

## Urban-rural income and wage gaps in the Philippines: measurement error, unequal endowments, or factor market failure?

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Income inequality is higher in the Philippines than in most of its Asian neighbors, and spatial inequality accounts for a fairly large share of it. There is little evidence of labor market failure in the Philippines since, when properly measured, wage gaps by skill level are modest. Unequal endowments account for most of the urban-rural income gaps. That is, individual attributes of workers and households explain the majority of the urban-rural gaps, and schooling, skill, and experience are the three individual characteristics that matter most. Provincial variables, like typhoon incidence, government corruption, school crowding, and access to health facilities, matter far less. Workers born in the cities and immigrants to the cities invest more in human capital than do rural workers. However, this paper cannot tell us how much of that is due to better human-capital-building infrastructure supply in the cities and how much is due to higher urban demand for that infrastructure.

**JEL classification:** D3, J3, O3, R1

**Keywords:** regional inequality, wage gaps, migration, the Philippines

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### 1. Introduction

Large urban-rural wage and income gaps have been one of the most-studied phenomena in the development literature.<sup>1</sup> At the same time, high rates of labor migration from rural to urban employment and from agriculture to industry and modern service employment have been notable characteristics of the transition

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<sup>1</sup> Weber [1899], Hatton and Williamson [1992], Yankow [2000], Gould [2007], Sicular et al. [2007], and Young [2013].

from pre-industrial to modern development. The coexistence of rapid emigration from poor and low-wage rural areas with persistent urban-rural income gaps might seem a puzzle, until one realizes that rapid semi-skilled and skilled labor demand growth and job creation in urban areas might explain both.

The Philippines, despite starting above its Southeast Asian neighbors' development levels in the first half of the twentieth century and even in the 1950s, has underperformed since the 1970s, especially in industry (de Dios and Williamson [2014]; World Bank [2013]). It also has relatively high income inequality, rural-urban income gaps, and regional inequality.<sup>2</sup> Policy is said to have favored Luzon, and, in particular, Metro Manila and its surrounding regions. Although labor market forces should have led to a closing of the urban-rural gap and a diminution in regional inequality, they have not done so, perhaps, some argue, due to impediments to migration, such as minimum wage legislation, regularization policy, labor unions, urban immigration restrictions, land zoning rules, and other market interventions.

This paper does find some evidence of labor market failure, but it is very modest. In general equilibrium theory, land, labor, and capital markets all matter in accounting for spatial income gaps. But what about the spatial labor market itself? Are there big urban-rural wage gaps? If so, are they explained by policy intervention, weak institutions, or rather by rural behavior, lack of language skills, poor rural schools, fear of religious persecution (a poor Muslim south and a rich Christian north), or some overwhelming demographic glut in rural areas [Williamson 2013]?

Understanding the determinants of income inequality both within and between regions has been and will be essential to identifying the sources of poor Philippine performance and to designing policy that will promote more rapid equitable development. The last major study of spatial income inequality in the Philippines was undertaken by Balisacan and Fuwa [2004]. In their study, the authors concluded that income inequality had undergone little change from 1985 to 2000. They also noted that income inequality was higher in the Philippines than in most of its Asian neighbors, although it is not as high as in Latin America, with which the Philippines is often compared. Furthermore, they concluded that while spatial inequality accounted for a large share of overall income inequality in the Philippines, that share seemed to be diminishing. Finally, they reported that income per capita was slowly converging across provinces, in contrast with many other developing economies.

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<sup>2</sup> For example, see Berry [1978] and Balisacan and Fuwa [2004].

This paper extends the Balisacan and Fuwa assessment forwards one decade. It also improves the data base and estimates the sources of the urban-rural gap using Fields and Oaxaca decomposition techniques. We explore the roles of measurement error, unequal endowments, and labor market failure, plus the likely impact of capital and land market failure. Thus, we ask: How much of the nominal wage gap disappears when proper site-specific prices—especially those of non-tradable services—are used for rural areas? How much of the measured average wage gap disappears when it is computed for the same occupations and skills, rather than for some average wage? Are the gaps different for skilled and unskilled workers, perhaps reflecting different responses to wage differentials?<sup>3</sup>

These are the questions that should be answered in making a judgment about labor market failure. If, instead, the focus is on the determinants of spatial income inequality, then different questions are relevant. Indeed, do household wage incomes behave differently than do wage rates by occupation and skill, perhaps due to household labor participation rate or employment rate differences between rural and urban locations? Do household total income gaps behave differently than wage income gaps, perhaps due to unobserved positive individual attributes (migrants self-select), and/or due to differences in investment income opportunities by location, and/or due to remittances from family abroad? Most importantly, are those large rural-urban income gaps explained mostly by wage gaps or mostly by endowment gaps?

## **2. Philippine urban-rural gaps, total inequality, and regional inequality: a comparative assessment**

Based on total household income, inequality in the Philippines improved very slowly between 2000 and 2012 (Figure 1).<sup>4</sup> The trends are broadly the same whether we use the Gini coefficient or Theil's T Statistic. However, we will use Theil's T Statistic in what follows since it is easily decomposable while the Gini is not.

