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Does Indonesia Have a “Low-Pay” Civil Service?

*Deon Filmer**David L. Lindauer*

Indonesia has long been characterized as having a “low-pay civil service,” which is in turn used to explain corruption at various levels of government. Analysis of individual and household level data show that the earnings of government employees, on average, is comparable to what they might earn in the private sector. Changing the structure of compensation may be an important part of civil service reform, but should not be seen as the main instrument to address corruption.

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Summary findings

Government officials and policy analysts maintain that Indonesia's civil servants are poorly paid and have been for decades. This conclusion is supported by anecdotal evidence and casual empiricism. Filmer and Lindauer systematically analyze the relationship between government and private compensation levels using data from two large household surveys carried out by Indonesia's Central Bureau of Statistics: the 1998 Sakernas and 1999 Susenas. The results suggest that government workers with a high school education or

less, representing three-quarters of the civil service, earn a pay premium over their private sector counterparts. Civil servants with more than a high school education earn less than they would in the private sector but, on average, the premium is far smaller than commonly is alleged and is in keeping with public/private differentials in other countries. These results prove robust to varying econometric specifications and cast doubt on low pay as an explanation for government corruption.

This paper—a product of Public Service Delivery, Development Research Group—is part of a larger effort in the group to understand ways to improve the delivery of public services. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The authors may be contacted at dfilmer@worldbank.org or dlindauer@wellesley.edu. June 2001. (18 pages)

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Deon Filmer

Development Research Group

World Bank

David L. Lindauer

Wellesley College

The authors thank Barbara Nunberg who oversaw the study that generated this work, as well as Jere Behrman and Martín Rama for comments. Deon Filmer is an Economist at the World Bank. David L. Lindauer is Stanford Calderwood Professor of Economics at Wellesley College. The findings, interpretations, and conclusions expressed in this paper are entirely those of the author(s) and do not necessarily represent the views of the World Bank, its Executive Directors, or the countries they represent. Working papers describe research in progress by the author(s) and are published to elicit comments and to further debate.

I. Introduction

Among academic writers and policy makers alike, Indonesia has been characterized as having a “low pay” civil service. This is a long maintained and widely shared view. Smith (1975), referring to the situation in 1970, suggests that “Indonesian public officials are among the most poorly paid in the world” with official salaries covering only half of “essential minimal monthly needs” (pp. 722-23). Smith goes on to cite low salary levels as a key determinant of government corruption. Gray (1979), also referring to the 1970s, “wonder[s] how Indonesian civil servants survive ... if [the civil servant] confines himself to the [official] nominal salary plus automatic cash supplements” (p. 85). Gray documents sources of illegal income for public officials but is more circumspect than Smith about the causal connection between low salaries and corruption.

The pay situation of Indonesian civil servants in 1984 is considered by Wirutomo (1991) who finds pay parity between private and government compensation for relatively unskilled workers (Rank I) but a growing pay differential in favor of the private sector at higher skills. At Rank II the private to government pay ratio is 2.7:1 and at Rank IV, the highest government rank, the ratio rises to 5.2:1. A recent report by the World Bank for the Consultative Group on Indonesia (World Bank 2000) paints a similar picture for the late 1990s, with a growing government/private pay gap at the highest ranks. The report finds that “[w]here civil service clerks make about half that of their private sector counterparts, director-generals make one-tenth to one-fifteenth” (p. 14).

Indonesian government officials share similar views. A 1970 commission, the Committee of Four, attributed widespread public corruption to low salaries.¹ Articles in the Singaporean newspaper, the *Straits Times* (March 30 and April 4, 2000), suggest similar views are held by contemporary policy makers and were the basis for the huge increase in allowances, amounting to as much as 1000 percent, given to some structural staff in April 2000.²

The claim that Indonesian civil servants are low paid, though widespread, raises many questions. Salaries may be low, but relative to what or whom? Are government salaries low relative to international levels or to domestic alternatives? With a civil service, including the armed services and police, of over 4.6 million, are all low paid or only those at higher ranks? Beyond these matters of fact, the consequences of low pay warrant further scrutiny. Is low pay a primary determinant of corruption?

¹ Cited in Smith (1975).

² In addition to Rank, Indonesian civil servants may be classified as Functional or Structural staff. Functional positions refer primarily to professionals. Structural staff, who in addition to their civil service Rank are designated by Echelon, occupy the top managerial positions and amount to about ten percent of all civil servants.

