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To cite this article: Tianyang Xi (2017) Inclusive institutions and economic growth: comparative perspective and policy implications for China, *China Economic Journal*, 10:2, 108-127, DOI: [10.1080/17538963.2017.1321212](https://doi.org/10.1080/17538963.2017.1321212)

To link to this article: <http://dx.doi.org/10.1080/17538963.2017.1321212>



Published online: 16 May 2017.



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# Inclusive institutions and economic growth: comparative perspective and policy implications for China

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## ABSTRACT

This paper examines the empirical relationship between the presence of inclusive institutions and the pattern of economic growth in a cross-country setting. We find evidence that the presence of inclusive institutions, indicated by political democracy, positively affects consumption share. In turn, the increase of the latter in the preceding year is associated with a significantly higher rate of total factor productivity (TFP) growth. The link from democracy to TFP growth via consumption is stronger for countries of higher levels of income. These findings suggest that institutional inclusiveness may have become increasingly important for economic growth when the level of income rises. We also provide preliminary evidence that consumption may have facilitated productivity growth via the channels of increasing innovations and reducing social conflicts. The findings shed lights on the structural transformations toward a more inclusive and sustainable model of growth in China today.

**Abbreviations:** FE: GMM: Generalized method of moments PWT:  
TFP: Total factor productivity

## ARTICLE HISTORY

Received 13 June 2016

Accepted 13 April 2017

## KEYWORDS

Inclusive institutions;  
democracy; growth;  
consumption; China

'In recent years it has become obvious that ... many forms of "consumption" – food, clothing, housing, recreation... represent an investment in the most valuable productive instrument of all, the people itself.'

Bertil Ohlin (1938)

## 1. Introduction

By most tangible measures of institutional quality, China's institutions are far from the ideal types that are able to support a robust long-term growth. China falls behind the West on the security of property rights, legal systems for contract enforcements, constitutional constraints on the government, and political competition for public offices. Such an institutional profile tends to get a low score for growth projections based on conventional wisdom from the Washington Consensus. Yet China has been, and still is, one of the fastest growing economies in the world for the past several

decades. The discrepancy between China's seemingly problematic institutions and its remarkable performance begs the question of how institutions affect economic performance. Does China manage to sustain fast economic growth despite its different institutions? Or, is it rather that China was able to grow spectacularly because of its institutions? The answer to this question has fundamental implications for China's policy reforms in the future.

This paper attempts to shed light on China's structural reforms by offering a comparative perspective on the relationship between institutions and growth. For institutions, I mainly focus on the degree of political democracy, which is a primary measure of institutional quality in the literature and is considered highly correlated with other dimensions of institutions such as the rule of law. Political democracy, in its minimalist sense, entails a mechanism through which candidates compete for political offices in contested elections (Przeworski 1999; Schumpeter 1942). Subjecting politicians to the popular vote enforces political accountability and incentivizes politicians, as agents of citizens, to abstain from moral hazard behaviors and exert efforts to promote economic performance and public interests (Barro 1973; Besley, Persson, and Sturm 2010; Person and Sturm; Fearon 2011). Moreover, political democracy contributes to institutional commitment to protecting property rights and hence encourages private investments (Clague et al. 1996; Olson 1993). On the other hand, politicians can be opportunistic, and the incentives for incumbents to win offices may lead them to distortionary policies, such as budget manipulation, reckless borrowing, and excessive redistribution (Acemoglu, Robinson, and Torvik 2013; Alesina and Rodrik 1994; Brender and Drazen 2005). Hence, democracy may affect growth both positively and negatively through many different channels, and its overall effects can be ambiguous (Przeworski and Limongi 1993).

In a well-known book, Acemoglu and Robinson (2012) elaborate on the premise that inclusive institutions give rise to a democratic advantage in long-run economic performance. Inclusive institutions are present when societies are featured with equal political participation and widely accessible economic opportunities, which help build a stable expectation for business investors and encourage innovations. Political democracy helps growth simply because it is conducive to inclusiveness. By contrast, in nondemocratic societies, institutions are extractive, i.e. political power is monopolized by a small group of elites, who use power to reinforce their economic privileges and grab rents from the disenfranchised group. In turn, under extractive institutions technological innovation is deterred, and growth unsustainable, because incentives for investments and innovations are undermined by the exercise of political powers.