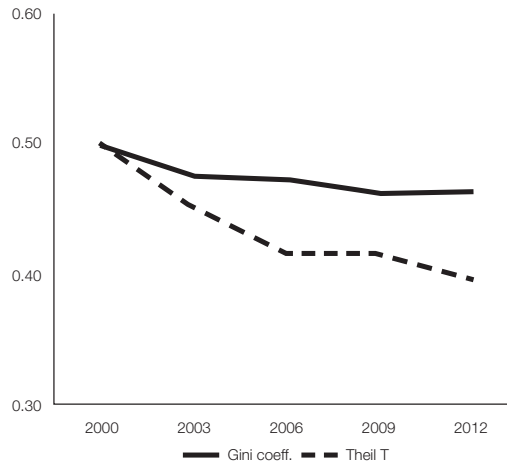
Table 1 reports country urban-rural gap measures for three statistics: the average wage; the average household wage income; and the average household total income. The gap is measured as the difference between urban and rural, divided by urban: thus, the percentage by which urban exceeds rural. The sample is small in any of those categories, and only the Philippines reports all three.

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<sup>3</sup> The idea here is that skilled workers are more likely than poorer, unskilled workers to have the financial resources to invest in a move.

<sup>4</sup> Philippine household income data are available every three years. Thus, to update the assessment by Balisacan and Fuwa, our analysis uses data from 2002 to 2012.

Chua, Limkin, Nye, and Williamson:  
Urban-rural income and wage gaps in the Philippines



Source: NSO, WB staff estimates

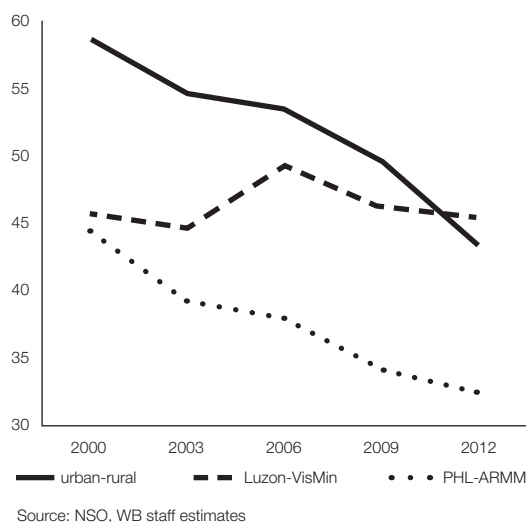
**FIGURE 1. Measures of inequality**

**TABLE 1. Cross-country comparison of wage and income gaps**

Country/Area	Year	r-u gap	Data used	Source
Philippines	2011/12	34	Individual wage	Labor Force Survey (2011)
		44	HH total income	Family Income and Expenditure Survey (2012)
		54	HH wage income	Family Income and Expenditure Survey (2012)
Nepal	2003	4	Individual wage	Hertz et al. (2008)
Bangladesh	2000	9	Individual wage	Hertz et al. (2008)
EU25	2003	12	HH total income	Cameron et al. (2008)
Indonesia	2000	16	Individual wage	Hertz et al. (2008)
India	2005	23	Individual wage	Karan an Selvaraj (2008)
US	2011	24	HH total income	Bureau of Labor Statistics, US Department of Labor
Vietnam	1998	26	Individual wage	Hertz et al. (2008)
India	2005	31	Individual wage	Karan an Selvaraj (2008)
Malaysia	2004	53	HH total income	Ragayah (2008)
Cambodia	1999	56	HH wage income	Morris (2007)
China	2002	58	Per capita income	Sicular et al. (2007)
China	2011	81	HH wage income	National Bureau of Statistics of China

But the Philippine results are revealing. The wage gap, 34 percent, is the smallest of the three. It reflects three influences: the fact that urban jobs are more skilled; that the urban cost of living is higher; and that there may be some labor market failure by specific job category. The household total wage income gap, 54 percent, is much bigger. It reflects the fact that urban immigrants self-select, that low-wage (high-wage) earners cluster in low-income (high-income) households, and that urban workers have higher hours worked per month. Surprisingly, the household total income gap, 44 percent, is lower than the household wage income gap. This cannot be explained by remittance rates since the share of remittance income to total household income was roughly the same for rural and urban households. In 2012, they were 17 percent of total rural household income and 15 percent of urban household income. Most importantly, the wage gap is significantly less than both income gaps.

Compared with its Asian neighbors, wage gaps in the Philippines are high: that 34 percent is the highest in Table 1; the reported wage gap is much higher than in Nepal (4 percent), Bangladesh (9 percent), and Indonesia (16 percent); and it is even higher than Vietnam (26 percent) and India (23-31 percent). The Philippine household wage income gap is only exceeded by China (81 versus 54 percent). Finally, the Philippine household total income gap of 44 percent is closest to Malaysia (53 percent), and both are much bigger than that of the United States (24 percent) and the European Union (12 percent).



