^{3} \beta_j PAIDcross_{i\,t-j} + \gamma Employee^{UN}{}_{i,t-1} + Z_{i,t}{}'\theta + \kappa + \mu_i + \phi_t + \varepsilon_{i,t}, \quad (2)$$

$$Employee^{CON}{}_{it} = \sum_{j=2}^{3} \alpha_j INJcross_{i\,t-j} + \sum_{j=0}^{3} \beta_j PAIDcross_{i\,t-j} + \gamma Employee^{CON}{}_{i,t-1} + Z_{i,t}{}'\theta + \kappa + \mu_i + \phi_t + \varepsilon_{i,t}, \quad (3)$$

where $Employee^{UN}$ and $Employee^{CON}$ are the number of employees on an unconsolidated basis and on consolidated basis respectively, which are both logarithmic values. Not all subsidiaries are consolidated for accounting purposes; as a general rule, a parent company includes majority-owned subsidiaries in a consolidated accounting statement. The number of employees at consolidated basis thus includes employees at consolidated subsidiaries, most of which with 50% or more direct and indirect ownership. If parent banks merely shuffled employees to consolidated subsidiaries, we would expect that the number of employees to fall at the parent bank but not at consolidated level. With the parent-bank-level consolidated data, the present approach would not be able to capture shuffling to unconsolidated subsidiaries. However, in the previous analysis by Onji, Vera, and Corbett (2012) whose data includes unconsolidated subsidiaries, most of the responses take place within wholly-owned subsidiaries, so the present approach should not lead to 'false negative.'

One caveat is the availability of consolidated data. Consolidated financial reporting was not mandatory until 1999 in Japan, and we do not have data at consolidated level prior to 1999. In equation (3), given the shorter time frame, we are only able to estimate the lagged impact of injection for the 2nd and 3rd year. $Z_{i,t}$ is vector of control variables similar to vector $X_{i,t}$ from

equation (1). However, $Z_{i,t}$ includes employees' average age instead of total number of employees.

3.3 Results

We first examine the estimation results of equation (1), the effect of injection and re-payment of capital on employees' average age, which are presented in Table 3. The model in the first column includes all of the control variables while those for the remainder columns include each control variable at a time.

Looking at the first four rows in Table 3, every coefficient of *INJcross* is significant and negative, except for the second row. These results suggest that the average age of employees of capital-injected banks gradually fell, that is injected banks may have been hiring younger workers over several years after receiving injections. How much younger did the average employee become at injected banks? Using the results from the Table 3 first column, we can roughly estimate it as follows; the coefficients on *INJcross* add to -52.091 (=$\hat{\alpha}_0$+$\hat{\alpha}_2$+$\hat{\alpha}_3$), and the mean value of $\frac{InjCap_i}{Asset_{it}}$ is 0.023 from Table 1. So, we can say that capital injection reduced the average employee's age at injected banks by 1.198 years (=-52.091x0.023). What does one year reduction in average age imply about the demographic composition? Consider a bank with 2,000 employees whose average age is 37 years old. The average employees' age falls by about 1 year if sixty-nine 65-years-old workers leave the parent bank.

As for the effect of pay-backs, while the effects are not as strong, we find significant effects after one and two years of pay-backs, which are shown the 6th and 7th rows of Table 3. Almost all of these coefficients are negative and significant, which indicate that the average age of employees of capital-injected banks gradually falls two years after paying back the injected

capital. Using the estimation results of the second column, we can roughly estimate that injected-banks become around 1.7 years younger on average after paying back the capital. Since the paybacks are typically accompanied by increases in employment, as will be demonstrated below, this reduction in average age would have been due to younger hires. If all the new hires consisted of 22-years-old college graduates, this would imply about extra 204 young workers.

These empirical results confirm that both Capital Injection and Payback have a negative impact on banks' average age. This suggests the possibility that older generations of employees were dismissed or transferred to subsidiaries several years after injections, and that banks started to hire younger workers two years after paying back the capital.

Next we turn to the results of Table 4, which shows the effect of injection on the number of workers during the injection and after the injection was paid back. Injected banks gradually decreased the number of employees several years after the event of the first capital injection. On the other hand, it is also significant that the number of employees was gradually increased several years after completing the capital pay-backs. These results are very consistent with the findings from equation (1). The reduction in the number of workers after capital injection suggests the possibility of older workers' were being transferred to subsidiaries, and the increment after pay-backs suggest that of hiring younger workers.

The result on consolidated basis in Table 5 is quite different. For instance, there is almost no significant effect of capital injections on employment levels, and the results are robust to the inclusion of additional controls. Even though the reduction of employees occurred on unconsolidated basis, or in parent companies, there is no significant reduction on consolidated

basis after injections. The asymmetric result between on unconsolidated and consolidated indicates the possibility that banks' shifting behaviors was caused by capital injection.[7]

The coefficients on paybacks are significant and positive for the first and third lags at the 10 percent level, indicating that employment increased on the consolidated basis as well as on the unconsolidated basis. [8] The employment on the consolidated basis however seems to take more time to increase than that on the unconsolidated basis, and the effects are not as precisely estimated. The weaker response may be due to several reasons. One possibility is that some of the transferred old workers were rehired by parent banks. However, this is not likely to have occurred on a large scale given the fall in the average age at parent banks documented above. Another more likely scenario is that the transferees retired, offsetting the increase in young workers are parent banks.

