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Remaking Inequality: Institutional Change and Income Stratification in Urban China

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ABSTRACT *This paper examines how China's institutional changes toward market transform the income inequality in the urban economy. We highlight the replacement of bureaucratic allocation with market on three levels: the creation and expansion of the private/hybrid sector that is relatively autonomous from direct state control, public firms' reduced dependence on the state and growing exposure to market discipline, and the emergence of urban labor markets. In-depth analysis of data collected in two southern Chinese cities during the mid-1990s provides strong and systematic support to market transition theory's core claim that the transition toward a market economy leads to higher income returns to human capital. Although there are also signs of persistent advantages based on political capital, these advantages are limited to senior members of the communist party only and small in magnitude in comparison to those associated with market-based opportunities.*

KEY WORDS: Institutional change, income inequality, urban China, market transition, human capital, political capital

JEL CLASSIFICATIONS: P21, O15, P25, J24, P31 and J31

Introduction

China's rapid economic growth during the past two decades has been accompanied by an equally impressive increase of personal income for urban residents. According to the Chinese Statistical Bureau (2002), average annual wage income for urban employees had increased by more than twelve-fold in 19 years, from 798 Yuan in 1982 to 10,870 Yuan in 2001. Even after adjusting for inflation,[1] the magnitude of the increase is still a remarkable 225 percent, corresponding to an average annual growth of 6.4 percent. To put these numbers into perspective, we note that in the same time period, the annual growth rate of real wage for employees in the United States

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averaged merely 0.54 percent.[2] In addition, in China, during the three decades prior to the urban reform (1953–1982) the average nominal wage had increased by only 61 percent, averaging less than 1.7 percent per year.

What the aggregate data on per capita income growth fail to reveal, however, is the growing income inequality. According to a World Bank (1997) study, the Gini index of income inequality for urban China had surged from 17.6 in 1981 to 27.5 in 1995. While regional disparity in economic development was surely among the contributing factors, Bian & Logan (1996) report a similar trend based on sample data from Tianjian, a coastal city located in northern China. Today, even casual observers would take notice that as a majority of the urban residents continue to live on a modest amount of wage income, many others have begun to enjoy a far-better material life decorated by fashionable clothes, imported cars, and luxury homes.

The growth of income inequality suggests, unsurprisingly, that urban residents do not benefit from the rising income level by the same magnitude. In this paper, we examine – from the market transition perspective – how institutional changes have reshaped income inequality in urban China (Nee, 1989a, 1996). We argue that the primary cause of the changing stratification order rests in the institutional changes that gradually, yet steadily, replace bureaucratic allocation in the Chinese economy with the market mechanism. We highlight three domains of institutional transformation that redefine the rules, both formal and informal, governing reward allocation among individuals: the creation and expansion of a relatively autonomous private/hybrid sector, the rising meritocracy in the internal reward allocation in market-dependent organizations, and the emergence of urban labor markets (Cao & Nee, 2000). Together, they significantly undermine the relative income advantage of the old political elite by creating new opportunity structures that greatly strengthen incentives for entrepreneurship and individual effort as reflected in increased returns to investments in human capital.

The Market Transition Perspective on Post-Socialist Inequality

Drawing from Karl Polanyi's (1957) inductive typology of modes of economic coordination, market transition theory builds on the basic premise that state socialist redistribution and a market economy entail fundamentally different distributive principles (Nee, 1989a). In redistributive economies, Polanyi's analysis highlighted the role of a small group of political elite that exercises *de facto* control over resource allocation. In state socialism, where the political elite assume the role of redistributors, such an institutional arrangement allows them to allocate economic rewards in favor of their own networks of party members, friends and family members at the expenses of direct producers (Szelenyi, 1978). As shown by Djilas' (1957) new class theory, the divide between those with redistributive power and those without constitutes a key dimension of the inequality in socialist societies. By contrast, in modern market economies, decentralized market exchanges are not dictated by political authority

but are instead based on mutual agreements between potential buyers and sellers of equal legal status. The competitive logic of market exchange rewards efficient and innovative usage resources and thus renders human capital and entrepreneurship the primary sources of income advantage.

Market transition theory extends this comparative institutional analysis to specify the mechanisms that drive institutional change in the transitions from state socialism. The theory advances three core arguments about the nature of institutional change in departures from state socialism: (1) that institutional innovations in economic reform are initiated and implemented by the state and the course of subsequent institutional change arises from the interaction between the revenue maximizing interests of political actors and constraints imposed on rulers by economic actors and the requirements for sustaining economic growth driven by markets; (2) that instituting market exchange as the dominant coordinating mechanism for an economy involves a parallel deinstitutionalization of core features of state socialist redistribution, and (3) that institutional change alters the structure of incentives to diminish the relative rewards gained through the accumulation of political capital (Nee & Lian, 1994; Nee, 1996). Moreover, the growth of decentralized market exchange expands the opportunity structures beyond the state-controlled economy and increases therein returns to entrepreneurship and investments in human capital. Accordingly, hybrid mixed institutional formations may emerge in the course of market transition, but are not likely to persist in stable equilibria because the institutional logic of expanding capitalist exchange imposes demands for further changes in informal and formal rules to accommodate the growing power and interests of economic agents pursuing profit and gain in free markets (Nee & Cao, 1999).

The meeting of the Central Committee of the Chinese Communist Party in October 2003 charting institutional changes enabling private enterprise to have equal footing with state-owned enterprises by 2010 illustrates the need for continuing state interventions to institute a market economy (Nee, 1989b). Such changes in the rules of the game incrementally alter the mechanisms of stratification away from rewarding primarily political capital, as in classical state socialism. Hence, the emergent stratification orders of postsocialist capitalist economies are likely over time to resemble that of other existing market capitalist societies, which although they vary in national forms (Hall & Soskice, 2001), nonetheless differ substantively from the institutional order of socialist redistributive economies. Construed as such, market transition theory differs from convergence theories that emphasize the underlying similarities of industrial economies, whether state socialist or market capitalist (Lipset & Zetterberg 1959; Inkeles, 1960).

