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Working Paper

Different faces of inequality across Asia: Decomposition of income gaps across demographic Groups

ADB Working Paper, No. 688

Provided in Cooperation with:

Asian Development Bank Institute (ADBI), Tokyo

Suggested Citation: Hlasny, Vladimir (2017) : Different faces of inequality across Asia: Decomposition of income gaps across demographic Groups, ADB Working Paper, No. 688, Asian Development Bank Institute (ADBI), Tokyo

This Version is available at:

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ADBI Working Paper Series

DIFFERENT FACES OF INEQUALITY ACROSS ASIA: DECOMPOSITION OF INCOME GAPS ACROSS DEMOGRAPHIC GROUPS

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No. 688
March 2017

Asian Development Bank Institute

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Suggested citation:

Hlasny, V. 2017. Different Faces of Inequality across Asia: Decomposition of Income Gaps across Demographic Groups. ADBI Working Paper 688. Tokyo: Asian Development Bank Institute. Available: <https://www.adb.org/publications/different-faces-inequality-across-asia>

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Abstract

Substantial evidence exists that economic inequality in Asia has been growing, but the dimensions of this inequality and its growth are far less clear. This paper evaluates inequality in household incomes per capita across various demographic groups in income surveys from six middle- and high-income countries across Asia: the People's Republic of China (PRC) (2002); India (2004); Japan (2008); Republic of Korea (2006); the Russian Federation (2004, 2007, and 2010); and Taipei,China (2005, 2007, 2010). These surveys, made available by Luxembourg Income Study, are unique in that they are harmonized across countries and time, cover even Asia's developing countries, and encompass over 130,000 household records. This study describes patterns in overall inequality, inequality in various quantiles of national income distributions, and income differentials across various demographic groups. Income gaps due to households' rural/urban residence, administrative region, education and employment status, and gender are assessed at various income quantiles using unconditional quantile regressions, and are decomposed into parts due to differentials in household endowments and parts due to differentials in returns to those endowments.

Japan; Taipei,China; and Republic of Korea have very low degrees of overall income inequality by world standards, while India and the PRC have high levels. The Russian Federation has a medium degree of inequality, sluggishly improving over time. Rural/urban income gaps are evident across all evaluated countries, but they are particularly high in the PRC, India, and the Russian Federation, accounting for a large share of overall inequality. The rural/urban gap has been falling in the Russian Federation and Taipei,China. Inequality between disadvantaged and advantaged regions is high in the PRC and India, followed by the Taipei,China. Over time this gap stagnated in Taipei,China and further deepened in the Russian Federation, disagreeing with claims of market integration and convergence in recent Russian Federation reports. Education gap is an important component in overall inequality across most countries, especially in the PRC and India. Employment gap is notably large among poor households in the Republic of Korea and Taipei,China, due to differential returns to household endowments, suggesting that non-employed individuals have similar skills as their employed counterparts, but markets and the welfare state do not bestow them with adequate compensation for their skills. Gender gaps are surprisingly small across the six countries—women appear to have a similar distribution of endowments as men, and returns to them are not significantly lower.

Polarization arises in the evaluated societies whereby a small group of households come in possession of large stocks of endowments and concentrate in cities and advantaged regions to receive high returns on their endowments. The rest of the populations, notably in India, lack resources to invest in market-valued characteristics to lift themselves up. Overall, education and the return to it, geographic location, and household composition play important roles in driving economic inequality—and suggest viable ways to control it—across demographic groups.

JEL Classification: D31, D63, N35

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1. MOTIVATION

Household income surveys have traditionally been used to evaluate income inequality, but the focus was limited to an aggregate measure of inequality or decomposition of inequality around the mean of the income distribution. Less is known about the distribution of incomes at lower and upper ends of countries' income distributions even in industrialized nations. Our knowledge is sparser yet in regard to developing countries. At the same time, understanding the income differentials among the bottom and top income households is important in all countries, because their influence on estimates of overall inequality, poverty, and polarization is substantial. This is particularly important today given the calls for action in countries worldwide in response to inequality, social injustice, and polarization of societies. Evidence in upper- and middle-income countries around the world shows that the aggregate-income share of top-income households has risen significantly in recent years, that the middle class may be shrinking, and that low-income households have seen stagnation or deterioration in their living standards.

In the Asia-Pacific region including India, economic inequality has been found to be growing (UN ESCAP 2015), and some dimensions including rural–urban inequality are high and persistent (Imai and Malaeb 2016). Economic inequality is not limited to inequality in outcomes, but more worryingly extends to inequality in opportunities for proper nutrition, health, education, other human development, and access to public resources and markets. These inequalities jointly contribute to the observed inequality in economic outcomes, including that in income, consumption, wealth, life expectancy, and life satisfaction. This is of particular concern in developing countries in Asia, where disadvantaged households are held in a perpetual deprivation trap by fragmented markets, lack of infrastructure, inapt or corrupt local governments, and households' lack of resources and information necessary for upward mobility.

In the PRC, economic growth and integration into the world economy through the opening of trade and foreign direct investment have increased inequality. The role of economic privatization and market capitalization has become more important in driving inequality over time, while that of geographic and demographic factors has diminished (Wan 2004; Wan and Zhou 2004; Wan, Lu, and Zhao 2007). Structural differences between regions have been found to persist, but regional inequality fell on account of improvements in factor mobility (Heshmati 2004). An important facet of inequality in the PRC involves the ethnicity and residence registration (*hukou*) dimensions. Chinese non-Han ethnic groups have traditionally fared worse than the Han, due to poor backgrounds, limited opportunities, and discrimination. Residents with agricultural *hukou* have been denied education, employment, and residence opportunities outside of their region of registration. In a bid to preempt domestic instability and separatism, and to integrate regional factor markets, the Central Chinese government has in recent years aimed to remove *hukou*-based restrictions and to promote the welfare of ethnic minorities (Jeong and Hlasny 2016), but the efforts have been weak.

In the Russian Federation, cross-region inequality was rising until the 1990s due to natural and structural differences and shocks (Heshmati 2004), but recent evidence points to a decrease in inequality since then on account of local economic growth (Guriev and Vakulenko 2012). Nevertheless, the level of inter-regional inequality remains high (Mahler 2011; also refer to studies evaluated by Gluschenko 2010, 2011), suggesting that opportunities for labor mobility are improving only slowly, and that inadequate regional housing options, transportation infrastructure and social policy may

play a role in it (Gluschenko 2010). These findings have implications for regional as well as national socio-economic policy.

In India, substantial inequality between urban and rural areas was identified as driving inter-regional disparities and their growth over time (Sachs et al. 2002; Heshmati 2004; Chamarbagwala 2010). Urban districts are richer and growing faster on account of strong performance of services and knowledge-intensive industries there, and inflow of skills and capital (Brar et al. 2014). Northern and urban districts also exhibit lower inequality in educational opportunities (Asadullah and Yalonetzky 2012). Trade expansion and liberalization of the services sector have had some effect on inequality growth, in part through their effect on inequality in returns to education (Kijima 2006), but employment reallocations for other reasons have played a greater role (Mehta and Hasan 2012).

In Japan, Republic of Korea and Taipei,China, much lower degrees of income inequality were identified, but were found to be systematic and persistent (Kang and Yun 2008; Higashikata 2013). One dimension involves disparity between incomes of regular and irregular workers (Sato and Imai 2011; Tarohmaru 2014; Hlasny 2016b). In Republic of Korea, increases in inequality since the 1990s were blamed on inequality in returns to skills (Kang and Yun 2008; Nahm 2008; Chang and England 2011), on demographic change—particularly ageing (Lee, Kim, and Cin 2013), and on unionization (studies cited by Ghosh and Lee 2016). In Japan it was observed that the return to skills stagnated or fell for lower- and middle-income workers while it rose for high-income male workers, contributing to gender gaps (Yokoyama, Kodama, and Higuchi 2016). In both countries, structural factors in the economy—including labor market reforms and skill-biased technological change—effectively led to relegation of disadvantaged workers to lower quality industries and jobs (Kang and Yun 2008; Park and Mah 2011). In Taipei,China, gender gaps are low, while rural–urban and educational gaps are responsible for much of inequality (Chang 2012; Chen 2014).

Persistent and systematic inequality is not only a fairness and social-justice concern but also a problem for countries' development. High inequality hampers economic growth and increases government costs for ensuring minimum levels of security (ECA, ILO, UNCTAD, UNDESA, and UNICEF 2012). Above a certain threshold, inequality undermines sustainable growth and poverty alleviation efforts (Chambers and Krause 2010; Berg and Ostry 2011). Between-group inequality is particularly worrying as it may yield intergenerational transmission of inequality, poverty traps for entire social groups, polarization, social tension, and political instability (Stewart and Langer 2007; Kabeer 2010; UNDP 2013). All these factors may yield social and political instability as well as outbreaks of conflict, as the events in the Middle East in 2011–2013, and recently in Latin America show.

Proper measurement, understanding, and eradication of inter-group inequalities are thus priorities for regional organizations and policy makers. However, existing knowledge is limited and inconclusive with respect to inter-group comparisons for vulnerable demographic groups such as rural or uneducated households. Hence, this paper contributes to the empirical literature on developing countries worldwide and particularly in Asia by measuring inter-group inequalities within six countries, decomposing the inequalities by source, and evaluating trends in the inequalities and their sources over time. Inequalities between different geographic areas and demographic groups are measured in order to estimate the effect of household endowments on overall inequality.

1.1 Contributions of this Study

Inter-group inequality is thought to be driven by differences in households' human capital, demographic characteristics, and geographic access to markets. Differences in households' endowments such as human capital, demographic characteristics, geographic location, and residence are evaluated as main determinants explaining the income differentials between social groups. In particular, income differentials across rural/urban areas, disadvantaged/advantaged administrative regions, and households with less/more educated, non-employed/employed and female/male heads are evaluated using ten Asian household income surveys included in the Luxembourg Income Study database. The ten surveys are for six middle- and high-income countries from across Asia that were harmonized and made available by Luxembourg Income Study (LIS).

The six countries evaluated in this study differ significantly in the levels of income as well as in the within-country degree and form of inequality in incomes. India and the PRC have the lowest distribution of incomes, whose mean and median are less than one-tenth of the levels in the highest-income country in the sample, Japan (Table 1). Republic of Korea's distribution of income is near Japan's level, while Taipei,China is midway between the levels in the PRC and India, and those in Japan. The Russian Federation has been making fast progress from income levels just twice as high as the PRC's, to near Taipei,China's.

Inequality gauged by the Gini index shows that Japan; Republic of Korea; and Taipei,China have modest inequality by world standards, at or below the world mean of national Ginis. The Russian Federation's Gini is 5 percentage points higher, or approximately one standard deviation above the world mean. Finally, the PRC and India have Ginis 20 percentage points above the levels in Japan and Taipei,China, in the high end of the worldwide distribution of Ginis. Correspondingly, income gaps, measured by the 75/25 and 90/10 percentile ratios of incomes, are lowest in Japan and Taipei,China, closely followed by Republic of Korea, lagged somewhat by the Russian Federation, and highest in India and the PRC. In the PRC, incomes in the highest decile are more than 13 times as high as in the bottom decile (Tables A1 and A2). The Lorenz curves for national income distributions indicate similar trends (Figure A1). Japan; Taipei,China; and Republic of Korea have the lowest degree of inequality among the evaluated countries, while the Russian Federation, India, and the PRC have the highest. In the PRC, the gap that should be redistributed to achieve perfect equality across households is twice as large as in Japan. Income distribution across all six countries taken together (all ten surveys) startlingly yields a similar degree of inequality as that in the PRC or India alone. In fact, their Ginis are just short of estimates of the Gini in middle- and high-income countries worldwide, of 54.6 using LIS data, and that is before these Ginis are corrected for various sampling and measurement issues that could lead to further adjustments upward by 3–7 percentage points (Hlasny and Verme 2015; Hlasny 2016a).¹

¹ Using all most-recent data in LIS database—967,746 household records in 41 national surveys—yields an estimate of the Gini in the middle- and high-income world of 69.6. The 41 surveys include: *at04*, *au10*, *be00*, *br11*, *ca10*, *ch04*, *cn02*, *co10*, *cz04*, *de10*, *dk10*, *ee10*, *es10*, *fi10*, *fr10*, *gr10*, *gt06*, *hu05*, *ie10*, *il10*, *in04*, *is10*, *it10*, *jp08*, *kr06*, *lu10*, *mx10*, *nl10*, *no10*, *pe04*, *pl10*, *ro97*, *ru10*, *se05*, *si10*, *sk10*, *tw10*, *uk10*, *us10*, *uy04*, *za10*. Incomes were converted to 2005 US\$, and national samples were weighted by 15–64yo population in the corresponding world income bracket as of 2014 (World Bank 2015a, 2015b, 2015c). This sample of national surveys accounts for 65.9% of population in the middle- and high-income countries worldwide.

Table 1: Quantile Decomposition for the PRC 2002, India 2004, Japan 2008, and Rep. of Korea 2006 by Rural/Urban Residence

	PRC 02			India 04		
	10th pctile	50th pctile	90th pctile	10th pctile	50th pctile	90th pctile
Treatment group	5.858*** (0.018)	6.915*** (0.009)	7.833*** (0.013)	5.845*** (0.010)	6.847*** (0.006)	8.015*** (0.010)
Control group	7.650*** (0.011)	8.381*** (0.008)	9.106*** (0.013)	6.613*** (0.011)	7.652*** (0.009)	8.729*** (0.013)
Overall Gap	-1.792*** (0.021)	-1.466*** (0.012)	-1.274*** (0.018)	-0.768*** (0.015)	-0.805*** (0.011)	-0.714*** (0.016)
Endowment	0.200*** (0.046)	0.004 (0.023)	-0.121*** (0.032)	-0.286*** (0.017)	-0.343*** (0.010)	-0.580*** (0.017)
Returns	-1.992*** (0.050)	-1.470*** (0.025)	-1.152*** (0.036)	-0.482*** (0.022)	-0.462*** (0.013)	-0.135*** (0.021)
Characteristics of hhd. head	0.158*** (0.029)	0.049*** (0.014)	-0.033* (0.020)	0.009*** (0.002)	0.013*** (0.002)	0.022*** (0.003)
Head education	-0.013 (0.026)	-0.032** (0.013)	0.014 (0.018)	-0.045*** (0.008)	-0.123*** (0.005)	-0.330*** (0.010)
Head employment	0.080*** (0.022)	0.055*** (0.011)	0.013 (0.015)	-0.180*** (0.011)	-0.152*** (0.006)	-0.153*** (0.010)
Household composition	0.013 (0.019)	-0.018* (0.009)	-0.029** (0.013)	-0.016*** (0.005)	-0.010*** (0.003)	-0.000 (0.004)
Geographic location	-0.040*** (0.009)	-0.051*** (0.005)	-0.086*** (0.007)	-0.053*** (0.011)	-0.071*** (0.006)	-0.119*** (0.011)
Characteristics of hhd. head	0.250 (0.631)	-0.397 (0.335)	-0.366 (0.498)	0.002 (0.311)	0.034 (0.209)	0.022 (0.319)
Head education	0.184** (0.086)	0.221*** (0.044)	0.451*** (0.063)	-0.175*** (0.029)	-0.235*** (0.020)	0.166*** (0.030)
Head employment	-0.250*** (0.068)	-0.080** (0.036)	-0.059 (0.052)	0.160*** (0.040)	0.094*** (0.026)	0.034 (0.040)
Household composition	0.127 (0.106)	0.016 (0.058)	-0.079 (0.087)	0.179* (0.095)	0.144** (0.063)	0.346*** (0.097)
Geographic location	-0.160*** (0.035)	-0.093*** (0.019)	0.021 (0.030)	-0.040 (0.024)	0.064*** (0.016)	0.202*** (0.025)
Constant	-2.143*** (0.658)	-1.137*** (0.349)	-1.120** (0.518)	-0.608* (0.325)	-0.563** (0.219)	-0.904*** (0.334)
Observations	17,029			41,004		

continued on next page

Table 1 *continued*

		Japan 08			Rep. of Korea 06		
		10th pctile	50th pctile	90th pctile	10th pctile	50th pctile	90th pctile
Endowment Effects (Explained)	Treatment group	9.406*** (0.111)	10.140*** (0.032)	10.700*** (0.051)	8.857*** (0.0221)	9.864*** (0.011)	10.560*** (0.015)
	Control group	9.496*** (0.021)	10.220*** (0.012)	10.860*** (0.017)	9.263*** (0.0131)	10.050*** (0.007)	10.660** (0.008)
	Overall Gap	-0.090 (0.113)	-0.076** (0.034)	-0.156*** (0.054)	-0.406*** (0.0256)	-0.182*** (0.013)	-0.101*** (0.017)
	Endowment	-0.136** (0.064)	-0.055*** (0.020)	-0.051* (0.029)	-0.419*** (0.0241)	-0.243*** (0.012)	-0.166*** (0.017)
	Returns	0.046 (0.118)	-0.022 (0.033)	-0.106* (0.056)	0.0125 (0.0323)	0.061*** (0.015)	0.065*** (0.023)
	Characteristics of hhd. head	-0.042 (0.039)	-0.011 (0.009)	0.004 (0.015)	-0.065*** (0.020)	-0.000 (0.009)	0.029** (0.014)
	Head education	-0.111** (0.044)	-0.027** (0.012)	-0.039** (0.019)	-0.119*** (0.017)	-0.105*** (0.008)	-0.119*** (0.013)
	Head employment	0.008 (0.024)	-0.006 (0.007)	-0.006 (0.009)	-0.249*** (0.022)	-0.102*** (0.010)	-0.049*** (0.015)
	Household composition	0.024 (0.034)	0.014 (0.011)	0.014 (0.017)	0.0028 (0.017)	-0.041*** (0.008)	-0.030** (0.013)
	Geographic location	-0.015 (0.031)	-0.025*** (0.009)	-0.023 (0.014)	0.010** (0.0049)	0.004** (0.002)	0.004** (0.002)
	Characteristics of hhd. head	-1.818 (1.315)	-0.097 (0.376)	-0.409 (0.629)	1.076** (0.491)	0.607*** (0.235)	0.113 (0.347)
	Head education	0.727** (0.355)	0.112 (0.103)	0.125 (0.172)	-0.407*** (0.136)	0.003 (0.067)	0.052 (0.094)
	Head employment	0.076 (0.213)	-0.076 (0.061)	-0.019 (0.101)	-0.115* (0.069)	0.068** (0.033)	0.062 (0.049)
	Household composition	0.002 (0.397)	0.268** (0.114)	-0.140 (0.190)	0.484 (0.333)	-0.133 (0.159)	0.043 (0.236)
	Geographic location	0.141 (0.224)	0.091 (0.065)	0.124 (0.109)	-0.431*** (0.055)	-0.188*** (0.026)	-0.194*** (0.040)
	Constant	0.919 (1.440)	-0.319 (0.412)	0.214 (0.690)	-0.595 (0.416)	-0.296 (0.199)	-0.010 (0.294)
	Observations		3,318			15,081	

PRC = People's Republic of China.

Notes: Standard errors computed using the delta method are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Our study offers several contributions to the existing literature on inequality in the developing world, and specifically in developing Asia. First, a recent estimation technique—unconditional quantile regression combined with the Blinder–Oaxaca decomposition—is used to estimate income gaps across demographic groups at various quantiles of national income distributions, and to explain them using differences in endowments as well as differences in the returns to those endowments. This approach has not been utilized adequately in decomposing inequality in developing Asian countries. The analysis was conducted in part on site at the LIS office in Luxembourg using offline access to LIS database. This allowed us to review all data carefully and use add-on statistical programs, which would have been cumbersome using online access alone.

The second contribution is that we use a novel set of household surveys that are harmonized across countries and time. The fact that these countries range from lower-middle income (India), through upper-middle income (the PRC, the Russian Federation) and recently industrialized (Taipei, China; Republic of Korea), to high income countries (Japan) is viewed as a strength. It allows us to comment on the socio-economic conditions in countries at different stages of development, allows robustness checks, and facilitates comparisons that can inform policy makers regarding prospects for countries on their respective growth paths.

The third contribution is that this study assesses multiple, non-traditional dimensions of inequality. Beside income gaps between rural versus urban residential groups and between disadvantaged versus advantaged regions, this study assesses income gaps across households with less versus more educated, non-employed versus employed, and female versus male heads. Therefore, this study tells a different story than that in existing literature regarding the form and evolution of inequality in developing Asia. The study is organized as follows. The next section reviews several methods commonly used in the empirical welfare-economic literature to decompose economic inequality by its dimensions. The following section presents the data and describes how variables were combined and formatted in the empirical analysis. Empirical results are presented next. Finally, section V concludes with a discussion of main lessons, their robustness and their implications for policymaking.

2. METHODS

Existing literature relies on a variety of approaches to decompose inequality and analyze its determinants. One method that helps to identify the causes of between-group inequality is the regression-based Blinder–Oaxaca decomposition (Blinder 1973; Oaxaca 1973), which distinguishes the role of differentials in endowments, and differentials in the returns to those endowments between pairs of demographic groups. One limitation of the standard Blinder–Oaxaca decomposition is that it only estimates the mean effect of a given variable on the gap in economic outcomes. In fact, the effects of covariates typically differ systematically along the income (or expenditure or wage) distribution. One method that allows estimating the impact of explanatory variables at different points on the welfare-aggregate distribution is the unconditional quantile regression (UQR) technique (Fournier and Koske 2012).

This paper uses UQR decomposition to study income gaps across the entire population distribution and decompose them by source. The UQR is implemented by a recently developed re-centered influence function (RIF) method (Firpo et al. 2009; Fortin et al. 2010). The UQR technique estimates the impacts of explanatory variables on individual quantiles of the unconditional distribution of an outcome variable—annual disposable

household income per adult-equivalent here. It measures how various quantiles of the distribution, not only the average, of the outcome variable will be affected by changes in explanatory variables. Using the structure from the Blinder–Oaxaca decomposition, the income differential between any two social groups in any quantile of the income distribution is separated into two effects: the *endowment* effect and the *returns* effect. The endowment effect is the “explained” part of the differential associated with the difference in values of household characteristics between the two groups of households, such as age, education, employment of the head, residence, and geographic region. The returns effect is the “unexplained” part of the differential—attributable to some latent form of segmentation, inefficiency, or discrimination in the market for human capital—interpreted as the effect of the difference in returns to individual characteristics between the two social groups, computed at values of characteristics possessed by the advantaged group.

RIF is a regression-based procedure facilitating decomposition of different distributional statistics across the unconditional distribution of total incomes per capita. The RIF is used in this paper to decompose the distribution of total income by households’ rural/urban residence and disadvantaged/advantaged region, and households with less/more educated, non-employed/employed, and female/male head. The method consists of two stages. The first stage entails estimating the UQR on log annual household income per capita of the two groups of interest,² then constructing a counterfactual distribution that would prevail if group 1 (e.g., rural households) received the returns that pertained to the second group (urban households, respectively). The comparison between the counterfactual and the empirical distribution allows us to estimate the part of the income gap attributable to differences in household characteristics (*endowment effect*) and the part attributable to differences in returns to these characteristics (*returns effect*).