**FIGURE 2. Income gaps (in percent)**

Given the country's heterogeneous island geography with multiple languages, ethnic groups, and religions, one might expect that spatial income gaps

(Figure 2) would account for a large share of the high Philippine inequality. But do they? Table 2 reports some country measures where total inequality is decomposed into between regions and within regions. The canonical case of Italy—with its persistent “North-South” or Mezzogiorno problem—records 13 percent of total inequality due to regional gaps. But the figure for the Philippines is higher, 20-24 percent in 2000, although it dropped to 11-14 percent in 2012. The figures are smaller for better integrated and richer countries, but they are bigger for China (38 percent) and Vietnam (36 percent).<sup>5</sup> Although it is not shown here, the urban versus rural between share in total Philippine inequality is a bit more than 10 percent in 2012, which is almost equal to the regional between share of 11 percent.

**TABLE 2. Within and between income inequality: the Philippines compared with other countries**

Country/Area	Year	Within region/province	Between regions/provinces	Source
Philippines	2011	80/76	20/24	Family Income and Expenditure Survey (2012)
Philippines	2012	89/86	11/14	Family Income and Expenditure Survey (2012)
Indonesia	1997	50	50	Akita (2003)
China	1998	62	38	Akita (2003)
Vietnam	1999	64	36	Minot et al. (2003)
Indonesia	1999	78	22	Tadjoeddin (2003)
Mozambique	1997	80	20	Simler and Nhate (2005)
Indonesia	1990	83	17	Tadjoeddin (2003)
Italy	995	87	13	Forster et al. (2005)
Russia	1995	90	10	Forster et al. (2005)
India	1983	94	6	Mishra and Parikh (1992)
Czech Republic	1996	97	3	Forster et al. (2005)
Canada	1997	98	2	Gray et al. (2003)
Poland	1999	98	2	Forster et al. (2005)

<sup>5</sup> We exclude Indonesia from these comparisons since it has very different estimates for within and between province inequalities from two different sources (Akita [2003]; Tadjoeddin [2003]) and even for the same source [Akita 2003].

Thus, while urban and regional income gaps certainly contribute to inequality in the Philippines, it is the variance of household incomes *within* urban and *within* rural areas and regions that matters most (80-89 percent). A study by Alwyn Young [2013] used consumption data from country Demographic and Health Surveys to show that the urban-rural gap explains a much higher share of total consumption inequality, on average 40 percent in his low-income sample, and the Philippines was about in the middle of his 65-country pack [Young 2013:1748].<sup>6</sup>

### 3. Gap measurement errors

#### 3.1. Getting the prices right

Since migrants respond to real wages and since living costs are lower in rural areas within all provinces and lower still in rural areas in the poorest provinces, some effort must be made to get the prices right. Typically, either the urban-rural gap estimates are nominal, or they are deflated only by the prices of tradable commodities (e.g. they exclude non-traded services which are priced low in rural areas since nominal wages are also low), and when deflated, they use provincial capital prices rather than rural prices. Since rural cost of living indices or consumer price indices are not available from official Philippine sources, we compute them using a modified version of the provincial consumer price indices reported by the National Statistics Office. We consider the official provincial consumer price indices as urban since the underlying price data are mainly collected from urban areas.

Our rural consumer price indices are computed using five consumption categories: agricultural food; other food; tradable goods and services<sup>7</sup>; semi-tradable goods and services; and non-tradable goods and services.<sup>8</sup> Agricultural food prices are taken from the Bureau of Agricultural Statistics, which provides farm gate and retail prices of key commodities. Only rice has complete price data at the provincial level so it is used as a proxy for agricultural food, and rural prices are calculated as the average of the farm gate and retail price. The agricultural food price index in the initial year (2001) is constructed as the average of the farm gate and retail price divided by retail price. Succeeding years follow trends in the farm gate and retail price. The prices of other food, tradables, and semi-tradable goods and services follow the provincial consumer price indices. Non-tradable goods and services prices are assumed to follow the movement of nominal rural wages. The initial year price of non-tradables is computed as the ratio of rural to urban nominal wages multiplied by the urban price of these non-tradables. Rural non-tradable price movements in succeeding years follow the growth in rural

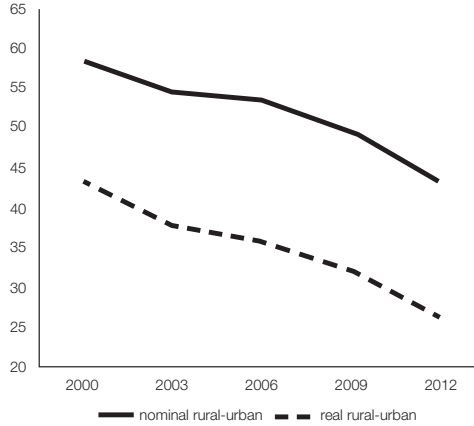
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<sup>6</sup> It should be noted that Young's consumption measure is based on ownership of durables and housing quality [Young 2013:1734], a measure that would exaggerate gaps.

<sup>7</sup> For the purposes of this analysis, tradables include alcoholic beverages, tobacco, clothing, footwear, furnishings, household equipment, and communication.

<sup>8</sup> It is assumed that 30 percent of semi-tradables are not traded.

nominal wages. This method ensures that the prices of food and non-tradable goods and services are cheaper in rural areas.