Our empirical results are consistent with the previous studies, and what is more, show the new finding that injected-banks coped with restructuring programs monitored by government by changing their demographic composition.

4. Matching analysis using Propensity Score

Ideally, we would like to assign banks randomly to capital injection programs to identify the impacts of an intervention. The injections of capital were clearly not random. Rather, selected banks received injection. In the previous section we controlled for confounding influences, including the impacts of poor performance, assuming that the control variables, in a linear specification, capture the influences of selection into the treatment. This section considers a

[7] The analysis in Table 4 employs a shorter time series than that in Table 3, so the imprecise estimate in Table 4 may be due to weak power of the test: due to non-reporting of consolidated financial statement until 1999, T=10, rather than 20, in the analysis on the consolidated employment. As a robustness check, we re-estimated the model (2) using the FY1999-2010 data, dropping the first two injection variables. We still found significantly negative coefficients so that the result is robust to this the time series length.

[8] Though the dependent variable in equation (3) is on a consolidated basis, control variables for bank specific effects are on an unconsolidated basis. As a robustness check, we re-estimated the model (3) using consolidated data instead. Again, there is almost no significant effect of injections, but the coefficients on lagged paybacks are significantly positive.

robustness check by constructing a comparable sample of non-injected banks based on propensity score (PS). The advantage of this matching analysis is that we do not impose the linier assumption, which may be viewed restrictive, on how the control variables captures the influence of the selection process.

We use propensity score matching to identify banks that, even though did not receive injection, are similar to injected banks across many dimensions. Notice that our goal is to find a more comparable sample of non-injected banks to injected banks. In this case, the propensity score provides an estimate of the likelihood of bank receiving a capital injection based on observables characteristics before the capital injection.

To estimate the propensity score, we use the following set of covariates: workers average age, return over assets, bank's size, number of workers and number of job applicants. It is important that we include pre-injection workers' average age in order to meet the selection-on-observables assumption (Dehejia and Wahba. 1999). That is, if we did not include pre-injection workers' average age we may be unable to capture the effect of some other unobservable confounders. Return over assets is included to ensure that the banks injected are being compared to banks of similar financial health in the pre-injection period. Bank size, measured as the natural logarithm of total assets as well as number of workers, allows us to match injected to non-injected banks in two different alternative dimensions of size. Number of job applicants, data aggregated over region guarantees that we compare capital injected banks to non-injected banks with similar labor supply conditions.

The pre-injection period is taken to be 1997 and 1998. Although some financial institutions received injection as early as the first quarter of 1998, several banks did not receive capital until the first quarter of 2000. Ideally, we want to estimate the propensity score for injected

and non-injected banks, in a period closed to the capital injection. We selected 1997 and 1998 since these are the two periods immediate before most capital injections occurred, and we could expect the capital injection to impact personnel policies with a lag for those that receive capital in early 1998. We use 2004 as the post-injection period. The choice of the post injection period is based on the average time of the injection years (7 years and 3 months). [9]

Figure 2 shows the age distribution of employees of injected and non-injected banks in the Pre-injection and Post-injection period in the matched sample (solid line non-injected, dotted line injected banks). The left panel shows how the distribution of the employees' age is very similar for both injected and non-injected banks in the pre-injection period. In contrast in the right panel, post-injection period, the distribution of the employees' age in the injected banks is centered at a lower age than the employees' age distribution of non-injected banks.[10] This further supports our initial findings that capital injected may have led to rejuvenation of the workforce at injected banks. In order to corroborate our results, in the next section we implement regression analysis using the matched sample.

4.1 Results on matched sample:

Using the banks' propensity score to determine a comparable sample of non-injected banks, we estimate the effect of "injection" and "repayment" on average employee's age and number employees (equations 2 and 3) on injected banks using a sample of 40 banks.[11]

[9] We used alternative years for both pre-injection and post injection periods and we obtained equivalent results.

[10] A t-test of mean differences of employee's average age of injected vs. non-injected banks in the post-injection period, indicates a statistically significant age difference of -1.2. Consistent with our initial regression analysis, employee's average age at injected banks declines by more than a year compared to employee's age at non-injected banks.

[11] For robustness, we estimate the main models with sample size of 30 and 50. We obtained similar results for all samples.

Table 6 reexamines the effect of injection on average employee's age in the restricted sample (equivalent to Table 3 for full sample). The results are broadly consistent with our previous findings, except that estimates tend to be less precise due to the smaller sample size. The coefficient for $INJcross_{t-3}$ indicates that the average employee's age at injected banks fell compared to non-injected banks. Since the significant coefficient on injection is -25.040 ($\hat{\alpha}_3$ in the first column in Table 6) and the mean value of $\frac{InjCap_i}{Asset_{it}}$ is 0.027, the average worker at injected banks was on average became 8 months younger than the non-injected banks. The results from the payback, $PAID_{i\,t-j}$, are now stronger. In all specifications the average employee's age at capital injected banks falls significantly more than non-injected banks. Adding the coefficients on $PAID_{i\,t-j}$ for t-1 through t-3 (-161.5 obtained from the first column in Table 6) and the mean value of $\frac{InjCap_i}{Asset_{it}}$ in this sample (0.027), we estimate that the average employee's age fell by 4.36 years at injected banks after the payment of capital.