Critics of the market transition theory have long insisted on the state as a competing institutional domain where redistributive power and political considerations generate changes that defy the market transition logic (e.g. Staniszkis, 1991; Rona-Tas, 1994; Walder, 1996, 2003; Zhou, 2000). In particular, the power-conversion thesis underscores the possibility of strategic adaptation by the former political elite. This is

evidenced in the substantially better chance that former cadres in Eastern Europe enjoyed in competing for lucrative positions in corporate management (Rona-Tas, 1994) and the commercialization of redistributive power in reforming China (Wank, 1999). Such arguments are consistent with parallel points proffered in market transition theory showing that economic marketization not only brings about new opportunities for economic actors, but also provides political actors with an occasion to derive even greater gains from their power (Nee & Lian, 1994). However, the critics predict that not in spite of, but because of state-crafted institutional change, the transition to a market economy works to reinforce rather than deinstitutionalize the relative power and privileges of the political elite (Walder, 1996; Parish & Michelson, 1996).

By contrast, market transition theory argues that despite the very considerable augmentation of private rewards through rent-seeking secured by political actors, the growth of a market economy expands opportunity structures in a manner that benefits economic actors even more than the political elite. Fueled by rapid market-driven economic growth, market transition expands the scale and quality of rewards to private entrepreneurship, the relative compensation for managers and professionals working in market-oriented firms, and offers new opportunities for employment in labor markets. As we have already pointed out elsewhere (Nee & Cao, 1999; Cao & Nee, 2000), state-centered analysts tend to focus exclusively on the fate of a small group of political elite, thus overlooking the tremendous upward mobility experienced by those commanding market power. What the recent studies pose is not a conceptual challenge to the market transition framework; instead, they reveal an inadequacy in empirical exploration where the growth of a market economy, parallel but linked to a still dominant state sector of state-owned firms and nonprofit organizations, is either assumed or crudely approximated at best.

In this paper, we report a systematic analysis of income inequality in two Chinese cities. We examine the replacement of redistribution with market mechanisms on three different levels. On the sectoral level, the Chinese economic reform has created a private/hybrid sector that is relatively autonomous from the state's bureaucratic control. On the organizational level, firms have become increasingly dependent on market exchanges, as opposed to state allocation, for key resources. On the individual level, the emerging urban labor market has fundamentally altered the mechanisms of matching individuals to jobs/positions. We show how each of these three institutional processes has changed, either directly or indirectly, the incentive structure at the micro-level in favor of human capital and entrepreneurship. In our view, this analysis serves two main purposes. First, it demonstrates empirically that market expansion creates new opportunities structures and results in a relative decline of the earnings significance of redistributive power. Second, in contrast to several previous studies that deny market effects without any discerning evidence, our analysis avoids the pitfall of uncritical causal attribution by establishing more concrete linkages between institutional changes toward the market and their impacts on individual's economic wellbeing.

Evidence from Two Southern Chinese Cities

Our analysis employs survey data collected from two southern Chinese cities – Shanghai and Guangzhou. The survey began in June 1994 and was concluded in February 1995. In each city, the researchers first used an address-based stratified sampling scheme to obtain a random sample of approximately 800 local households. It was then supplemented by a sample of about 150 households of migrant workers. This decision was based on local scholars' estimates that migrant workers accounted for roughly 15 percent of the workforce in either city (Lu, 1996). An additional 50 households with members holding secondary jobs were also added to ensure that sufficient information would be gathered on secondary employment. The resulting household sample size was 1000 per city. Within each household one labor force participant was selected as the respondent. Information on his/her job history as well as that on the income and employment of all other income earners in the household was then collected. It should be noted that the respondent sample was not representative of the city's urban labor force due to two biases. One bias stemmed from the nonrandom selection of respondent in favor of the household head, who was typically a male with higher income than all others in the family. A second bias related to household size, as members of smaller households were proportionally more likely to be selected than their counterparts in larger households. For these reasons our main regression analysis includes both the respondents and all other income earners in the households. Together, they form a representative sample in which all labor force participants in each city had had equal chance of being included. The pooled sample contains 3874 individuals, with 1825 from Shanghai and 2049 from Guangzhou. The respondent sample will be used only when the analysis requires more detailed information that is unavailable for other income earners in the household.

Both Shanghai and Guangzhou are among the most populous and the most industrialized cities in China. However, their reform trajectories differ considerably. Shanghai is one of the four municipalities under the direct jurisdiction of the central government and has served as the most important industrial basis and revenue source for the central government since 1949. In 1983, with 1.2 percent of the nation's population, Shanghai contributed 10.6 percent of China's total industrial output and 6.5 percent of the national income (Shanghai Statistical Bureau, 1984). Because of its strategic importance, Shanghai's industrial sector was managed through intensive state planning and the central government had been especially conservative with implementing reform policies there. As a result, although nationwide implementation of urban reform policies started in the early 1980s, not much progress had been made in Shanghai until ten years later when it became the token city favored by the central leadership to symbolize its renewed commitment to market reform (Lu, 1996). In contrast, urban reform in Guangzhou started in the late 1970s when the city was chosen by the central government as one of the experimental sites for testing various market reform policies (Vogel, 1989). State policy has been liberal since then. Also

benefiting from its proximity with Hong Kong and Macaw, Guangzhou quickly became the pioneer city in China's urban reform. The sharp contrast of Guangzhou's head-start in market reform with Shanghai's early stagnation allows us to examine, at various places, the effects of economic marketization through cross-city comparisons. More specifically, since our survey data were collected in 1994–95, we expect to see more extensive impacts of market reform on income inequality in Guangzhou than in Shanghai.

Table 1 presents the means and standard deviations of all variables and also the same descriptive statistics for each city and the public and private/hybrid sectors within each city. The dependent variable is the natural logarithm of monthly income. We use age to approximate work experience and age squared to capture the second-order effect. Another human capital variable, education, is measured in years of schooling. We create a dummy variable to indicate the most common form of political capital – communist party membership. Occupations are classified into four broad categories based on the nature of the work: professional-technical, administrative-managerial, clerical-service, and manual. The last category serves as the reference group. Secondary job is a dummy variable that assumes the value of 1 if the person held a secondary job at the time of the survey. Three more dummy variables are included to control for gender, household registration status, and city, respectively. We distinguish nine types of employer organizations: governmental agencies, state-owned nonprofit organizations, collective-owned nonprofit organizations, state firms, collective firms, self-employment, private firms, Sino-foreign joint ventures, and wholly foreign-owned companies. The last four types constitute the private/hybrid sector. Although we would like to control for more employer characteristics, especially size and industry, such information is unfortunately not available in our data.