The method can be expressed as using the following influence function re-centered so that its mean corresponds to the θ th quantile of y , log annual income per capita:

$$RIF(y, Q_\theta) = X\beta + \varepsilon \quad (1)$$

$RIF(y, Q_\theta)$ is estimated by computing the sample quantile Q_θ and deriving the density of y at that point by Kernel method. X is a matrix of regressors that can be divided into five groups. The first group consists of household-head characteristics including age, age squared, gender, and marital status. The second group consists of three binary indicators for the education level of the head. The third group includes binary indicators for the employment status and employment sector of the household head. The fourth group contains household characteristics including household size and ratio of those below 14 years and those above 65 years of age in the household. Finally, the fifth group includes geographic location indicators.

After estimating the RIF equation for individual deciles from the 10th percentile to the 90th percentile of the population, the predicted values for individual demographic groups are decomposed into the endowment and returns effects as follows:

$$\hat{Q}_\theta^i - \hat{Q}_\theta^j = \{\hat{Q}_\theta^i - \hat{Q}_\theta^*\} + \{\hat{Q}_\theta^* - \hat{Q}_\theta^j\} = (\bar{X}^i - \bar{X}^j)\hat{\beta}_\theta^i + \bar{X}^j(\hat{\beta}_\theta^i - \hat{\beta}_\theta^j) \quad (2)$$

² In our case: Rural/urban households, and households with female/male, uneducated/educated and non-employed/employed heads.

*for i/j pairs: rural/urban, female/male head,
uneducated/educated head, non-employed/employed head.
= counterfactual values.

Here \hat{Q}_θ is the θ th unconditional quantile of log annual income per capita, \bar{X} is the vector of the means of covariates and $\hat{\beta}_\theta^k$ is the estimate of the unconditional quantile partial effects of group k . $\hat{Q}_\theta^* = X^j \hat{\beta}_\theta^i$ is the θ th quantile of the unconditional counterfactual distribution that would have prevailed for group j if they received group i 's returns to their characteristics.

The first term in equation 2, $(\bar{X}^i - \bar{X}^j) \hat{\beta}_\theta^i$, is the endowment effect. It is the contribution of the differences in distributions of household characteristics to inequality at the θ th unconditional quantile. The second term, $\bar{X}^j (\hat{\beta}_\theta^i - \hat{\beta}_\theta^j)$, is the returns effect—the inequality due to differences in the returns to household characteristics at the θ th unconditional quantile.

3. DATA

3.1 Selection of National Surveys

This study relies on ten household surveys for six countries from across Asia collected and harmonized by LIS. As of October 2015, LIS offered public access to over 250 income distributions for 45 countries, and additional surveys are being added several times a year. The datasets are harmonized and can be studied jointly both across years and across countries. In this study, only the most recent waves of national surveys are used, to focus on inequality at its level in recent times, and to ensure comparability. The ten surveys are for years 2002–2010. For the Russian Federation and Taipei,China, two older survey waves are used in order to evaluate robustness of results and comment on evolution over time.³

The original microdata for the ten surveys were provided by the Chinese Household Income Survey Project provided by the Beijing Inter–University Consortium for Political and Social Research, University of Michigan; India Human Development Survey, provided by the Data Sharing for Demographic Research—Carolina Population Center at the University of North Carolina—Chapel Hill; Japan Household Panel Survey run by the Keio University Joint Research Center for Panel Studies; Korean Household Income and Expenditure Survey and Farm Household Income and Expenditure Survey conducted by Statistics Korea; Russia Longitudinal Monitoring Survey run by Higher School of Economics and provided also by the Carolina Population Center; Taipei,China Survey of Family Income and Expenditure—Taipei,China Area, administered by the Directorate General of Budget, Accounting and Statistics.

The Russian Federation is included among Asian countries evaluated here because 76.8 percent of its territory (13.1 mil. km²), 26.3 percent of population (37.6 mil.), and three of its eight federal districts (Ural, Siberian, and Far Eastern) are in Asia.⁴ The

³ LIS database additionally includes the year-2000 survey for the Russian Federation, and the 1981, 1986, 1991, 1995, 1997, and 2000 waves for Taipei,China, not evaluated here.

⁴ These numbers are prior to the annexation of Crimea in 2014. Russian surveys in LIS database includes 8 regions: Moscow and St. Petersburg; Northern and North Western; Central and Central Black-Earth; Volgo-Vyatski and Volga Basin; North Caucasian; Ural; Western Siberia; Eastern Siberia and Far East. This differs slightly from the Russian Federation's federal districts, namely: Center (including Moscow/St. Petersburg); South; North West (including North); Far East; Siberia; Ural; Volga; Northern Caucasus.

Russian Federation is also sometimes classified as a Central Asian (or Central Eurasian) economy, because the Russian economy and households may be thought of as facing similar industrial, institutional, and cultural conditions as those in surrounding central Asian countries around the Ural mountain range. Finally, the Russian Federation, India, and the PRC (and Brazil) are often compared as members of the “BRIC” club of large transitional economies. Even though the Russian Federation has recently made a transition from an upper-middle to a high-income country, this transition did not occur until 2013 (World Bank 2013, 2015c), and so it is valuable to include the country along with the PRC and India.

3.2 Variables for the Analysis

In the LIS database of national surveys, we use information from both the household and the personal record files. Information on demographic characteristics and employment status of household heads is merged with information for households including their residence, administrative region, and disposable income per capita.

Specifically, the following variables are used to identify income inequality across demographic groups: disposable household income *dhi*, administrative region *region_c*, residence type *rural*, employment status *emp*, highest attended education level *educlev*, and *sex*. Other variables used in the estimation include: *age*; industry classification *inda1*, farming activity status *farming*, cohabitation with partner *hpartner*; household composition *hhtype*; household size *nhhmem*; number of household members 13 or younger *nhhmem13*, and 65 or older *nhhmem65*; relationship to household head *relation*; and normalized household sampling weights *hwgt*. Finally, currency conversion rates and gross domestic product (GDP) deflators are adopted from the World Bank Development Indicators database (World Bank 2015a, 2015b).

Annual disposable household income per adult equivalent is used as our measure of economic outcome and welfare. Disposable income is also an appropriate outcome variable in our goal to measure the real returns to households’ endowments in the market for human capital. Square root of household size is used as the adult equivalent scale, following LIS practices. Table A1 presents selected summary statistics for the ten surveys.

3.3 Treatment versus Control Groups

Inequality in incomes within countries is decomposed into between-group components using several delineations of treatment versus control groups, namely households with rural versus urban residence, in disadvantaged versus advantaged administrative regions, and with heads who are less versus more educated, non-employed versus employed, and female versus male. Table A3 and A4 show that there are substantial differences in demographic composition of population across the six countries and that, perhaps more importantly, the composition differs very systematically across income-quantile groups in national populations.

Rural versus urban residence: First we identify inequality between households with urban versus rural residence. In the PRC, India, Japan, and the Russian Federation, an appropriate indicator *rural* is used to this end. In Republic of Korea and Taipei,China, however, identification problems arise. In the 2007 and 2010 waves of the Taipei,China survey, indicator for urban/rural residence—or any other subnational geographic indicator—is missing for all households. The closest variable that can be used to distinguish rural and urban households is *farming* (and an identical variable *farm* in 2007). In this study, Taipei,China households with *farming* set to “runs a farming

activity” are classified as rural households, and those that do not run a farming activity are classified as urban households. Similarly, 3,074 households in the Korean survey have the residence indicator missing. The closest variable that can be used to distinguish rural and urban households is the industry classification—in this study, Korean households with residence indicator missing are classified as rural if their industry is agriculture (classification done for 2,745 households).⁵ One potential problem with this classification in Taipei, China and Republic of Korea is that only economically active household-heads may be classified as rural, while both active and inactive heads may be classified as urban. The results, however, do not appear to show any pro-rural bias.

Disadvantaged versus advantaged administrative regions: To decompose inequality within each country by geography, we use administrative-region disaggregation available in the LIS database. In the PRC, we distinguish the predominantly agricultural northwest, west, and southwest regions—including Anhui, Gansu, Guangxi, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangxi, Shaanxi, Shanxi, Sichuan, Xinjiang, and Yunnan provinces—from the industrialized east coast—including Beijing, Chongqing, Guangdong, Jiangsu, Jilin, Liaoning, Shandong, and Zhejiang provinces.

In India, we distinguish country’s less developed states, mostly in India’s interior and east—Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Jammu and Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Orissa/Odisha, Rajasthan, Sikkim, Tripura, Uttar Pradesh, and West Bengal states—from the states in the industrialized and developed southwest and north—Chandigarh, Dadra and Nagar Haveli, Daman and Diu, Delhi, Goa, Pondicherry, Gujarat, Haryana, Himachal Pradesh, Kerala, Maharashtra, Punjab, Tamil Nadu, and Uttarakhand states. This classification also relies on categorization of regions according to economic development by Brar et al. (2014).

In Japan, regions are split between those on all but Honshu island (Hokkaido, Kyushu, Shikoku islands), and Honshu Island (Chubu, Chugoku, Kanto, Kinki, Tohoku regions). In the Russian Federation, we distinguish the mineral-extraction reliant Asian districts—Ural, Siberia and Far East—from the industrialized European regions—including Moscow and St. Petersburg, Northern and North Western, Central and Central Black-Earth, Volgo-Vyatski and Volga Basin, and North Caucasian regions. In Republic of Korea, for lack of more precise regional disaggregation, we distinguish non-capital area of the country (both urban and rural), and Seoul metropolitan area (all urban). Similarly, in Taipei, China we distinguish Taipei province and Kaohsiung municipality, as a disadvantaged region, from Taipei Municipality, the advantaged region.

Decompositions are further performed for households with uneducated (less than complete secondary school) versus educated (complete secondary or higher) heads; non-employed (not currently employed) versus employed heads; and female versus male heads.

3.4 Other Explanatory Variables: Households’ Endowments

In regressions decomposing inequality across other, non-geographic dimensions, we account for households’ residence in different regions as their endowment on which they receive returns. In India, we distinguish four regions: The most developed

⁵ Another problem in Republic of Korea and Taipei, China is that even for respondents with known residence and region indicators, inequality between rural versus urban residences, and that between disadvantaged versus advantaged regions, will be estimated imprecisely, because *Seoul metropolitan area* and *Taipei municipality* are entirely urban regions.

region (Chandigarh, Delhi, Goa, Pondicherry), the above-median region (Gujarat, Haryana, Himachal Pradesh, Kerala, Daman and Diu, Dadra and Nagar Haveli, Maharashtra, Punjab, Tamil Nadu, Uttarakhand), the median region (Andhra Pradesh, Chhattisgarh, Jammu and Kashmir, Karnataka, Orissa/Odisha, Rajasthan, West Bengal) and the least developed region (Madhya Pradesh, Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya, Assam, Jharkhand, Uttar Pradesh, Bihar). This again relies on categorization of regions according to economic development by Brar et al. (2014).

Additional endowments include household heads' age, age squared, gender, status as married, education status (illiterate, primary, lower secondary/preparatory, secondary, postsecondary through tertiary, bachelor's or higher), employment status and sector (agriculture, industry, services, undistinguishable), household size, dependents (proportion of persons below 14, proportion of persons above 65), specific household composition (one-person household, couple without children, couple with children, one parent with children, couple without children and relatives, head, and other members), administrative region, and residence type (rural/urban) are used.

4. RESULTS

Tables 1–14 present the main results of this study. To provide an overall range of estimated log-incomes and income effects in the population, the tables report the statistics for the first, the fifth (median) and the ninth income deciles. Central results for other deciles are illustrated in figures A2 through A6 in the appendix.

The first two rows in these tables report the predicted values of log incomes for the two comparison groups—the treatment (or disadvantaged) group and the control (or advantaged) group, less the overall constant term. Because these statistics are not of central interest here, their discussion will be omitted to spare space. The third row reports on the composite income differential between the two groups, and rows 4 and 5 report the portions attributable to systematic differences in various endowments across the treatment and control groups, and the portion attributable to the differential returns to these endowments. For household endowments, we use all observable household characteristics that may have bearing on households' earning capacity or that may be valued by markets, with the exception of the characteristic defining the treatment versus control group. For instance, in the analysis of the rural/urban income differential, characteristics of household heads (age, age squared, gender, marriage, education and employment status, and sector of employment), household size and specific composition, and administrative region of residence are used. These characteristics may affect income directly if human-capital markets value them or offer allowances for them, or if they imply more working people in the household. The effects of each of these (groups of) endowments on the income differential are shown in rows 6–10.

Row 5 reports on the portion of the income differential that cannot be explained by systematic endowment differences between the treatment and the control groups, and is thus attributed to the differential returns to all endowments, assuming that no important endowments were omitted from the analysis, in agreement with the tradition in the literature using this technique (Belhaj Hassine 2014; Ramadan et al. 2015). The last large block of rows, rows 11–15 in the lower half of Tables 1–14, shows the effects of differential returns to individual (groups of) endowments on the income gaps. Finally, the bottom row of tables 1–14 shows the overall constant terms in the regressions.

4.1 Rural/Urban Income Gap

The first two rows in Tables 1–14 confirm that the PRC and India are at the lower end among the evaluated countries in terms of income levels across each pair of comparison groups (rural/urban, disadvantaged/advantaged region, less/more educated, non-employed/employed, female/male), and across income quantiles, while Japan and Republic of Korea are in the upper end.

Tables 1–3 show the results for the rural/urban gap in each national survey. Row 3 confirms that the PRC has substantial income differentials between rural and urban households, followed by India and the Russian Federation, and then by Taipei, China and Republic of Korea, while such a differential is largely missing in Japan. In the PRC, the Russian Federation, and Republic of Korea, the rural/urban gap is largest among the poorest households, suggesting that the rural poor are trapped in a desperate position. In India and Taipei, China, the gap is similar across income quantiles, while in Japan the gap increases only in the highest income quantiles. Over time, the rural/urban gap in the Russian Federation has been gradually diminishing across all population quantiles, and in Taipei, China there was a significant improvement in rural/urban inequality between 2005 and 2007.

Decomposing the composite income differential into endowment and returns effects, in rows 4–5 of Tables 1–3, indicates that the endowment effect between rural and urban households is nearly non-existent in the PRC, suggesting similar household characteristics, including education and household composition. The rural rich have slightly lower sets of endowments (demographics of household head, household composition, and access to geographic markets) than the urban rich, while the rural poor have even higher endowments (demographics of household head and employment) than their urban counterparts. The returns effect, however, is consistently negative and much larger, affecting particularly low-income rural households. The rural poor receive much lower returns on their endowments, including sector of employment and access to geographic markets, than similarly endowed urban households. This could be due to discrimination, to various barriers including state-regulated ones, as well as to market fragmentation under which employers and workers are not matched efficiently. In India, a different pattern emerges. Both the endowment effect and the returns effect are consistently negative, but while the endowment effect is largest among richer households—suggesting a particular shortfall in education, employment sector, and access to geographic markets among the rural rich—the returns effect is large among median and poor households—suggesting discrimination or lack of market access among the rural poor that lowers their return to education. In Japan, some evidence exists of a shortfall in endowments (particularly education) among the rural poor, while the rural rich are affected more by lower returns to their endowments (particularly household-head demographics) than their urban counterparts. In Republic of Korea, significant shortfalls in endowments including household-head demographics, education, and employment are found among rural households, particularly among the rural poor, while rural households receive slightly higher returns on their endowments (demographics and employment sector), significant among households in the middle and the top of the income distribution.

Table 2: Quantile Decomposition for the Russian Federation 2004, 2007, and 2010 by Rural/Urban Residence

		Russian Federation 04		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	6.978*** (0.083)	8.040*** (0.034)	8.990*** (0.050)
	Control group	7.676*** (0.028)	8.543*** (0.019)	9.449*** (0.026)
	Overall Gap	−0.698*** (0.087)	−0.503*** (0.039)	−0.459*** (0.057)
	Endowment	0.112 (0.099)	−0.068* (0.041)	−0.151** (0.060)
	Returns	−0.810*** (0.126)	−0.436*** (0.053)	−0.309*** (0.079)
	Characteristics of hhd. head	0.041 (0.031)	0.026** (0.013)	0.0117 (0.017)
	Head education	−0.006 (0.046)	−0.042** (0.019)	−0.040 (0.029)
	Head employment	0.058 (0.058)	−0.041* (0.024)	−0.027 (0.036)
	Household composition	0.087** (0.041)	0.036** (0.017)	0.040* (0.024)
	Residence	−0.068 (0.069)	−0.047* (0.028)	−0.136*** (0.042)
	Characteristics of hhd. head	0.611 (1.055)	0.458 (0.450)	0.839 (0.680)
	Head education	−0.323 (0.410)	−0.090 (0.188)	0.134 (0.284)
	Head employment	−0.223 (0.148)	−0.049 (0.064)	0.057 (0.096)
	Household composition	0.401 (0.272)	−0.010 (0.118)	−0.122 (0.178)
	Residence	0.363** (0.175)	0.073 (0.076)	0.068 (0.115)
	Constant	−1.639 (1.158)	−0.818* (0.497)	−1.285* (0.750)
	Observations		3,086	

continued on next page

Table 2 *continued*

		Russian Federation 07		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	7.513*** (0.075)	8.650*** (0.037)	9.558*** (0.035)
	Control group	8.186*** (0.024)	9.125*** (0.018)	9.901*** (0.020)
	Overall Gap	-0.673*** (0.079)	-0.475*** (0.041)	-0.343*** (0.040)
	Endowment	-0.185** (0.080)	-0.186*** (0.039)	-0.173*** (0.037)
	Returns	-0.488*** (0.105)	-0.288*** (0.051)	-0.170*** (0.052)
	Characteristics of hhd. head	0.036 (0.029)	0.031** (0.016)	0.019 (0.014)
	Head education	-0.102** (0.042)	-0.118*** (0.022)	-0.079*** (0.021)
	Head employment	-0.061 (0.048)	-0.056** (0.023)	-0.084*** (0.023)
	Household composition	-0.017 (0.035)	-0.014 (0.016)	-0.002 (0.013)
	Residence	-0.042 (0.041)	-0.030 (0.021)	-0.027 (0.019)
	Characteristics of hhd. head	0.291 (0.910)	-0.175 (0.447)	0.797 (0.464)
	Head education	-0.155 (0.448)	0.323 (0.237)	0.319 (0.258)
	Head employment	0.192 (0.124)	-0.030 (0.061)	0.001 (0.064)
	Household composition	-0.243 (0.236)	0.066 (0.118)	-0.040 (0.123)
	Residence	0.563*** (0.157)	0.217*** (0.079)	0.050 (0.083)
	Constant	-1.136 (1.024)	-0.690 (0.509)	-1.299** (0.533)
	Observations		3,370	

continued on next page

Table 2 *continued*

		Russian Federation 10		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.196*** (0.060)	9.171*** (0.019)	9.998*** (0.029)
	Control group	8.742*** (0.018)	9.513*** (0.012)	10.280*** (0.016)
	Overall Gap	−0.547*** (0.062)	−0.342*** (0.023)	−0.280*** (0.033)
	Endowment	−0.243*** (0.062)	−0.127*** (0.021)	−0.055* (0.030)
	Returns	−0.303*** (0.082)	−0.215*** (0.027)	−0.225*** (0.042)
	Characteristics of hhd. head	0.002 (0.028)	0.018** (0.009)	0.004 (0.014)
	Head education	−0.138*** (0.032)	−0.085*** (0.011)	−0.068*** (0.015)
	Head employment	−0.079** (0.035)	−0.023** (0.010)	0.001 (0.016)
	Household composition	−0.021 (0.032)	0.004 (0.011)	0.058*** (0.016)
	Residence	−0.007 (0.034)	−0.041*** (0.011)	−0.051*** (0.017)
	Characteristics of hhd. head	0.652 (0.738)	0.505** (0.246)	1.095*** (0.381)
	Head education	−0.082 (0.411)	0.113 (0.165)	0.362 (0.249)
	Head employment	0.407*** (0.099)	−0.072** (0.034)	−0.029 (0.053)
	Household composition	0.013 (0.18)	0.145** (0.062)	0.218** (0.095)
	Residence	0.121 (0.125)	0.118*** (0.044)	0.121* (0.067)
	Constant	−1.415* (0.831)	−1.024*** (0.291)	−1.992*** (0.446)
Observations		5,713		

Notes: Standard errors computed using the delta method are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

**Table 3: Quantile Decomposition for Taipei, China 2005, 2007
and 2010 by Rural/Urban Residence**

		Taipei, China 05		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.390*** (0.050)	9.045*** (0.040)	9.692*** (0.035)
	Control group	8.853*** (0.009)	9.517*** (0.006)	10.210*** (0.008)
	Overall Gap	-0.463*** (0.051)	-0.472*** (0.041)	-0.521*** (0.036)
	Endowment	-0.233 (0.181)	-0.363** (0.151)	-0.171 (0.143)
	Returns	-0.230 (0.184)	-0.109 (0.154)	-0.351** (0.147)
	Characteristics of hhd. head	0.041 (0.033)	0.069** (0.029)	0.0126 (0.026)
	Head education	-0.123 (0.175)	-0.276* (0.147)	-0.140 (0.139)
	Head employment	-0.083 (0.057)	-0.105** (0.048)	-0.010 (0.045)
	Household composition	-0.068* (0.038)	-0.052 (0.033)	-0.033 (0.027)
	Characteristics of hhd. head	2.079* (1.090)	-0.345 (0.900)	-1.645* (0.880)
	Head education	-0.424* (0.237)	0.373* (0.197)	-0.105 (0.190)
	Head employment	-0.779*** (0.174)	0.211 (0.144)	-0.138 (0.140)
	Household composition	-0.431 (0.974)	0.835 (0.804)	0.520 (0.787)
	Constant	-0.675 (0.639)	-1.182** (0.530)	1.018** (0.513)
Observations		13,679		

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Table 3 *continued*

		Taipei, China 07		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.585*** (0.029)	9.244*** (0.019)	9.921*** (0.031)
	Control group	8.808*** (0.010)	9.498*** (0.006)	10.220*** (0.009)
	Overall Gap	−0.223*** (0.030)	−0.254*** (0.020)	−0.298*** (0.032)
	Endowment	−0.082 (0.099)	−0.124* (0.063)	−0.295*** (0.109)
	Returns	−0.141 (0.102)	−0.130** (0.065)	−0.003 (0.112)
	Characteristics of hhd. head	0.035 (0.056)	0.066* (0.036)	0.091 (0.061)
	Head education	−0.033 (0.028)	−0.118*** (0.019)	−0.295*** (0.033)
	Head employment	−0.061 (0.096)	−0.038 (0.061)	−0.055 (0.106)
	Household composition	−0.023 (0.056)	−0.034 (0.036)	−0.035 (0.061)
	Characteristics of hhd. head	−0.354 (0.661)	−0.423 (0.419)	0.245 (0.715)
	Head education	−0.795*** (0.124)	−0.047 (0.078)	0.456*** (0.133)
	Head employment	−0.257 (0.823)	−0.018 (0.523)	−0.112 (0.902)
	Household composition	−0.204 (0.525)	0.083 (0.333)	0.270 (0.566)
	Constant	1.467 (1.037)	0.275 (0.659)	−0.863 (1.135)
Observations		13,774		

continued on next page

Table 3 *continued*

		Taipei,China 10		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.534*** (0.029)	9.273*** (0.020)	9.955*** (0.031)
	Control group	8.749*** (0.010)	9.503*** (0.006)	10.220*** (0.008)
	Overall Gap	-0.215*** (0.031)	-0.230*** (0.021)	-0.265*** (0.032)
	Endowment	0.016 (0.079)	-0.064 (0.052)	-0.203** (0.084)
	Returns	-0.230*** (0.083)	-0.167*** (0.054)	-0.062 (0.088)
	Characteristics of hhd. head	0.050 (0.041)	0.011 (0.027)	0.087** (0.044)
	Head education	-0.050* (0.027)	-0.114*** (0.019)	-0.277*** (0.031)
	Head employment	0.055 (0.074)	-0.014 (0.049)	-0.035 (0.079)
	Household composition	-0.040 (0.042)	0.054* (0.029)	0.021 (0.045)
	Characteristics of hhd. head	0.098 (0.621)	-0.697* (0.399)	-0.232 (0.644)
	Head education	-1.011*** (0.163)	-0.062 (0.105)	0.076 (0.171)
	Head employment	0.439 (0.560)	-0.171 (0.368)	-0.210 (0.598)
	Household composition	0.154 (0.498)	0.602* (0.318)	0.665 (0.512)
	Constant	0.091 (0.793)	0.161 (0.519)	-0.361 (0.844)
	Observations	14,843		

Notes: Standard errors computed using the delta method are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Residence unavailable.