The argument on inclusive and extractive institutions is closely related to the issues of economic growth in China. China's economic institutions in the reform era are arguably inclusive to the extent that rapid market expansion facilitated the rise of millions of households out of poverty. But at the same time, the state sector still plays a dominant role in the economic system, and the playing field is hardly level for all individuals. Some economic opportunities remain inaccessible to the private sector, and allocations of resources are highly skewed due to political power. At the macroeconomic level, growth has been spurred largely by government-led investments as opposed to innovations, and productivity efficiency in the manufacturing sectors is comparatively low. These structural problems in the Chinese

economy often lead to doubts on the sustainability of China's growth, as Acemoglu and Robinson (2012) did in their book.

In the recent years, the Chinese leadership has been keen to implement a portfolio of comprehensive structural reforms to encourage innovation and the growth of private sectors, with a significant part consistent with measures advocated by The World Bank (2013). However, if the theoretical premise proposed by Acemoglu and Robinson (2012) and others is fundamentally correct, the current policy changes adopted by the Party are unlikely to be a perfect overhaul for the economy because economic reforms will have to confront the political power, which is by constitution exclusively owned. The question, then, is whether China can possibly pursue a practical path of reforms toward more sustainable growth without touching upon its political foundation.

Motivated by this question, I examine the relationship between the degree of institutional inclusiveness and the pattern of economic growth from a cross-country, comparative, perspective. The purpose of my analyses is to first outline the similarities and discrepancies between China's economic structure and those of more advanced countries when their levels of development are comparable to where China stands today. The second purpose is to obtain a better sense of the sustainability of China's growth and the necessity of structural reforms in the future based on the insights from large-N evidence. In Section 2, I draw upon the recent literature on the structural imbalance and institutional frictions in China and identify the pattern of consumption share as one of the main discrepancies of the Chinese economy compared with the rest of the world. I then present an overview of the historical patterns of consumption shares in other large economies, and suggest that sustainable growth is normally coupled with a rising trend of consumption in the transition from middle- to high-income countries in most cases. In Sections 4 and 5, I respectively explore the cross-country regularities on the relationship between political democracy and household consumption, investigating how this is related to long-term economic performance. In Section 6, I focus on the channels through which the pattern of household consumption interacts with growth accounting. A key finding is that increase in consumption imposes a cost on the growth rate by reducing capital accumulation; however, it also helps the economy grow faster by increasing production efficiency. The effect of consumption on production efficiency is stronger when income level is higher. In the meantime, the presence of political democracy per se does not have a positive effect on either capital accumulation or production efficiency. These empirical findings lead to the tentative conclusion that reforms aiming to enhance institutional inclusiveness can be instrumental for supporting sustainable growth in China.

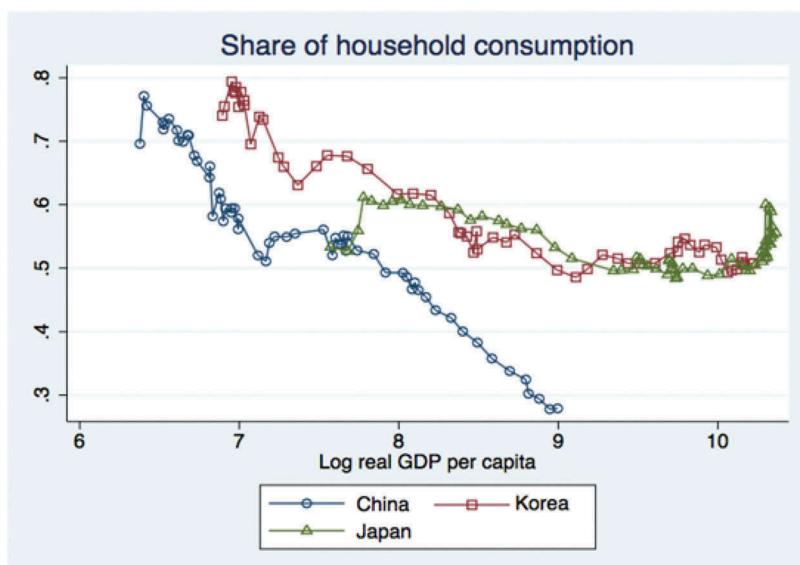
## 2. Critiques of the China model

A major strand of criticisms on the China model, which concentrates on the expenditure side of the economy, can be summarized as the following. (1) The fast rate of economic growth in China in the past decades was closely associated with a development strategy led by the state, which made investment in physical assets and export a primary channel of growth. (2) In turn, the growth has been coupled with a considerably high national saving rate, an exceptionally low share of household consumption, and surging income inequality compared with most developed and developing

economies. (3) Such a model of growth reflects inherent structural imbalances to the extent that both the sources of growth and of income distribution were underlaid by a set of policy distortions in the factor and product markets, and thus, renders the long-term growth unsustainable along the current path.