Source: NSO, WB staff estimates

**FIGURE 3. Rural-urban income gaps (nominal and real in percent)**

As expected, the urban-rural income gap falls when these improved rural site prices are used instead of provincial-capital prices (Figure 3). Over the 2000-2012 period, the urban-rural real income gap is 17 percent lower than the nominal gap, and higher urban prices account for around 6.1 percent of the urban-rural nominal income gap. That is, the average urban-rural cost of living difference/ average urban-rural nominal income gap = 17 percent/52 percent = 33 percent. The Oaxaca decomposition offers another way to assess how much cost of living differences account for the urban-rural gap. Using individual household income data for 2000-2012, the decomposition tells us that about ₱38,000, or 34 percent of the ₱110,000 difference, is explained by cost of living differences (Table 3), a figure very close to the 33 percent using descriptive statistics.

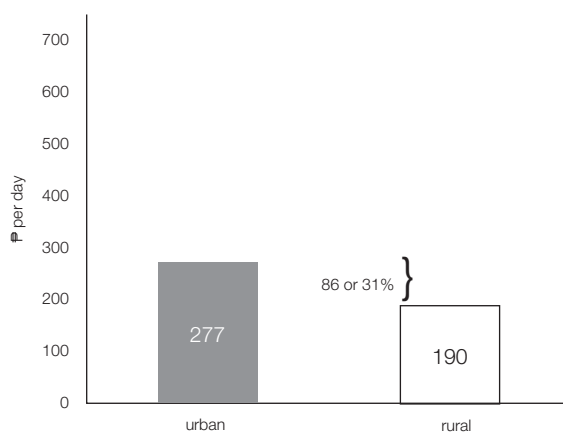
**TABLE 3. How much of the urban-rural income gap is explained by the cost of living differences?**

Explanatory variable: prices	
Average HH income	
Urban	229,999.3
Rural	120,342.8
Difference	109,656.5
Decomposition	
Explained	37,734.9
Unexplained	71,921.6
Percent Explained	34.4



### 3.2. Getting the wages right

What happens to the 34 percent nominal urban-rural wage gap when average wages (mean wage in urban *barangays* versus mean wage in rural *barangays*) are broken down by skilled or unskilled wage categories? The urban-rural nominal wage gap for unskilled labor is 31 percent; the real wage gap is 6 percent. The urban-rural nominal wage gap for skilled labor is 17 percent; the real wage gap is nil. Both figures are below the 34 percent gap for the average wage (Figures 4 and 5).<sup>9</sup> Presumably, the measured real wage gap would decline even further if we could disaggregate jobs in greater detail. In short, the reported nominal urban-rural wage gap falls significantly when prices and wages are measured more accurately. Also, note that the skilled labor urban-rural wage gap declined over the past few years, while the unskilled wage gap remained constant (Figure 6). One reason for the recent decline in the skilled wage gap could be the dispersion of business process outsourcing firms from Manila to secondary cities like Cebu, Bacolod, Iloilo, and Davao.<sup>10</sup>



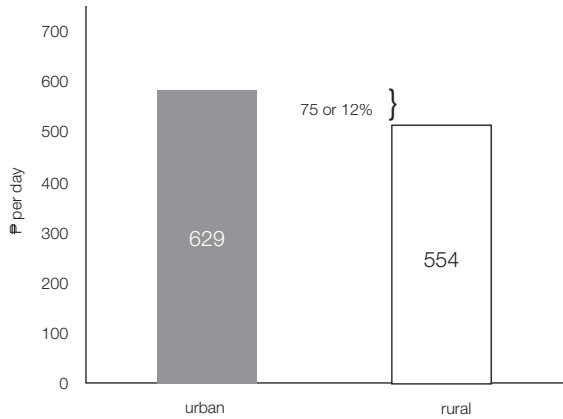
Source: Labor Force Survey

**FIGURE 4. Average nominal rural and urban wages in 2011  
(skilled, in pesos per day)**

<sup>9</sup> Note that we predicted the lower real wage gap for skilled workers, appealing to the notion that they were better able to finance the move.

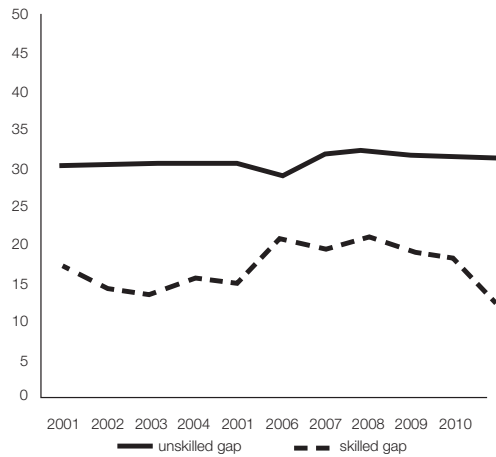
<sup>10</sup> In 2007, 82 percent of the full-time business process outsourcing workers were located in Manila. However, the share fell to 75 percent in 2013.