In the Russian Federation (Table 2), rural households have lower endowments than urban households, particularly in their educational achievement, employment sector, and access to geographic markets. Over time, this shortfall fluctuates for households in the middle and top, while it systematically grows in size among the poorest households. The returns effect is consistently strongly negative among rural households, and strongest among the poorest households, but it gradually abates over time. In Taipei,China (Table 3), rural households are systematically less educated than urban households, and the returns to education and other endowments are

systematically lower among rural households, but the effects are insignificant in one half of all cases, and there are no clear patterns across income quantiles or over time.

In most of the surveys evaluated in Tables 1–3, the endowment effect is as large as or larger than the returns effect, suggesting that rural households are less endowed with characteristics that are associated with higher earning capacity than urban households. Rural households may still receive lower returns on their stock of endowments than urban households. The policy priority, however, should be to increase the endowments of rural households because the lack of endowments such as marketable skills is a primary driver of the rural/urban income gap. Figures A2–A6 in the appendix illustrate these endowment and returns effects across all population deciles. The endowment and returns effects add up to the overall between-group gaps.

4.2 Disadvantaged/Advantaged Region Gap

Regarding regional inequality, assessed in Tables 4–5, the differential in row 3 appears smaller than the rural/urban gap, suggesting that in most countries spatial inequality is due more to gaps along the local rural/urban dimension than to gaps across larger national regions. In the PRC and the Russian Federation the differential is greatest in the middle and top of the income distribution. In India; Japan; and Taipei,China (2005) all income quantiles see a similar level of regional inequality that cannot be ranked.⁶ In Republic of Korea, the income differential is large only among the poorest decile of the population. Over time, surprisingly, regional inequality in the Russian Federation increases systematically across the 3 years and across all income quantiles. This calls into question reports in existing studies that regional incomes have been converging in the Russian Federation (Guriev and Vakulenko 2012), as the increases in regional gaps are very consistent.

Decomposing the gap into the endowment and returns effects in the PRC, we find the endowment effect to be of the same size and similar magnitude as the returns effect. Households in disadvantaged western provinces tend to be less educated (most notably households in the upper half of the income distribution) and reside in rural areas, away from major centers of economic activity. They also receive significantly lower returns on their education, on their household composition and on their type of residence—particularly households in the lower half of the income distribution.

For most of the other evaluated surveys—specifically Japan; the Russian Federation; and Taipei,China (and to some degree in India)—the decomposition suggests that the returns effects are more important to the regional income gaps than the endowment effects. In India, households in disadvantaged states are slightly less educated, work in inferior sectors, have a less advantageous household composition, and have an inferior access to urban markets compared to households in privileged states, limiting their earning potential. They receive substantially lower returns on their demographic characteristics such as age and marital status, education, and economically advantageous household composition.

In Japan; the Russian Federation; and Taipei,China the endowment effects are small, implying that across regions households are similarly endowed with characteristics that are associated with earning capacity. In disadvantaged regions, the income shortfall is thus due to unexplained factors such as a shortfall in returns to the available stock of endowments—the return to household heads' age and marital status in Japan and the Russian Federation.

⁶ Years other than '05 cannot be evaluated for Taipei,China for lack of regional indicators in the respective survey waves.

Table 4: Quantile Decomposition for the PRC 2002, India 2004, Japan 2008, and Rep. of Korea 2006 by Disadvantaged/Advantaged Admin. Region

	PRC 02			India 04		
	10th pctile	50th pctile	90th pctile	10th pctile	50th pctile	90th pctile
Treatment group	6.047*** (0.016)	7.172*** (0.012)	8.434*** (0.012)	5.894*** (0.010)	6.911*** (0.007)	8.156*** (0.011)
Control group	6.300*** (0.027)	7.899*** (0.019)	9.021*** (0.016)	6.222*** (0.014)	7.348*** (0.010)	8.514*** (0.012)
Overall Gap	-0.253*** (0.032)	-0.727*** (0.023)	-0.587*** (0.020)	-0.328*** (0.017)	-0.437*** (0.012)	-0.358*** (0.016)
Endowment	-0.137*** (0.011)	-0.331*** (0.014)	-0.264*** (0.013)	-0.087*** (0.007)	-0.171*** (0.006)	-0.238*** (0.010)
Returns	-0.116*** (0.031)	-0.396*** (0.018)	-0.323*** (0.019)	-0.241*** (0.017)	-0.266*** (0.011)	-0.120*** (0.016)
Characteristics of hhd. head	0.016*** (0.005)	0.005 (0.003)	-0.033*** (0.004)	0.005** (0.002)	-0.006*** (0.002)	-0.017*** (0.003)
Head education	-0.001 (0.005)	-0.015*** (0.003)	-0.064*** (0.007)	-0.010*** (0.003)	-0.051*** (0.003)	-0.103*** (0.007)
Head employment	0.035*** (0.007)	0.008** (0.004)	-0.007* (0.004)	-0.014*** (0.003)	-0.017*** (0.002)	-0.006** (0.003)
Household composition	-0.006 (0.007)	-0.025*** (0.005)	-0.006 (0.005)	-0.024*** (0.004)	-0.023*** (0.003)	-0.019*** (0.004)
Residence	-0.182*** (0.012)	-0.304*** (0.013)	-0.153*** (0.009)	-0.044*** (0.004)	-0.074*** (0.003)	-0.093*** (0.005)
Characteristics of hhd. head	1.078 (0.874)	-1.042** (0.473)	0.398 (0.514)	-1.209*** (0.331)	-0.292 (0.213)	-0.184 (0.297)
Head education	-0.622** (0.260)	-0.520*** (0.138)	0.006 (0.150)	-0.212*** (0.028)	-0.073*** (0.018)	0.153*** (0.025)
Head employment	-0.018 (0.092)	0.005 (0.050)	-0.159*** (0.054)	0.052 (0.043)	-0.013 (0.028)	0.073* (0.039)
Household composition	-0.203 (0.137)	-0.041 (0.075)	-0.273*** (0.081)	-0.163 (0.104)	-0.176*** (0.067)	-0.074 (0.094)
Residence	-0.378*** (0.044)	-0.242*** (0.024)	0.156*** (0.026)	-0.004 (0.015)	0.019* (0.010)	0.130*** (0.014)
Constant	0.027 (0.924)	1.445*** (0.499)	-0.452 (0.542)	1.296*** (0.346)	0.270 (0.223)	-0.217 (0.310)
Observations	17,029			41,004		

continued on next page

Table 4 continued

		Japan 08			Rep. of Korea 06		
		10th pctile	50th pctile	90th pctile	10th pctile	50th pctile	90th pctile
Endowment Effects (Explained)	Treatment group	9.390*** (0.041)	10.080*** (0.025)	10.690*** (0.037)	9.122*** (0.014)	10.000*** (0.006)	10.650*** (0.007)
	Control group	9.530*** (0.024)	10.240*** (0.012)	10.870*** (0.018)	9.327*** (0.031)	10.060*** (0.016)	10.690*** (0.021)
	Overall Gap	-0.140*** (0.048)	-0.163*** (0.028)	-0.178*** (0.041)	-0.205*** (0.034)	-0.056*** (0.017)	-0.049** (0.022)
	Endowment	-0.021 (0.021)	-0.041*** (0.014)	-0.043** (0.018)	-0.128*** (0.018)	-0.071*** (0.007)	-0.063*** (0.007)
	Returns	-0.119** (0.048)	-0.122*** (0.028)	-0.135*** (0.041)	-0.077** (0.031)	0.015 (0.016)	0.015 (0.021)
	Characteristics of hhd. head	-0.016 (0.016)	-0.012 (0.009)	-0.008 (0.013)	0.007 (0.007)	0.017*** (0.004)	0.018*** (0.005)
	Head education	-0.016 (0.012)	-0.012** (0.006)	-0.016** (0.008)	-0.075*** (0.008)	-0.060*** (0.006)	-0.064*** (0.006)
	Head employment	-0.006 (0.011)	-0.004 (0.006)	0.001 (0.008)	-0.015 (0.009)	-0.004 (0.002)	-0.003 (0.002)
	Household composition	0.021 (0.018)	-0.001 (0.013)	-0.013 (0.016)	-0.046*** (0.008)	-0.024*** (0.004)	-0.014*** (0.005)
	Residence	-0.003 (0.007)	-0.012** (0.005)	-0.008 (0.007)	—	—	—
	Characteristics of hhd. head	-1.110** (0.561)	-0.352 (0.329)	-1.027** (0.485)	0.445 (0.584)	0.756** (0.298)	0.939** (0.404)
	Head education	0.330** (0.160)	0.104 (0.093)	0.136 (0.137)	-0.0415 (0.262)	-0.0799 (0.136)	-0.098 (0.184)
	Head employment	0.036 (0.086)	-0.028 (0.050)	0.024 (0.074)	0.132 (0.095)	-0.030 (0.049)	0.025 (0.066)
	Household composition	0.171 (0.166)	-0.055 (0.097)	-0.244* (0.143)	0.112 (0.359)	-0.182 (0.183)	-0.452* (0.248)
	Residence	0.0357 (0.126)	0.125* (0.072)	0.0155 (0.106)	—	—	—
	Constant	0.418 (0.626)	0.084 (0.367)	0.960* (0.541)	-0.724 (0.503)	-0.450* (0.256)	-0.399 (0.348)
Observations		3,318			15,448		

PRC = People's Republic of China.

Notes: Standard errors computed using the delta method are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
— variables unavailable.

Table 5: Quantile Decomposition for the Russian Federation 2004, 2007, and 2010, and Taipei, China 2005 by Disadvantaged/Advantaged Administrative Region

	Russian Federation 04			Russian Federation 07		
	10th pctile	50th pctile	90th pctile	10th pctile	50th pctile	90th pctile
Treatment group	7.438*** (0.049)	8.325*** (0.025)	9.247*** (0.036)	7.931*** (0.049)	8.892*** (0.024)	9.665*** (0.028)
Control group	7.478*** (0.035)	8.454*** (0.022)	9.403*** (0.029)	8.054*** (0.028)	9.060*** (0.020)	9.888*** (0.022)
Overall Gap	-0.040 (0.061)	-0.130*** (0.034)	-0.156*** (0.046)	-0.123** (0.056)	-0.169*** (0.031)	-0.222*** (0.035)
Endowment	-0.060** (0.030)	0.014 (0.017)	0.004 (0.016)	-0.071*** (0.026)	-0.049*** (0.016)	-0.020 (0.012)
Returns	0.021 (0.059)	-0.144*** (0.031)	-0.159*** (0.047)	-0.052 (0.055)	-0.119*** (0.029)	-0.203*** (0.035)
Characteristics of hhd. head	-0.007 (0.036)	-0.023 (0.019)	-0.013 (0.027)	-0.021 (0.026)	0.008 (0.010)	0.025 (0.026)
Head education	0.0006 (0.008)	0.000 (0.006)	-0.001 (0.007)	-0.021* (0.011)	-0.016** (0.006)	-0.010* (0.006)
Head employment	0.029** (0.013)	0.015** (0.007)	0.008 (0.005)	-0.005 (0.011)	-0.007 (0.008)	-0.003 (0.006)
Household composition	-0.038 (0.043)	0.041 (0.025)	0.019 (0.034)	0.010 (0.031)	-0.019* (0.011)	-0.025 (0.025)
Residence	-0.045*** (0.017)	-0.019*** (0.007)	-0.008* (0.005)	-0.033** (0.013)	-0.016*** (0.006)	-0.007* (0.004)
Characteristics of hhd. head	-1.075 (0.986)	-0.526 (0.507)	-1.277* (0.771)	0.266 (0.826)	-0.579 (0.430)	1.224** (0.530)
Head education	-0.078 (0.335)	0.064 (0.174)	0.165 (0.263)	-0.438 (0.383)	-0.056 (0.201)	0.132 (0.247)
Head employment	0.285*** (0.090)	0.057 (0.047)	-0.034 (0.071)	-0.053 (0.083)	-0.031 (0.043)	0.022 (0.053)
Household composition	0.079 (0.812)	0.159 (0.409)	1.338** (0.629)	0.704 (0.643)	0.227 (0.329)	-0.927** (0.408)
Residence	0.193* (0.101)	-0.024 (0.053)	-0.105 (0.080)	0.211** (0.095)	-0.002 (0.050)	-0.009 (0.061)
Constant	0.616 (0.706)	0.127 (0.372)	-0.246 (0.558)	-0.742 (0.682)	0.322 (0.359)	-0.644 (0.441)
Observations		3,086			3,370	

continued on next page

Table 5 continued

		Russian Federation 10			Taipei, China 05		
		10th pctile	50th pctile	90th pctile	10th pctile	50th pctile	90th pctile
Endowment Effects (Explained)	Treatment group	8.465*** (0.046)	9.305*** (0.015)	10.050*** (0.024)	8.788*** (0.010)	9.457*** (0.006)	10.120*** (0.008)
	Control group	8.640*** (0.022)	9.485*** (0.014)	10.280*** (0.018)	9.278*** (0.020)	9.956*** (0.016)	10.560*** (0.017)
	Overall Gap	-0.175*** (0.051)	-0.180*** (0.021)	-0.231*** (0.030)	-0.490*** (0.023)	-0.499*** (0.016)	-0.437*** (0.019)
	Endowment	-0.075*** (0.025)	-0.040*** (0.010)	-0.018 (0.011)	-0.072*** (0.017)	-0.133*** (0.008)	-0.224*** (0.012)
	Returns	-0.100** (0.051)	-0.140*** (0.019)	-0.213*** (0.030)	-0.418*** (0.022)	-0.366*** (0.015)	-0.214*** (0.020)
	Characteristics of hhd. head	-0.080** (0.034)	-0.008 (0.008)	-0.005 (0.012)	-0.054** (0.023)	0.006 (0.013)	-0.014 (0.020)
	Head education	-0.018* (0.011)	-0.008* (0.005)	-0.009* (0.005)	-0.094*** (0.007)	-0.123*** (0.006)	-0.198*** (0.011)
	Head employment	0.016 (0.011)	0.005 (0.004)	0.003 (0.004)	0.019 (0.014)	-0.014*** (0.004)	-0.011** (0.005)
	Household composition	0.020 (0.039)	-0.023** (0.009)	-0.002 (0.015)	0.058** (0.023)	-0.002 (0.013)	-0.001 (0.020)
	Residence	-0.013* (0.008)	-0.006* (0.003)	-0.005* (0.003)	—	—	—
	Characteristics of hhd. head	-1.424** (0.726)	-0.019 (0.271)	-0.020 (0.428)	-0.447 (0.592)	0.352 (0.429)	-0.225 (0.538)
	Head education	0.109 (0.493)	0.112 (0.177)	-0.004 (0.284)	0.0515 (0.182)	0.113 (0.135)	0.237 (0.165)
	Head employment	0.062 (0.076)	-0.049* (0.029)	-0.028 (0.046)	0.810*** (0.083)	-0.051 (0.059)	0.037 (0.075)
	Household composition	1.291** (0.555)	0.011 (0.201)	0.315 (0.321)	0.764 (0.541)	-0.598 (0.391)	-0.112 (0.492)
	Residence	0.163* (0.086)	0.006 (0.033)	0.026 (0.051)	—	—	—
	Constant	-0.300 (0.682)	-0.201 (0.255)	-0.502 (0.403)	-1.596*** (0.353)	-0.182 (0.258)	-0.151 (0.321)
	Observations	5,713			13,679		

Notes: Standard errors computed using the delta method are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. — variables unavailable.

In Republic of Korea, the endowment effect exceeds the returns effect which is around zero, suggesting that workers outside of Seoul have as good of an access to earning opportunities as workers in the capital, and the same returns on this characteristic, but they lack important characteristics to be eligible for those opportunities, including education and favorable household composition. This may in

turn suggest the existence of inequality of opportunities for quality education, housing, and family planning.

To summarize, in disadvantaged regions in Japan; the Russian Federation; and Taipei,China (and to some degree in India), markets may not exist to utilize workers' skills efficiently, or workers face discrimination compared to relatively endowed workers from more advantaged regions. To promote equalization of living conditions across administrative regions, regulators at the regional and federal levels should strive to integrate markets better, and facilitate better matches between employers and workers. In the PRC, development policy should strive both to improve skills of workers in disadvantaged regions as well as to afford them better access to markets and provide protection from discrimination.

4.3 Less/More Educated Gap

Tables 6–8 present the decomposition of income gaps between households with less versus more educated heads. Row 3 shows that income differentials between households with less than high-school education and those with completed high school or more are very high across all countries. Perhaps as a surprise, even here we find that the gaps are larger in India and the PRC (in that order), followed by Taipei,China; Republic of Korea; and the Russian Federation, and are smallest in Japan. This presumably reflects polarization of society in developing countries where skilled workers concentrate in cities, and rural population does not invest in education at all, perhaps in the face of barriers or in expectation of low returns. Over time, education gaps further significantly grow at the bottom of the income distribution in the Russian Federation and Taipei,China, while remaining similar at the high end. This disagrees with previous findings for urban India and for Japan that the returns to education in the 1990s increased mostly at the top of the income distribution while stagnating for lower-income households (Azam 2012; Aza and Bhatt 2016; Yokoyama, Kodama, and Higuchi 2016).

Decomposing the education gap into the endowment and returns effects yields diverging results across countries. In the PRC, Republic of Korea, and the first waves of the Russian and Taipei,China surveys (2004 and 2005, respectively), the two effects are similar among the bottom income quantile groups. This suggests that the stock of non-education related endowments as well as the returns to them generate the income differential between less and more educated households. In the PRC, the returns effect is limited among higher income-level groups, and the income gap becomes mostly due to the endowment effect (i.e., inferior non-education related characteristics among less educated households). In Japan; Republic of Korea; and Taipei,China, on the other hand, the endowment effect vanishes among the median and higher quantile households, and it is mostly the returns effect that explains education gaps. Among these households, highly educated households receive higher returns to non-education related characteristics than lower-educated households. In the Russian Federation, a significant transformation occurs across the three survey waves. The endowment effect starts as large in 2004, disfavoring all less educated households, particularly in the top half of the income distribution. At the same time, the returns effect is evident only among non-top income households. Over time, the endowment effect rises gradually in magnitude among bottom-income households and shrinks among top-income households, so that by 2010 it is similar across all income quantiles. The returns effect, on the other hand, rises sharply in magnitude over time among bottom-income and top-income households, while remaining similar in the middle of the income distribution.

Table 6: Quantile Decomposition for the PRC 2002, India 2004, Japan 2008, and Rep. of Korea 2006 by Less/More Educated Household Head

	PRC 02			India 04		
	10th pctile	50th pctile	90th pctile	10th pctile	50th pctile	90th pctile
Treatment group	6.002*** (0.017)	7.127*** (0.011)	8.353*** (0.015)	5.937*** (0.009)	6.961*** (0.006)	8.101*** (0.008)
Control group	6.493*** (0.031)	8.137*** (0.015)	9.043*** (0.015)	6.517*** (0.030)	8.056*** (0.015)	9.061*** (0.020)
Overall Gap	-0.491*** (0.036)	-1.009*** (0.019)	-0.690*** (0.021)	-0.580*** (0.031)	-1.095*** (0.016)	-0.959*** (0.021)
Endowment	-0.322*** (0.021)	-0.613*** (0.015)	-0.770*** (0.021)	-0.244*** (0.010)	-0.273*** (0.008)	-0.245*** (0.010)
Returns	-0.169*** (0.040)	-0.396*** (0.019)	0.080*** (0.025)	-0.337*** (0.031)	-0.822*** (0.015)	-0.714*** (0.022)
Characteristics of hhd. head	0.008 (0.011)	-0.006 (0.006)	-0.032*** (0.009)	-0.029*** (0.011)	-0.005 (0.007)	0.030*** (0.010)
Head education	—	—	—	—	—	—
Head employment	0.049*** (0.015)	-0.016* (0.008)	-0.028** (0.011)	-0.140*** (0.007)	-0.127*** (0.005)	-0.094*** (0.006)
Household composition	0.019** (0.010)	-0.014*** (0.005)	0.021*** (0.007)	0.009 (0.011)	0.011 (0.007)	-0.003 (0.010)
Geographic location	-0.397*** (0.024)	-0.576*** (0.016)	-0.731*** (0.021)	-0.083*** (0.008)	-0.151*** (0.006)	-0.178*** (0.008)
Characteristics of hhd. head	0.607 (0.989)	0.183 (0.432)	0.447 (0.559)	1.147 (0.872)	-0.396 (0.417)	-0.933 (0.611)
Head education	—	—	—	—	—	—
Head employment	-0.237** (0.107)	-0.079* (0.047)	-0.028 (0.062)	-0.364*** (0.090)	-0.134*** (0.043)	-0.043 (0.064)
Household composition	0.055 (0.160)	0.066 (0.070)	-0.119 (0.091)	0.379** (0.176)	0.261*** (0.085)	0.576*** (0.126)
Geographic location	-1.135*** (0.083)	-0.188*** (0.037)	0.735*** (0.048)	-0.171*** (0.058)	0.077*** (0.028)	0.145*** (0.041)
Constant	0.541 (1.005)	-0.380 (0.439)	-0.956* (0.569)	-1.327 (0.882)	-0.630 (0.421)	-0.459 (0.617)
Observations	17,006			40,840		

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Table 6 *continued*

		Japan 08			Rep. of Korea 06		
		10th pctile	50th pctile	90th pctile	10th pctile	50th pctile	90th pctile
Endowment Effects (Explained)	Treatment group	9.212*** (0.050)	10.040*** (0.029)	10.670*** (0.032)	8.720*** (0.017)	9.689*** (0.011)	10.440*** (0.012)
	Control group	9.548*** (0.023)	10.240*** (0.012)	10.870*** (0.017)	9.403*** (0.011)	10.100*** (0.006)	10.710*** (0.009)
	Overall Gap	-0.336*** (0.055)	-0.198*** (0.031)	-0.201*** (0.036)	-0.682*** (0.020)	-0.409*** (0.013)	-0.272*** (0.015)
	Endowment	-0.077*** (0.029)	-0.046*** (0.017)	-0.022 (0.017)	-0.190*** (0.031)	-0.002 (0.019)	0.037* (0.021)
	Returns	-0.259*** (0.056)	-0.152*** (0.032)	-0.179*** (0.037)	-0.493*** (0.036)	-0.407*** (0.022)	-0.309*** (0.026)
	Characteristics of hhd. head	-0.061* (0.032)	-0.015 (0.016)	0.034* (0.019)	-0.058 (0.041)	0.059** (0.024)	-0.040 (0.028)
	Head education	—	—	—	—	—	—
	Head employment	-0.013 (0.014)	-0.017** (0.008)	-0.024** (0.010)	-0.073** (0.031)	-0.104*** (0.018)	-0.051** (0.021)
	Household composition	0.002 (0.025)	-0.014 (0.016)	-0.020 (0.017)	-0.002 (0.034)	0.022 (0.021)	0.073*** (0.024)
	Geographic location	-0.005 (0.013)	-0.001 (0.008)	-0.012* (0.007)	-0.056* (0.030)	0.021 (0.018)	0.054*** (0.021)
	Characteristics of hhd. head	-1.160* (0.628)	-0.735** (0.352)	-1.161*** (0.421)	0.748* (0.396)	0.623*** (0.238)	-0.440 (0.293)
	Head education	—	—	—	—	—	—
	Head employment	-0.199** (0.097)	-0.036 (0.054)	0.119* (0.065)	-0.086 (0.056)	0.147*** (0.034)	-0.025 (0.043)
	Household composition	-0.088 (0.197)	0.213* (0.111)	0.040 (0.132)	0.589*** (0.189)	0.211* (0.114)	-0.034 (0.142)
	Geographic location	0.279 (0.273)	0.019 (0.152)	0.133 (0.184)	-0.331 (0.276)	-0.355** (0.167)	-0.168 (0.214)
	Constant	0.910 (0.733)	0.387 (0.411)	0.690 (0.491)	-1.413*** (0.470)	-1.033*** (0.284)	0.357 (0.351)
	Observations		3,318			15,081	

PRC = People's Republic of China.