The creation and expansion of the private/hybrid sector

One of the major changes that the Chinese economic reform brought about is the creation of a relatively autonomous private/hybrid sector. Prior to the reform, public ownerships dominated the urban economy. In 1982, nonpublic ownerships accounted for only 0.74 percent of the nation's industrial output and 1.29 percent of the urban employment. Since then, the Chinese government has recognized self-employment, private firms, Sino-foreign joint ventures, and wholly foreign-owned companies as legitimate elements of the national economy and encouraged their growth. By 1994, these new property forms contributed 25 percent of China's industrial output and employed 13.8 percent of the urban labor force (Chinese Statistics Bureau, 1995). Compared to the two public ownerships – state and collective, private/hybrid property forms have never been integrated into the central planning system and are much less subject to the state's bureaucratic control. Although it would be naïve to consider them as completely free from the state's influence, the emergence and expansion of

Table 1. Means and standard deviations of all variables

		Shanghai			Guangzhou		
Variables	2 Cities Pooled	Whole City	Public Sector	Private/hybrid	Whole City	Public Sector	Private/hybrid
Income (Yuan/month)	1036.69 (1050.32)	699.15 (505.92)	673.20 (474.93)	873.02 (653.11)	1337.33 (1290.86)	1063.45 (694.51)	1967.13 (1955.50)
Log-income	6.71 (0.63)	6.41 (0.51)	6.39 (0.49)	6.57 (0.64)	6.97 (0.61)	6.84 (0.49)	7.28 (0.74)
Age (year)	36.79 (9.80)	38.20 (8.79)	39.09 (8.36)	32.22 (9.28)	35.54 (10.47)	37.96 (10.61)	29.99 (7.67)
Education (year)	11.54 (2.71)	11.23 (2.65)	11.38 (2.55)	10.22 (3.07)	11.82 (2.73)	11.88 (2.80)	11.68 (2.58)
CCP membership (yes = 1, no = 0)	0.16 (0.36)	0.15 (0.36)	0.16 (0.37)	0.07 (0.26)	0.15 (0.36)	0.19 (0.40)	0.05 (0.21)
Occupation (reference = manual)							
Professional & technical	0.27 (0.44)	0.24 (0.43)	0.26 (0.44)	0.13 (0.33)	0.29 (0.45)	0.33 (0.47)	0.19 (0.39)
Administrative & managerial	0.06 (0.25)	0.04 (0.21)	0.04 (0.19)	0.08 (0.28)	0.08 (0.28)	0.05 (0.22)	0.15 (0.36)
Clerical & service	0.33 (0.47)	0.30 (0.46)	0.27 (0.45)	0.47 (0.50)	0.36 (0.48)	0.32 (0.47)	0.44 (0.50)
Secondary job (yes = 1, no = 0)	0.07 (0.26)	0.07 (0.26)	0.08 (0.27)	0.04 (0.20)	0.07 (0.26)	0.07 (0.25)	0.09 (0.29)
Gender (male = 1, female = 0)	0.55 (0.50)	0.54 (0.50)	0.54 (0.50)	0.60 (0.49)	0.55 (0.50)	0.54 (0.50)	0.574 (0.50)
Migrant worker (yes = 1, no = 0)	0.14 (0.35)	0.12 (0.32)	0.06 (0.24)	0.52 (0.50)	0.16 (0.36)	0.11 (0.31)	0.26 (0.44)
Private/hybrid (yes = 1, no = 0)	0.22 (0.42)	0.13 (0.34)	—	1.00 (0.00)	0.30 (0.46)	—	1.00 (0.00)
Employer (reference = state firm)							
Government	0.05 (0.22)	0.02 (0.15)	0.03 (0.16)	—	0.07 (0.26)	0.10 (0.31)	—
State-owned nonprofit	0.17 (0.38)	0.18 (0.38)	0.21 (0.40)	—	0.17 (0.37)	0.24 (0.43)	—
Collective-owned nonprofit	0.03 (0.17)	0.03 (0.16)	0.03 (0.18)	—	0.03 (0.18)	0.05 (0.21)	—
Collective firm	0.10 (0.30)	0.10 (0.30)	0.11 (0.32)	—	0.10 (0.30)	0.14 (0.35)	—
Self-employed	0.08 (0.27)	0.08 (0.26)	—	0.58 (0.49)	0.08 (0.27)	—	0.27 (0.44)
Private firm	0.04 (0.18)	0.01 (0.09)	—	0.06 (0.24)	0.06 (0.24)	—	0.20 (0.40)
Sino-foreign joint venture	0.08 (0.27)	0.04 (0.19)	—	0.29 (0.46)	0.12 (0.32)	—	0.39 (0.49)
Foreign company	0.03 (0.17)	0.01 (0.09)	—	0.07 (0.25)	0.05 (0.21)	—	0.15 (0.36)
Sample size	3874	1825	1588	237	2049	1428	621

Note: Numbers in parentheses are standard deviations.

a private/hybrid sector have indeed created new avenues for economic success that rivals political advantages.

To assess the earning opportunities associated with private/hybrid sector employment, we conduct a regression analysis of income determination in Shanghai and Guangzhou. We begin with OLS regression and use the White covariance matrix to correct for heteroscedasticity (White, 1980). Because recruitment into the private/hybrid sector is obviously nonrandom, as can be seen in the descriptive statistics presented in Table 1, we also estimate a parallel set of treatment effects models to address the issue of endogeneity (Greene, 1993, pp. 713–714). Each treatment effect model consists of two equations: a binary probit model, which predicts selection into the private/hybrid sector, and the main equation for income determination. Regressors in the selection model are gender, age, age squared, education, party membership, household registration status, and city. Results from both OLS regressions and maximum likelihood estimates of the treatment effects models are presented in Table 2.

Model 1 in Table 2 contrasts the private/hybrid sector as a whole against the public sector. According to the OLS regression (first column), employees in the private/hybrid sector enjoy a 47 percent earning advantage over their counterparts in the public sector. With the endogeneity taken into account, the treatment effects model (fourth column) yields a slightly larger estimate for the private/hybrid sector advantage. Other results remain virtually unchanged. The estimated ρ, correlation between disturbances in the selection model and the main equation, is negative but statistically insignificant ($p < 0.6141$), indicating that selection into the private/private hybrid sector follows patterns sufficiently different from those of income determination.

Model 2 replaces the dummy variable for private/hybrid sector employment with more detailed employer classification (second and sixth columns). Here we find a high degree of homogeneity in the public sector, as the differences among employees of governmental agencies, state-owned nonprofit organizations, collective-owned nonprofit organizations, state firms, and collective firms all fail to achieve statistical significance. Within the private/hybrid sector, self-employments enjoy the largest edge, followed by private firms, foreign companies, and joint ventures. Once again, results from the OLS regression and treatment effects model are highly consistent with each other.