II. Evidence on Pay Levels

Belief in the inadequacy of government compensation may be widespread but the evidence to substantiate this claim has been equally inadequate. Anecdotal evidence abounds. Civil servants, especially in the managerial and professional ranks, often claim to know people with similar qualifications who earn multiples of their salaries in the private sector. Academic studies and policy analyses attest to more rigorous comparisons. Smith (1975) conducted a survey of almost six hundred government officials and asked them to estimate their monthly expenditure needs. On average, such needs fell well below official salaries. Clark and Oey-Gardiner (1991) employ a similar methodology in their analysis of faculty compensation at Indonesia's public universities. They compare official salaries with a respondent's identification of "income needed" and conclude that government pay is below prevailing market wages. But such comparisons are not a robust way of determining the adequacy of government pay. Expenditure behavior is not exogenous to earnings. If expenditures exceed official income, this may reflect opportunities, both legal and illegal, civil servants face for securing other sources of income rather than any inadequacy of government pay.

The studies by Wirutomo (1991) and the World Bank (2000) employ a different comparison than the one used by Smith (1975) and Clark and Oey-Gardiner (1991). The former studies compare government pay at different salary ranks to compensation offered by a sample of private establishments. Wirutomo reports the comparison group as "big private firms" visited by the author. The World Bank study employs a pay survey undertaken by Watson Wyatt, an international human resource-consulting firm. The Watson Wyatt data were compiled from a survey of 79 companies in Jakarta, of whom 77 were multinationals, mostly North American or European, and 80 percent were in banking, information technology, insurance, or pharmaceuticals. Such a narrow sample of firms should not be considered as representative either of domestic firms or of the labor market alternatives facing most Indonesian civil servants.

Given the basis for comparison, it is not surprising that earlier studies conclude that Indonesia's civil servants are low paid and lag behind the compensation of their counterparts in the private sector. It is a well-known result, after adjusting for worker education and experience, that multinationals and large domestic concerns pay higher wages than do domestic or smaller enterprises, *ceteris paribus*.³ Why such firms pay a premium for workers is a subject of some debate (Jenkins 1990). Multinationals, large domestic firms, and many state-owned enterprises usually have considerable ability-to-pay to their employees. This is because of the economic rents these firms often enjoy due to protected product markets or economies-of-scale. Such firms may use these rents to

³ Graham (2000) reviews cross-country evidence of the superior pay offered by multinationals as compared to domestic prevailing wages.

compensate workers in excess of market wages in the hope of attracting and retaining the best workers (an efficiency wage explanation), in order to minimize labor unrest in their operations, or in response to direct government pressure. The superior compensation received by Indonesian employees of foreign and large domestic firms may even indicate that such firms pay “too much” relative to the reservation wages of their employees. It is harder to argue that previous studies provide reliable evidence that civil servants receive “too little”.

An alternative approach to evaluating the relative position of government pay within the Indonesian wage structure is to analyze data from Indonesia’s labor force (Sakernas) and household expenditure (Susenas) surveys, both undertaken annually by the government’s statistical bureau, Badan Pusat Statistik (BPS). These are both large household surveys, which identify if an individual’s primary employment is in government or the private sector, and which provide information on monthly earnings, on education and experiences, and on other human capital attributes. Surprisingly, these surveys do not appear previously to have been used for evaluating the relationship between government compensation and prevailing market wages.

III. Estimates of Government versus Private Sector Pay from Sakernas

Indonesian wage earners represent about one third of the nation’s labor force of 90 million. The remaining two thirds of the labor force primarily is self-employed or family workers engaged in agriculture or the informal sector. Among wage earners, roughly 4.6 million are civil servants or work for the Armed Services or police.⁴

Earnings and other data from Sakernas are drawn from a representative national sample of 50,000 households. In the 1998 survey, there were almost 28,000 observations on individual wage earners of which 16.7 percent had a primary sector of economic activity identified as “Government or Defense Service.” Earnings information is obtained from the response to the question “What is the average net monthly income that you receive from your primary activity/job? [“Berapa upah/gaji bersih yang biasanya diterima selama sebulan dari pekerjaan utama?”]” adding both compensation in cash as well as in kind.

Table 1 presents a comparison of government and private pay by education. On average, government earnings at 414,000 rps./month *exceeds* the national, non-government average of 274,000 rps./month. This is not surprising since government is more education-intensive than the private wage sector. (In the Sakernas sample, 49

⁴ Estimates of the size of the labor force and of the number of wage earners refer to 1999 and are based on Sakernas as reported in *Labor Force Situation in Indonesia*, Badan Pusat Statistik (1999), Table 15.9. Government employment is drawn from independent estimates provided by the State Personnel Administration Board (BKN) and the Ministry of Finance.

percent of workers that are engaged in the private wage sector have a primary education or less, as compared to only 5 percent for workers employed by government.) When disaggregated by education level, a government pay premium remains at lower education levels; close to pay parity is achieved for graduates of senior high school; and a private sector premium emerges for those with some tertiary education (“Diploma I/II” or “Akademi/Diploma III”) or a university degree (“Universitas/Diploma IV”).