Notes: Standard errors computed using the delta method are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 7: Quantile Decomposition for the Russian Federation 2004, 2007, and 2010 by Less/More Educated Household Head

		Russian Federation 04		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	7.270*** (0.044)	8.109*** (0.025)	9.068*** (0.042)
	Control group	7.566*** (0.034)	8.525*** (0.020)	9.419*** (0.027)
	Overall Gap	-0.296*** (0.055)	-0.417*** (0.032)	-0.351*** (0.050)
	Endowment	-0.102** (0.047)	-0.237*** (0.028)	-0.346*** (0.046)
	Returns	-0.194*** (0.068)	-0.180*** (0.037)	-0.005 (0.061)
	Characteristics of hhd. head	0.119* (0.068)	0.069* (0.037)	0.070 (0.063)
	Head education	—	—	—
	Head employment	-0.138*** (0.042)	-0.147*** (0.024)	-0.246*** (0.041)
	Household composition	0.055 (0.064)	-0.069* (0.037)	-0.074 (0.060)
	Residence	-0.138*** (0.024)	-0.091*** (0.014)	-0.097*** (0.024)
	Characteristics of hhd. head	1.764** (0.776)	0.384 (0.422)	-1.505** (0.672)
	Head education	—	—	—
	Head employment	-0.025 (0.097)	0.060 (0.053)	0.362*** (0.085)
	Household composition	0.247 (0.521)	0.676** (0.283)	1.455*** (0.449)
	Residence	-0.257* (0.138)	-0.089 (0.075)	-0.026 (0.120)
	Constant	-1.923*** (0.647)	-1.211*** (0.351)	-0.291 (0.564)
Observations		3,086		

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Table 7 *continued*

		Russian Federation 07		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	7.617*** (0.093)	8.561*** (0.031)	9.505*** (0.047)
	Control group	8.145*** (0.027)	9.106*** (0.018)	9.878*** (0.020)
	Overall Gap	−0.528*** (0.097)	−0.545*** (0.036)	−0.373*** (0.051)
	Endowment	−0.110 (0.092)	−0.237*** (0.031)	−0.217*** (0.046)
	Returns	−0.417*** (0.121)	−0.308*** (0.040)	−0.156** (0.061)
	Characteristics of hhd. head	−0.058 (0.129)	0.016 (0.040)	−0.203** (0.082)
	Head education	—	—	—
	Head employment	−0.387*** (0.084)	−0.156*** (0.027)	−0.086** (0.041)
	Household composition	0.539*** (0.128)	0.001 (0.039)	0.178** (0.077)
	Residence	−0.204*** (0.043)	−0.098*** (0.016)	−0.107*** (0.025)
	Characteristics of hhd. head	2.756** (1.265)	0.334 (0.465)	2.175*** (0.674)
	Head education	—	—	—
	Head employment	0.391** (0.161)	−0.002 (0.056)	−0.015 (0.084)
	Household composition	−1.798** (0.841)	0.116 (0.324)	−1.765*** (0.458)
	Residence	0.388 (0.238)	0.038 (0.085)	0.306** (0.125)
	Constant	−2.154* (1.158)	−0.793** (0.401)	−0.857 (0.601)
Observations			3,370	

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Table 7 continued

		Russian Federation 10		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.122*** (0.069)	9.139*** (0.022)	9.985*** (0.029)
	Control group	8.682*** (0.018)	9.477*** (0.011)	10.250*** (0.016)
	Overall Gap	−0.560*** (0.071)	−0.339*** (0.025)	−0.268*** (0.033)
	Endowment	−0.137* (0.073)	−0.134*** (0.023)	−0.107*** (0.031)
	Returns	−0.423*** (0.094)	−0.205*** (0.030)	−0.160*** (0.042)
	Characteristics of hhd. head	0.458*** (0.101)	0.089*** (0.028)	−0.023 (0.038)
	Head education	—	—	—
	Head employment	−0.351*** (0.065)	−0.096*** (0.020)	−0.060** (0.027)
	Household composition	−0.076 (0.095)	−0.031 (0.028)	0.032 (0.037)
	Residence	−0.169*** (0.036)	−0.097*** (0.013)	−0.057*** (0.017)
	Characteristics of hhd. head	−1.437 (0.990)	−0.086 (0.326)	1.396*** (0.458)
	Head education	—	—	—
	Head employment	0.383*** (0.119)	−0.045 (0.040)	0.007 (0.055)
	Household composition	1.761** (0.686)	0.611*** (0.227)	−0.393 (0.319)
	Residence	−0.073 (0.179)	0.031 (0.060)	−0.069 (0.084)
Returns Effects (Unexplained)	Constant	−1.057 (0.795)	−0.716*** (0.263)	−1.101*** (0.369)
	Observations	5,713		

Notes: Standard errors computed using the delta method are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Quantile Decomposition for Taipei, China 2005, 2007, and 2010 by Less/More Educated Household Head

		Taipei, China 05		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.578*** (0.015)	9.298*** (0.008)	9.928*** (0.011)
	Control group	9.052*** (0.009)	9.636*** (0.007)	10.320*** (0.010)
	Overall Gap	-0.474*** (0.017)	-0.338*** (0.011)	-0.396*** (0.015)
	Endowment	-0.226*** (0.016)	-0.029*** (0.009)	0.011 (0.012)
	Returns	-0.248*** (0.020)	-0.310*** (0.012)	-0.407*** (0.018)
	Characteristics of hhd. head	0.022 (0.020)	0.068*** (0.011)	0.138*** (0.017)
	Head education	—	—	—
	Head employment	-0.190*** (0.012)	-0.072*** (0.005)	-0.055*** (0.007)
	Household composition	-0.018 (0.016)	0.005 (0.009)	-0.022* (0.014)
	Residence	-0.040*** (0.006)	-0.030*** (0.003)	-0.050*** (0.005)
	Characteristics of hhd. head	-0.999** (0.468)	-0.013 (0.317)	0.370 (0.468)
	Head education	—	—	—
	Head employment	0.705*** (0.067)	0.025 (0.046)	-0.212*** (0.068)
	Household composition	0.493 (0.427)	0.393 (0.294)	0.012 (0.434)
	Residence	-0.106 (0.110)	-0.063 (0.081)	-0.114 (0.120)
	Constant	-0.341 (0.265)	-0.651*** (0.173)	-0.464* (0.256)
Observations		13,679		

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Table 8 *continued*

		Taipei, China 07		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.519*** (0.014)	9.276*** (0.009)	9.930*** (0.012)
	Control group	8.997*** (0.009)	9.593*** (0.007)	10.310*** (0.010)
	Overall Gap	−0.477*** (0.016)	−0.316*** (0.011)	−0.375*** (0.015)
	Endowment	−0.155*** (0.014)	−0.003 (0.009)	0.071*** (0.012)
	Returns	−0.322*** (0.019)	−0.313*** (0.012)	−0.447*** (0.018)
	Characteristics of hhd. head	0.034** (0.016)	0.103*** (0.010)	0.161*** (0.014)
	Head education	—	—	—
	Head employment	−0.142*** (0.011)	−0.067*** (0.006)	−0.050*** (0.008)
	Household composition	−0.045*** (0.011)	−0.030*** (0.007)	−0.027*** (0.010)
	Residence	−0.002 (0.005)	−0.009*** (0.003)	−0.012*** (0.004)
	Characteristics of hhd. head	−0.709* (0.394)	0.486* (0.274)	0.124 (0.401)
	Head education	—	—	—
	Head employment	0.551*** (0.066)	0.125*** (0.047)	−0.040 (0.068)
	Household composition	0.142 (0.344)	0.039 (0.244)	0.602* (0.356)
	Residence	−0.133** (0.064)	−0.047 (0.045)	0.116* (0.065)
Returns Effects (Unexplained)	Constant	−0.173 (0.255)	−0.916*** (0.170)	−1.249*** (0.250)
Observations		13,774		

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Table 8 *continued*

		Taipei, China 10		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.417*** (0.017)	9.242*** (0.010)	9.888*** (0.011)
	Control group	8.933*** (0.009)	9.587*** (0.007)	10.290*** (0.009)
	Overall Gap	−0.515*** (0.019)	−0.344*** (0.012)	−0.401*** (0.014)
	Endowment	−0.209*** (0.019)	−0.009 (0.012)	0.055*** (0.013)
	Returns	−0.307*** (0.024)	−0.335*** (0.015)	−0.456*** (0.019)
	Characteristics of hhd. head	0.039 (0.025)	0.123*** (0.015)	0.157*** (0.018)
	Head education	—	—	—
	Head employment	−0.209*** (0.014)	−0.110*** (0.007)	−0.054*** (0.008)
	Household composition	−0.031* (0.018)	−0.013 (0.011)	−0.044*** (0.013)
	Residence	−0.008 (0.005)	−0.009*** (0.003)	−0.004 (0.004)
	Characteristics of hhd. head	0.272 (0.491)	0.948*** (0.316)	0.494 (0.419)
	Head education	—	—	—
	Head employment	0.553*** (0.071)	0.142*** (0.046)	−0.183*** (0.061)
	Household composition	−0.670 (0.434)	−0.164 (0.282)	−0.133 (0.377)
	Residence	−0.003 (0.073)	−0.017 (0.046)	−0.087 (0.061)
Returns Effects (Unexplained)	Constant	−0.459 (0.304)	−1.244*** (0.189)	−0.548** (0.244)
Observations		14,843		

Notes: Standard errors computed using the delta method are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

In the PRC, households with less educated heads tend to be located further from urban market centers (significantly inferior geographic location), receive lower returns on their work in their economic sector, and significantly lower returns on their location of residence. In India, households with less educated heads are employed in inferior sectors, and reside further from urban market centers. They receive substantially

higher returns on advantageous forms of household composition, and lower returns on their employment in the services and industry sectors. The return to their residence near markets disadvantages unskilled households in the bottom of the income distribution, while helping unskilled households in the middle and top of the income distribution.

In Japan and Republic of Korea, less educated workers have similar characteristics as more educated workers, although they work in somewhat inferior economic sectors. Their incomes are negatively affected by their lower return on their demographic characteristics, in the case of Japan, and lower return on their proximity to markets (or geographic location), in the case of Republic of Korea. Other endowment and returns effects do not have consistent signs or degrees of significance across income quantiles.

In the Russian Federation, the rising endowment effects among bottom-income less educated households are due to deteriorating employment status and residence among poor households with less educated heads relative to their more educated counterparts. The less educated poor households fell behind during 2004–2007 and remained in that state until 2010. The shrinking endowment effects among top-income households have to do with the relative improvement of their employment status and proximity to markets compared to more educated households (diminution of the respective endowment effects).

Incomes of less educated Russian households also suffer from significant unexplained or returns effects. The returns to household-head characteristics, education, employment, household composition, and residence have a mixed ranking across less- and more-educated households, across income quantiles and across years.

Finally, in Taipei, China, education gaps are mostly due to large negative unexplained or returns effects, which increase with the households' income quantile (Table 8, Row 5). These returns effects persist across the years. Negative endowment effects are also observable among lower-income households, but vanish by the middle of the income distribution and turn positive among above-median income households. Less educated households in Taipei, China thus appear to receive lower returns on some of their characteristics, but among the characteristics evaluated here, none of their returns effects are systematically strongly negative (bottom of Table 8, rows 11–15). Nevertheless, large endowment effects are also found among the poorest households, attributable to inferior employment status and household composition among poor less educated households relative to their more educated peers. Less educated households also appear to reside further from economic centers, which adversely affects their earnings. This effect may be larger among higher-income households.

4.4 Non-employed/Employed Gap

Table 9 row 3 shows that the income gap due to the employment status of household heads is high in Republic of Korea and non-negligible in Japan, particularly in the lower half of the income distribution. In the PRC and India, households with non-employed heads receive a premium, particularly in the lower half of the income distribution in the PRC, and in the upper half of the income distribution in India. This is puzzling, but may reflect the significance of the shadow economy and informal resource markets across the PRC and India, or high prevalence among households of relying on saved wealth and capital earnings rather than labor earnings for income. Another possible explanation has to do with the contributions or remittances from household members and relatives other than household head. To the extent that households with high flows of incomes from other household members have higher reported incomes and their

heads may be less likely to work, this may explain the puzzle. This reaches to the highest echelons of society in both countries. In fact, Table A4 in the appendix shows that the employment rate in the PRC, and slightly more weakly in India, is highest among the poorest households. The evidence for the PRC in Table 9 should thus be interpreted as comparing labor class (control group) versus leisure class (treatment group).

Table 9: Quantile Decomposition for the PRC 2002, India 2004, Japan 2008, and Rep. of Korea 2006 by Non-employed/Employed Household Head

	PRC 02			India 04		
	10th pctile	50th pctile	90th pctile	10th pctile	50th pctile	90th pctile
Treatment group	6.589*** (0.046)	8.138*** (0.020)	8.949*** (0.020)	5.871*** (0.031)	7.293*** (0.015)	8.473*** (0.023)
Control group	6.082*** (0.014)	7.293*** (0.012)	8.661*** (0.012)	5.985*** (0.008)	7.008*** (0.006)	8.270*** (0.009)
Overall Gap	0.507*** (0.048)	0.845*** (0.023)	0.288*** (0.023)	-0.114*** (0.032)	0.285*** (0.016)	0.203*** (0.024)
Endowment	1.214*** (0.065)	0.650*** (0.028)	0.214*** (0.029)	0.433*** (0.046)	0.285*** (0.022)	0.380*** (0.033)
Returns	-0.707*** (0.072)	0.195*** (0.031)	0.074** (0.035)	-0.546*** (0.054)	-0.000 (0.025)	-0.177*** (0.039)
Characteristics of hhd. head	-0.043 (0.075)	0.217*** (0.031)	0.137*** (0.036)	0.051 (0.092)	0.130*** (0.042)	0.237*** (0.065)
Head education	0.003 (0.006)	0.0002 (0.005)	0.006 (0.006)	-0.016*** (0.005)	-0.029*** (0.005)	-0.025*** (0.008)
Head employment	-	-	-	-	-	-
Household composition	0.001 (0.051)	0.007 (0.021)	-0.025 (0.024)	0.313*** (0.085)	0.094** (0.038)	0.107* (0.060)
Geographic location	1.253*** (0.057)	0.425*** (0.023)	0.096*** (0.024)	0.085*** (0.011)	0.089*** (0.006)	0.062*** (0.008)
Characteristics of hhd. head	-2.344** (1.010)	1.809*** (0.481)	0.528 (0.559)	1.323** (0.590)	-0.160 (0.280)	0.404 (0.437)
Head education	-0.019 (0.224)	0.368*** (0.107)	0.057 (0.124)	0.038 (0.045)	0.120*** (0.021)	0.043 (0.033)
Head employment	-	-	-	-	-	-
Household composition	-0.028 (0.187)	0.071 (0.086)	0.253** (0.099)	0.669*** (0.201)	0.102 (0.094)	0.173 (0.147)
Geographic location	0.815*** (0.075)	-0.154*** (0.034)	-0.235*** (0.039)	0.039 (0.048)	-0.009 (0.023)	-0.110*** (0.035)
Constant	0.870 (1.068)	-1.898*** (0.506)	-0.529 (0.587)	-2.615*** (0.636)	-0.052 (0.301)	-0.687 (0.469)
Observations	17,029			41,004		

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Table 9 *continued*

		Japan 08			Rep. of Korea 06		
		10th pctile	50th pctile	90th pctile	10th pctile	50th pctile	90th pctile
Endowment Effects (Explained)	Treatment group	9.269*** (0.038)	10.060*** (0.020)	10.750*** (0.037)	8.360*** (0.039)	9.420*** (0.019)	10.45*** (0.031)
	Control group	9.593*** (0.021)	10.270*** (0.013)	10.870*** (0.019)	9.351*** (0.009)	10.060*** (0.006)	10.670*** (0.007)
	Overall Gap	-0.325*** (0.044)	-0.212*** (0.023)	-0.122*** (0.042)	-0.991*** (0.040)	-0.640*** (0.019)	-0.216*** (0.032)
	Endowment	0.040 (0.044)	-0.009 (0.023)	-0.014 (0.043)	-0.055 (0.052)	-0.219*** (0.025)	-0.126*** (0.041)
	Returns	-0.365*** (0.061)	-0.203*** (0.031)	-0.108* (0.058)	-0.936*** (0.065)	-0.421*** (0.029)	-0.090* (0.050)
	Characteristics of hhd. head	0.125** (0.053)	0.080*** (0.027)	0.136*** (0.050)	0.405** (0.186)	-0.206** (0.083)	0.311** (0.144)
	Head education	-0.046*** (0.016)	-0.010 (0.008)	-0.038** (0.015)	-0.098*** (0.028)	-0.188*** (0.014)	-0.201*** (0.023)
	Head employment	—	—	—	—	—	—
	Household composition	-0.039 (0.031)	-0.077*** (0.017)	-0.112*** (0.031)	-0.360* (0.184)	0.175** (0.082)	-0.232 (0.142)
	Geographic location	-0.000 (0.005)	-0.001 (0.003)	0.000 (0.003)	-0.003 (0.003)	-0.001 (0.001)	-0.004* (0.002)
	Characteristics of hhd. head	-1.127** (0.522)	-0.774*** (0.272)	-0.147 (0.494)	-0.680 (0.700)	0.755** (0.318)	0.437 (0.542)
	Head education	0.015 (0.144)	-0.115 (0.076)	0.024 (0.134)	-0.150 (0.165)	0.458*** (0.078)	0.302** (0.129)
	Head employment	—	—	—	—	—	—
	Household composition	-0.030 (0.162)	0.153* (0.084)	0.276* (0.154)	1.486*** (0.515)	-0.341 (0.232)	0.921** (0.398)
	Geographic location	0.116 (0.161)	0.009 (0.084)	0.020 (0.153)	0.062 (0.080)	0.032 (0.036)	0.153** (0.062)
	Constant	0.662 (0.598)	0.523* (0.311)	-0.280 (0.566)	-1.654*** (0.538)	-1.325*** (0.247)	-1.904*** (0.417)
	Observations		3,318			15,081	

PRC = People's Republic of China.