Table 7 shows the results of the capital injection on the numbers of employees on unconsolidated basis. Consistent with our findings for the full sample the results suggest that capital injected banks reduced the number of workers during the injection and proceeded to hire workers after the government funds were paid. The result on consolidated basis in Table 8 is somewhat different from our results in Table 7. The coefficient on the second lag of injection is significant, albeit marginally at the 10 percent level, in the full specification (Column 1). Unlike previously, however, this coefficient is sensible to the choice of control variables, as other columns indicate. The repayment had significant positive effects on hiring. Therefore, the results from the restricted sample are consistent with our previous findings.

One may be concerned that the control variables are insufficient in capturing the selection into treatment. Particularly, the accounting measures of financial health may not be sufficient to

produce a comparable sample, if the degrees of financial window dressing differ across banks. If this is the case, the estimates may still confound the influence of market forces, which pushes weaker banks to remove older workers, unaccounted for by the accounting measures. To address this concern, we have added the change in the stock price as a market-based measure of financial health. If stock investors utilize qualitative information in making assessments on banks' health, we would expect that the movement of stock price should reflect such additional information. By including the change in stock price we would expect to obtain a more comparable sample. In implementation, we measured the change in stock prices over years 1997- 1998, and included it as an additional variable to compute propensity scores. The results were quantitatively similar to our findings on the original matched sample, suggesting that the accounting measures are capturing most of the variation in true performances.[12]

Our findings on the declining average employee's age and the faster employment rate after payment by injected banks support our main hypothesis: during the period of re-structuring after receiving capital injections, on average capital injected banks shed (or shifted to subsidiaries) older workers. After the repayment of the government funds, on average, capital injected banks hired younger employees. Furthermore, our results suggest that older workers that were initially shifted to subsidiaries during the re-structuring post-injection period, most likely did not return to the main bank after the capital injections were paid.

6. Conclusion

[12] Given their uniqueness, it may be hard to find a good match for some financial institutions . Yokohama bank, for example, is a regional bank but has an extensive branch network outside its main operating region. Yokohama Bank would therefore not have a directly comparable counterpart among a group of regional banks, but would look much different from large city banks. As an additional check, we have dropped Yokohama Bank, and have found the results to be quantitatively similar to the baseline results.

This paper empirically examined the demographic composition of bank employees to see whether the Japanese capital injection program induced injected banks to shed older employees. The main contribution of our paper is that we provide the first exploration of the relation between the bank capital injection and restructuring program, and workers' demographics. Our results support the following conclusions. First, injected banks tended to shed older workers at the time of the injection, most likely relocating many older workers to subsidiaries until they retired. Second, the lifetime-employment practice evolved at injected banks but not completely disappeared: Workers may not stay for life at a parent bank itself, but still many continue to work in the same corporate group, at a subsidiary. Third, after repayment of government funds injected banks were more likely to hire younger workers to replace the older workers shifted or transferred to subsidiaries. To the extent that the banking sector became high tech, a rejuvenation of the workforce may have resulted in productivity growth.

We interpreted the direction of causality as flowing from the injection program to the labor management and not vice versa. Our prior is that banks would have requested public funding out of financing consideration and regarded requirements on restructuring as being 'strings' attached in public assistance. We however acknowledge that the direction of causality may in part runs the other way. Possibly, bank managers viewed the injection program as an internal political tool which pushes workers into accepting otherwise resisted layoff plans. The corporate governance structure in Japan is such that the importance of workers as corporate stakeholders is higher than in a typical company in the Anglo-Saxon countries. Our analysis permits an interpretation that the manager applied for the injection program in part to facilitate layoffs, and that the constraint was not as exogenously as it appears to be. The

determinants of the capital injection request were not in the scope of this paper but would be an interesting topic for further investigation.

Finally, our empirical analysis is based on bank-level employee characteristics. Ideally, we would like to have employee-level panel data that would us to track relocation of employees within a banking group. Such future work would be of interests.

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Figure 1
Average employees' age for four banks