Household consumption is a dimension of salience in the scholarly literature on the structural imbalance in China. According to the calculation provided by the Penn World Table (8.0), the share of household consumption in China was barely above 40 percent in 2003, a time when the expenditure-side real per capita GDP, measured by purchase power parity in 2005 dollars, was 4450 dollars. That share falls to below 28 percent in 2011, when the GDP per capita in China rose to about 8000 dollars. For comparison, the consumption shares in Korea and Japan were respectively 51 percent and 54 percent in 2003, and the shares in the two countries were 51 and 56.5 percent in 2008. Looking at the historical experiences of Korea and Japan when their levels of GDP per capita were comparable to China's in 2003, we obtain 55 percent for Korea in 1981 and 58 percent for Japan in 1962. As Figure 1 clearly shows, not only was the consumption share in China lower than those in Korea and Japan for the same level of development, but also the decline in consumption share over time was much faster in China than those of Korea and Japan were. This discrepancy merits further scrutiny over the institutional frictions in China, particularly those that gave rise to the lack of consumption and consumption smoothing in a large fast-growing economy.

The literature offers several explanations for mechanisms driving the patterns of saving and consumption in Chinese households. Precautionary saving is often proposed as a fundamental reason for keeping household consumption low. Due to an



**Figure 1.** Consumption share in China, Korea, and Japan.

The x-axis is the logarithm of expenditure-side real GDP per capita at chained PPPs in 2005 dollars. The y-axis represents the share of household consumptions in GDP in the three countries corresponding to the level of real GDP per capita.

emphasis on investment and export as the primary growth engines, the state has engaged in a development strategy which uses fiscal resources to overwhelmingly finance investments in infrastructure and fixed assets and subsidized certain manufacturing industries. In turn, welfare programs, such as public pension, health care, and unemployment benefits, are underprovided. Private households are hence forced to spare a large share of income to insure themselves against all kinds of shocks to the income, health, employment, and retirement needs that might occur in the future. Meng (2003) uses urban household survey data and finds consumption smoothing to be a main motive behind household saving. However, the use of smoothing is significantly constrained when it comes to the financial needs for education. The literature also documents significant heterogeneous saving behaviors among different age cohorts, and attribute the lack of consumption smoothing to the dependent share in population and the rising financial burdens of certain age cohorts (Bonham and Wiemer 2013; Chamon and Prasad 2010). The financial burden of households may stem from many different channels, such as sex imbalance and the resulting competition in the marriage markets (Wei and Zhang 2011), rural-urban segregation (Chen, Lu, and Zhong 2015; Giles and Yoo 2007), and surging housing prices (Wang and Wen 2012).

Aside from precautionary saving, the relatively low share of household income is considered as another important factor leading to the consumption-investment imbalance. Aziz and Cui (2007) document synchronized decline in both the wage income and investment returns for Chinese household in the recent years. Using the World Bank Enterprise survey, they argue that the financial obstacles faced by the private sector are likely to have induced the repressed labor share in GDP, as private firms cope with the imperfection of the capital market by adjusting the labor cost. Perkins (2012) notes that the growth of labor income was slower than that of GDP. In addition, recent survey data have suggested rising income and wealth inequalities among households. According to the China Household Finance Survey (CHFS) based on over 8000 households, China's Gini coefficient has risen to 0.61 in 2013 (Gan 2013). A high degree of income inequality contributes to high savings rate as the consumption propensity of the rich is generally lower than that of the poor. As the CHFS data demonstrates, the savings rate for the top 5 percent income households is 73.5 percent, which is significantly higher than the average of the whole sample, 29.2 percent.