**Table 1: Monthly Earnings by Education Level , 1998
(percent of wage earners in category)**

<i>Education Level</i>	<i>Earnings, '000 rupiahs/month (percent)</i>		
	<i>Private Sector</i>	<i>Government</i>	<i>Private to Government Pay Ratio</i>
Primary or Lower	192 (42.2)	290 (0.7)	0.7:1
Junior High School	239 (13.7)	379 (1.2)	0.6:1
Senior High School	337 (23.5)	392 (8.2)	0.9:1
Some Tertiary	530 (3.2)	458 (2.0)	1.2:1
University or Higher	771 (3.3)	520 (2.1)	1.5:1
ALL LEVELS	274 (85.8)	414 (14.2)	0.7:1

Source: Authors' analysis of Sakernas, 1998.

Three conclusions emerge from this simple comparison of mean earnings. First, the overwhelming majority of government workers do not receive “low pay” as compared to their private sector counterparts. Close to three-quarters of all civil servants have a high school degree or less and this group earns either comparable amounts or more than the prevailing pay of similarly educated workers in the private sector. Second, better-educated civil servants in 1998 did earn less than prevailing market wages, but the pay ratio between the private and public sector for this higher education cohort was on the order of 1.2 to 1.5:1. This ratio is well below the amounts reported in earlier studies, which were based on much narrower samples of private sector jobs and, hence, market opportunities. Third, the pattern of government pay exceeding private compensation for less educated workers and private pay exceeding government compensation for more educated workers – the problem of government salary compression – is a pattern common to other civil services (Nunberg 1994). Indonesia's situation does not appear unique.

Sakernas is a rich data set and it is possible to estimate a more complete comparison of government and private pay based on worker attributes including not only education, but an individual's age, gender and location. These additional attributes commonly are found as significant determinants of earnings. Tables 2, 3 and 4 present

regression estimates that include these variables. The results confirm the basic findings reported in the simple comparisons of means in Table 1.

In Table 2, following standard human capital theory, a semi-logarithmic earnings equation is estimated. The dependent variable is the natural logarithm of monthly earnings (E) of individual i and the independent variables include age (A) and age-squared to account for the expected curvature in age-earnings profiles. Five discrete categories of education are included (S_2 to S_6). The omitted category is less than completed primary education. Specifications also include the following dummy variables: Government (G , 1=Government and Defense Services; 0=all other), gender (M , 1=male; 0=female), and urban (U , 1=urban; 0=rural):

$$\text{Log}(E_i) = \alpha_c + \alpha_a \times A_i + \alpha_{a2} \times A_i^2 + \sum_{s=2,6} \beta_s \times S_{s,i} + \delta_g \times G_i + \delta_m \times M_i + \delta_u \times U_i + \varepsilon_i \quad (1)$$

Age and age-squared have the expected signs and high degrees of significance. Education variables exhibit increasing and significant earnings differentials associated with higher levels of schooling. Men earn a significant premium over women, as do urban over rural wage workers. In the estimation on the entire wage sector, government workers, on average, earn an estimated *pay premium* over the private sector, *ceteris paribus*, of about 10 percent.⁵ If the sample is restricted to urban employees only, the magnitude and significance of the coefficients on age, education and gender remain roughly the same. However, the government premium is indistinguishable from zero. In other words, among urban employees, government and non-government workers, on average, have the same reported earnings from their primary job, holding constant human capital characteristics.

⁵ In a semi-logarithmic equation the coefficient on a dummy variable cannot be interpreted as the relative effect of the variable on the dependent variable. Instead, in order to calculate the relative effect, γ , the coefficient, α , must be transformed according to $\gamma = e^\alpha - 1$. When the coefficient on a dummy variable is close to zero, the coefficient is a close approximation of the relative effect. See Halvorsen and Palmquist (1980) for a complete derivation.

Table 2: The Determinants of Monthly Earnings of Indonesia's Wage Employees, 1998

Variables	All Wage Employees		Urban Employees Only	
	Coefficient	(t-Statistic)	Coefficient	(t-Statistic)
Constant	10.41	(192.1)	10.42	(143.5)
Age	0.04	(15.9)	0.05	(13.8)
(Age) ²	-0.0004	(-11.5)	-0.0004	(-9.0)
EDUCATION				
Primary	0.32	(17.4)	0.34	(12.4)
Junior High School	0.53	(26.0)	0.55	(18.1)
Senior High School	0.82	(39.9)	0.86	(28.7)
Some Tertiary	1.16	(41.5)	1.21	(31.5)
University	1.26	(33.9)	1.33	(29.3)
DUMMY VARS				
Government	0.10	(5.7)	0.002	(0.1)
Male	0.40	(33.6)	0.31	(22.6)
Urban	0.15	(10.9)	-	-
# Observations	27,759		16,366	
R ²	0.39		0.39	
F	652.4 (10,1027)		383.3 (9,598)	

Source: Authors' analysis of Sakernas, 1998.