Among other variables included in Models 1 and 2, those measuring human capital all have the expected effects. One additional year's schooling increases logged income by about 0.04. This estimate is smaller than but close to those reported by Liu (2003) and Wu & Xie (2003). The effect of age as a proxy for work experience is curvilinear, and the magnitudes of the first- and second-order effects are comparable to Zhou's (2000, p. 1156) estimates. However, unlike several studies that have documented a considerable advantage to members of the communist party (Xie & Hannum, 1996; Zhou, 2000, p. 1161; Liu, 2003; Wu & Xie, 2003), Model 1 shows that party membership does not have a significant effect on income. This discrepancy is likely to be due

Table 2. Income determination in Shanghai and Guangzhou, 1994–95 (dependent variable: logged monthly income)

	OLS				Treatment effects model			
	Model 1	Model 2	Model 3		Model 1	Model 2	Model 3	
			Main Effects	× Guangzhou			Main Effects	× Guangzhou
Constant	4.838**	4.818**	5.288**	−0.256	4.775**	4.769**	5.283**	−0.257
Age/10	0.464**	0.473**	0.267**	0.352**	0.483**	0.487**	0.268*	0.353**
Age squared/100	−0.058**	−0.061**	−0.026*	−0.059**	−0.060**	−0.062**	−0.026#	−0.059**
Education/10	0.370**	0.395**	0.246**	0.187**	0.375**	0.400**	0.246**	0.189*
CCP membership (yes = 1, no = 0)	−0.013	−0.223*	−0.239	0.035	−0.009	−0.212#	−0.238	0.035
CCP membership x Age/10	—	0.051*	0.062	−0.014	—	0.049#	0.062	−0.014
Occupation (reference = manual)								
Professional & technical	0.104**	0.101**	0.100**	0.021	0.104**	0.101**	0.100*	0.021
Administrative & managerial	0.449**	0.427**	0.262**	0.213*	0.449**	0.427**	0.262**	0.213**
Clerical & service	0.089**	0.090**	0.019	0.135**	0.089**	0.090**	0.019	0.135**
Secondary job (yes = 1, no = 0)	0.330**	0.333**	0.206**	0.212**	0.329**	0.333**	0.206**	0.212**
Private/hybrid (yes = 1, no = 0)	0.383**	—	—	—	0.456**	—	—	—
Employer (reference = state firm)								
Government	—	−0.036	0.100#	0.038	—	−0.036	0.100	0.038
State-owned nonprofit	—	0.008	0.128**	−0.226**	—	0.008	0.128**	−0.226**
Collective-owned nonprofit	—	−0.079#	−0.159**	0.345**	—	−0.078	−0.159**	0.345**
Collective firm	—	−0.017	−0.060	0.056	—	−0.017	−0.060#	0.058
Self-employed	—	0.517**	0.185**	0.524**	—	0.575**	0.191	0.523**
Private firm	—	0.400**	0.246	0.115	—	0.456**	0.253	0.114
Sino-foreign joint venture	—	0.244**	0.438**	−0.288**	—	0.303#	0.446#	−0.289**
Foreign company	—	0.372**	0.849**	−0.605**	—	0.429**	0.856**	−0.601**
Gender (male = 1, female = 0)	0.270**	0.267**	0.217**	0.088**	0.266**	0.264**	0.217**	0.087**
Migrant worker (yes = 1, no = 0)	−0.102**	−0.138**	−0.057	−0.042	−0.118**	−0.150**	−0.059	−0.042
City (Guangzhou = 1, Shanghai = 0)	0.474**	0.485**	—	—	0.464**	0.479**	—	—
σ	—	—	—	—	0.488**	0.485**	0.468**	—
ρ	—	—	—	—	−0.086	−0.069	−0.008	—
Adjusted R^2	0.404	0.411	0.447		0.405	0.411	0.447	
Sample size	3874	3874	3874		3874	3874	3874	

Note: # $p < 0.10$; * $p < 0.05$; ** $p < 0.01$. Significance levels for OLS coefficients are adjusted for heteroscedasticity.

to the fact that while these previous studies are based on national samples, our data came from two southern cities in the coastal region where the institutional changes toward markets had been more extensive than in China as a whole. Meanwhile, Model 2 reveals a positive interaction effect between party membership and age.[3] In other words, even though young people do not reap immediate benefits from joining the party, this form of political capital does generate an income advantage as their seniority grows. It is worth emphasizing that despite its steady increase with seniority, this political advantage remains small in magnitude relative to the returns to human capital and entrepreneurship. Simple calculation shows that the net advantage for a 60-year old party member is merely 8.7 percent, roughly the same as that associated with two years of education and only a fraction of that enjoyed by private/hybrid sector employees. Together, independent variables in Model 1 and Model 2 explain over 40 percent of the total variance in the dependent variable, although much of its explanatory power is due to the large income gap between the two cities.

Our main finding that the private/hybrid sector confers opportunities for even higher earning than in the public sector is consistent with the conventional wisdom that market coordination coupled with recognized private property rights generates stronger work incentives and induces greater work efforts, which are then rewarded with greater material gains. Indeed, further examination of data from official Chinese sources reveals that the private/hybrid sector has maintained a higher level of productivity than the public sector. In 1995, average labor productivity for all Shanghai's industrial firms was 35,252 Yuan per capita (Shanghai Statistical Bureau, 1996, pp. 222–223). Both state firms and collective firms scored below average at 32,853 and 17,313 Yuan, respectively. Above the average were joint ventures with foreign nations at 89,531; joint ventures with Taiwan, Hong Kong, and Macaw at 40,131; and a residual category of 'other ownership' at 37,226.[4] Similarly, in Guangzhou, labor productivity for the private/hybrid sector as a whole averaged 51,993 Yuan, compared with 36,865 Yuan for state firms and 18,705 Yuan for collective firms (Guangzhou Statistical Bureau, 1996, p. 128). During our field trip to Shanghai in 1996, many of the self-employed we talked to regularly worked over 12 hours a day, and private firm employees explicitly cited higher income as the primary motivator of their work effort. All these cases stand in sharp contrast with the low efficiency and low effort level characterizing pre-reform Chinese organizations (Lin *et al*., 1996).