Notes: Standard errors computed using the delta method are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 10: Quantile Decomposition for the Russian Federation 2004, 2007, and 2010 by Non-employed/Employed Household Head

		Russian Federation 04		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	7.330*** (0.039)	8.121*** (0.019)	9.066*** (0.033)
	Control group	7.565*** (0.040)	8.587*** (0.023)	9.465*** (0.030)
	Overall Gap	-0.235*** (0.056)	-0.467*** (0.030)	-0.399*** (0.045)
	Endowment	0.097** (0.047)	-0.128*** (0.023)	-0.272*** (0.039)
	Returns	-0.332*** (0.069)	-0.339*** (0.033)	-0.127** (0.055)
	Characteristics of hhd. head	0.119 (0.087)	0.078** (0.039)	-0.226*** (0.077)
	Head education	-0.072*** (0.028)	-0.069*** (0.013)	-0.078*** (0.023)
	Head employment	—	—	—
	Household composition	0.091 (0.077)	-0.111*** (0.035)	0.062 (0.068)
	Residence	-0.042*** (0.014)	-0.027*** (0.008)	-0.031** (0.013)
	Characteristics of hhd. head	1.370 (0.878)	0.585 (0.446)	1.767*** (0.683)
	Head education	0.189 (0.796)	-0.505 (0.431)	0.003 (0.602)
	Head employment	—	—	—
	Household composition	0.323 (0.583)	-0.208 (0.292)	-0.349 (0.457)
	Residence	-0.252* (0.138)	-0.181*** (0.069)	-0.112 (0.108)
	Constant	-1.962* (1.024)	-0.030 (0.542)	-1.437* (0.783)
	Observations		3,086	

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Table 10 *continued*

		Russian Federation 07		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	7.785*** (0.042)	8.659*** (0.025)	9.576*** (0.027)
	Control group	8.234*** (0.035)	9.196*** (0.019)	9.933*** (0.023)
	Overall Gap	−0.448*** (0.054)	−0.537*** (0.032)	−0.358*** (0.035)
	Endowment	0.063 (0.049)	−0.133*** (0.030)	−0.103*** (0.032)
	Returns	−0.512*** (0.069)	−0.404*** (0.039)	−0.255*** (0.044)
	Characteristics of hhd. head	−0.069 (0.122)	0.028 (0.070)	−0.249*** (0.083)
	Head education	−0.090*** (0.027)	−0.081*** (0.016)	−0.076*** (0.017)
	Head employment	–	–	–
	Household composition	0.274** (0.115)	−0.054 (0.066)	0.226*** (0.079)
	Residence	−0.051*** (0.016)	−0.026*** (0.010)	−0.004 (0.011)
	Characteristics of hhd. head	1.229 (0.920)	−0.824 (0.509)	0.877 (0.589)
	Head education	0.486 (2.439)	−0.146 (1.269)	0.528 (1.575)
	Head employment	–	–	–
	Household composition	−0.657 (0.712)	0.489 (0.400)	−0.603 (0.456)
	Residence	−0.184 (0.139)	−0.148* (0.077)	−0.159* (0.089)
Returns Effects (Unexplained)	Constant	−1.385 (2.508)	0.224 (1.309)	−0.899 (1.619)
	Observations		3,370	

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Table 10 *continued*

		Russian Federation 10		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.317*** (0.035)	9.232*** (0.013)	10.010*** (0.024)
	Control group	8.721*** (0.021)	9.558*** (0.013)	10.290*** (0.018)
	Overall Gap	−0.404*** (0.041)	−0.327*** (0.019)	−0.280*** (0.030)
	Endowment	0.227*** (0.040)	−0.015 (0.015)	−0.109*** (0.027)
	Returns	−0.631*** (0.053)	−0.311*** (0.021)	−0.171*** (0.037)
	Characteristics of hhd. head	0.240*** (0.081)	0.094*** (0.028)	−0.005 (0.055)
	Head education	−0.083*** (0.021)	−0.058*** (0.007)	−0.092*** (0.014)
	Head employment	—	—	—
	Household composition	0.099 (0.073)	−0.037 (0.026)	−0.007 (0.049)
	Residence	−0.029*** (0.010)	−0.015*** (0.005)	−0.005 (0.009)
	Characteristics of hhd. head	1.339** (0.631)	0.194 (0.270)	0.660 (0.452)
	Head education	0.070 (1.945)	1.059 (1.183)	0.277 (1.648)
	Head employment	—	—	—
	Household composition	−0.553 (0.503)	0.529*** (0.199)	0.127 (0.350)
	Residence	−0.045 (0.102)	−0.033 (0.044)	−0.064 (0.074)
Returns Effects (Unexplained)	Constant	−1.441 (1.980)	−2.060* (1.194)	−1.170 (1.670)
	Observations	5,713		

Notes: Standard errors computed using the delta method are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 11: Quantile Decomposition for Taipei, China 2005, 2007, and 2010 by Non-employed/Employed Household Head

		Taipei, China 05		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.086*** (0.021)	8.788*** (0.016)	9.759*** (0.022)
	Control group	8.967*** (0.007)	9.549*** (0.006)	10.230*** (0.008)
	Overall Gap	-0.881*** (0.022)	-0.762*** (0.017)	-0.470*** (0.024)
	Endowment	0.241*** (0.056)	0.055 (0.039)	-0.045 (0.055)
	Returns	-1.122*** (0.060)	-0.817*** (0.041)	-0.425*** (0.058)
	Characteristics of hhd. head	0.149* (0.089)	0.236*** (0.061)	0.021 (0.085)
	Head education	-0.078*** (0.018)	-0.190*** (0.014)	-0.170*** (0.020)
	Head employment	—	—	—
	Household composition	0.155* (0.084)	-0.015 (0.058)	0.078 (0.081)
	Residence	0.014*** (0.004)	0.024*** (0.005)	0.026*** (0.006)
	Characteristics of hhd. head	0.167 (0.744)	-0.312 (0.515)	0.967 (0.730)
	Head education	-0.212*** (0.077)	0.186*** (0.055)	0.003 (0.080)
	Head employment	—	—	—
	Household composition	-0.946 (0.663)	0.258 (0.459)	-0.237 (0.651)
	Residence	-0.337** (0.133)	0.125 (0.092)	0.044 (0.131)
	Constant	0.207 (0.432)	-1.073*** (0.299)	-1.201*** (0.424)
	Observations		13,679	

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Table 11 *continued*

		Taipei,China 07		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.108*** (0.021)	8.853*** (0.018)	9.814*** (0.023)
	Control group	8.904*** (0.008)	9.512*** (0.006)	10.220*** (0.009)
	Overall Gap	−0.796*** (0.022)	−0.659*** (0.019)	−0.405*** (0.024)
	Endowment	0.081 (0.088)	−0.122* (0.068)	0.023 (0.089)
	Returns	−0.877*** (0.090)	−0.537*** (0.069)	−0.428*** (0.091)
	Characteristics of hhd. head	0.267*** (0.063)	0.326*** (0.049)	0.242*** (0.063)
	Head education	−0.145*** (0.019)	−0.242*** (0.017)	−0.183*** (0.021)
	Head employment	—	—	—
	Household composition	0.003 (0.058)	−0.202*** (0.045)	−0.051 (0.058)
	Residence	−0.044 (0.066)	−0.004 (0.051)	0.015 (0.066)
	Characteristics of hhd. head	−0.063 (0.397)	0.768** (0.303)	0.842** (0.403)
	Head education	0.026 (0.079)	0.455*** (0.058)	0.035 (0.084)
	Head employment	—	—	—
	Household composition	−0.122 (0.180)	0.230* (0.138)	0.448** (0.181)
	Residence	−0.714 (0.662)	−0.202 (0.510)	0.062 (0.664)
	Constant	−0.003 (0.856)	−1.788*** (0.657)	−1.815** (0.861)
	Observations		13,774	

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Table 11 *continued*

		Taipei,China 10		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	7.934*** (0.025)	8.824*** (0.018)	9.880*** (0.023)
	Control group	8.874*** (0.008)	9.527*** (0.006)	10.220*** (0.009)
	Overall Gap	-0.940*** (0.026)	-0.703*** (0.019)	-0.343*** (0.024)
	Endowment	0.221** (0.090)	-0.019 (0.059)	-0.027 (0.077)
	Returns	-1.161*** (0.094)	-0.685*** (0.061)	-0.315*** (0.079)
	Characteristics of hhd. head	0.014 (0.105)	0.134* (0.069)	-0.179* (0.097)
	Head education	-0.110*** (0.022)	-0.284*** (0.017)	-0.239*** (0.021)
	Head employment	-	-	-
	Household composition	0.342*** (0.098)	0.091 (0.064)	0.376*** (0.092)
	Residence	-0.025 (0.056)	0.040 (0.036)	0.015 (0.047)
	Characteristics of hhd. head	-1.365 (0.832)	0.675 (0.543)	3.181*** (0.722)
	Head education	-0.267** (0.115)	0.548*** (0.077)	0.142 (0.113)
	Head employment	-	-	-
	Household composition	-0.789 (0.704)	-1.008** (0.460)	-2.984*** (0.613)
	Residence	-0.513 (0.597)	0.280 (0.388)	0.050 (0.506)
	Constant	1.773** (0.851)	-1.180** (0.554)	-0.703 (0.728)
Observations		14,843		

Notes: Standard errors computed using the delta method are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

In the Russian Federation and especially in Taipei, China (Tables 10 and 11), the employment gap is large negative, particularly among the poorest households. The non-employed poor are thus particularly disadvantaged relative to their employed peers. Across the three waves of Russian and Taipei, China surveys, the employment gap fluctuates over time, perhaps even slightly growing among the poorest households, and falling among the richest households.

Decomposing the non-employment/employment gap into the endowment and returns effects also yields divergent trends across the ten surveys. In the PRC and India, the non-employed households' income premium is almost entirely due to the high (positive) endowment effects, as non-employed household heads have more advantageous characteristics and geographic residence than their working peers, particularly among the first through fifth income-decile households. In India they also have more advantageous household composition, and these surpluses in endowments offset significant shortages in educational attainment among non-employed household heads. The returns effect is negative among households in the bottom three income-deciles, and vanishes to essentially zero among higher-decile groups. This suggests that non-employed households in the PRC, particularly those in the bottom half of the income distribution have higher endowments than their employed counterparts. Even though these non-employed households also receive lower returns on their endowments than the employed households, in the composite the earnings of the non-employed group are higher.

Hence, the returns effects further favor non-employed median- and high-income households in the PRC, while they favor working households in India, and working householders among the poor in the PRC. Across individual household endowments and income quantiles, the returns effects are not consistent qualitatively or quantitatively. The most significant finding is that the return to geographic location favors non-working households among the poor, while it favors working households in the middle and upper half of the income distribution.

In Japan and Republic of Korea, both the endowment and returns effects have the expected negative signs, favoring households with working heads. The returns effects are consistently larger in absolute value than the endowment effects, and particularly large among the lowest income-quantile groups. The endowment effects are near zero—balancing the contrary signs of the differentials in the returns to householders' characteristics, and to education and household composition between working and non-working households—and only become significant at richer income quantiles in Republic of Korea. The strong negative composite effects are caused by the differentials in returns to householder characteristics, in the case of Japan, and by differentials in returns to various endowments, in the Korean case. In Japan, non-working households receive systematically lower returns on householder characteristics than their working counterparts, while in both countries non-working households appear to receive higher returns on education and household composition.

In the Russian Federation, the endowment component of the employment gap is positive among poor households, suggesting that poor non-employed households are more endowed with marketable characteristics than the working poor (most notably characteristics of household heads), while richer non-employed households are less endowed than their employed counterparts. The returns effects are significantly negative and larger in magnitude among lower-income households, exerting the greatest harm on poor non-working households. This is due to a differential in the returns to the proximity to markets between working and non-working households.

In Taipei, China, the endowment component of the employment gap is largely nonexistent across years and income quantiles, even though it is consistently positive among the lowest-decile group. Non-employed households appear to have heads with more favorable demographic characteristics and more favorable household composition, but they are also less educated. On balance, these endowment effects cancel out (except among the lowest decile). The returns component drives most of the employment gap in incomes. Non-working households appear to face lower returns on their composition.

4.5 Female/Male Income Gap

The final dimension along which we decompose inequality is gender of the household head. The third row in Tables 12–14 shows that gender gap in favor of male households is high among the poorest households in India; Republic of Korea; and Taipei, China, and much smaller (but still favoring male households) among households with median or high incomes. In the PRC, like with the employment gap, gender gap is very high positive, meaning that female households receive a large premium compared with male-headed households. Once again this could be explained by the existence of remittances from partners or ex-husbands who are not present in the household but contribute to household income (Ramadan et al. 2015). This pro-female income differential in the PRC is high across all income quantiles, particularly among low and median income groups, suggesting that while the unusual arrangements are widespread even among the richest households, perhaps they are most prevalent among business-owning families in the middle class, and among poor rural households with migrant bread-winners living temporarily in cities.

In Japan and the Russian Federation, the gap is relatively small across the board, and only statistically significant among richer households.⁷ Over time, gender gap gradually increases in the Russian Federation, while it stays relatively unchanged in Taipei, China.

Decomposing this gender gap into the endowment and the returns effects, we also find divergent results across the six countries. In the PRC, the pro-female gap is due equally to a large positive endowment effect and a large positive returns effect (except for a large negative returns effect among the poorest decile). Female households appear to have higher education, and more advantageous geographic location. They also receive higher returns to their employment, to the characteristics of their household head and possibly to their education than male households.

⁷ The results for Japan and Republic of Korea provide an interesting picture about the manifestation of gender gaps across the income distribution—while Republic of Korea has significantly graver gender gaps overall, these gaps fall below those in Japan in the upper tail of the income distribution. This possibly corroborates evidence by Youm and Yamaguchi (2016) that glass-ceiling discrimination against female managers is high in Japan, and that by mid-2000s this problem had reached similar levels in Republic of Korea.

Table 12: Quantile Decomposition for the PRC 2002, India 2004, Japan 2008, and Rep. of Korea 2006 by Female/Male Household Head

	The PRC 02			India 04		
	10th pctile	50th pctile	90th pctile	10th pctile	50th pctile	90th pctile
Treatment group	6.957*** (0.058)	8.345*** (0.016)	9.141*** (0.025)	5.622*** (0.032)	6.935*** (0.020)	8.212*** (0.024)
Control group	6.074*** (0.014)	7.256*** (0.011)	8.589*** (0.012)	6.005*** (0.008)	7.051*** (0.006)	8.318*** (0.009)
Overall Gap	0.883*** (0.060)	1.089*** (0.019)	0.553*** (0.028)	-0.383*** (0.033)	-0.116*** (0.021)	-0.106*** (0.025)
Endowment	3.324*** (0.089)	0.497*** (0.026)	0.293*** (0.044)	-0.662*** (0.187)	0.060 (0.108)	-0.126 (0.131)
Returns	-2.441*** (0.089)	0.592*** (0.029)	0.259*** (0.050)	0.279 (0.189)	-0.176 (0.109)	0.020 (0.133)
Characteristics of hhd. head	-0.037 (0.053)	-0.060*** (0.017)	-0.038 (0.030)	-0.764 (1.270)	-0.367 (0.733)	-0.849 (0.891)
Head education	0.0084 (0.028)	0.105*** (0.010)	0.103*** (0.016)	-0.117*** (0.028)	-0.207*** (0.017)	-0.383*** (0.022)
Head employment	-0.054 (0.054)	-0.037** (0.018)	-0.050 (0.031)	-0.139*** (0.025)	-0.002 (0.015)	-0.017 (0.018)
Household composition	0.084 (0.071)	0.021 (0.023)	0.025 (0.041)	0.336 (1.249)	0.612 (0.722)	1.114 (0.877)
Geographic location	3.323*** (0.106)	0.469*** (0.031)	0.253*** (0.055)	0.021*** (0.006)	0.024*** (0.005)	0.010** (0.004)
Characteristics of hhd. head	0.359 (0.991)	0.976** (0.403)	0.174 (0.612)	2.517* (1.407)	0.979 (0.816)	0.622 (1.001)
Head education	0.447 (0.274)	0.300*** (0.104)	-0.034 (0.165)	0.118** (0.051)	0.139*** (0.030)	0.286*** (0.037)
Head employment	0.140 (0.128)	0.141*** (0.049)	0.196** (0.078)	-0.017 (0.067)	-0.108*** (0.040)	-0.082 (0.050)
Household composition	-0.389 (0.242)	0.058 (0.086)	-0.019 (0.143)	0.074 (1.277)	-0.120 (0.738)	-0.780 (0.897)
Geographic location	1.514*** (0.092)	-0.126*** (0.032)	-0.240*** (0.053)	-0.155*** (0.050)	-0.011 (0.029)	-0.046 (0.036)
Constant	-4.511*** (1.073)	-0.756* (0.429)	0.182 (0.658)	-2.259*** (0.561)	-1.055*** (0.334)	0.019 (0.430)
Observations		17,029			41,004	

continued on next page

Table 12 *continued*

	Japan 08			Rep. of Korea 06		
	10th pctile	50th pctile	90th pctile	10th pctile	50th pctile	90th pctile
Treatment group	9.406*** (0.111)	10.140*** (0.032)	10.700*** (0.051)	8.807*** (0.023)	9.747*** (0.014)	10.550*** (0.016)
Control group	9.496*** (0.021)	10.220*** (0.012)	10.860*** (0.017)	9.282*** (0.012)	10.060*** (0.006)	10.670*** (0.008)
Overall Gap	-0.090 (0.113)	-0.076** (0.034)	-0.156*** (0.054)	-0.475*** (0.026)	-0.311*** (0.015)	-0.120*** (0.018)
Endowment	-0.136** (0.064)	-0.055*** (0.020)	-0.051* (0.029)	-0.190*** (0.042)	-0.141*** (0.026)	-0.079*** (0.030)
Returns	0.046 (0.118)	-0.022 (0.033)	-0.106* (0.056)	-0.285*** (0.047)	-0.170*** (0.029)	-0.041 (0.034)
Characteristics of hhd. head	-0.042 (0.039)	-0.011 (0.009)	0.004 (0.015)	-0.273 (0.223)	0.024 (0.136)	-0.339** (0.160)
Head education	-0.111** (0.044)	-0.027** (0.012)	-0.039** (0.019)	-0.055*** (0.018)	-0.142*** (0.012)	-0.163*** (0.014)
Head employment	0.008 (0.024)	-0.006 (0.007)	-0.006 (0.009)	-0.101*** (0.021)	-0.044*** (0.013)	0.025 (0.015)
Household composition	0.024 (0.034)	0.014 (0.011)	0.014 (0.017)	0.226 (0.221)	0.038 (0.135)	0.395** (0.159)
Geographic location	-0.015 (0.031)	-0.025*** (0.009)	-0.023 (0.014)	0.014 (0.016)	-0.016 (0.010)	0.003 (0.011)
Characteristics of hhd. head	-1.818 (1.315)	-0.097 (0.376)	-0.409 (0.629)	0.519 (0.478)	0.308 (0.277)	0.687** (0.338)
Head education	0.727** (0.355)	0.112 (0.103)	0.125 (0.172)	-0.327** (0.138)	0.264*** (0.077)	0.186* (0.097)
Head employment	0.076 (0.213)	-0.076 (0.061)	-0.019 (0.101)	-0.759*** (0.067)	-0.095** (0.038)	-0.164*** (0.047)
Household composition	0.0024 (0.397)	0.268** (0.114)	-0.140 (0.190)	-0.473 (0.370)	0.327 (0.216)	-0.136 (0.263)
Geographic location	0.141 (0.224)	0.091 (0.065)	0.124 (0.109)	-0.262 (0.343)	-0.306 (0.200)	0.364 (0.243)
Constant	0.919 (1.440)	-0.319 (0.412)	0.214 (0.690)	1.018** (0.500)	-0.670** (0.288)	-0.977*** (0.353)
Observations	3,318			15,081		

PRC = People's Republic of China.

Notes: Standard errors computed using the delta method are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 13: Quantile Decomposition for the Russian Federation 2004, 2007, and 2010 by Female/Male Household Head

		Russian Federation 04		
		10th pctl	50th pctl	90th pctl
	Treatment group	7.484***	8.406***	9.341***
		(0.029)	(0.019)	(0.022)
	Control group	7.281***	8.423***	9.411***
		(0.092)	(0.057)	(0.074)
	Overall Gap	0.203**	−0.017	−0.070
		(0.096)	(0.060)	(0.077)
	Endowment	0.028	0.045	−0.028
		(0.037)	(0.032)	(0.030)
	Returns	0.176*	−0.061	−0.041
		(0.095)	(0.055)	(0.075)
Endowment Effects (Explained)	Characteristics of hhd. head	−0.007	−0.012	0.017
		(0.011)	(0.009)	(0.026)
	Head education	−0.003	0.020*	0.012
		(0.012)	(0.011)	(0.008)
	Head employment	0.012	−0.007	−0.027*
Returns Effects (Unexplained)		(0.018)	(0.013)	(0.014)
	Household composition	0.000	0.053***	−0.018
		(0.023)	(0.020)	(0.026)
	Residence	0.025	−0.010	−0.012
		(0.021)	(0.017)	(0.017)
	Characteristics of hhd. head	−0.341	1.471**	1.291
		(1.200)	(0.692)	(0.943)
	Head education	0.841*	−0.109	−0.102
		(0.454)	(0.261)	(0.356)
	Head employment	−0.318*	−0.292***	−0.375***
		(0.169)	(0.098)	(0.133)
	Household composition	0.523	−0.737	−0.713
		(0.878)	(0.506)	(0.690)
	Residence	−0.284	−0.160	−0.053
		(0.286)	(0.164)	(0.225)
	Constant	−0.246	−0.234	−0.089
		(1.053)	(0.607)	(0.827)
Observations		3,086		

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Table 13 *continued*

		Russian Federation 07		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.006*** (0.026)	8.992*** (0.017)	9.808*** (0.019)
	Control group	8.039*** (0.059)	9.096*** (0.066)	9.943*** (0.043)
	Overall Gap	−0.033 (0.064)	−0.104 (0.068)	−0.135*** (0.047)
	Endowment	−0.036 (0.033)	−0.004 (0.028)	−0.048* (0.027)
	Returns	0.003 (0.064)	−0.100* (0.059)	−0.088* (0.046)
	Characteristics of hhd. head	−0.006 (0.020)	−0.006 (0.015)	0.005 (0.009)
	Head education	0.005 (0.013)	−0.007 (0.008)	−0.008 (0.009)
	Head employment	0.024 (0.016)	−0.003 (0.012)	−0.002 (0.010)
	Household composition	−0.026 (0.018)	0.054*** (0.015)	0.013 (0.012)
	Residence	−0.033** (0.017)	−0.042*** (0.015)	−0.056*** (0.018)
	Characteristics of hhd. head	−0.603 (0.599)	−0.604 (0.525)	0.131 (0.438)
	Head education	0.458 (0.372)	−0.072 (0.325)	0.024 (0.272)
	Head employment	−0.121 (0.096)	−0.524*** (0.088)	−0.064 (0.070)
	Household composition	0.263 (0.260)	0.420* (0.232)	−0.101 (0.190)
	Residence	0.377** (0.164)	0.054 (0.147)	0.033 (0.120)
	Constant	−0.371 (0.668)	0.626 (0.581)	−0.112 (0.488)
	Observations		3,370	

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Table 13 *continued*

		Russian Federation 10		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.561*** (0.022)	9.404*** (0.011)	10.200*** (0.014)
	Control group	8.689*** (0.049)	9.517*** (0.034)	10.390*** (0.056)
	Overall Gap	−0.128** (0.054)	−0.113*** (0.036)	−0.187*** (0.057)
	Endowment	−0.067** (0.026)	−0.037** (0.017)	−0.058*** (0.019)
	Returns	−0.061 (0.054)	−0.076** (0.033)	−0.129** (0.054)
	Characteristics of hhd. head	−0.016 (0.012)	−0.018*** (0.007)	−0.011 (0.007)
	Head education	0.010 (0.010)	0.0015 (0.006)	−0.008 (0.006)
	Head employment	−0.020 (0.015)	−0.013* (0.007)	−0.008 (0.007)
	Household composition	−0.037** (0.015)	0.014 (0.009)	0.008 (0.009)
	Residence	−0.004 (0.012)	−0.022** (0.010)	−0.039*** (0.013)
	Characteristics of hhd. head	−0.723 (0.787)	−0.364 (0.480)	2.317*** (0.810)
	Head education	0.328 (0.362)	0.226 (0.215)	−0.720** (0.357)
	Head employment	−0.124 (0.089)	−0.217*** (0.054)	−0.320*** (0.090)
	Household composition	0.431 (0.693)	0.334 (0.427)	−1.533** (0.725)
	Residence	0.366*** (0.142)	0.089 (0.086)	0.095 (0.145)
	Constant	−0.339 (0.562)	−0.143 (0.332)	0.032 (0.552)
	Observations	5,713		
Returns Effects (Unexplained)				

Notes: Standard errors computed using the delta method are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

**Table 14: Quantile Decomposition for Taipei,China 2005, 2007,
and 2010 by Female/Male Household Head**

		Taipei,China 05		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.654*** (0.019)	9.415*** (0.013)	10.180*** (0.017)
	Control group	8.886*** (0.010)	9.522*** (0.006)	10.210*** (0.009)
	Overall Gap	-0.232*** (0.022)	-0.107*** (0.015)	-0.029 (0.019)
	Endowment	-0.122*** (0.022)	-0.054*** (0.016)	-0.076*** (0.020)
	Returns	-0.110*** (0.026)	-0.054*** (0.018)	0.047* (0.025)
	Characteristics of hhd. head	-0.099*** (0.035)	-0.012 (0.025)	-0.043 (0.035)
	Head education	-0.038*** (0.007)	-0.013* (0.007)	-0.000 (0.008)
	Head employment	-0.087*** (0.014)	0.015** (0.007)	0.001 (0.009)
	Household composition	0.088** (0.035)	-0.061** (0.025)	-0.055 (0.034)
	Residence	0.013*** (0.003)	0.017*** (0.003)	0.022*** (0.004)
	Characteristics of hhd. head	0.488** (0.236)	0.619*** (0.163)	-0.097 (0.231)
	Head education	-0.308*** (0.088)	0.194*** (0.061)	0.070 (0.086)
	Head employment	0.139** (0.069)	-0.033 (0.047)	-0.219*** (0.067)
	Household composition	-0.217*** (0.076)	0.116** (0.053)	0.196*** (0.075)
	Residence	-0.000 (0.139)	0.078 (0.098)	-0.093 (0.137)
	Constant	-0.212 (0.280)	-1.028*** (0.194)	0.190 (0.275)
Observations		13,679		

continued on next page

Table 14 *continued*

		Taipei, China 07		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.595*** (0.018)	9.365*** (0.013)	10.170*** (0.021)
	Control group	8.834*** (0.010)	9.499*** (0.006)	10.210*** (0.009)
	Overall Gap	−0.239*** (0.020)	−0.135*** (0.014)	−0.043* (0.023)
	Endowment	−0.124*** (0.021)	−0.097*** (0.016)	−0.131*** (0.025)
	Returns	−0.115*** (0.026)	−0.037** (0.019)	0.088*** (0.031)
	Characteristics of hhd. head	−0.091 (0.182)	−0.164 (0.132)	0.130 (0.221)
	Head education	−0.035*** (0.007)	−0.008 (0.007)	−0.005 (0.011)
	Head employment	−0.037*** (0.010)	0.007 (0.007)	0.002 (0.010)
	Household composition	0.051 (0.183)	0.067 (0.133)	−0.263 (0.223)
	Residence	−0.012*** (0.004)	0.001 (0.003)	0.005 (0.005)
	Characteristics of hhd. head	1.043** (0.469)	1.147*** (0.327)	−0.261 (0.541)
	Head education	−0.086 (0.091)	0.179*** (0.063)	0.250** (0.104)
	Head employment	−0.247*** (0.071)	−0.066 (0.050)	−0.078 (0.082)
	Household composition	−0.562 (0.434)	0.001 (0.302)	1.095** (0.500)
	Residence	−0.292*** (0.089)	−0.102 (0.063)	0.082 (0.105)
	Constant	0.028 (0.274)	−1.196*** (0.192)	−1.000*** (0.317)
	Observations	13,774		