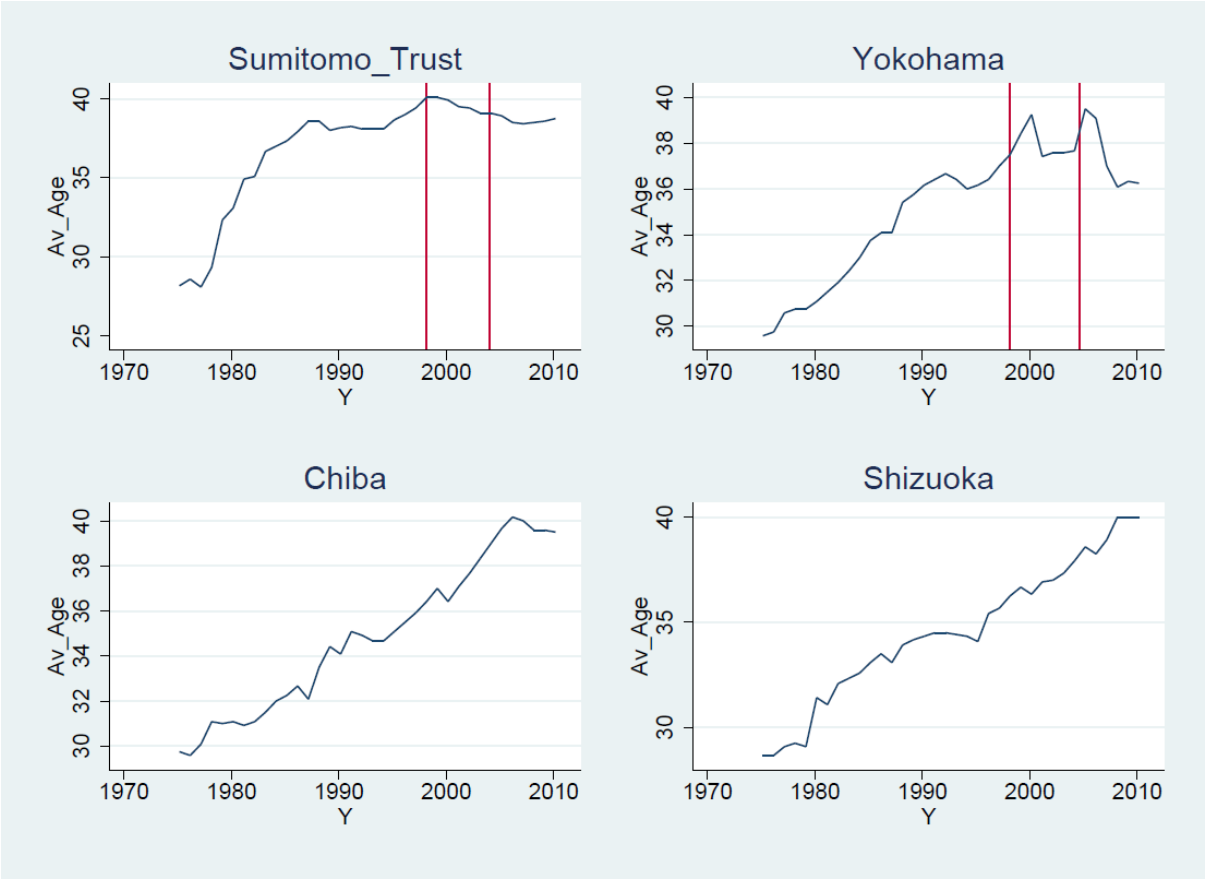
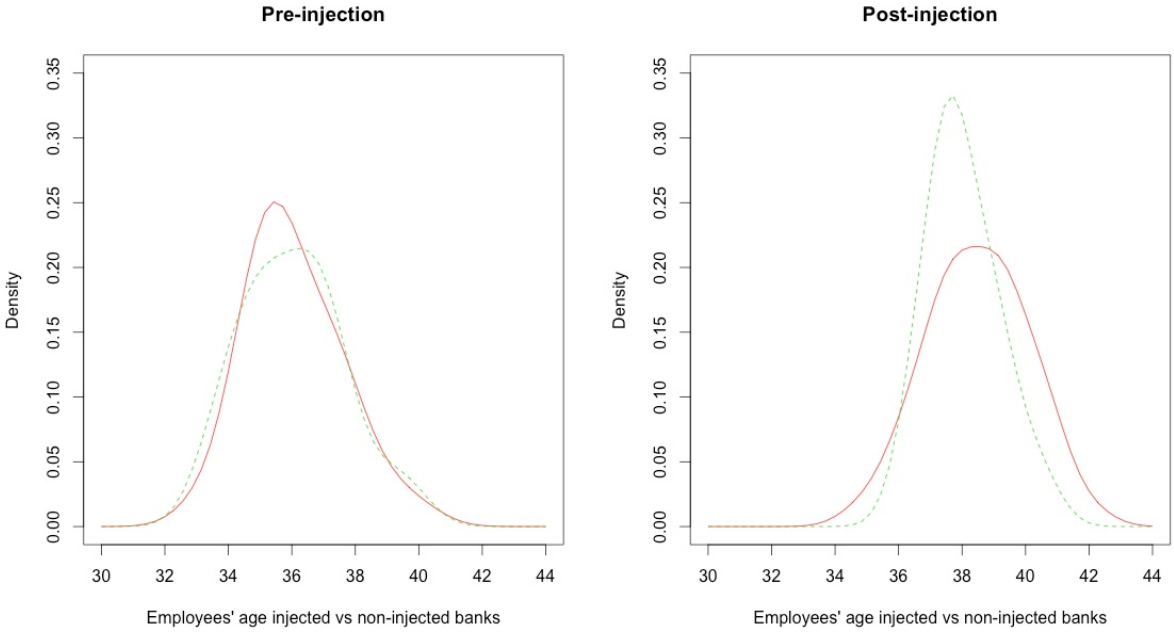


Figure 2
Employees' age injected versus non-injected banks



Note: injected banks solid line, non-injected banks dotted line

Table 1
Summary statistics

Variable		*Mean*	*Std. Dev.*	*Min*	*Max*	*Obs*
Av. Age	*level*	37.079	2.199	30.917	43.667	*2352*
$\frac{InjCap_i}{Asset_{it}}$	*ratio*	0.023	0.012	0.006	0.067	*263*
Control Variables (Bank specific factors)						
No. Employees ^{UN}	*logarithm*	7.482	0.807	5.652	10.460	*2352*
No. Employees ^{CON}	*logarithm*	7.520	0.853	5.872	11.004	*1228*
Salary	*logarithm*	9.454	0.908	7.425	12.663	*2352*
Total Asset	*logarithm*	14.641	1.208	12.303	18.852	*2352*
ROA	*raio*	0.045	1.049	-25.333	1.603	*2352*
Control Variables (Regional labor market factors)						
Job Applicants	*logarithm*	10.759	0.897	8.586	12.517	*2352*
Wage	*logarithm*	6.108	0.104	5.776	6.406	*2352*