There are two possible reasons for the difference in the Government coefficient in the entire wage sector versus the urban only samples. First, the entire wage sector sample includes rural wage workers – primarily plantation labor – who tend to earn lower wages than their urban counterparts. Second, central government employees are covered by a unified salary structure that does not differentiate on the basis of rural or urban location. If parity in pay holds in the urban sample, the same would not be expected in the full sample. Again, this is because rural private sector wage rates tend to fall below urban ones. Since rural government employees, who account for one third of all government employees, earn the same amount as urban government employees, the full sample would tend to show a government premium.

Tables 3 and 4 extend the analysis by looking “behind” the average return to government employment. The regression equations in Tables 3 and 4 examine differences in the earnings structure by education, between government and the private sector. Added to the basic earnings function of Table 2 are inter-active dummy variables between government employment and education levels. Extending equation (1) yields:

$$\begin{aligned} \text{Log}(E_i) = & \alpha_c + \alpha_a \times A_i + \alpha_{a2} \times A_i^2 + \sum_{s=2,6} \beta_s \times S_{s,i} + \delta_g \times G_i + \delta_m \times M_i + \delta_u \times U_i \\ & + \sum_{s=2,6} \beta_s^1 \times S_{s,i} \times G_i + \varepsilon_i \end{aligned} \quad (2)$$

The coefficients on the interaction terms (β_s^1) indicate whether there is an additional premium awarded to workers by education based on their sector of

employment. The impact on earnings of government employment is now the sum of the coefficient on the Government dummy variable plus the coefficient on the relevant interactive dummy variable on education ($\beta_s + \beta_s^I$).

Both the entire wage sector sample (Table 3), as well as the urban only sample (Table 4), suggest those government workers with a high school education or less earn a premium over their private sector counterparts. Indonesians with some tertiary education or a university degree earn less than they would in the private sector. Point estimates of the respective premiums range, at most, from roughly ± 25 percent, with relatively weak statistical significance. The econometric evidence, similar to the simple comparison of average pay in Table 1, does not indicate that the Indonesian government, over all, is a low wage employer nor is there evidence of the huge private pay advantages for educated workers reported by previous studies.

Table 3: The Earnings Structure by Education Government Versus Private employees, All Wage Employees, 1998

<i>Variables</i>	<i>Coefficient</i>	<i>(t-Statistic)</i>	<i>Coefficient on Interaction Term*</i>	<i>(t-Statistic)</i>
Constant	10.43	(193.1)		
Age	0.04	(15.6)		
(Age) ²	-0.0004	(-11.2)		
EDUCATION				
Primary	0.32	(17.2)	0.02	(0.09)
Junior High School	0.52	(25.3)	0.14	(0.78)
Senior High School	0.80	(38.7)	0.05	(0.30)
Some Tertiary	1.22	(37.6)	-0.16	(-0.91)
University	1.36	(29.5)	-0.28	(-1.59)
DUMMY VARS				
Government	0.11	(0.62)		
Male	0.40	(33.6)		
Urban	0.15	(10.9)		
# Observations		27,759		
R ²		0.39		
F		451.2 (15,1027)		

Note: # Coefficient on the product of each education dummy variable times Government dummy variable.

Source: Authors' analysis of Sakernas, 1998.

Table 4: The Earnings Structure by Education, Government Versus Private Employees, Urban Employees Only, 1998

<i>Variables</i>	<i>Coefficient</i>	<i>(t-Statistic)</i>	<i>Coefficient on Interaction Term[#]</i>	<i>(t-Statistic)</i>
Constant	10.44	(144.3)		
Age	0.05	(13.4)		
(Age) ²	-0.0004	(-11.4)		
EDUCATION				
Primary	0.34	(12.3)	0.10	(0.46)
Junior High School	0.53	(17.3)	0.25	(1.15)
Senior High School	0.84	(28.0)	0.06	(0.29)
Some Tertiary	1.26	(29.6)	-0.16	(-0.71)
University	1.43	(26.8)	-0.26	(-1.14)
DUMMY VARS				
Government	-0.003	(-0.21)		
Male	0.31	(22.7)		
Urban	-	-		
# Observations		16,366		
R ²		0.39		
F		256.2 (14,598)		

Note: # Coefficient on the product of each education dummy variable times Government dummy variable.

Source: Authors' analysis of Sakernas, 1998.