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Table 14 *continued*

		Taipei,China 10		
		10th pctl	50th pctl	90th pctl
Endowment Effects (Explained)	Treatment group	8.567*** (0.018)	9.390*** (0.013)	10.180*** (0.016)
	Control group	8.791*** (0.011)	9.504*** (0.006)	10.210*** (0.009)
	Overall Gap	-0.224*** (0.021)	-0.115*** (0.014)	-0.024 (0.019)
	Endowment	-0.077*** (0.021)	-0.059*** (0.015)	-0.116*** (0.018)
	Returns	-0.148*** (0.026)	-0.056*** (0.018)	0.092*** (0.024)
	Characteristics of hhd. head	-0.095** (0.045)	-0.021 (0.032)	0.009 (0.042)
	Head education	-0.020*** (0.007)	-0.002 (0.007)	0.003 (0.008)
	Head employment	-0.049*** (0.012)	0.000 (0.007)	0.006 (0.009)
	Household composition	0.084* (0.044)	-0.046 (0.031)	-0.142*** (0.040)
	Residence	0.003 (0.004)	0.010*** (0.003)	0.009** (0.004)
Returns Effects (Unexplained)	Characteristics of hhd. head	0.726*** (0.256)	0.730*** (0.171)	0.221 (0.238)
	Head education	-0.570*** (0.120)	0.208*** (0.078)	0.115 (0.112)
	Head employment	-0.167** (0.072)	0.051 (0.047)	-0.154** (0.067)
	Household composition	-0.158 (0.104)	0.073 (0.071)	0.321*** (0.097)
	Residence	0.050 (0.096)	0.133** (0.066)	0.095 (0.089)
	Constant	-0.028 (0.295)	-1.250*** (0.196)	-0.506* (0.274)
	Observations	14,843		

Notes: Standard errors computed using the delta method are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

In India, the pro-male gender gap is apparently due to the endowment effects among poor and rich households, while at the center of the income distribution, the returns effect dominates and drives the pro-male gap. Female Indian households are less educated, have an inferior employment status and inferior demographic characteristics than male households, even though they have a superior location or access to markets. Female households receive higher returns to their demographic characteristics and to education, while they receive lower returns to their employment status and location. On balance, these returns effects essentially cancel out, for a low insignificant composite returns effect.

In Japan, the pro-male gap is driven by the endowment effects, as female households are less educated and have poorer geographic access to markets. The returns effects contribute only among the highest deciles, through a lower return to demographic characteristics earned by female heads relative to males. In Republic of Korea, both the endowment and returns effects work to harm female households, particularly in the lower half of the income distribution. Female households have less desirable demographic characteristics and employment status, and lower education than male households. Female heads also receive a lower return on their employment status (significant), although higher-income female heads may receive higher returns on their demographic characteristics and education.

In the Russian Federation, the overall gender gap rose substantially between 2004 and 2010, especially among poorer households. In 2004, the endowment effect was essentially nonexistent, with female households having very similar characteristics as male households across all income quantiles. The returns effect was actually positive in the lowest decile group, thanks to a higher return to education (and to household composition) among poor female households relative to poor male households. Female households received lower returns on their employment status and geographic residence, but these were counteracted by higher returns on demographic characteristics among richer female households. By 2007, the composite endowment effect became consistently negative for all quantile groups (significant only in the top decile), and the returns effect became negative significant among the middle and high income groups, leading to an overall pro-male gap among households in the middle and top of the income distribution. Female households are now found to reside in significantly inferior locations relative to male households, affecting their earning capacity. At the same time, female households receive a lower return on their employment status and on their demographic characteristics, which trumps small premiums in their returns to household composition and geographic location.

Finally, in 2010, the composite endowment effects became negative significant across all income quantiles, and the returns effect turned more negative and significant. The differentials in individual endowments and returns to them still carry the same signs as in 2007 but are larger and more significant. Hence, female households are hurt by deterioration in their endowment of marketable characteristics as well as by deterioration in the market valuation of their characteristics relative to men's. Whether these trends are due to deprivation traps, corrosion of social welfare nets, market discrimination, or other structural marginalization of female workers is unclear, but clearly public policy should tackle the degradation of the living conditions of female-led households on both fronts.

In Taipei, China, the gender gap has been larger among poorer households, and has stagnated at the year-2005 levels to 2010. The gap has been made up approximately equally of the endowment and returns effects, with the exception of the richest quantile, where a pro-female returns effect has inexplicably been offsetting nearly two-thirds of the pro-male endowment effect.

Female household heads attain slightly lower education than their male counterparts in Taipei,China, and have slightly less market-desirable demographic characteristics. They earn lower returns on their employment status, but higher returns on their demographic characteristics. A divergence is apparent in the returns effects between poorer and richer households. While poorer female households receive lower returns on their education and household composition than their poor male counterparts, richer female households receive a premium in their return to these attributes. This is what drives the pro-female composite returns effect and what makes the overall gender gap small at the top of the income distribution. The precise source of this phenomenon is presently unclear and deserves future scrutiny.

5. CONCLUSIONS

This study has used ten national household surveys to investigate the level, composition, and evolution of income inequality among six Asian countries in different stages of development—the PRC; India; Japan; Republic of Korea; the Russian Federation; and Taipei,China. To estimate the effects of various household characteristics and the returns to them on household income at different income quantiles, we have used advanced methods including the Blinder–Oaxaca decomposition and the unconditional quantile regressions estimated using a recently developed re-centered influence function estimation procedure.

The results indicate that Japan; Taipei,China; and Republic of Korea have very low degrees of income inequality, while India and the PRC have very high levels, followed by the Russian Federation. There is evidence of rural/urban and regional income gaps across all of the evaluated countries, but they are particularly high in India; the PRC; and the Russian Federation, and account for a large portion of the overall inequality. While the rural/urban gap has been going away in the Russian Federation and Taipei,China, regional gaps remain strong in Taipei,China and appear to further grow in the Russian Federation, disagreeing with claims in recent Russian reports that Russian factor markets have become more integrated and that the level of economic development has been converging across Russian regions. Broadly, we find support for the premise that the extent and form of inequality are relatively stagnant within countries while they vary substantially across countries with vastly different economic and institutional conditions (Li, Squire, and Zou 1998).

Education gap is an important component in overall inequality across most countries. Some evidence exists of polarization of societies whereby a small group of households accumulate large stocks of education and non-education endowments, and concentrate near markets—in cities and advantaged regions—to receive high returns on all these endowments. The rest of the national population, most notably in India, lacks resources to invest in the various endowments and falls behind.

Urban/rural gap is due to education and employment status of urban versus rural households, and because rural households receive a significantly lower return on their education. These point to a lack of employment opportunities in rural areas, particularly for skilled workers. Education gap is due in part to the fact that less educated workers have a harder time finding employment. In other words, workers who are less formally educated receive lower credit for their other endowments—such as residence closer to main labor markets—and are not given a chance to prove themselves. Female-headed households are less educated and are viewed in the market as having inferior personal characteristics (age, marital status), leading to a lower propensity to be employed. Even when employed, they work in irregular positions or are self-employed, and suffer

a substantial reduction in earnings, interpreted as a penalty for inconvenience that female workers cause to employers.

Overall, education and the return to it, geographic location and household composition play an important role in driving economic inequality—and suggest a viable way to control it—across demographic groups. These findings have important implications for public policy in developing Asia. For one, education reform and better welfare nets are needed to provide basic opportunities for workers to improve their skills. Family planning and residence support programs, such as public housing or relaxation of national-registration laws (i.e., *hukou*), could help ameliorate regional and rural/urban inequality. Empowering authorities and organizations in disadvantaged regions to support workers, and to help them acquire skills and be matched to quality employment would also work to loosen the grip of the deprivation trap (Chambers 1983).

Interestingly, in the PRC and India there is a large group of households without working heads, or female-led households, who out-earn the counterpart working and male households. This occurs among all income-quantile groups. Among top-income households, this may correspond to a leisure class of residents who live off of wealth or remittances. At lower-income groups, the far more likely picture is that of poor rural households with their breadwinners working temporarily or seasonally in cities. Those may be the female, unemployed-headed households whose breadwinners have no decent earning opportunities in their home region, for various reasons. The increase in income in these households comes at a high cost to the breadwinners of living away from their family, living in poor conditions as migrant workers in the shadow of law. The role of public policy should be to open opportunities to workers in all regions and circumstances, and to facilitate quality matches between workers and employers.

A final observation may be made is that throughout this analysis, Japan; Republic of Korea; and Taipei,China represent an entirely different continent in terms of the level, the distribution, as well as the decomposition of incomes, from India and the PRC, and even the Russian Federation. The latter countries should aspire to adopt the development model—the market policies, welfare state, and institutions—used in Republic of Korea in the 1960s and Taipei,China in the 1980s. There is hope that appropriate policy reforms will not only increase the aggregate level of wealth, but will bring more equal prosperity to all corners of their societies.

REFERENCES

- Asadullah, M. N, and G. Yalonetzky. 2012. Inequality of Educational Opportunity in India: Changes over Time and Across States. *World Development* 40(6): 1151–1163.
- Azam, M. 2012. Changes in Wage Structure in Urban India, 1983–2004: A Quantile Regression Decomposition. *World Development* 40(6): 1135–1150.
- Azam, M., and V. Bhatt. 2016. Spatial Income Inequality in India, 1993–2011: A District Level Decomposition. *IZA Working Paper*.
- Belhaj Hassine, N. 2014. Economic Inequality in the Arab Region. *World Bank Policy Research Working Paper* WPS-6911. Washington, DC: The World Bank.
- Berg, A., and J. Ostry. 2011. Inequality and Unsustainable Growth: Two Sides of the Same Coin? *IMF Staff Discussion Note*. Washington, DC: International Monetary Fund.
- Blinder, A. 1973. Wage Discrimination: Reduced Form and Structural Estimates. *Journal of Human Resources* 8(4): 436–455.
- Brar, J., S. Gupta, A. Madgavkar, B. C. Maitra, S. Rohra, and M. Sundar. 2014. India's Economic Geography in 2025: States, Clusters and Cities. *Insights India Report*. McKinsey & Company, October.
- Chamarbagwala, R. 2010. Economic Liberalization and Urban–Rural Inequality in India: A Quantile Regression Analysis. *Journal Empirical Economics* 39(2): 371–394.
- Chambers, D., and A. Krause. 2010. Is The Relationship Between Inequality and Growth Affected by Physical and Human Capital Accumulation? *Journal of Economic Inequality* 8(2): 153–172.
- Chambers, R. 1983. *Rural Development: Putting the Last First*. Harlow, United Kingdom: Prentice Hall.
- Chang, C., and P. England. 2011. Gender Inequality in Earnings in Industrialized East Asia. *Social Science Research* 40(1): 1–14.
- Chang, H. 2012. Consumption Inequality between Farm and Nonfarm Households in Taipei, China: A Decomposition Analysis of Differences in Distribution. *Agricultural Economics* 43(5): 487–498.
- Chen, C.-L. 2014. <http://bit.ly/2llg38n> 44(2): 1–44.
- ECA, ILO, UNCTAD, UNDESA, and UNICEF. 2012. *Social Protection: A Development Priority on the Post 2015 UN Development Agenda*. UN System task team on the post 2015 UN Development agenda.
- Firpo, S., N. M. Fortin, and T. Lemieux. 2009. Unconditional Quantile Regressions. *Econometrica* 77(3): 953–973.
- Fortin, N. M., T. Lemieux, and S. Firpo. 2010. Decomposition Methods in Economics. *NBER Working Paper* 16045. Cambridge, MA: National Bureau of Economic Research.
- Fournier, J.-M., and I. Koske. 2012. The Determinants of Earnings Inequality: Evidence from Quantile Regressions. *OECD Journal: Economic Studies* 2012/1.

- Ghosh, P. K., and J. Y. Lee. 2016. Decomposition of the Changes in Korean Wage Inequality during the Period 1998–2007. *Journal of Labor Research* 37(1): 1–28.
- Gluschenko, K. P. 2010. Methodologies of Analyzing Inter-Regional Income Inequality and Their Applications to Russia (1 April). *William Davidson Institute Working Paper* No. 984.
- . 2011. Studies on Income Inequality among Russian Regions: Variations in Social-Economic Development by Region. *Regional Research of Russia* 1(4): 319–330.
- Guriey, S., and E. Vakulenko. 2012. Convergence between Russian Regions. *CEFIR/ES Working Paper* 180. October.
- Heshmati, A. 2004. Regional Income Inequality in Selected Large Countries. *Institute for the Study of Labor IZA Discussion Paper* 1307. September.
- Higashikata, T. 2013. Factor Decomposition of Income Inequality Change: Japan's Regional Income Disparity from 1955 to 1998. *IDE Discussion Paper* 400.2013.3.
- Hlasny, V. 2016a. Unit Nonresponse Bias to Inequality Measurement: Worldwide Analysis Using Luxembourg Income Study Database. *Luxembourg Income Study Technical Working Paper* 8. March.
- . 2016b. Labor Market Rigidities and Social Inequality in Korea: The Role of Legal, Economic and Social Governance. *On Korea Academic Paper Series* 10. Washington, DC: Korea Economic Institute of America.
- Hlasny, V., and P. Verme. 2015. Top Incomes and the Measurement of Inequality: A Comparative Analysis of Correction Methods Using EU and US Survey Data. *World Bank Policy Research Working Paper Series*. Forthcoming.
- Imai, K. S., and B. Malaeb. 2016. Asia's Rural–Urban Disparity in the Context of Growing Inequality. *Kobe University RIEB Discussion Paper* DP2016-29.
- Jeong, J., and V. Hlasny. 2016. Co-opting Separatists: Social Welfare to Cross-Border Minorities in Xinjiang. *Ewha Womans University Working Paper*.
- Kabeer, N. 2010. *Can the MDGs Provide a Pathway to Social Justice? The Challenges of Intersecting Inequalities*. New York, NY: UN MDG Achievement Fund; Brighton: IDS.
- Kang, B.-G., and M.-S. Yun. 2008. Changes in Korean Wage Inequality, 1980–2005. *IZA Discussion Paper* 3780.
- Kijima, Y. 2006. Why Did Wage Inequality Increase? Evidence from Urban India 1983–99. *Journal of Development Economics* 81: 97–117.
- Lee, H.-Y., J. Kim, and B. C. Cin. 2013. Empirical Analysis on the Determinants of Income Inequality in Korea. *International Journal of Advanced Science and Technology* 53(April): 95–109.
- Li, H., L. Squire, and H. Zou. 1999. Explaining International and Intertemporal Variations in Income Inequality. *Economic Journal* 108(446): 26–43.
- Mahler, C. 2011. Diverging Fortunes: Recent Developments in Income Inequality across Russian Regions. *Opticon* 1826 10(Spring).
- Mehta, A., and R. Hasan. 2012. The Effects of Trade and Services Liberalization on Wage Inequality in India. *International Review of Economics and Finance* 23: 75–90.

- Nahm, J. 2008. Shrinking Middle Class and Changing Income Distribution of Korea:1995–2005. *Korean Economic Review* 24(2).
- Oaxaca, R. 1973. Male–Female Wage Differentials in Urban Labor Markets. *International Economic Review* 14(3): 693–709.
- Panel Data Research Center. (PDRC). 2015. Survey Methodology: Keio Household Panel Survey and Japan Household Panel Survey Data. Unpublished manuscript. Keio University.
- Park, J., and J. S. Mah. 2011. Neo-liberal Reform and Bipolarisation of Income in Korea. *Journal of Contemporary Asia* 41(2): 249–265.
- Ramadan, R., V. Hlasny, and V. Intini. 2015. Inequality Decomposition in the Arab Region: Application to Jordan, Egypt, Palestine, Sudan and Tunisia. *UN ESCWA Working Paper* 9. December.
- Sachs, J. D., N. Bajpai, and A. Ramiah. 2002. Understanding Regional Economic Growth in India. *Asian Economic Papers* 1(3): 32–62.
- Sato, Y., and J. Imai (eds.) 2011. *Japan's New Inequality: Intersection of Employment Reforms and Welfare Arrangements*. Melbourne, Australia: Trans Pacific Press.
- Stewart, F., and A. Langer. 2007. Horizontal Inequalities: Explaining Persistence and Change. Centre for Research on Inequality, Human Security and Ethnicity. *Working Paper* 39. Oxford, United Kingdom: University of Oxford.
- Tarohmaru, H. 2014. Factors in the Wage Differential between Standard and Nonstandard Employment: A Comparison of Japan, South Korea and Taipei, China. In *Transformation of the Intimate and the Public in Asian Modernity*, pp.144–165.
- United Nations Development Programme (UNDP). 2013. *Humanity Divided: Confronting Inequality in Developing Countries*. United Nations Development Programme.
- United Nations Statistics Division (UNSD). 2015. Millennium Development Goals Indicators: Purchasing Power Parities (PPP) Conversion Factor, Local Currency Unit to International Dollar, 1990–2012. Updated 6 July.
- Wan, G. 2004. Accounting for Income Inequality in Rural China: A Regression-based Approach. *Journal of Comparative Economics* 32(2): 348–363.
- Wan, G., and Z. Zhou. 2004. Income Inequality in Rural China: Regression-Based Decomposition Using Household Data. *WIDER Research Paper* 2004/51.
- Wan, G., M. Lu, and C. Zhao. 2007. Globalization and Regional Income Inequality: Empirical Evidence From Within China. *Review of Income and Wealth* 53(1): 35–59.
- World Bank. 2013. New Country Classifications, <http://data.worldbank.org/news/new-country-classifications> (posted 2 July).
- . 2015a. Inflation: GDP Deflator (annual %), World Bank national accounts data, and OECD National Accounts data, World Development Indicators catalog, <http://data.worldbank.org/indicator/NY.GDP.DEFL.KD.ZG>.
- . 2015b. PPP conversion factor, GDP (LCU per international \$), International Comparison Program database, World Development Indicators catalog, <http://data.worldbank.org/indicator/PA.NUS.PPP>.

- . 2015c. World DataBank: World Development Indicators, <http://databank.worldbank.org/data/home.aspx>. Last updated 22 December 2015; extracted 6 January 2016.
- Yokoyama, I., N. Kodama, and Y. Higuchi. 2016. What Happened to Wage Inequality in Japan during the Last 25 Years? Evidence from the FFL decomposition method. *RIETI Discussion Paper* 16-E-081.
- Youm, Y., and K. Yamaguchi. 2016. Gender Gaps in Japan and Korea: A Comparative Study on the Rates of Promotions to Managing Positions. *RIETI Discussion Paper* 16-E-011.

APPENDIX

Table A1: Distribution of Real Income
(2005 US\$)

Country	Income Ref. Year	LIS dname	Curr= 2005US\$1	Net/Mixed/ Gross	Sample Size	
PRC	2002	cn02	2.898cny	M: tax., contr. insuf. captured	17,124	
India	2004	in04	11.531inr	N: tax, contrib. not collected	41,554	
Japan	2008	jp08	108.300jpy	G: tax, contrib. imputed	4,022	
Rep. of Korea	2006	kr06	749.176krw	G: taxes, contrib. fully captured	15,532	
Russian Federation	2004	ru07	13.216rub	N: taxes, contrib.	3,394	
	2007	ru07	13.216rub	not collected	3,933	
	2010	ru10	14.372rub		6,323	
Taipei,China	2005	tw05	31.022twd	G: taxes, contrib. fully captured	13,681	
	2007	tw07	31.030twd	G: taxes, contrib.	13,776	
	2010	tw10	29.263twd	collected	14,853	
Country	Avg. Inc. (\$)	Median Inc. (\$)	Gini (LIS) ^a	Gini ^b	75/25% Ratio	90/10% Ratio
PRC	2,706*	1,646	50.32 (0.25)	50.72 (0.28)	4.41	13.49
India	1,905**	1,144	48.56 (0.20)	50.84 (0.43)	3.39	10.32
Japan	30,730	27,199	30.18 (0.52)	30.18 (0.52)	1.98	3.94
Rep. of Korea	24,894	22,319	30.96 (0.26)	31.02 (0.27)	2.12	4.46
Russian Federation	5,912*	4,474	40.31 (0.59)	40.45 (0.63)	2.75	6.60
	9,752*	8,090	37.05 (0.51)	37.05 (0.51)	2.75	6.15
Taipei,China	15,111*	12,252	35.26 (0.45)	35.71 (0.59)	2.30	5.14
	15,826	13,437	30.52 (0.25)	30.53 (0.25)	2.00	3.96
	15,385	13,069	30.97 (0.23)	31.03 (0.25)	2.03	4.16
	15,395	13,150	31.78 (0.24)	31.80 (0.24)	2.09	4.37

(2015a, 2015b, 2015c).

PRC = People's Republic of China., US = United States.

* – classified by LIS as upper-middle; ** – lower-middle; rest – high income country.

^a Gini (LIS) is computed using LIS method: Keep only nonzero disposable incomes and weights; censor small disposable incomes per capita at 0.01×mean disposable income per capita; censor high disposable household incomes at 10×median disposable household income, prior to dividing by adult equivalence scale; Adult equivalence scale is square root of household members; for analytical weight, count of household members is used. Results may differ from statistics reported by LIS because an older version of data may have been used.

^b LIS method is partly adopted: Keep only disposable incomes of \$1 or greater, and positive weights; no top/bottom coding is performed; Adult equivalence scale is square root of household members; for analytical weight, count of household members is used. For clarity, Ginis and their jack-knife estimated standard errors are multiplied by 100.

Source: Author's analysis of LIS data; US\$ GDP deflators, currency conversion rates and income-status from the World Bank.