Chua, Limkin, Nye, and Williamson:  
Urban-rural income and wage gaps in the Philippines



Source: Labor Force Survey

**FIGURE 5. Average nominal rural and urban wages in 2011 (skilled)**



Source: Labor Force Survey

**FIGURE 6. Urban-rural skilled and unskilled wages gaps.  
(Average nominal rural and urban wages)**

Finally, we can find no evidence of a Todaro effect in the Philippines.<sup>11</sup> That is, underemployment plays no role in accounting for these wage gaps. Wages adjusted for underemployment—the daily wage divided by 8, multiplied by

<sup>11</sup> Strictly speaking, the Todaro effect [1971] means that rural wages would be closer to urban wages if we took (allegedly higher) urban unemployment into account. Here, we use underemployment to adjust wages and loosely refer to it as the Todaro effect.

normal hours worked per day (only for underemployed workers working less than 8 hours a day)—differ from unadjusted wages only by about 0.5 percent. Of course, it's possible that the explanation for the small difference is that workers already factor in underemployment when reporting their daily wages during the survey interview. Since the Todaro-adjusted wage is not statistically different from the unadjusted wage, the latter is used in all the regressions that follow.

#### 4. What explains the Philippine wage gap?

As we have seen, urban-rural wage gaps diminish greatly when computed by skill and properly deflated by location-specific cost-of-living. What accounts for gaps when properly measured?

This section offers a more explicit statistical explanation of the wage gap using the Oaxaca and Fields decomposition methods. The period covered is 2001-2009. The unit of observation goes down to the individual and household level, and it is grouped by urban or rural location, which is in turn based on *barangay* characteristics. Individual attributes like education, age, and wages by occupation or skill are available for all years. We also use provincial variables, although they are available only triennially (i.e., 2003, 2006, and 2009). Our main data sources are the quarterly Labor Force Survey and the triennially Family Income and Expenditure Survey. Education, health amenities, and outcome variables are sourced from government administrative data. Poverty and Gini statistics are computed from the Family Income and Expenditure Survey. Infrastructure, political, and geographic data are sourced from the Asia Pacific Policy Center provincial data set. The Oaxaca decomposition uses the estimated coefficients from two separate regressions—one for rural *barangays* and one for urban (and for other group categories, respectively)—to account for the difference between the average urban-rural wage gaps (unadjusted by our new rural prices). The difference is broken down into the explained and unexplained components. There is reason to believe that the unexplained residuals can in large part be attributed to undocumented (positive) attributes of city immigrants [Young 2013]. The regressions are pooled Ordinary Least Squares. Multi-collinearity often results when all the provincial-level variables are used at the same time, but the regressions exploited below are limited to those that are free of multi-collinearity.

To better understand the contribution of these variables to the wage gap, we implement the Oaxaca and Fields decompositions. As noted above, the regressions underlying the decompositions are pooled Ordinary Least Squares, where year and region are added as controls, and the results are presented in Table 4.<sup>12</sup> As expected, wages are higher on average for urban, skilled, and large

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<sup>12</sup> Pooled Ordinary Least Squares with year controls, and year and occupation controls, were also run. The results are broadly similar to the regressions used below. The regressions using occupation controls yield higher R<sup>2</sup>.

industry workers compared to their counterparts. Higher education, age, large firm employment, road density, and the regional minimum wage are also associated with higher wages. The last column in Table 4 uses the Fields decomposition index (the share of the total variance attributable to each explanatory variable in percent) to assess the importance of each variable. The most important variables are skilled work (23.3 percent), large industry employment (3 percent), college education (50.9 percent), age as a proxy for experience (11.5 percent), and provincial road density (10.4 percent).

**TABLE 4. Explaining nominal wages: individual pooled data – Ordinary Least Squares regressions**

	Dependent variable: ln(wage)				(4) Fields Decomposition
	(1)	(2)	(3)	(4)	
Urban	0.0544***	0.0514***	0.0600***	0.0500***	1.2
Skilled	0.4186***	0.4189***	0.4185***	0.4188***	23.3
Large industry	0.1577***	0.1577***	0.1581***	0.1576***	9.8
Sector of employment					
Industry	0.2501***	0.2512***	0.2529***	0.2497***	3.0
Services	0.0186***	0.0195***	0.0204***	0.0185***	0.5
Individual Characteristics					
Educational attainment					
Elementary undergraduate	0.1424***	0.1406***	0.1404***	0.1419***	-2.9
Elementary graduate	0.1786***	0.1765***	0.1764***	0.1780***	-3.1
High school undergraduate	0.2493***	0.2466***	0.2468***	0.2483***	-3.6
High school graduate	0.3419***	0.3392***	0.3395***	0.3409***	-3.0
College undergraduate	0.5033***	0.5004***	0.5007***	0.5022***	4.0
College graduate	0.8291***	0.8262***	0.8266***	0.8280***	46.9
Age	0.0417***	0.0418***	0.0418***	0.0417***	29.9
Age <sup>2</sup>	-0.0004***	-0.0004***	-0.0004***	-0.0004***	-18.4
Provincial characteristics					
Student to room ratio	-0.29167***	-1.8014***	-2.5462***	-2.2050***	0.9
Number of doctors	0	0.0002**	0.0001	0.0001	-9.7
Remittance to HH income ratio	-0.0012*			-0.0017**	-0.4
Domestic remittance to HH inc ratio		-0.0019*	-0.0035***		
Distance from Manila	0	-0.0000*	-0.0000*	0	1.9
Gini coefficient		-0.1418***		-0.1136***	0.5
Poverty incidence		-0.0021***		-0.0015***	2.1
LGU income (from local sources)	0.0076***	-0.0006	0.0059**	0.0022	-0.4
Total road density	0.2057***			0.1559***	10.4
Access to electricity		0.0004*	0.0014***	0	1.7
Access to safe water	-0.0002**	0	-0.0001	-0.0002	0.0
Political dynasty index	0	0	0	0	0.0
Conflict incidence	-0.0043***	-0.0044***	-0.0051***	-0.0040***	0.0
Frequency of typhoons	0.0021	-0.0023	-0.0034	0.002	0.3
Prices	-0.0001	0.0001	-0.0002	0.0001	1.0
Min wage	0.0006***	0.0011***	0.0011***	0.0007***	4.1
Constant	3.3875***	3.5585***	3.2935***	3.5501***	