These results are maintained after subjecting the analysis of pay differentials to more stringent econometric specifications. Two potential econometric problems confront the earnings regression reported in this paper. First, workers for whom we observe earnings are not a random sample of the population but a potentially self-selected one. If this potential self-selection is correlated with the variables of interest, then the uncorrected estimates would be biased as they would capture both a "participation" effect as well as a direct effect on earnings.⁶ Second, there are potentially unobserved household and community characteristics, correlated with the included characteristics (including the government dummy variable), that are unobserved and therefore not specified in the model. Not correcting for these would potentially bias the estimates, for example, ascribing to government a pay differential actually awarded to unspecified worker attributes. Employing the approach used by Behrman and Deolalikar (1995), in their analysis of gender differentials in the returns to schooling in Indonesia, alternative specifications were estimated in an attempt to correct for these potential estimation

⁶ The canonical example is the relationship between education and wages. According to economic theory, only individuals whose wage exceeds the threshold "reservation wage" will participate in wage work. One would therefore expect that individuals with more education and higher wages would be over-represented in a sample of wage workers. The effect of this selection would be to underestimate the relationship between education and wages for the population as a whole, since low-education/low-wage individuals are rare in the selected sample.

problems. These approaches yield coefficients that largely are unchanged from those obtained using the basic formulations in Tables 2 to 4. (The Appendix provides details of the alternative econometric approaches.)

IV. Estimates of Government versus Private Sector Pay from Susenas

Because the results on government versus private pay run counter to conventional wisdom, it is important to identify other data that might offer an independent test of the relationship. In addition to its labor force survey, BPS also carries out an annual household expenditure survey (Susenas). The expenditure survey contains questions similar to those in Sakernas and permits additional estimates of how government pay relates to prevailing market wages.

The 1999 Susenas was available to this study. It contains over 160 thousand households. About one third of the total contain household heads who report positive wage income. A comparison of mean earnings from this sample (results not shown), by education level, reveals findings similar to those of Table 1. Because of price inflation, nominal earnings in 1999 are higher than in 1998 but the ratio of government to private pay by education level is similar.

Table 5 reports regression estimates for the sub-sample of wage earning household heads in the 1999 Susenas. Only household heads are employed in this part of the analysis because there is only one value of expenditures per household. Therefore, the right hand side variables in the model need to be aggregated in some way so that there is only one observation per household. We choose to record the characteristics (wage earning status, gender, and education) of the *head* of the household. This choice maintains simplicity in the model (for example, there are no fractional education levels), and allows simple comparisons to be made between the Susenas earnings and expenditure models described below, as well as with the already reported Sakernas earnings model.

The first regression presents an earnings equation run on all wage earning household heads. The results are essentially the same as those from Sakernas (Table 2), earnings increasing but at a decreasing rate with age, earnings increasing with education, and earnings higher for men and in urban areas. The Government dummy variable is positive and remains significant (t-statistic of 2.3). But the relative effect of government employment on monthly earnings, about 4 percent, is less than half the magnitude found in the Sakernas data. This may be because the Susenas results, unlike those from Sakernas, are on household heads only and most household heads are male. Since women working for government earn a greater premium (or smaller deficit) over their private

wage alternative, *ceteris paribus*, a smaller coefficient on the Government dummy variable in Susenas is expected.⁷

Table 5: The Determinants of Earnings and Expenditures of Household Heads who Were Wage Employees, 1999

Independent Variables	Dependent Variable			
	Ln(Monthly Earnings)		Ln(Household Expenditures Per Person)	
	Coefficient	(t-Statistic)	Coefficient	(t-Statistic)
Constant	10.51	(141.6)	12.48	(224.6)
Age	0.05	(14.4)	-0.05	(-19.5)
(Age) ²	-0.0005	(-12.4)	0.0006	(19.5)
EDUCATION				
Primary	0.26	(15.7)	0.11	(12.8)
Junior High School	0.49	(27.1)	0.28	(25.6)
Senior High School	0.73	(40.6)	0.49	(39.7)
Some Tertiary	1.01	(42.8)	0.67	(35.9)
University	1.15	(25.7)	0.88	(33.9)
DUMMY VARS				
Government	0.04	(2.3)	-0.01	(-1.0)
Male	0.47	(30.4)	-0.12	(-10.5)
Urban	0.22	(18.5)	0.26	(21.9)
# Observations	54,513		54,513	
R ²	0.32		0.34	
F	617.8 (10, 1689)		545.8 (10,1689)	

Source: Authors' analysis of Susenas, 1999.

The second regression in Table 5 offers an indirect test of relative government compensation levels. Employing the expenditure information in Susenas, the dependent variable no longer is earnings but is the logarithm of monthly household expenditures per household member. If government pay is significantly lower than market wages, expenditure levels in households headed by government workers might be expected to be lower as well. This is not the case. Holding constant for the age, education, and gender of the household head, and for the urban/rural location and size of the household, the effect of sector of employment on household expenditures is not significantly different from zero. Households headed by government workers, on average, do not have lower expenditures than their private sector counterparts. Similar to the results using Sakernas, if interaction terms are added by education level, average household expenditures are a little higher for those with a junior high school or lower education level and a government

⁷ Carrying out the same regression on the total sample of wage earners, and not just household heads, yields results that are even more similar to those in the Sakernas. For example, the coefficient on the government dummy variable equals 0.08 (with a t-statistic of 5.7) when the entire sample of individuals aged 16 to 60 is used.