**Table A2: Mean Disposable Household Income Per Capita
and Share of Aggregate Income, by Quintile**
(2005 US\$, [%])

Quintile	<i>cn02</i>	<i>in04</i>	<i>jp08</i>	<i>kr06</i>	<i>ru04</i>	<i>ru07</i>	<i>ru10</i>	<i>tw05</i>	<i>tw07</i>	<i>tw10</i>
1	488 [3.19]	391 [3.88]	11,957 [7.90]	7,317 [7.12]	1,471 [5.38]	2,489 [5.68]	4,652 [6.42]	5,815 [8.22]	5,533 [8.05]	5,187 [7.59]
2	1,137 [7.03]	807 [7.77]	20,224 [13.39]	14,340 [13.17]	2,818 [10.38]	4,756 [10.97]	8,521 [11.88]	9,562 [13.11]	9,207 [12.96]	9,036 [12.83]
3	2,114 [12.41]	1,304 [12.13]	26,714 [17.65]	20,699 [17.94]	4,073 [15.23]	7,222 [16.72]	11,527 [16.41]	12,887 [17.04]	12,523 [17.00]	12,613 [17.15]
4	3,681 [23.25]	2,259 [20.51]	34,807 [22.88]	28,260 [23.63]	6,166 [22.98]	10,770 [24.17]	16,169 [22.99]	17,514 [22.62]	17,069 [22.58]	17,236 [22.81]
5	7,830 [54.13]	5,942 [55.71]	58,427 [38.18]	46,748 [38.15]	12,816 [46.03]	19,619 [42.46]	30,354 [42.31]	30,709 [39.00]	30,236 [39.40]	30,416 [39.62]

Notes: Currency conversion rates and GDP deflators from World Bank (2015a, 2015b). Summary statistics account for household sampling weights and household size.

Table A3: Means of Explanatory Variables of Interest
(% of households with binary variable=1)

	<i>cn02</i>	<i>in04</i>	<i>jp08</i>	<i>kr06</i>	<i>ru04</i>	<i>ru07</i>	<i>ru10</i>	<i>tw05</i>	<i>tw07</i>	<i>tw10</i>
Urban	46.44	35.23	90.27	80.79	74.55	74.90	74.96	97.16	92.09	92.85
Advantaged region	38.49	37.49	81.04	13.07	66.26	67.19	66.37	14.62	–	–
<i>Household head characteristics</i>										
Cohabiting	95.03	85.51	72.98	73.07	54.31	53.78	55.59	69.41	68.10	64.29
Employed	85.15	85.71	68.97	83.15	55.37	55.16	57.85	82.86	83.31	81.45
Complete upper secondary educat.	36.75	13.34	87.14	60.83	72.54	75.58	80.06	57.44	59.02	64.07
Male	83.68	90.26	48.51	77.11	12.46	12.00	13.23	77.93	76.44	73.44
Prime working-age (30–50yo)	63.11	56.30	35.95	49.02	40.52	37.78	37.39	52.67	51.49	48.93
<i>Industry classification</i>										
Service	34.31	35.34	13.51	51.39	70.86	71.90	75.21	55.50	56.53	55.88
Industry	28.88	19.61	65.38	27.01	23.68	24.09	20.37	36.64	36.13	37.11
Agriculture	33.32	45.07	21.96	21.60	5.46	4.01	4.42	7.87	7.34	7.02

yo = years old.

Note: In *tw07* and *tw10*, urban is inferred from “not running a farming activity.” Cohabiting entails “head living with partner,” “married couple,” or “non-married cohabiting couple” as opposed to “head not living with partner.” Age ranges from 16 to 104.

Table A4: Summary Statistics by Income Quintile
(% of households)

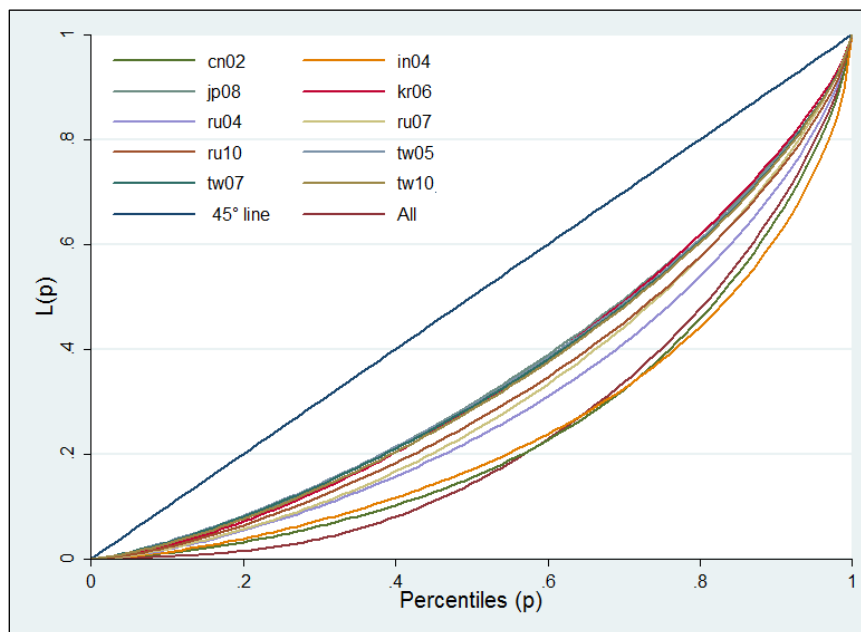
Quintile	<i>cn02</i>	<i>in04</i>	<i>jp08</i>	<i>kr06</i>	<i>ru04</i>	<i>ru07</i>	<i>ru10</i>	<i>tw05</i>	<i>tw07</i>	<i>tw10</i>
<i>Urban</i>										
1	0.67	12.29	88.39	53.97	54.05	59.70	59.23	92.29	85.92	88.14
2	8.92	21.03	88.84	63.57	70.81	70.77	70.78	96.89	89.73	90.33
3	46.13	34.15	89.73	67.97	75.85	74.78	78.28	98.28	92.81	93.26
4	82.34	47.18	91.07	71.60	82.79	83.23	80.55	98.72	95.35	95.49
5	94.16	61.53	93.3	73.66	89.3	86.05	85.99	99.63	96.66	97.00
<i>Advantaged region</i>										
1	31.57	24.38	75.15	6.99	66.18	62.22	61.33	3.47	–	–
2	32.35	30.70	78.42	10.16	64.03	65.43	61.07	7.02	–	–
3	34.04	39.28	79.91	10.58	62.88	63.06	64.83	11.62	–	–
4	38.26	45.87	85.27	12.17	66.23	68.69	68.29	17.54	–	–
5	56.25	47.22	86.46	12.52	71.96	76.56	76.36	33.46	–	–
<i>Complete upper secondary education</i>										
1	17.43	3.73	68.90	31.91	55.34	56.44	67.98	23.14	24.28	31.19
2	19.15	3.91	80.95	53.62	65.00	68.25	73.84	47.88	52.45	57.33
3	28.46	6.51	83.04	64.82	72.29	78.04	81.29	60.42	61.89	67.65
4	50.25	13.31	87.35	73.98	82.95	84.27	87.74	70.54	71.80	76.05
5	68.64	39.41	88.39	78.83	87.84	91.25	91.24	85.27	84.71	88.21
<i>Employed</i>										
1	93.78	85.04	54.72	56.67	39.12	28.49	42.64	47.00	52.09	48.37
2	92.60	90.22	63.83	83.79	35.00	35.76	43.31	86.84	86.32	84.94
3	86.14	87.56	69.72	90.36	54.46	57.27	53.10	92.36	92.56	89.82
4	78.12	84.16	78.36	92.98	70.94	71.66	71.67	92.80	91.54	92.12
5	74.91	82.45	81.79	93.56	81.36	80.56	79.68	95.36	94.12	92.28
<i>Male</i>										
1	95.45	86.49	44.35	60.55	14.56	10.37	11.02	68.27	66.72	63.99
2	95.01	90.70	48.96	73.46	10.32	10.39	10.59	77.56	74.41	71.47
3	87.18	91.11	49.55	80.29	11.67	10.53	12.76	80.74	79.46	77.80
4	75.03	91.04	51.34	85.47	11.36	10.68	13.50	81.80	80.87	77.43
5	65.59	92.16	53.27	86.05	13.94	15.43	16.20	81.28	80.76	76.45

Note: In *tw07* and *tw10*, urban is inferred from "not running a farming activity."

Table A5: Mean Disposable Household Income Per Capita by Demographic Group

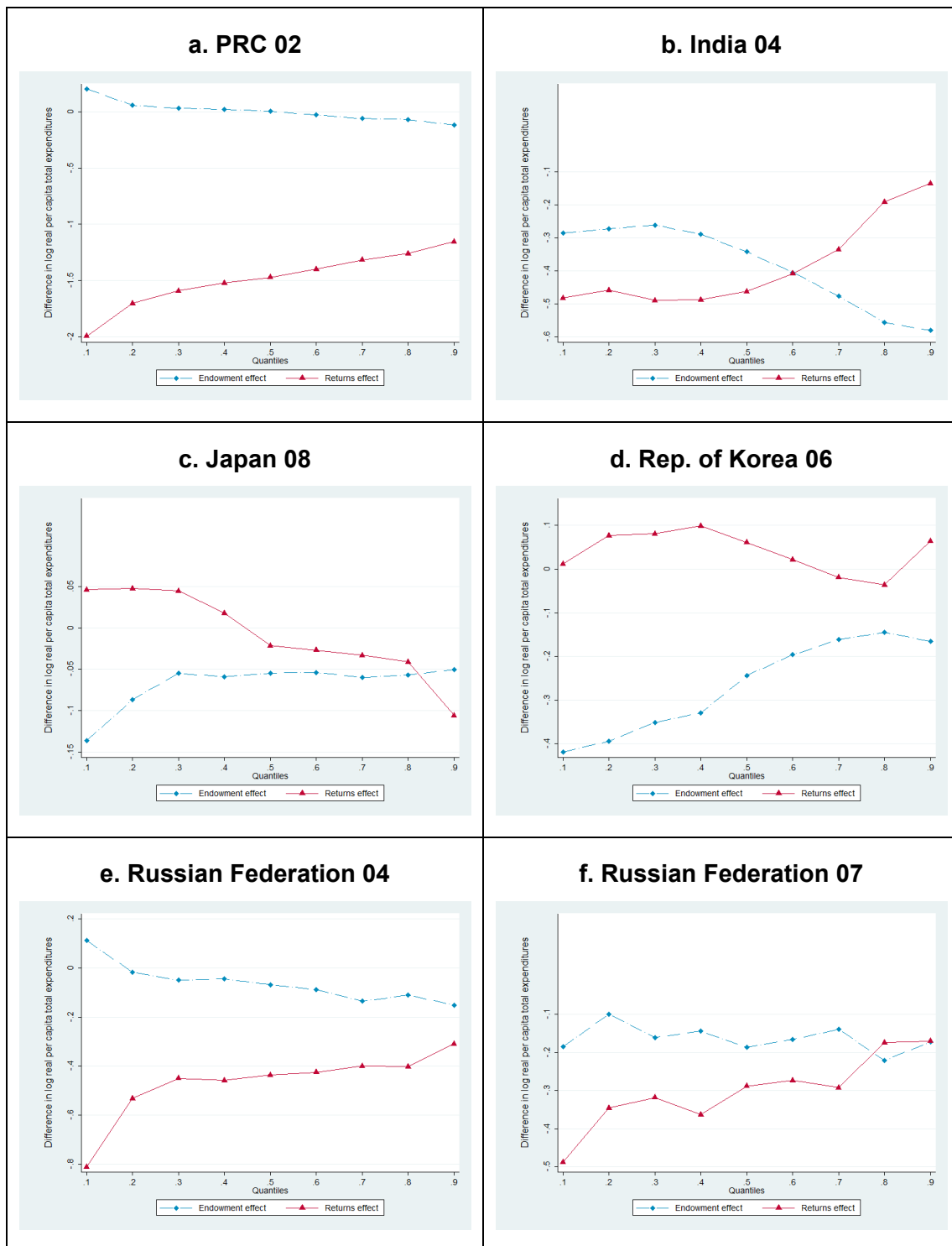
	<i>cn02</i>	<i>in04</i>	<i>jp08</i>	<i>kr06</i>	<i>ru04</i>	<i>ru07</i>	<i>ru10</i>	<i>tw05</i>	<i>tw07</i>	<i>tw10</i>
Urban	5,181	3,050	31,013	25,650	6,657	10,702	16,378	15,972	15,673	15,685
Rural	1,319	1,496	28,084	21,786	3,989	7,167	11,716	9,670	12,205	11,963
Advantaged region	3,826	2,408	31,594	26,014	6,211	10,317	16,086	23,344	–	–
Disadvantaged	2,016	1,663	26,980	24,827	5,321	8,535	13,107	14,820	–	–
Employed	2,518	1,849	32,335	26,112	6,748	11,300	16,689	16,511	15,990	16,069
Non-employed	3,975	2,259	26,467	16,773	4,534	7,325	12,357	9,015	9,443	9,545
Complete upper secondary educat.	4,223	4,303	31,767	27,212	6,429	10,544	15,935	18,111	17,397	17,197
Less educated	1,919	1,612	23,167	18,644	4,334	6,925	11,399	12,325	12,018	11,580
Male	2,351	1,925	31,307	25,958	6,196	10,913	17,755	16,056	15,665	15,674
Female	4,937	1,654	30,168	20,347	5,879	9,633	14,786	14,711	14,163	14,382

Note: Currency conversion rates and GDP deflators from World Bank (2015a, 2015b). Summary statistics account for household sampling weights and household size.

Figure A1: Lorenz Concentration Curves, by National Survey

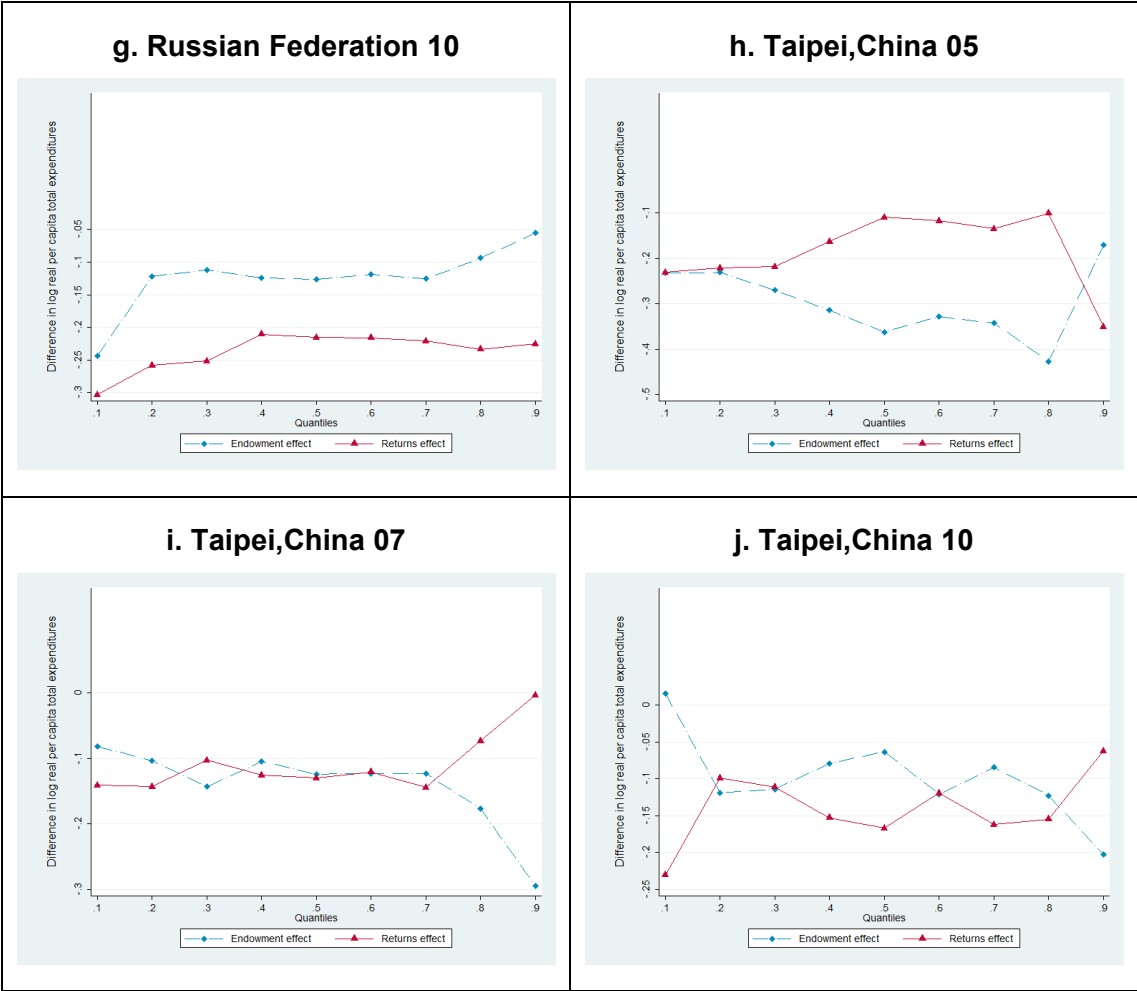
Notes: Households' analytical weights used, accounting for household size.

Figure A2: Endowment and Returns Effects of Rural vs. Urban Residence
(% differences in income)



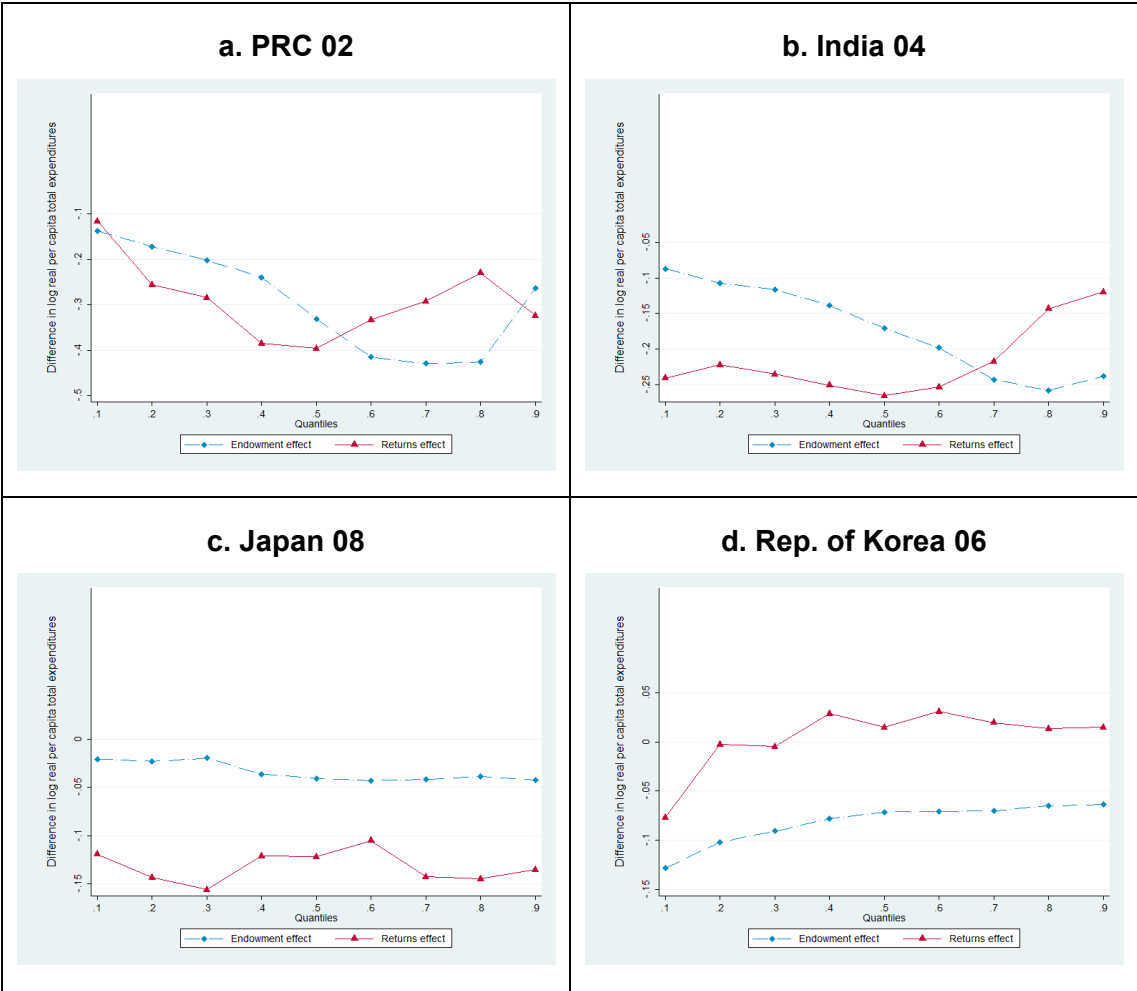
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Figure A2 continued



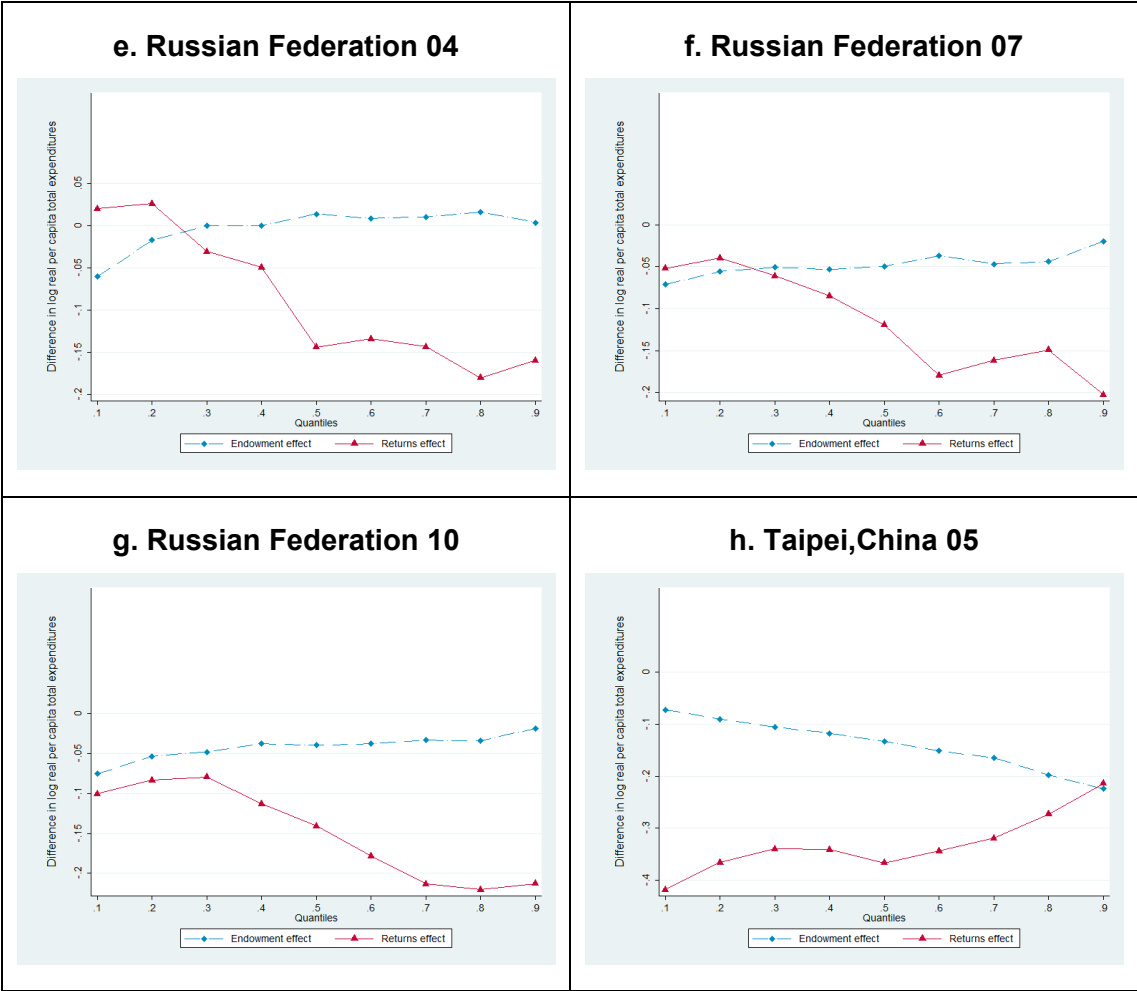
PRC = People's Republic of China.