Table 2

	Injection (yyyymm)	Repayment (yyyymm)	Time to repayment (years)
TOKYO-MITSUBISHI UFJ	199803	200002	1.92
MITSUBISHI UFJ TRUST	199803	200101	2.83
SUMITOMO TRUST&BANK	199803	200401	5.83
YACHIYO BANK	200009	200603	5.50
KYUSHU BANK	200203	200802	5.92
BANK OF YOKOHAMA	199803	200408	6.42
MIZUHO TRUST & BANK	199803	200409	6.50
MOMIJI BANK	199909	200512	6.25
KUMAMOTO FAMILY BANK	200002	200605	6.25
IND.BANK OF JAPAN	199803	200508	7.42
ASHIKAGA BANK	199803	200602	7.92
MITSUI TRUST & BANK	199803	200503	7.00
ASAHI BANK	199803	200510	7.58
MIZUHO BANK	199803	200607	8.33
MIZUHO CORPORATE BAN	199803	200607	8.33
UFJ BANK	199803	200605	8.33
TOKAI BANK	199803	200606	8.25
UFJ TRUST BANK	199803	200606	8.25
SAKURA BANK	199803	200610	8.58
CHUO MITSUI TRUST	199803	200607	8.33
FUKUOKA CITY BANK	200201	201007	8.50
HOKKAIDO BANK	200003	200908	9.42
GIFU BANK	200104	201012	9.67
BANK OF THE RYUKYUS	199909	201007	10.83
HIGASHI NIPPON BANK	200103	201103	10.00
HOKURIKU BANK	199803	200907	11.33
RESONA BANK	199803		
SHINSEI BANK	199803		
AOZORA BANK	199803	Unpaid	
CHIBA KOGYO BANK	200009		
KINKI OSAKA BANK	200104		
AVERAGE (REPAYERS)			7.52 (≒7 yr. and 6 mo.)

Table 3
Effects of capital injection and payback on the average age of workers

Equation	(1)	(1)	(1)	(1)	(1)	(1)	(1)
$INJcross_{t-0}$	-8.712*	-8.876*	-10.123**	-9.461*	-7.886*	-8.694*	-8.410*
	(3.978)	(3.631)	(3.732)	(3.749)	(3.592)	(3.510)	(3.574)
$INJcross_{t-1}$	-12.333	-3.932	-5.174	-12.024	-3.409	-3.484	-3.229
	(9.349)	(7.033)	(6.860)	(9.452)	(6.974)	(6.974)	(6.947)
$INJcross_{t-2}$	-21.771*	-20.775*	-21.957*	-22.615*	-20.220+	-19.751+	-20.044+
	(10.453)	(10.115)	(9.645)	(10.523)	(10.305)	(10.358)	(10.403)
$INJcross_{t-3}$	-21.608**	-18.469**	-21.025**	-21.830**	-17.487**	-16.896**	-17.561**
	(6.476)	(5.787)	(6.000)	(6.225)	(5.814)	(5.726)	(5.824)
$PAIDcross_{t-0}$	10.944	12.123	10.710	9.361	12.926	14.097	12.986
	(13.282)	(14.587)	(14.452)	(13.320)	(14.801)	(15.009)	(14.792)
$PAIDcross_{t-1}$	-21.584+	-23.776*	-24.522*	-25.090*	-22.944*	-20.990*	-22.815*
	(11.430)	(9.920)	(10.429)	(11.426)	(9.577)	(9.620)	(9.571)
$PAIDcross_{t-2}$	-42.322	-48.286+	-47.219+	-47.457+	-47.819+	-45.490+	-47.839+
	(28.454)	(26.955)	(27.792)	(28.531)	(26.571)	(26.302)	(26.493)
$PAIDcross_{t-3}$	-21.660	-25.427	-25.470	-24.674	-25.218	-23.698	-25.132
	(22.360)	(21.242)	(21.792)	(22.632)	(20.953)	(20.454)	(20.913)
Lag of dep. var.	0.751**	0.778**	0.769**	0.759**	0.782**	0.779**	0.782**
	(0.032)	(0.031)	(0.031)	(0.032)	(0.031)	(0.031)	(0.031)
Salary	0.567**	-0.163					
	(0.192)	(0.136)					
Asset	-0.261		-0.462**				
	(0.207)		(0.155)				
$Employees^{UN}$	-1.040**			-0.709**			
	(0.293)			(0.191)			
ROA	0.011				0.006		
	(0.014)				(0.011)		
Job Applicants	0.494*					0.404+	
	(0.212)					(0.214)	
Nominal Wage	-0.112						0.021
	(0.294)						(0.296)
Constant	10.698*	9.346**	14.856**	13.878**	7.662**	3.610	7.549**
	(4.550)	(1.832)	(2.775)	(2.095)	(1.091)	(2.370)	(2.214)
Observations	2,352	2,357	2,359	2,354	2,359	2,359	2,359
R-squared	0.897	0.894	0.895	0.896	0.894	0.895	0.894
Number of banks	172	173	173	172	173	173	173