Given that market reform in Guangzhou started one decade earlier than in Shanghai, we expect more extensive changes in the income distribution in Guangzhou. This expectation is generally confirmed in Model 3 in Table 2, where we include interaction terms between the city dummy variable and all other independent variables. Both the OLS regression and the treatment effects model show that returns to education, work experience, and occupational expertise tend to be significantly higher in Guangzhou. Another interesting finding pertains to the income advantages associated with different types of employment in the private/hybrid sector: while those in foreign companies and joint ventures enjoy the largest lead in Shanghai, in Guangzhou it is

the self-employed that constitute the economic elite. One possible explanation may be that market reform in Shanghai is heavily shaped by the influx of foreign capital, much of which concentrates in high-tech industries, whereas Guangzhou's longer reform history has afforded small businesses enough time to establish and to secure their market positions. As to the public sector, we find a persistent gap between state-owned and collective-owned organizations in Shanghai – a classic feature of China's socialist stratification order – and its absence in Guangzhou. There is, however, no evidence for differential returns to political capital, as measured by party membership, in these two cities.

The rise of meritocracy in market-dependent organizations

A second process in which the institutional changes toward market reshape inequality takes place at the organizational level. In the reform era, not only do the newly created private/hybrid firms operate in a marketized environment, a majority of public firms have also become highly autonomous from the state and subject to strong market discipline. The reduction of centralized planning and public firms' growing autonomy and financial self-responsibility are well documented in the economic literature (e.g. Naughton, 1995). Without repeating it, we illustrate in this section the rise of meritocracy in public firms as a result of their increasing exposure to market competition and how this trend impacts income inequality. Specifically, we propose that as market success becomes more and more important for their resource acquisition and survival, public firms face stronger incentives to promote efficiency by rewarding employee contribution and sanctioning inadequate performance. This should lead to the adoptions of more performance-based compensation systems. By contrast, since nonprofit organizations and governmental agencies remain dependent on the state for most of their resources and are not subject to strong market discipline, reward allocation in these organizations is unlikely to undergo major changes. Over time, we expect public firms to gradually differentiate themselves from their state-dependent counterparts and to become increasingly similar to private/hybrid firms whose fates depend the most on their performances on the market.

To illustrate the impacts of market discipline on organizational reward allocation, we present data from the respondent sample[5] to demonstrate how performance emphasis varies systematically with the type of employer organizations. We use four measures to gauge the extent of performance emphasis. The first – bonus determination – asks whether the employee's bonus is fixed over time or is determined according to his/her workload or output. This measures how sensitive monetary compensation is to the temporal variations in work contribution. The second is bonus distribution, which distinguishes egalitarian bonus distribution from distribution according to each employee's workload/output. This measures the strength of performance emphasis relative to egalitarianism. The third is whether or not poor performance would affect the employee's income, and the fourth is if there are additional penalties on job failure.

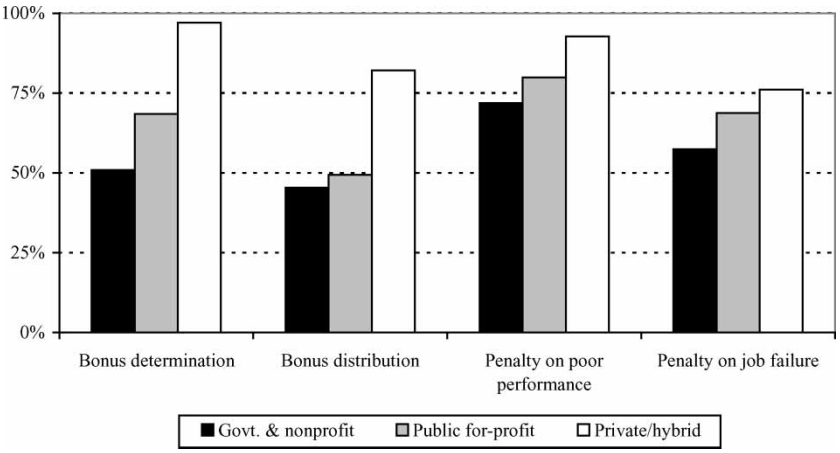

Figure 1. Percentage of Shanghai employees subject to performance-based reward and sanctioning mechanisms, by employment sector.

Figures 1 and 2 present the percentages of respondents subject to these performance-based reward and sanctioning mechanisms in three types of employer organizations: governmental agencies and nonprofit organizations, public firms, and private/hybrid firms.

Figures 1 and 2 reveal two interesting patterns. First, in both cities, employees in private/hybrid firms are the most likely to be subject to these performance-based reward and sanctioning mechanisms, and work contribution is consistently the least

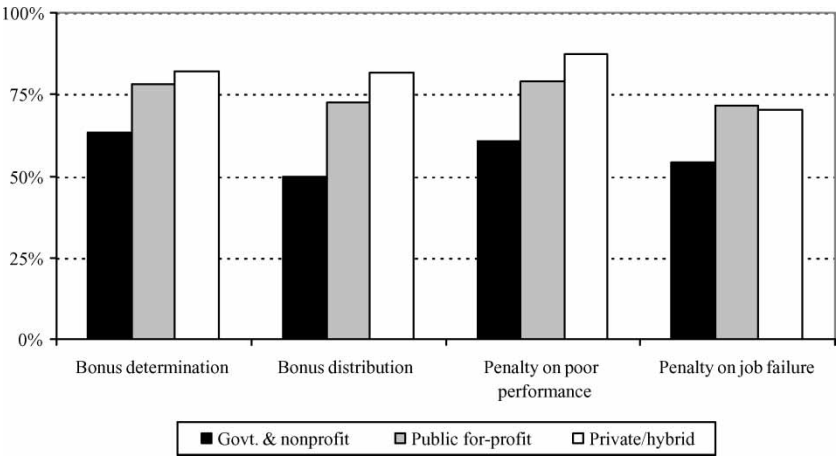

Figure 2. Percentage of Guangzhou employees subject to performance-based reward and sanctioning mechanisms, by employment sector.

consequential for those in governmental agencies and nonprofit organizations. This pattern supports our argument of greater performance emphasis in market-dependent organizations. Second, in terms of the proportion of their employees subject to these mechanisms, public firms in Shanghai appear comparable to governmental agencies and nonprofit organizations but are much less meritocratic than private/hybrid firms. By contrast, in Guangzhou, public firms are almost indistinguishable from private/hybrid firms, as both place greater emphasis on job performance than do governmental agencies and nonprofit organizations. This result fits nicely with the two cities' respective reform trajectories. That is, the similarity between public firms and state-dependent organizations in Shanghai is consistent with the city's delayed start in market reform, whereas in Guangzhou public firms have been afforded sufficient time to adjust their employment practices to an increasingly marketized institutional environment.