job, at parity for high school graduates, and lower for those with more education and a government rather than a private sector job (Table 6).⁸

Table 6: Expenditures by Education Level for Households Headed by Government Versus Private Employees, 1999

<i>Variables</i>	<i>Coefficient</i>	<i>(t-Statistic)</i>	<i>Coefficient on Interaction Term[#]</i>	<i>(t-Statistic)</i>
Constant	12.49	(226.4)		
Age	-0.06	(-19.8)		
(Age) ²	0.0007	(19.7)		
EDUCATION				
Primary	0.11	(12.0)	0.07	(1.0)
Junior High School	0.27	(23.3)	0.02	(0.3)
Senior High School	0.49	(38.2)	-0.08	(-1.2)
Some Tertiary	0.74	(31.9)	-0.25	(-3.6)
University	0.96	(29.6)	-0.28	(-3.8)
DUMMY VARS				
Government	0.09	(1.3)		
Male	-0.12	(-10.7)		
Urban	0.26	(21.8)		
# Observations			54,513	
R ²			0.34	

Note: # Coefficient on the product of each education dummy variable times Government dummy variable.

Source: Authors' analysis of Susenas, 1999.

These results, on relative household expenditures by sector of employment of the household head, alone, are an imperfect test of the relationship between earnings in the government and private sector. Households headed by civil servants might respond to lower wages by finding other sources of income, both legal and illegal, or by sending more family members into the labor force. The absence of lower expenditures among households headed by civil servants is at least consistent with the hypothesis that government workers are not systematically underpaid relative to market opportunities. And when combined with the Susenas results on relative earnings parity between government and private sectors, a mutually consistent picture emerges.

The Susenas results refer to another year, are drawn from a different sample, permit use of expenditure as well as earnings data, and confirm the findings from the

⁸ In Table 6 the sign of the age variables, as well as of the male dummy variable, has changed. This is because the variables now refer to the age and gender of the household head. These are intrinsically linked to the household size and composition, which are incorporated into the dependent variable (i.e., household expenditures *per capita*) but not controlled for in the regression. When the regression includes the number of household members and its square, the effects of age and of being male become significantly positive and all the other coefficients are qualitatively unchanged.

Sakernas data on 1998. There is no evidence that government is a “low pay” employer for the average government employee. Even for the more educated, who do earn less in government than they would in the private economy, the differentials are not large and not of the order of magnitude reported previously.

V. Reconciling the Evidence

The estimates of government/private pay differentials obtained from BPS surveys are so different from the findings of earlier studies, and from official views on civil servant pay, that it is important to try and reconcile these differences. One argument, that BPS data are of low quality and cannot be relied upon, is not persuasive. The basic age-education-earnings profile that emerges from the regression analysis is too similar to results from other countries, both in the direction and magnitude of specific coefficients and in the degree of explanatory power, to conclude that the survey is seriously flawed. Other researchers familiar with these data reach a similar conclusion (Behrman and Deolalikar, 1995). A related argument is that 1998 and 1999 were in the midst of the financial crisis and are atypical years. Concerning government/private pay differentials, this may be true. But the direction of bias during these years is to find a smaller government pay premium (or a larger government pay deficit). This is because adjustments in nominal pay during these crisis years happened more slowly in government than in the private sector.

Another possibility is that BPS data systematically under-represent earnings. It is easy to see why reported earnings in the survey may be too low. When asked, “What is the net monthly income you received from your primary job?” individuals may report only their basic salary and not allowances or fringe benefits. Alternatively, individuals may be reluctant to reveal their true earnings to a government enumerator for fear that such information may be used against them, for example, by tax authorities. But for either omission to account for the estimated pattern of government versus private pay within the Sakernas or Susenas data requires that individuals who work in the private sector are more, *not less*, likely than government workers to forget to include allowances and fringes, or to consciously under-report actual earnings. If under-reporting is equally distributed across all workers, reported earnings systematically will be too low, but the estimated differential between government and private workers will remain unaffected.

If there is a bias in reporting, it is civil servants who more often may systematically report lower than actual earnings. Private employers may have less, not more, complicated systems of allowances and fringe benefits because they are not as constrained by the role of law and regulations in revising their salary scales. Government workers also are known to receive both legal and extra-legal payments associated with their positions. Honoraria, per diems in excess of actual travel expenses, project bonuses, etc. are legally sanctioned forms of compensation in government, often are transacted in

cash, are said to be less prevalent in the private sector, and may not be included by civil servants in response to questions on earnings. Similarly, non-legally sanctioned payments, including illegal surcharges levied on government-provided goods and services (for example, side-payments required to get a license or permit approved), kickbacks on government purchases, graft involved in tax evasion, etc. commonly are acknowledged in Indonesia. They may represent a significant source of earnings for a larger number of civil servants than do equivalent illegal actions of private workers. These potential biases in reporting income suggest that the estimated government premium from the Sakernas data serves as a conservative estimate of the extent of the average pay premium received by government workers.