Notes: Robust standard errors in parentheses. Sample Period: FY1999-FY2010 (March 2000-March2011). ** p<0.01, * p<0.05, + p<0.1

Table 4
Effect of Capital Injection and Payback on the number of employees (Unconsolidated Basis)

Equation	(2)	(2)	(2)	(2)	(2)	(2)	(2)
$INJcross_{t-0}$	0.032	-0.374	-0.786	-0.753+	-0.487	-0.982*	-1.021*
	(0.336)	(0.327)	(0.641)	(0.382)	(0.403)	(0.470)	(0.473)
$INJcross_{t-1}$	-1.173	-1.178	-2.429+	-1.720+	-2.796*	-2.624*	-2.670*
	(0.949)	(0.939)	(1.344)	(0.990)	(1.255)	(1.271)	(1.269)
$INJcross_{t-2}$	-1.098**	-0.709*	-0.424	-1.326**	-0.602	-0.542	-0.510
	(0.383)	(0.342)	(0.494)	(0.263)	(0.451)	(0.470)	(0.471)
$INJcross_{t-3}$	-1.950**	-2.085**	-1.187	-2.747**	-1.712*	-1.802*	-1.726*
	(0.687)	(0.730)	(0.758)	(0.738)	(0.796)	(0.828)	(0.829)
$PAIDcross_{t-0}$	2.386**	2.464**	2.396**	2.630**	2.426**	2.371**	2.507**
	(0.679)	(0.633)	(0.709)	(0.733)	(0.669)	(0.657)	(0.665)
$PAIDcross_{t-1}$	2.957	2.932+	2.893+	3.055	2.830+	2.706+	2.932+
	(1.807)	(1.507)	(1.493)	(1.856)	(1.493)	(1.520)	(1.511)
$PAIDcross_{t-2}$	3.373*	4.039*	3.607+	3.704*	4.066*	3.757+	4.053*
	(1.683)	(1.857)	(1.943)	(1.792)	(1.875)	(1.913)	(1.937)
$PAIDcross_{t-3}$	2.774**	3.358**	3.126**	2.872**	3.165**	3.086**	3.289**
	-0.438	(0.537)	(0.511)	(0.374)	(0.482)	(0.472)	(0.504)
Lag of dep. var.	0.733**	0.784**	0.852**	0.918**	0.930**	0.929**	0.927**
	(0.038)	(0.036)	(0.022)	(0.015)	(0.011)	(0.012)	(0.012)
Salary	0.154**	0.174**					
	(0.031)	(0.035)					
Asset	0.076**		0.102**				
	(0.022)		(0.033)				
Av. Age	-0.007**			-0.007**			
	(0.001)			(0.001)			
ROA	0.003**				0.005**		
	(0.001)				(0.001)		
Job Applicants	-0.003					-0.048**	
	(0.011)					(0.012)	
Nominal Wage	0.001						-0.005
	(0.022)						(0.022)
Constant	-0.247	-0.051	-0.425	0.895**	0.509**	1.036**	0.557**
	(0.376)	(0.146)	(0.394)	(0.137)	(0.081)	(0.162)	(0.141)
Observations	2,352	2,464	2,472	2,354	2,472	2,472	2,472
R-squared	0.958	0.953	0.948	0.948	0.946	0.945	0.945
Number of banks	172	175	175	172	175	175	175

Notes: Robust standard errors in parentheses. Sample Period: FY1999-FY2010 (March 2000-March2011). ** p<0.01, * p<0.05, + p<0.1

Table 5
Effect of Capital Injection and Payback on the number of employees (Consolidated Basis)

Equation	(3)	(3)	(3)	(3)	(3)	(3)	(3)
INJcross $_{t-2}$	0.458	1.758	-0.816	0.857	1.016	0.938	0.908
	(1.173)	(1.363)	(1.519)	(1.370)	(1.410)	(1.367)	(1.400)
INJcross $_{t-3}$	-1.307	-0.726	-1.931+	-1.753+	-1.609	-1.561	-1.540
	(1.028)	(1.424)	(1.058)	(0.987)	(1.171)	(1.125)	(1.133)
PAIDcross $_{t-0}$	0.539	-1.146	-1.292	-0.535	-2.034	-2.176	-2.082
	(1.236)	(1.639)	(1.467)	(1.850)	(1.927)	(1.957)	(1.943)
PAIDcross $_{t-1}$	2.409+	0.519	0.377	1.582	0.097	-0.138	0.061
	(1.287)	(1.475)	(1.348)	(2.353)	(1.865)	(1.918)	(1.879)
PAIDcross $_{t-2}$	1.515	2.116	0.171	3.172*	2.312*	2.110*	2.347*
	(1.190)	(1.350)	(1.151)	(1.472)	(0.939)	(0.902)	(0.919)
PAIDcross $_{t-3}$	6.869+	6.957*	6.153+	8.340+	7.700*	7.517*	7.647*
	(4.083)	(3.398)	(3.318)	(4.341)	(3.462)	(3.500)	(3.455)
Lag of dep. var.	0.204	0.285	0.280	0.298	0.352+	0.353+	0.353+
	(0.152)	(0.183)	(0.183)	(0.194)	(0.205)	(0.204)	(0.204)
Salary	0.318**	0.401**					
	(0.063)	(0.091)					
Asset	0.346**		0.490**				
	(0.103)		(0.122)				
Av. Age	-0.016**			-0.022**			
	(0.005)			(0.007)			
ROA	-0.002				-0.003		
	(0.005)				(0.007)		
Job Applicants	0.002					-0.049	
	(0.030)					(0.037)	
Nominal Wage	0.025						0.006
	(0.046)						(0.048)
Constant	-1.637	1.615*	-1.836+	6.135**	4.856**	5.395**	4.815**
	(1.626)	(0.709)	(0.999)	(1.699)	(1.529)	(1.630)	(1.527)
Observations	1,107	1,212	1,215	1,109	1,215	1,215	1,215
R-squared	0.671	0.621	0.597	0.543	0.522	0.523	0.522
Number of banks	147	150	150	147	150	150	150