	Dependent variable: $\ln(\text{wage})$			
	(1)	(2)	(3)	(4) Fields Decomposition
R <sup>2</sup>	0.54	0.54	0.54	0.54
Observations	272150	272150	272150	272150
Controls				
Time	Y	Y	Y	Y
Region	Y	Y	Y	Y

In addition, bivariate regressions of the log nominal wage with provincial level variables reveal that only the following are significant and have the expected signs: student to classroom ratio; grade 6 test scores; percentage of children who are fully immunized; distance of provincial capital from Manila; Gini coefficient; poverty incidence; local government revenue; road density; proportion of households with electricity; access to safe water; political dynasty; conflict; and number of typhoons per year. When these provincial-level environmental attributes are added to the regression equation reported in Table 4, students per classroom (a school quality proxy), remittances, distance of provincial capital from Manila, the Gini coefficient, poverty incidence, local government income, road density, and incidence of conflict are all significant and have the expected signs. However, except for road density, their explanatory power is very small since their presence raises only slightly and each Fields statistic is small. These results suggest that initial location conditions (e.g., poverty, inequality, typhoon incidence, size of the provincial economy, distance from Manila), location amenities (e.g., classroom size, road infrastructure, health facilities)<sup>13</sup>, and location remittance experience all influence *barangay* wage levels, but not by much.

Most importantly, after controlling for all these provincial and individual attributes, urban location has little else to offer (1.2 percent Fields effect). What contribute most to the urban-rural average wage gap are the individual characteristics relevant to high-wage firms, like schooling, skills, and experience.<sup>14</sup> However, if provincial characteristics influence individual characteristics, then these decompositions understate the importance of location-specific human-capital-building infrastructure.

The Oaxaca decomposition in Table 5 confirms these results. Five groups are defined for the wage decompositions: urban-rural for all workers; urban-rural for unskilled workers only; skilled-unskilled<sup>15</sup>; formal-informal<sup>16</sup>; and workers

<sup>13</sup> See Albouy [2008] for a comprehensive assessment of the impact of amenities and quality of life on wages across metropolitan areas in developed countries.

<sup>14</sup> How skills determine city competitiveness is explored at length in Glaeser and Mare [2001].

<sup>15</sup> Occupation codes from the Philippine Standard Occupational Classification Code and their respective average wages were used to determine which occupations are skilled or unskilled.

<sup>16</sup> Here we follow the definition in the 2013 Philippine Development Report, "Creating More and Better Jobs", where those working in agriculture, transport, communications, wholesale trade, and retail trade are all treated as informal workers.

in large and small industries.<sup>17</sup> Table 5 reports those underlying regressions: the variables included in the decomposition explain 93 percent of the urban-rural wage gap. These variables also explain 46 percent of the skilled-unskilled wage gap, 77 percent of the formal-informal wage gap, and 68 percent of the large-small industry wage gap.

**TABLE 5. Individual pooled data: Oaxaca decomposition of wages for 5 groups**

<b>Urban rural</b>					
	<b>Educ only</b>	<b>Age only</b>	<b>Educ and age only</b>	<b>Provincial variables only</b>	
Average wage					
Urban		279.1			
Rural		157.9			
Difference		91.2			
Decomposition					
Explained	84.9	45.5	5.3	40.4	58.4
Unexplained	6.3	45.7	85.9	41.8	32.8
Percent Explained	93.1	49.9	5.8	54.1	84.0
<b>Skilled-Unskilled</b>					
	<b>Educ only</b>	<b>Age only</b>	<b>Educ and age only</b>	<b>Provincial variables only</b>	
Average wage					
Urban		469.1			
Rural		165.4			
Difference		263.7			
Decomposition					
Explained	129.1	116.1	-4.8	129.9	9.6
Unexplained	151.5	167.5	269.4	151.5	271.1
Percent Explained	45.5	40.9	5.0	45.4	3.4
<b>Formal-Informal</b>					
	<b>Educ only</b>	<b>Age only</b>	<b>Educ and age only</b>	<b>Provincial variables only</b>	
Average wage					
Urban		278.7			
Rural		178.4			
Difference		102.3			
Decomposition					
Explained	78.7	58.4	12.2	68.0	18.2
Unexplained	23.6	43.9	90.1	34.3	81.1
Percent Explained	78.9	57.1	12.0	68.5	17.6

<sup>17</sup> The distinction between small and large industry is used as a proxy for labor policy, in which large firms are more likely to be affected by minimum wage and contractual terms. The distinction is derived using the 2008 Informal Sector Survey. Industries in which informal workers comprise at least 90 percent are defined as small.