The prevalence of non-legally sanctioned payments raises a third possible explanation for why the Sakernas and Susenas data do not support the conventional view of a significant pay premium in the private sector. Perhaps civil servants, rather than excluding, include their “extra” earnings in response to questions about “average net monthly income” in primary jobs. If this occurs, the self-reporting of earnings would systematically over-estimate *official wages*. Independent evidence on government pay scales rejects this interpretation of the data.

In August 1998, the date of the Sakernas survey used in this paper, government salaries were based on 1997 salary scales. These scales cover four salary ranks, each further divided into between four and five sub-ranks. Within each sub-rank, salaries are determined by years of service. Government employment data from the State Personnel Administration Board (BKN) provides the number of civil servants by sub-rank. Selecting the mid-point salary to represent the mean basic wage for each of the seventeen sub-ranks, results in an estimate of average government earnings in 1997 of 310,000 rps./month. Because of the financial crisis, a 15 percent across-the-board increase in government salary scales was applied in April 1998, raising the average estimated basic salary in government to 356,500 rps./month. Statutory allowances, including family, spouse and rice allowances, equal another 15 percent of the basic salary. Adding these supplements to the basic wage predicts an August 1998 estimate of 410,000 rps./month.⁹ This is remarkably similar to the 1998 Sakernas estimate of official wages for government workers of 414,000 rps./month. Earnings reported by Sakernas appear to refer to official wages only.

If not data accuracy, how else can the results of the different studies on government pay be reconciled? Earlier research on government pay focused on specific occupational categories, often in the managerial ranks, and compared pay levels to a

⁹ Estimates of official compensation should also include the mean value of functional and structural allowances (see n. 2.) However, there is no simple way to map such allowances onto the salary scales. If included, the estimated mean level of official compensation would be higher than 410,000 rps/mth.

narrow set of well-paying domestic and foreign enterprises. BPS data permit a different comparison, between broad education categories and relative to the entire labor market. BPS data do not support comparisons at the very top of the occupation hierarchy and are ill suited to judging the reservation wages of senior managers and professionals. More detailed human resource surveys are required for this purpose.

If the different survey designs are not perfect substitutes, and if the empirical results from the various types of surveys are accurate, then what may be mistaken is the interpretation of the data. There may be a “fallacy of association” where significant pay differentials, between top government officials and senior corporate executives in the most well-paying enterprises, have been considered as estimates of the prevailing pay gap for *all* civil servants. For lower ranks, which employ the majority of civil servants, this gap does not appear to exist relative to the entire domestic labor market.

Even for senior ranks, the observed gap may not be the appropriate target for setting salaries. For many civil servants, basic salary and standard allowances do not capture the total compensation received. Furthermore, senior government officials and professionals, worldwide, tend to earn less than their private sector counterparts. Government employment possesses “a compensating differential” where greater employment security, the exercise of power, sometimes a less-demanding pace and/or the opportunity to serve one's country can compensate for lower earnings. Determining adequate compensation for the most senior administrative and professional cadre is a challenge all governments face and requires more detailed scrutiny than afforded by this analysis.

VI. Pay, Corruption, and Government Performance

It long has been alleged that Indonesia has a “low pay” civil service, which, in turn, is responsible for the widespread corruption in government. Results from BPS surveys in 1998 and 1999 dispute these conclusions. Most government employees appeared to earn amounts comparable to their opportunity cost, that is, to the alternative earnings they might have received in the private wage sector. These results may be even stronger as of the end of 2000. Presidential decrees in April 1999, and again in April and May 2000, significantly raised nominal government salaries well in excess of price inflation. With more limited recovery in the market economy, government pay may now exceed private pay for all but a fraction of the nation's 4.6 million government employees.

If the assumption of low pay is inaccurate, so must be any simple linkage between pay and corruption. How to explain the prevalence of petty corruption by lower ranking government workers, if they earn a premium over the private sector? And can the alleged “big corruption” among higher-ranking officials realistically be tied to the pay they receive relative to their non-government counterparts? Rather than identifying corrupt

behavior as a behavioral response to “low pay”, it is more helpful to view corruption as a response to opportunity. Soliciting bribes, arranging kickbacks or practicing extortion all represent calculated risks where costs and benefits of corrupt behavior are weighed. If the risks of getting caught are low and punishment minimal, corruption is apt to flourish. Increases in official pay raise the expected costs of losing one’s job. But unless actions are taken to punish corrupt behavior, pay increases, alone, will do little to change the cost/benefit calculation and corruption need not abate. Changes in compensation levels can be part of a package to reform civil servant behavior but other elements are essential to reduce corrupt practices.