Notes: Robust standard errors in parentheses. Sample Period: FY1999-FY2010 (March 2000-March2011). ** p<0.01, * p<0.05, + p<0.1

Table 6
Effects of capital injection and payback on the average age of workers (non-injected bank sample based on PSM)

Equation	(1)	(1)	(1)	(1)	(1)	(1)	(1)
$INJcross_{t-0}$	11.903	-10.281	-6.081	-7.765	10.324	-9.206	-8.556
	(21.052)	(16.476)	(13.737)	(17.638)	(18.296)	(15.670)	(15.827)
$INJcross_{t-1}$	34.942	17.820	19.254	35.400	20.480+	19.998+	20.426+
	(22.294)	(12.888)	(11.978)	(22.191)	(11.452)	(11.660)	(11.912)
$INJcross_{t-2}$	-15.363	-13.526	-14.355	-14.844	-13.651	-11.289	-11.562
	(16.742)	(15.475)	(15.179)	(16.170)	(16.476)	(16.171)	(16.052)
$INJcross_{t-3}$	-25.040**	-22.503**	-23.857**	-25.256**	-21.767**	-19.981**	-20.579**
	(3.686)	(3.172)	(2.981)	(3.508)	(2.956)	(2.919)	(2.822)
$PAIDcross_{t-0}$	18.968	20.065	21.063	15.599	23.851	24.728	23.787
	(31.674)	(32.273)	(32.580)	(30.641)	(32.838)	(33.279)	(32.758)
$PAIDcross_{t-1}$	-33.220**	-35.733**	-35.029**	-37.343**	-32.275**	-30.713**	-32.463**
	(6.297)	(6.673)	(6.954)	(5.174)	(6.880)	(7.494)	(6.778)
$PAIDcross_{t-2}$	-84.708**	-92.439**	-89.989**	-90.608**	-89.090**	-87.295**	-89.300**
	(13.969)	(11.981)	(13.783)	(12.614)	(12.673)	(11.771)	(12.360)
$PAIDcross_{t-3}$	-43.623**	-46.653**	-46.675**	-46.654**	-44.502**	-42.776**	-44.671**
	(11.796)	(10.468)	(11.364)	(10.958)	(10.641)	(10.396)	(10.568)
Lag of dep. var.	0.787**	0.829**	0.814**	0.796**	0.838**	0.831**	0.836**
	(0.036)	(0.032)	(0.031)	(0.033)	(0.032)	(0.034)	(0.033)
Salary	0.442	-0.315					
	(0.348)	(0.216)					
Asset	-0.220		-0.493*				
	(0.274)		(0.197)				
$Employees^{UN}$	-1.076+			-0.940**			
	(0.547)			(0.287)			
ROA	0.038				0.042+		
	(0.023)				(0.022)		
Job Applicants	0.499					0.472	
	(0.399)					(0.408)	
Nominal Wage	-0.360						0.009
	(0.545)						(0.608)
Constant	12.065+	9.632**	14.580**	14.884**	6.296**	1.370	6.316
	(6.436)	(2.489)	(3.548)	(2.893)	(1.270)	(4.268)	(4.135)
Observations	713	714	714	713	714	714	714
R-squared	0.919	0.916	0.917	0.918	0.916	0.916	0.915
Number of banks	40	40	40	40	40	40	40

Notes: Robust standard errors in parentheses. Sample Period: FY1999-FY2010 (March 2000-March 2011). ** p<0.01, * p<0.05, + p<0.1

Table 7
Effect of Capital Injection and Payback on the number of employees (non-injected bank sample based on PSM. Unconsolidated Basis)