**Urban-Rural Unskilled**

	<b>Educ only</b>	<b>Age only</b>	<b>Educ and age only</b>	<b>Provincial variables only</b>
Average wage				
Urban		210.5		
Rural		150.9		
Difference		58.7		
Deocmposition				
Explained	58.2	20.1	3.4	23.3
Unexplained	1.5	39.7	56.3	36.4
Percent Explained	97.4	33.6	5.7	39.0

**Large-Small Industry**

	<b>Educ only</b>	<b>Age only</b>	<b>Educ and age only</b>	<b>Provincial variables only</b>
Average wage				
Urban		331.6		
Rural		164.0		
Difference		167.6		
Deocmposition				
Explained	114.5	96.9	10.5	104.7
Unexplained	53.1	70.7	157.1	62.9
Percent Explained	66.3	5.8	6.3	68.5

**5. What explains the Philippine income gap?**

Finally, we apply the Oaxaca decomposition to total household income from 2000 to 2009 using the same regression model and variables that we did for wages. To repeat our earlier finding, about ₱38,000 of the ₱110,000 urban-rural nominal income gap, or 34 percent, is explained by cost of living differences. Table 6 deals with the real income gap. Since the individual and provincial variables exhibit much the same statistical impact on income gaps as they do on wage gaps, we do not report their detail here in the text except to repeat that education and experience are the individual variables that dominate: by themselves they explain 71 percent of the household total income gap.

However, one income gap finding does emerge which contrasts dramatically with the wage gap findings: provincial environmental variables have a much bigger impact—50 percent of household income gaps are explained by provincial variables alone. This result strongly suggests that provincial variables have a powerful effect on labor participation rates, skill mix, occupation mix, property incomes, and remittances; they have little impact on wage rates themselves.

**TABLE 6. Oaxaca Decomposition of urban-rural  
real total household income gaps**

	All	Educ only	Age only	Educ and age only	Provincial variables only
Average wage					
Urban			178,896.0		
Rural			115,311.8		
Difference			63,584.2		
Decomposition					
Explained	66,985.1	41,782.9	0.0	45,083.2	31,577.9
Unexplained	0.0	21,801.4	63,584.2	18,501.0	32,006.3
Percent Explained	100.0	65.7	0.0	70.9	49.7

## 6. Understanding spatial wage and income gaps: thinking in general equilibrium

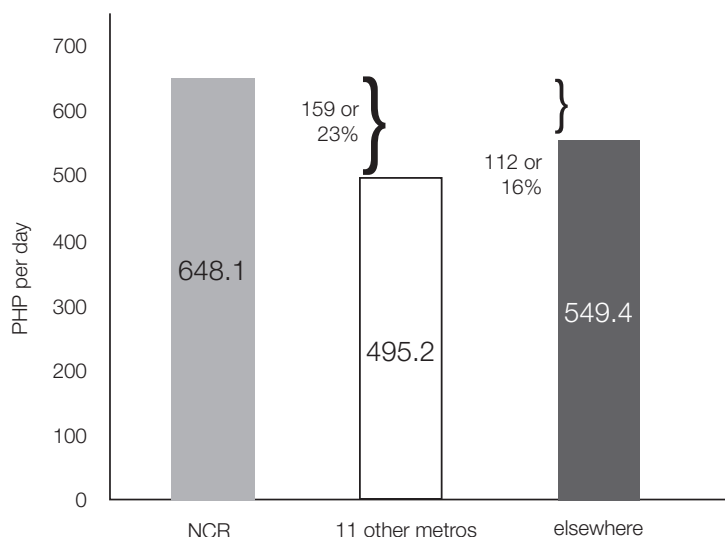
Income inequality is higher in the Philippines than in most of its Asian neighbors, and spatial inequality accounts for a fairly large share of it. So what accounts for the large urban-rural wage and income gaps in the Philippines? Individual attributes of workers and households explain the majority of the gaps, and schooling, skill, and experience are the three individual characteristics that matter most. Provincial variables like typhoon incidence, government corruption, school crowding, and access to health facilities have only a modest impact on urban-rural wage gaps, but they have a powerful impact on urban-rural income gaps. Workers born in the cities and immigrants to the cities invest more in human capital than do rural workers, but this paper cannot tell us why. That is, it cannot say how much of this is due to better human-capital-building infrastructure supply and how much is due to individual demand for that infrastructure, and, if the latter, how much is due to market incentives.

Many questions remain unanswered. First, we have no direct evidence that explains why the urban-rural skilled wage gap fell substantially in the last few years of our sample, whereas the equivalent gap for unskilled wages remained essentially constant. To the extent that this has been driven primarily by more abundant skills in Metro Manila and contiguous regions, it implies that firms have found the location attractive. But it also suggests that opportunities have emerged for businesses to expand in rural areas where their added demand for skilled workers has helped close the wage gap. An investigation into the specific changes in policies, markets, or institutions that led to this result might suggest strategies that would further improve labor market integration between urban and rural areas, thus reducing spatial inequality.