Appendix

In their analysis of gender differentials in the returns to schooling in Indonesia, Behrman and Deolalikar (1995) outline two potential econometric problems in earnings regression estimates. First, workers for whom we observe earnings are not a random sample of the population but a potentially self-selected one. While the Sakernas data do not provide entirely convincing variables to allow for statistically correcting the estimates, household demographic composition variables can be used in a first stage model to control for the potential selectivity of receiving wages. Specifically, the probability of reporting earnings and the determination of those (log) earnings is jointly estimated. Variables for the number of household members under age 10, the number aged between 10 and 59, and the number aged 60 and over, are included in the participation equation but not in the earnings determination equation. The assumption underlying this restriction is that the age profile of the household determines the opportunity cost of participation in the wage labor market, but not earnings directly.

The second potential problem is of unobserved heterogeneity. In this case there are potentially unobserved household and community characteristics, correlated with the included characteristics (including the government dummy variable), that are unobserved and therefore not specified in the model. Not correcting for these would potentially bias the estimates. In order to allow for this possibility, a household fixed-effects model of the (log) earnings equation is estimated. An additional benefit of this procedure is that if selectivity is based on household attributes, as is assumed in most empirical applications, then this fixed-effects approach should control for selectivity in the wage labor market as well as for the more generic potential unobserved heterogeneity problems.

Both of these approaches yield estimates that are largely unchanged from those in Tables 2 to 4. In the all-Indonesia estimates the identifying instruments are jointly significantly different from zero in the participation equation, however the point estimate of an approximate 10 percent average pay premium in the public sector remains (Appendix Table 1A). In the urban-only sample, the identifying variables perform less well and are jointly insignificantly different from zero. The resulting estimate of the

average government premium remains insignificantly different from zero. The selection-corrected interactive models also yield the point estimates that the public sector premium diminishes with the level of education, and becomes negative for those with at least some tertiary education (results available from authors.)

The fixed-effects estimates yield similarly consistent results. Since this estimation method relies on within household variation to identify an effect, the significance of the results is lower. Nonetheless, the point estimate on the average public sector premium is about 7 percent in the all-Indonesia sample (and is significantly different from zero at the ten percent level), and remains insignificant in the urban-only sample (Appendix Table 1B). The interaction models again suggest that the public sector premium becomes negative only for those with at least some tertiary education (results available from authors.)

Appendix Table 1A – Selection Corrected Estimates: The Determinants of Monthly Earnings of Indonesia’s Wage Employees, 1998

<i>Variables</i>	<i>All Wage Employees</i>		<i>Urban Employees Only</i>	
	<i>Coefficient</i>	<i>(t-Statistic)</i>	<i>Coefficient</i>	<i>(t-Statistic)</i>
Constant	10.4	72.5	12.4	105.9
Age	0.043	10.5	-0.006	1.26
(Age) ²	-0.0004	7.34	0.0003	4.81
EDUCATION				
Primary	0.32	17.3	0.29	9.14
Junior High School	0.53	26.0	0.54	16.2
Senior High School	0.81	30.1	0.64	17.4
Some Tertiary	1.15	23.3	0.72	13.8
University	1.25	24.9	0.90	16.05
DUMMY VARS				
Government	0.10	5.72	-0.009	0.44
Male	0.40	17.3	0.030	1.54
Urban	0.15	8.69	-	-
Selection model*				
Rho	-0.015, p-value = 0.84		-0.829, p-value <0.001	
Chi-square test for joint significance of identifying instruments (df =3)	28.43, p-value <0.001		4.91, p-value = 0.178	
# Observations	122,242 (27,759 wage workers)		54,490 (16,366 wage workers)	

Note: * Sample selection using Heckman selection model. Identifying instruments are the numbers of household members aged 0 to 9, 10 to 59, and 60 and over.

Source: Authors’ analysis of Sakernas, 1998

Appendix Table 1B – Fixed-Effects Estimates: The Determinants of Monthly Earnings of Indonesia’s Wage Employees, 1998

Variables	All Wage Employees		Urban Employees Only	
	Coefficient	(t-Statistic)	Coefficient	(t-Statistic)
Constant	10.4	81.0	10.4	68.8
Age	0.046	7.70	0.049	6.04
(Age) ²	-0.0004	5.15	-0.0004	3.57
EDUCATION				
Primary	0.29	7.98	0.34	6.28
Junior High School	0.43	9.68	0.48	7.57
Senior High School	0.71	13.4	0.84	12.4
Some Tertiary	1.05	14.3	1.16	12.9
University	1.16	13.8	1.31	14.0
DUMMY VARS				
Government	0.07	1.74	-0.004	0.08
Male	0.36	19.2	0.29	12.9
Urban	12.4	1.06	-	-
R-squared	.762		.748	
# Observations	15123		9406	

Source: Authors’ analysis of Sakernas, 1998

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