Equation	(2)	(2)	(2)	(2)	(2)	(2)	(2)
$INJcross_{t-0}$	0.674	-0.907	-3.802+	-1.817	-1.866	-3.408+	-3.528+
	(0.806)	(0.943)	(1.980)	(1.373)	(1.843)	(1.885)	(1.870)
$INJcross_{t-1}$	-5.352*	-6.033*	-8.278**	-6.064*	-8.329**	-8.298**	-8.372**
	(2.340)	(2.736)	(1.769)	(2.928)	(1.789)	(1.829)	(1.811)
$INJcross_{t-2}$	-2.337**	-1.636**	0.328	-1.738**	0.316	0.335	0.391
	(0.468)	(0.355)	(0.763)	(0.374)	(0.714)	(0.687)	(0.722)
$INJcross_{t-3}$	-1.187**	-1.021*	-0.479	-1.722**	-0.747	-0.776	-0.661
	(0.407)	(0.479)	(0.885)	(0.496)	(0.863)	(0.878)	(0.882)
$PAIDcross_{t-0}$	0.842*	1.702**	0.885*	0.855*	1.276**	1.034**	1.245**
	(0.395)	(0.574)	(0.396)	(0.328)	(0.265)	(0.328)	(0.299)
$PAIDcross_{t-1}$	1.766*	2.724**	1.994**	1.616**	2.280**	1.933**	2.231**
	(0.661)	(0.847)	(0.598)	(0.411)	(0.435)	(0.510)	(0.465)
$PAIDcross_{t-2}$	4.790**	6.672**	5.769**	4.929*	6.269**	5.868**	6.245**
	(1.478)	(1.090)	(1.832)	(1.927)	(1.762)	(1.727)	(1.777)
$PAIDcross_{t-3}$	1.607**	3.300**	2.765**	1.574**	2.955**	2.559**	2.938**
	(0.473)	(0.485)	(0.324)	(0.498)	(0.316)	(0.333)	(0.337)
Lag of dep. var.	0.769**	0.848**	0.907**	0.937**	0.962**	0.956**	0.960**
	(0.036)	(0.035)	(0.022)	(0.023)	(0.018)	(0.018)	(0.018)
Salary	0.146**	0.145**					
	(0.021)	(0.026)					
Asset	0.053*		0.052*				
	(0.024)		(0.020)				
Av. Age	-0.008**			-0.008**			
	(0.002)			(0.002)			
ROA	0.004**				0.004*		
	(0.001)				(0.002)		
Job Applicants	0.004					-0.070**	
	(0.019)					(0.018)	
Nominal Wage	-0.007						-0.020
	(0.042)						(0.044)
Constant	-0.152	-0.211	-0.060	0.776**	0.300*	1.137**	0.444
	(0.520)	(0.197)	(0.234)	(0.218)	(0.134)	(0.246)	(0.293)
Observations	713	743	747	713	747	747	747
R-squared	0.977	0.974	0.970	0.972	0.970	0.970	0.969
Number of banks	40	40	40	40	40	40	40

Notes: Robust standard errors in parentheses. Sample Period: FY1999-FY2010 (March 2000-March2011). ** p<0.01, * p<0.05, + p<0.1

Table 8
Effect of Capital Injection and Payback on the number of employees (non-injected bank sample based on PSM. Consolidated Basis)

Equation	(3)	(3)	(3)	(3)	(3)	(3)	(3)
$INJcross_{t-2}$	1.775+	2.387+	0.955	1.517	1.614	1.627	1.590
	(1.029)	(1.364)	(1.190)	(0.931)	(1.273)	(1.213)	(1.239)
$INJcross_{t-3}$	-0.440	0.150	-1.040	-1.047*	-0.720	-0.795	-0.744
	(0.530)	(0.683)	(0.665)	(0.403)	(0.641)	(0.623)	(0.610)
$PAIDcross_{t-0}$	1.167	0.991	-0.439	0.049	-0.583	-0.764	-0.594
	(1.173)	(0.971)	(0.903)	(1.289)	(1.036)	(0.978)	(1.008)
$PAIDcross_{t-1}$	1.651+	1.685*	0.614	0.450	0.238	-0.076	0.166
	(0.946)	(0.820)	(1.042)	(1.190)	(1.041)	(1.006)	(0.964)
$PAIDcross_{t-2}$	6.320*	7.433*	5.711*	5.347+	6.277*	5.908+	6.383*
	(2.816)	(3.118)	(2.403)	(2.645)	(2.883)	(2.953)	(2.953)
$PAIDcross_{t-3}$	4.107**	5.213**	4.575**	3.802**	4.880**	4.516**	4.717**
	(0.792)	(0.662)	(0.430)	(0.539)	(0.460)	(0.491)	(0.543)
Lag of dep. var.	0.691**	0.734**	0.731**	0.762**	0.792**	0.783**	0.795**
	(0.033)	(0.026)	(0.037)	(0.027)	(0.051)	(0.047)	(0.046)
Salary	0.184**	0.223**					
	(0.049)	(0.039)					
Asset	0.087		0.182**				
	(0.063)		(0.055)				
Av. Age	-0.011*			-0.016**			
	(0.004)			(0.004)			
ROA	-0.000				0.001		
	(0.004)				(0.004)		
Job Applicants	-0.015					-0.107*	
	(0.031)					(0.049)	
Nominal Wage	-0.126+						-0.192*
	(0.073)						(0.084)
Constant	0.636	-0.076	-0.653	2.379**	1.609**	2.894**	2.766**
	(0.835)	(0.391)	(0.921)	(0.242)	(0.393)	(0.708)	(0.669)
Observations	360	388	388	360	388	388	388
R-squared	0.792	0.792	0.777	0.772	0.768	0.772	0.772
Number of banks	40	40	40	40	40	40	40

Notes: Robust standard errors in parentheses. Sample Period: FY1999-FY2010 (March 2000-March 2011). ** p<0.01, * p<0.05, + p<0.1