Second, we do not yet know why secondary cities have relatively low skilled wages (Figure 7). This could be due to a shortage of investment opportunities for



skill-intensive firms in secondary cities. If so, we need to know more about the causes of the shortage.

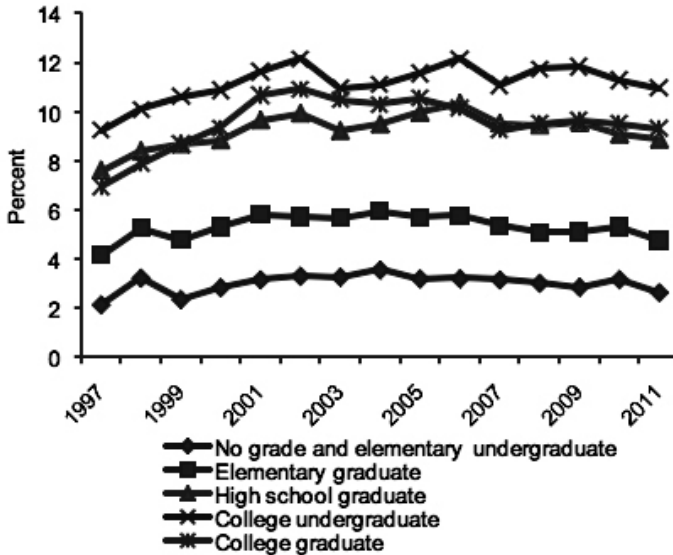


Source: Labor Force Survey

**FIGURE 7. Average nominal wages in 2011(skilled)**

Third, we have shown that unemployment and underemployment account for very little of the urban-rural income and wage gaps, either for skilled labor, unskilled labor, or the average of the two. This is puzzling given that unemployment rates rise with education in the Philippines (Figure 8). We have also shown that those large urban-rural income gaps are driven mostly by education and experience. So why doesn't an excess supply of educated workers in the cities lead skill-intensive firms to expand employment, thus driving down both the income and the wage gaps? Are skilled jobs rationed with their rates of pay sticky downwards?

Fourth, the relative stability of the unskilled urban-rural gap over the last decade must be explained by one or both of two forces: unskilled workers may not be exploiting the gap with much vigor; and firms are not exploiting it with much vigor either. Do constraints on worker mobility matter, such as poverty making investment in the move difficult, high minimum wages, labor regulations, or union restrictions? Are there barriers in capital markets that do not make it profitable for firms to invest outside well-established urban areas? And what about land markets?



Source: Labor Force Survey

**FIGURE 8. Unemployment by educational attainment**

Joseph Capuno [2010] reported strong evidence of systematic spatial clustering of land values in the Philippines. That is, land prices tend to converge only within certain regions, especially in those areas of major population density such as the Metro Manila region. Capuno [2012:20] could only find evidence of statistically significant positive spatial autocorrelation for Metro Manila and three neighboring provinces; otherwise, he could observe no significant correlations in land prices. Moreover, he [2012:21] could find no evidence of spatial autocorrelation when considering the role of distance in land price integration forces.

It seems to us that the lack of wage and land price convergence across regions in the Philippines is not caused primarily by distance or geography but rather by the fact that different jurisdictions continue to have significant administrative autonomy, which raises barriers to market integration. These institutions are consistent with continued spatial segmentation of land and capital markets. Lack of labor market integration might, at least partially, be explained by mobility restrictions on firms, but also by constraints on land use.

Given the judicial and administrative constraints on the spatial mobility of firms and their land use, Philippine workers do an excellent job of sorting themselves to take advantage of the spatial opportunities. The fact that education, age, experience, and other individual characteristics remove much of the observed urban-rural wage gaps suggests fairly efficient labor market adjustment. The fact that firms do not locate or expand in areas with cheaper land and labor, or that trade does not promote national integration, seems to suggest that capital and

land market failure offer a better way to understand persistent urban-rural income gaps than does labor market failure. The persistence of spatial income gaps in the Philippines has much more to do with unequal spatial endowments than labor market failure. And the fact that individual endowments explain so much of spatial inequality in the Philippines suggests that local political economy forces are critical since they determine the quality of the education-health infrastructure. Given the large role that spatial infrastructure inequalities have in promoting the rural-urban gap, government programs to ameliorate these differences should come in the following areas:

- Promotion of the development of secondary urban centers outside of the national capital region;
- Improvement of the investment climate, which may constrain companies from expanding investment in existing urban areas that would be able to attract more rural unskilled workers and also retain many of the skilled workers who would otherwise work abroad as overseas Filipino workers;
- Improvement of infrastructure and transportation between areas identified as weakly integrated despite geographical proximity;
- Reconsideration of the current rules on the limited and highly politicized rezoning of agricultural lands to commercial so as to permit more investment;
- Relaxation of labor market rules that might hamper expansion of employment in existing businesses; and most importantly
- Promotion by the central government of programs that might serve to level the education-health infrastructure playing field between rural and urban areas.

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