The above interpretation is corroborated by aggregate data on wage bill composition in these two cities. We classify total employee compensation into two components: fixed wage, which includes guaranteed incomes such as salary and subsidies; and incentive wage, which is more directly tied to work contribution and includes piece-rate wage, bonus, and overtime pay. In 1992, incentive wage accounted for 30.6 percent of the wage bill in Shanghai's state-owned organizations and 25.5 percent of the collective sector (Shanghai Statistical Bureau, 1993), reflecting a modest level of emphasis on job performance in reward allocation. In Guangzhou, the respective figures reached 47.6 percent and 53.6 percent (Guangzhou Statistical Bureau, 1993). Overall, about half of the wage bill in Guangzhou's public sector was distributed with reference to work contribution, compared to just over a quarter in Shanghai.

Since human capital is one of the main determinants of productivity, we expect returns to human capital to vary with the employer organization's exposure to market discipline. More specifically, we predict the following patterns in income determination in our sample: (1) returns to human capital in Shanghai should be low in governmental agencies, nonprofit organizations, and public firms but significantly higher in the private/hybrid sector; (2) in Guangzhou, returns to human capital should be comparably high in public firms and the private/hybrid sector but lower in governmental agencies and nonprofit organizations.

To test these predictions, we conduct separate regression analyses for the two cities. For each city, we allow the effects of all individual characteristics to vary across the three types of organizations. This is done by including their interaction terms with two dummy variables, one for governmental agencies and nonprofit organizations and another for the private/hybrid sector. The main effects, therefore, reflect patterns of income determination among those employed by state and collective firms. Tables 3 and 4 present the results from both OLS regressions and treatment effects models that take into account the endogeneity of private/hybrid sector employment. For both cities, the two methods yield almost identical coefficient estimates, although there are considerable differences in significance levels.

Table 3. Income determination in Shanghai, 1994–95, by sector (dependent variable: logged monthly income)

	OLS			Treatment effects model		
	Main effect	×Govt./nonprofit	×Private/hybrid	Main effect	×Govt./nonprofit	×Private/hybrid
Constant	5.935**	—	—	5.901**	—	—
Age/10	−0.035	0.282	1.325**	−0.023	0.281	1.330**
Age squared/100	0.014	−0.037	−0.181**	0.012	−0.036	−0.181**
Education/10	0.143*	0.166	0.395**	0.146#	0.165	0.399*
CCP membership (yes = 1, no = 0)	0.017	0.090	−0.319**	0.018	0.090	−0.318#
Occupation (reference = manual)						
Professional & technical	0.126**	−0.137*	−0.097	0.126**	−0.137	−0.097
Administrative & managerial	0.342**	−0.321*	−0.118	0.342**	−0.321#	−0.118
Clerical & service	0.005	−0.045	0.112	0.005	−0.045	0.112
Secondary job (yes = 1, no = 0)	0.196**	0.060	−0.166	0.196**	0.060	−0.166
Gender (male = 1, female = 0)	0.232**	−0.105*	−0.045	0.230**	−0.105	−0.048
Migrant worker (yes = 1, no = 0)	0.073	−0.312*	−0.239*	0.054	−0.312*	−0.249
Employer (reference = state firm)						
Government	−0.474	—	—	−0.470	—	—
State-owned nonprofit	−0.453	—	—	−0.449	—	—
Collective-owned nonprofit	−0.731#	—	—	−0.727	—	—
Collective firm	−0.073#	—	—	−0.073*	—	—
Self-employed	−2.346**	—	—	−2.306**	—	—
Private firm	−2.355**	—	—	−2.316**	—	—
Sino-foreign joint venture	−2.230**	—	—	−2.191**	—	—
Foreign company	−1.830**	—	—	−1.790**	—	—
σ	—	—	—	0.444**	—	—
ρ	—	—	—	−0.063	—	—
Adjusted R^2		0.235			0.240	
Sample size		1825			1825	

Note: # $p < 0.10$; * $p < 0.05$; ** $p < 0.01$. Significance levels for OLS coefficients are adjusted for heteroscedasticity.

Table 4. Income determination in Guangzhou, 1994–95, by sector (dependent variable: logged monthly income)

	OLS			Treatment effects model		
	Main effect	×Govt./nonprofit	×Private/hybrid	Main effect	×Govt./nonprofit	×Private/hybrid
Constant	5.028**	—	—	5.007**	—	—
Age/10	0.678**	−0.557**	0.535*	0.582**	−0.557*	0.528#
Age squared/100	−0.078**	0.070**	−0.069*	−0.078**	0.070*	−0.067
Education/10	0.426**	−0.018	0.115	0.428**	−0.018	0.117
CCP membership (yes = 1, no = 0)	0.250	−0.028	−0.103	0.028	−0.028	−0.100
Occupation (reference = manual)						
Professional & technical	0.164**	−0.220**	0.033	0.164**	−0.220*	0.033
Administrative & managerial	0.384**	−0.099	0.170#	0.384**	−0.099	0.170#
Clerical & service	0.172**	−0.173*	0.050	0.172**	−0.173*	0.050
Secondary job (yes = 1, no = 0)	0.496**	−0.165	0.059	0.496**	−0.165	0.059
Gender (male = 1, female = 0)	0.344**	−0.130*	−0.039	0.343**	−0.129*	−0.040
Migrant worker (yes = 1, no = 0)	0.049	−0.080	−0.276**	0.047	−0.080	−0.276**
Employer (reference = state firm)						
Government	1.223**	—	—	1.222*	—	—
State-owned nonprofit	1.201**	—	—	1.200*	—	—
Collective-owned nonprofit	1.213**	—	—	1.212**	—	—
Collective firm	−0.011	—	—	−0.011	—	—
Self-employed	−0.330	—	—	−0.298	—	—
Private firm	−0.653	—	—	−0.621	—	—
Sino-foreign joint venture	−0.893*	—	—	−0.861	—	—
Foreign company	−0.806*	—	—	−0.774	—	—
σ	—	—	—	0.473**	—	—
ρ	—	—	—	−0.031	—	—
Adjusted R^2		0.390			0.391	
Sample size		2049			2049	

Note: $^{\#}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$. Significance levels for OLS coefficients are adjusted for heteroscedasticity.