Figure A3: Endowment and Returns Effects: Disadvantaged vs. Advantaged Region
(% diff. in income)



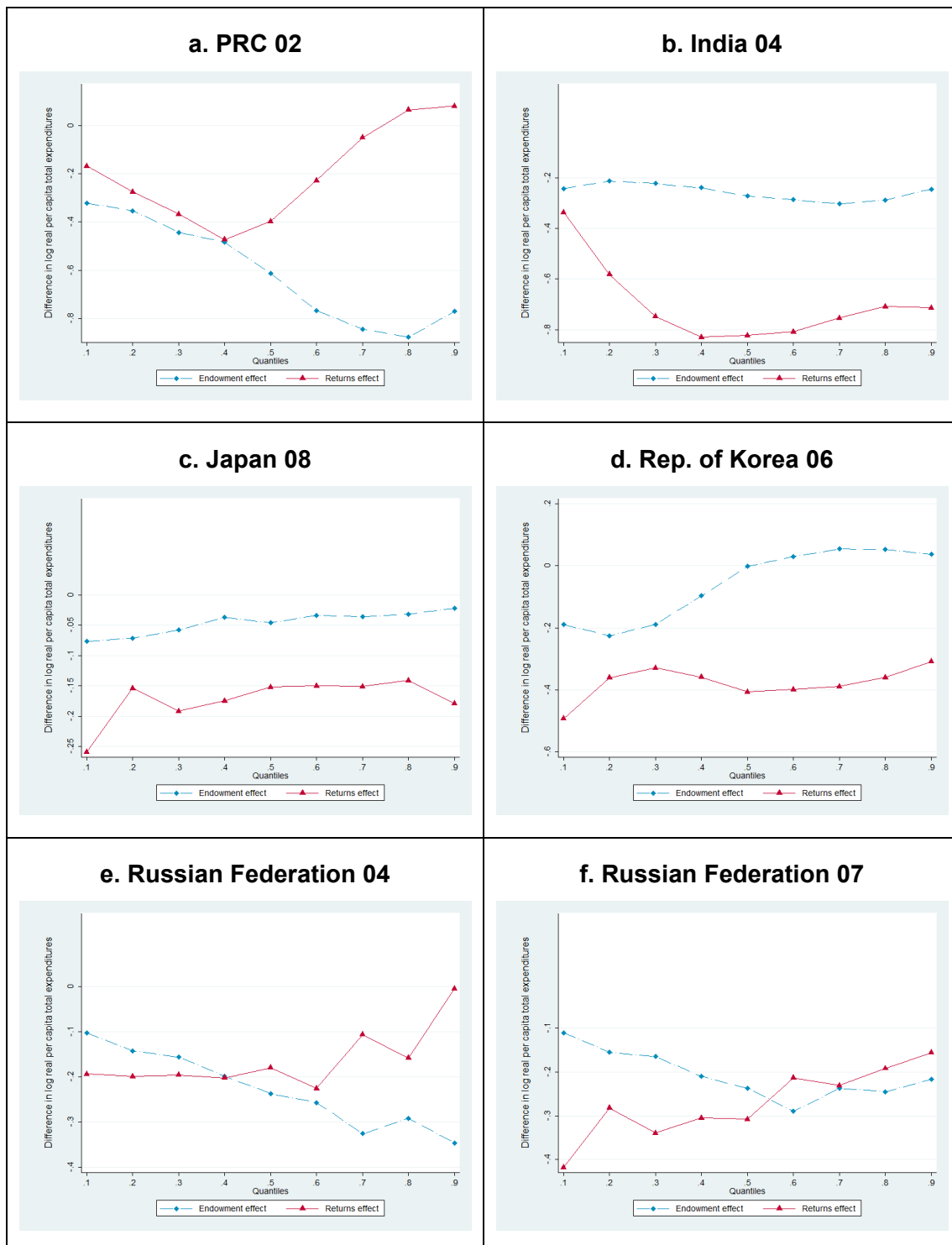
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Figure A3 continued



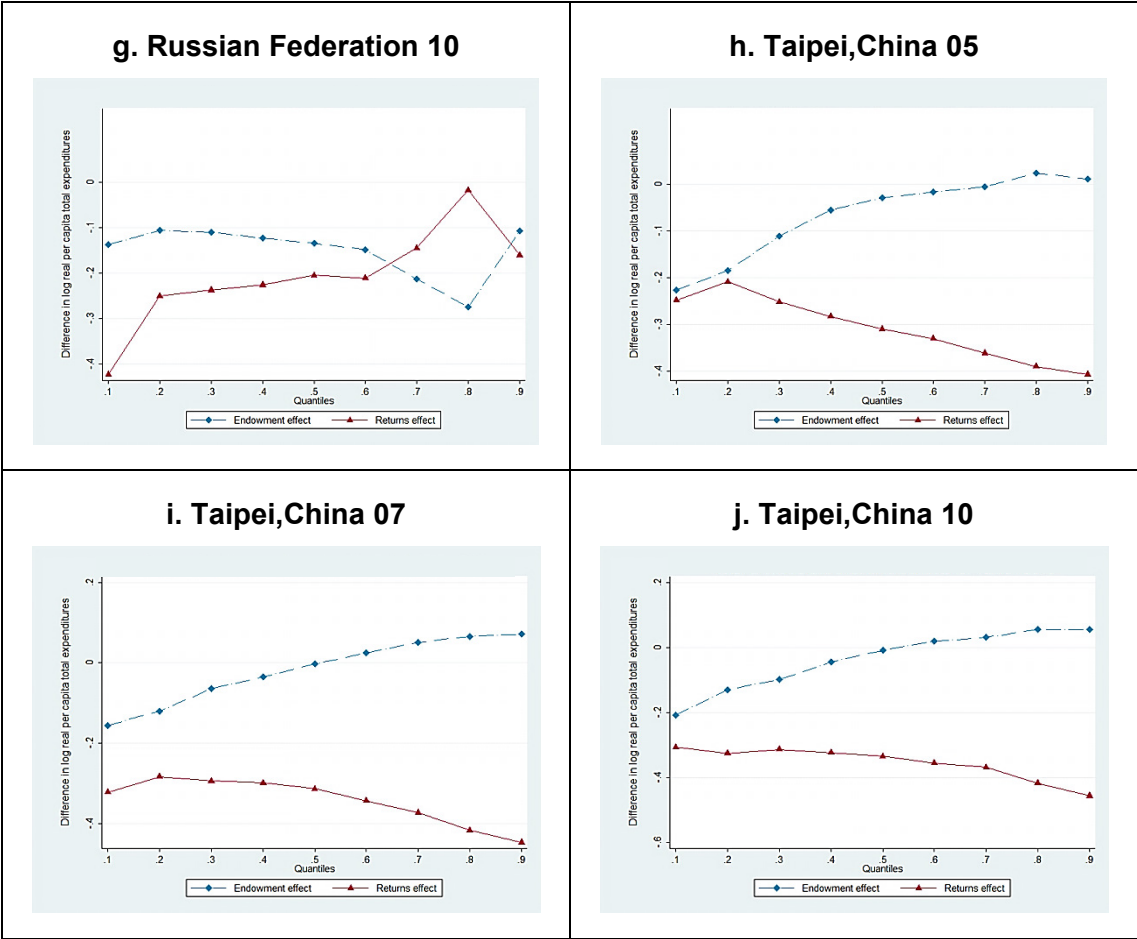
PRC = People's Republic of China.

**Figure A4: Endowment and Returns Effects: Less
vs. More Educated Household Head**
(% diff. in income)



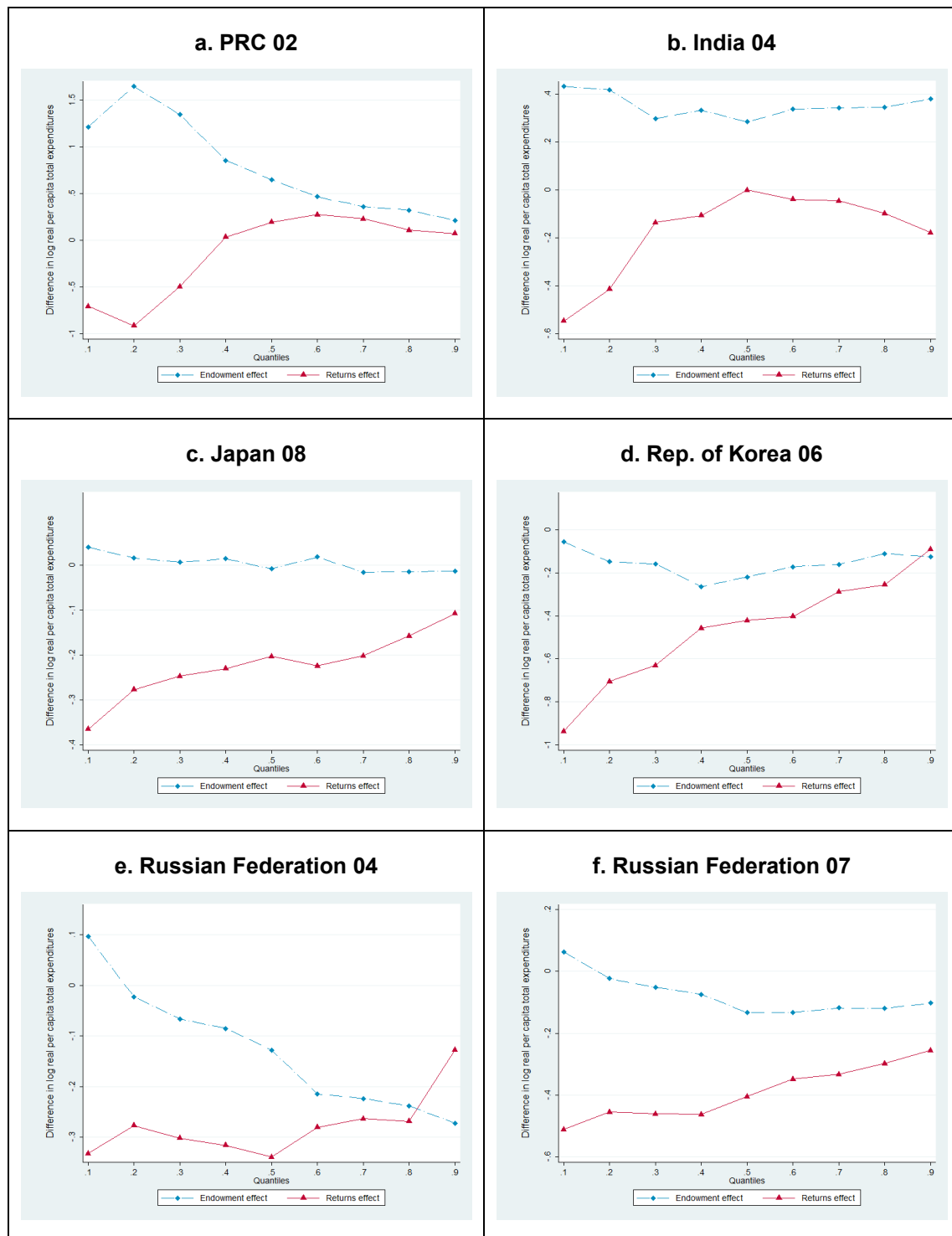
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Figure A4 continued



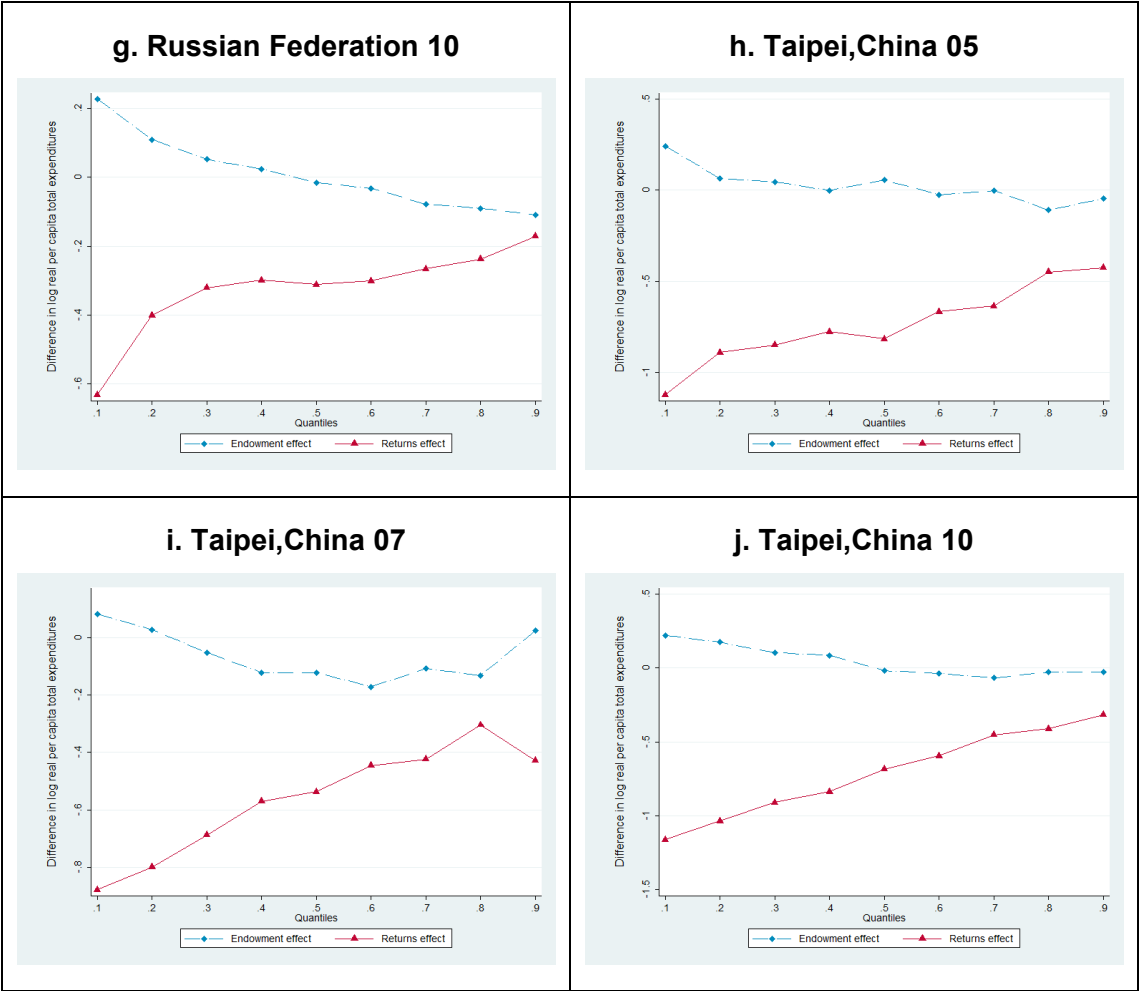
PRC = People's Republic of China.

Figure A5: Endowment and Returns Effects: Non-employed vs. Employed Head
(% diff. in income)



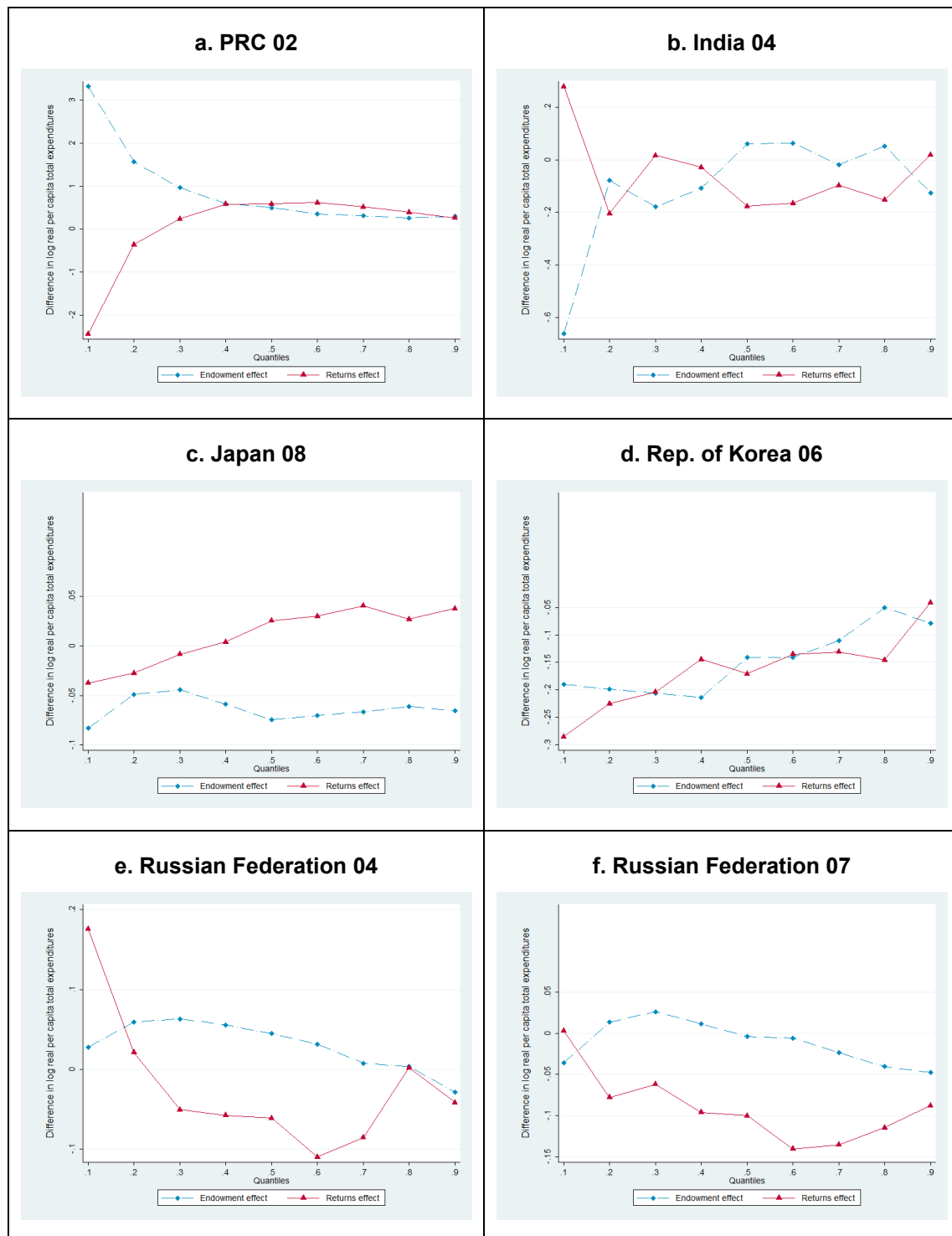
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Figure A5 continued



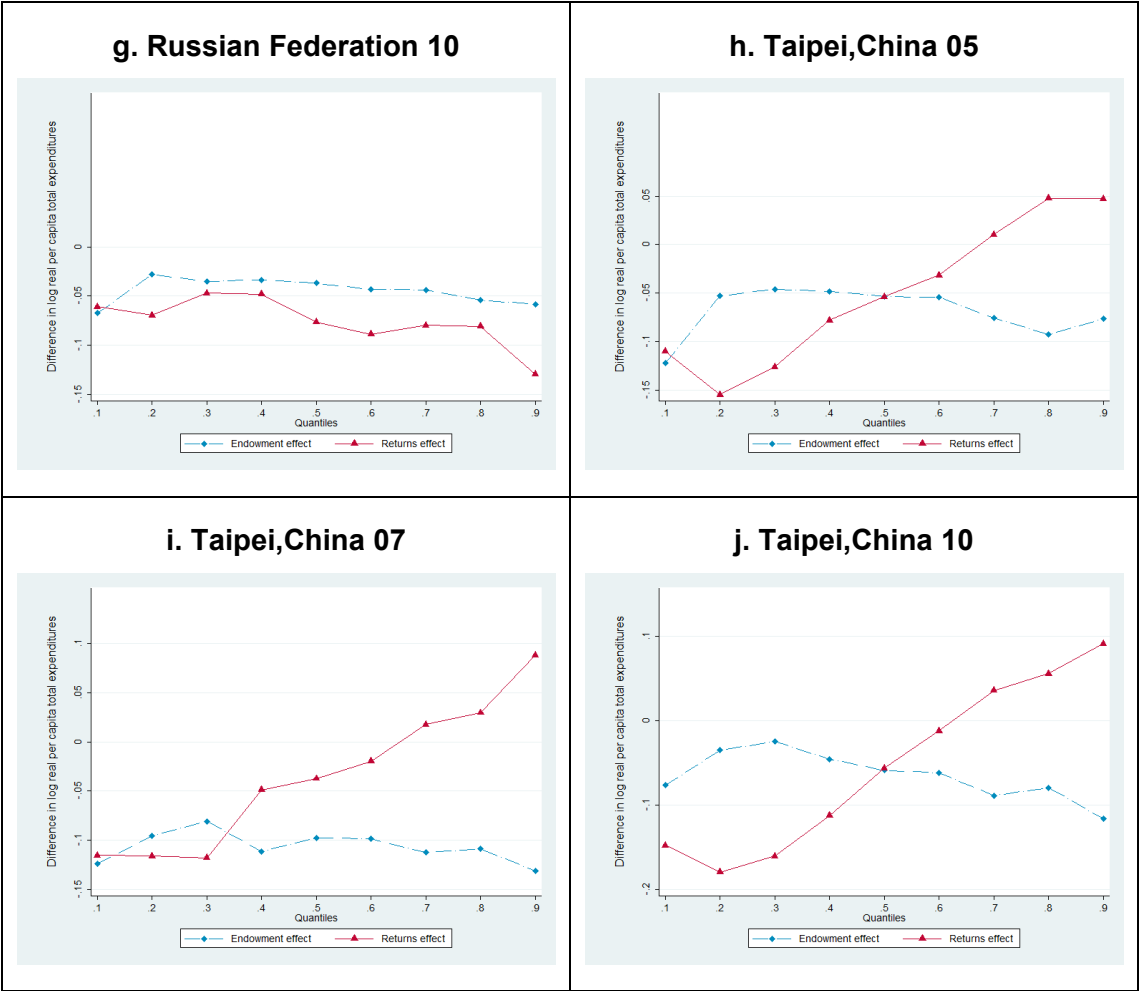
PRC = People's Republic of China.

Figure A6: Endowment and Returns Effects: Female vs. Male Household Head
(% diff. in income)



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Figure A6 continued



PRC = People's Republic of China.