Table 3 lends strong support to our predictions regarding income inequality in Shanghai. Among those employed by governmental agencies, nonprofit organizations, and public firms, age is not a significant predictor of income. Meanwhile, the relationship between age and logged income is strongly curvilinear in the private/hybrid sector, with maximum earning level reached at the age of 39. Return to education is modest in public firms, governmental agencies, and nonprofit organizations but is significantly higher in the private/hybrid sector. On average, each additional year of schooling increases income by 1.4∼3.1 percent in the public sector, compared to 5.5 percent in the private/hybrid sector. The OLS regression indicates some differences in the effects of occupations and party membership across organizational types, although they become statistically insignificant in the treatment effects model. It should be noted that the large and negative coefficients for the four types of private/hybrid sector employment do not indicate income disadvantages. Instead, they result from the higher rates of returns to human capital as measured by age and education in the private/hybrid sector.

Also as predicted, Table 4 shows that, in Guangzhou, work experience and occupational expertise are highly rewarded in both public firms and the private/hybrid sector but have much smaller effects in governmental agencies and nonprofit organizations. However, there is no difference in the effect of either education or party membership across the three types of organizations. Overall, income distributions in public firms and the private/hybrid sector appear similar, especially according to the treatment effects model, whereas those employed in governmental agencies and nonprofit organizations follow a more distinctive pattern marked by lower rewards for work experience and occupational expertise. In short, regression results from both Shanghai and Guangzhou provide systematic support to our argument that over time public firms' growing exposure to market discipline leads to greater performance emphasis in their reward allocation and thereby increases the returns to human capital among their employees.

The emergence of labor markets

A third process in China's economic marketization lies in the replacement of bureaucratic labor control with labor markets. Prior to the reform, the government not only monopolized job provision, but also dictated all personnel transfers across work organizations (Walder, 1986; Bian, 1994). Voluntary job changes were relatively rare, as they were not encouraged by the government and required a series of approvals from the current employer, the personnel department, and the receiving organization. The process became even more complicated if a change in household registration was involved. As a result, many workers were confined to one organization throughout their whole lives, and still others were forced to relocate to places where the government perceived their abilities could be better utilized.

Bureaucratic control over labor mobility has loosened significantly during the reform period. Employment relationship is now defined by the labor contract between the two parties involved. Grain and consumer goods are no longer supplied through employment-based rationing systems, and the requirement for local household registration is also disappearing in many employers' checklist. These changes have greatly weakened individuals' dependence on their workunits (Walder, 1986). Today, voluntary job changes are commonplace, as Chinese urbanites routinely rely on labor market means such as employment agencies and job advertisements to search for new opportunities (Matthews, 1998).

The emergence of labor market increases returns to human capital in two ways. First, labor markets allow individuals with superior talent and expertise to obtain better employment through voluntary job changes, while those with limited human capital are likely to be forced to settle for inferior compensation. Second, labor markets also create competitive pressure that forces employer organizations to adjust their compensation schemes in order to attract and retain competent workers who are in short supply. These two mechanisms imply that returns to human capital should be higher in localities with more developed labor markets. In addition, to the extent voluntary job changes via labor market means result in better matches, individuals who have acquired their jobs on the labor market should enjoy higher income.[6]

Our data provide information on how the respondent had obtained his/her current job. This allows us to examine the emergence of labor markets in these two cities and its impacts on income inequality. To begin, we identify the following situations as job acquisitions via labor market channels: (1) the respondent took a competency exam in order to qualify for the position; (2) the respondent applied to jobs advertised on news media; (3) the respondent used a job search agency; (4) the respondent applied directly to the employer; and (5) the respondent became self-employed. State allocations in the forms of standard assignment upon school graduation (*tongyi fenpei*) and job inheritance (*dingti*) constitute about two thirds of the jobs acquired via nonmarket means, and the rest were through personal contacts and unspecified methods. Defined as such, labor market channels account for 43.7 percent of the respondent's job acquisition in Guangzhou, compared to only 17.5 percent in Shanghai. Such a large gap in labor market development between the two cities is consistent with the difference in the timings of their reforms. It is also likely to have contributed to the higher income returns to education, work experience, and occupational expertise in Guangzhou as demonstrated in Model 3 in Table 2.

A more direct illustration of the impacts of labor markets is presented in Table 5, where we examine whether or not people who acquired their jobs via labor market means are indeed better off. The OLS coefficient estimate is 0.085 and highly significant, indicating a net advantage of 8.9 percent associated with job acquisition via labor market. Since, as mentioned before, the respondent selection was not random but favored household heads as well as those in small households, we estimate a regression model with selectivity to correct for these biases (Greene, 1993, pp. 708–713).

Table 5. Effect of labor marketization on income in Shanghai and Guangzhou, 1994–95 (dependent variable: logged monthly income)

	OLS	Selection model	Mean of X
Constant	4.999**	4.597**	—
Job Acquisition (labor market = 1, else = 0)	0.085**	0.073**	0.31
Age/10	0.472**	0.474**	36.25
Age squared/100	−0.056**	−0.058**	1,404.52
Education/10	0.326**	0.375**	11.71
CCP membership (yes = 1, no = 0)	−0.141	−0.152	0.14
CCP membership x Age/10	0.033	0.028	6.05
Occupation (reference = manual)			
Professional & technical	0.070*	0.068#	0.25
Administrative & managerial	0.387**	0.454**	0.09
Clerical & service	0.085**	0.104**	0.34
Secondary job (yes = 1, no = 0)	0.302**	0.483**	0.13
Gender (male = 1, female = 0)	0.175**	0.312**	0.67
Migrant worker (yes = 1, no = 0)	−0.210**	−0.166**	0.17
Employer (reference = state firm)			
Government	−0.096	−0.125#	0.04
State-owned nonprofit	−0.005	−0.015	0.16
Collective-owned nonprofit	−0.148**	−0.134	0.03
Collective firm	0.038	0.032	0.09
Self-employed	0.483**	0.530**	0.10
Private firm	0.404**	0.473**	0.05
Sino-foreign joint venture	0.145**	0.191**	0.10
Foreign company	0.433**	0.451**	0.03
City (Guangzhou = 1, Shanghai = 0)	0.577**	0.549**	0.51
σ	—	0.554**	—
ρ	—	0.664**	—
Adjusted R^2	0.437	0.440	—
Sample Size	1851	1851	1851

Note: $^{\#}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$. Significance levels for OLS coefficients are adjusted for heteroscedasticity.

The selection model is based on all income earners in the households surveyed, and the regressors include variables in the main equation as well as the inverse of the total number of income earners in the household. With selectivity taken into account, the estimated advantage to labor market participation shrinks slightly but remains a remarkable 7.5 percent. Other results are comparable to those reported in Table 2.

An often-overlooked aspect of the emerging labor markets is that secondary jobs have also become commonplace in urban China. We consider secondary employment a labor-market phenomenon because most secondary jobs are not allocated by the government but are instead acquired through market channels. Since secondary

employment does not involve any change in organizational affiliation, it provides public sector employees with an opportunity to utilize their expertise and spare labor without assuming major risks. One of the well publicized secondary employments is the hiring of the so-called 'Sunday engineers' by small firms, many of which are in rural areas, to overcome technical obstacles on an *ad hoc* basis. Other common jobs include tutoring, interior decoration, accounting service, legal consultation, part-time salesmanship, stock trading, and of course, manual labor. Small business ventures are also possible, as many have established family-based manufactories and opened up retail stores in residential neighborhoods. Our data show that, with over-sampled secondary job holders excluded, as of June 1994, close to five percent of the Shanghai sample held secondary jobs. The percentage for Guangzhou was slightly higher, reaching 6.8 in November 1994.

Secondary employment plays an important role in reshaping the income distribution in urban China. According to our estimates (Model 3 in Table 2), secondary employment brings about a net income advantage of 23 percent in Shanghai and 52 percent in Guangzhou. The highest incomes from secondary employment reported in our sample reached 5,000∼7,000 Yuan per month. Also, in a separate analysis not reported here, we find that well-educated males are the most likely to take on secondary employment. It is uncommon among government employees but not so among those whose primary jobs are in the private/hybrid sector. Overall, there is no evidence that the gains from secondary employment are achieved at the expense of other market-based advantages.

Summary and Discussion

In summary, our analysis of the income inequality in Shanghai and Guangzhou has documented extensive evidence for the effects of the transition to a market economy on urban inequality. In our attempt to specify how the emerging market institutions reshape the opportunity structure for urban residents, we focus on the replacements of bureaucratic control with market on three levels and explore their respective implications on individual's economic wellbeing. On the sectoral level, the creation and expansion of a relatively autonomous private/hybrid sector has resulted in new opportunities in favor of economic actors, human capital, and entrepreneurship. On the organizational level, firm's growing exposure to a competitive market generates the impetus for organizational change toward more meritocratic reward allocation. On the individual level, the emerging urban labor markets not only strengthen the bargaining power of those with superior human capital, but also encourage employer organizations to better differentiate rewards according to work contribution. Guided by these ideas, we argue that changes in the stratification order are by no means uniform or linear (Shu & Bian 2003). Instead, we find a consistent correlation between the returns to human capital and the institutional context of the employment, and a new group of economic elite commanding market powers have emerged to

challenge politically-based advantages. Overall, a simple, parsimonious market transition framework has allowed us to not only detect a variety of complex changes in reforming China, but also provide a coherent, non-*ad hoc* account of the causal mechanisms behind.

Our study also testifies to the declining role of political capital in determining economic outcomes. Previous research using either national data or data from the 1980s has consistently reported an income advantage, typically around 5∼10 percent, to members of the communist party (e.g. Xie & Hannum, 1996; Zhou, 2000; Liu, 2003; Wu & Xie, 2003). Our analysis of income determination in Shanghai and Guangzhou shows that by the mid-1990s, this form of political capital had ceased to be a valuable asset in general, and even for the most senior members of the communist party the size of the advantage is still very modest in comparison to those associated with market-based opportunities. To be sure, these two southern coastal cities are by no means representative of the entire urban China. Despite considerable differences between themselves, urban reforms in both cities had progressed further than the nation as a whole. While this fact certainly prevents us from making national level generalizations, it also suggests that, given China's steady transition toward a market economy, our findings should be indicative of what is to come for urban areas that have yet to experience fundamental institutional transformations.

As proponents of the market transition theory, we agree with the view that the political dynamics of state intervention and ongoing institutional changes enabling, motivating and governing the emergence of a market economy are surely parallel processes that can generate changes unanticipated by the market transition logic. Yet, market transition as a sweeping change in the economic realm has indeed taken place in postsocialist nations. By focusing on this change, market transition theory not only explains many of the new patterns of inequality, but also lays the ground for further conceptualizing how various interest groups may begin to alter their customary practices and devise adaptive strategies (Nee & Cao, 1999, p. 806). For instance, the surviving elite argument proposed by students of Eastern Europe in effect builds on the recognition of the emerging opportunity structures centered on markets (Staniszkis, 1991; Rona-Tas, 1994). That former cadres pursue managerial/entrepreneurial careers and that administrative expertise and network ties become the new sources of advantage both testify to the far-reaching impact of markets. While we welcome the challenges raised by some critics to better specifying the complex interactions between market, politics, and structural change (Zhou, 2000; Walder *et al*., 2000; Gerber, 2002; Walder, 2003), we are cautious of the dangerous tendency of theoretical nihilism behind some of the recent efforts to substitute theory-driven empirical research with descriptive quantitative analysis of associations between variables. A rival approach first needs to focus on formulating a competing theory that can explain the findings reported in our study of institutional change in Shanghai and Guangzhou without reference to the causal significance of the expansion of the market mechanism.

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Notes

1. Urban residents' consumption price index is used in inflation adjustment.
2. Calculated from figures at the US Department of Labor's Bureau of Labor Statistics website at http://www.bls.gov.
3. We thank an anonymous reviewer for suggesting this possibility. The same reviewer also pointed out that party members cannot be expected to report their illicit income from activities such as corruption. We agree and therefore analyses of survey data are likely to underestimate political advantages. However, other social groups, especially the self-employed and entrepreneurs, may have a tendency to underreport as well, and the very fact that political advantages are increasingly derived from illegal activities, in our view, is an even more telling sign of the de-institutionalization of the old stratification order.
4. Productivity in Shanghai's foreign firms was below average. We suspect this might have resulted from two factors. First, given the delayed takeoff of Shanghai reform, by 1995 many foreign companies might still be in the stage of initial setup, hence not operating at full capacity. The second factor is the intentional under-reporting of profits by foreign owners in order to evade taxes. Under-reporting would be more difficult for joint ventures due to the presence of representatives of the Chinese side in both the management and the board of directors. Among public firms, the opposite tendency of over-reporting was likely to be more common. In any case, had the low productivity been indeed true among Shanghai's foreign companies, it would be hard to imagine that international capital continued to pour in during subsequent years.
5. Unfortunately, information on reward and sanctioning mechanisms is not available for other income earners in the households surveyed.
6. Once again, we thank the anonymous reviewer for suggesting this idea.

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