While many factors may have contributed to a high savings rate among Chinese households, government policies and institutional frictions are believed to constitute an important driving force of household consumption and saving decisions. Du, Fang, and Jin (2014) use provincial level panel data to show that the intensity of overtaking strategies, as measured by a region-specific technology choice index (TCI), has a significant effect on lowering the consumption-investment ratio and the labor share in the GDP growth. Local governments often pursued industrial policies to raise revenues from capital-intense sectors, such as infrastructure, real estate, and energy production, which are predominantly comprised of state-owned enterprises or private firms supported by the patronage of local officials. As a result, firms with political connections are able to finance at much lower costs than the market price, further leading to an increase in corporate savings rates as well as slowdown in employment growth (Prasad 2011; Yang, Zhang, and Zhou 2012). The problem of internal structural

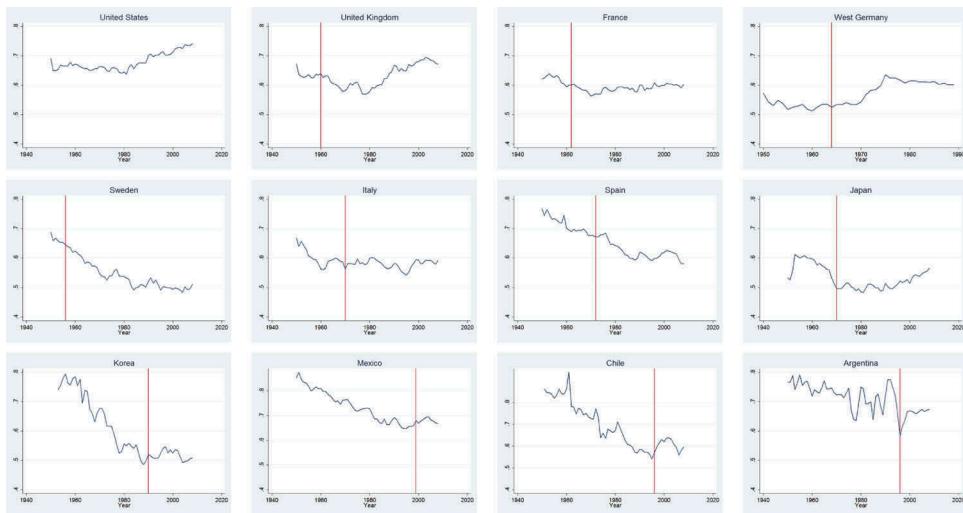
imbalance is further aggravated by various kinds of entry barriers in the factor markets, which remain under stringent state control (Huang and Wang 2010; Prasad and Rajan 2006). In turn, the quality of growth measured by productivity efficiency may have been low despite China's remarkable performance in total GDP growth (Young 2003).

### **3. The rise and fall of consumption**

With ample empirical evidence offered by critiques, the diagnosis seems to be clear. Because investment-based policies caused distortions and efficiency losses, reforms are necessary to direct resources from exclusive focus on capital investments and facilitate a more inclusive model of growth. Viewing from the supply side, this involves reforms that clear entry barriers and encourage more innovation and entrepreneurship from the private sector, as the Chinese government has painstakingly engaged in since the 18th National Party Congress in 2012. The reforms require a switch of government focus toward facilitating more balanced income distribution between labor and capital, and an expansion in the service sector based on robust consumption growth (Knight and Wang 2011; Lardy 2006).

Despite all these claims, however, there is no decisive evidence with regard to the empirical relationship between consumption and economic growth in developing economies and how this relationship interacts with institutional features and the stage of economic development. *A priori*, it is not clear that the current digression of China's consumption pattern from those of the advanced economies indeed stems from inherent structural imbalance. In the standard Solow model, consumption share is constant over time and the optimal share depends on technology and population. In a standard new classical growth model, consumption share remains constant only at the steady state, and the dynamic path of consumption share depends on technology, population growth, risk attitude, and the initial conditions of factor endowments. It is possible that consumption share may increase or decrease before reaching the steady state. Even for advanced economies the consumption share may fluctuate over time in response to idiosyncratic shocks (Campbell and Mankiw 1990; Carroll and Summers 1991). Hence, high investment share in China may not necessarily render China an outlier. It may simply reflect high rates of capital return, as Bai, Hsieh, and Qian (2006) suggest. As income continues to grow and the rate of capital returns starts to decrease, households will find it increasingly attractive to trade the future investment returns off with current consumption. The increase of the consumption share in total GDP to nearly 50 percent in 2014 seems to manifest this point. In that case, structural reforms may still be necessary, but they should have quite different targets such as industrial upgrading rather than correcting the internal imbalance between investment and consumption.

Figure 2 provides a cross-country comparison for consumption share in some large economies that have surpassed 10 000 dollars on GDP per capita at some point in history. All except for Mexico and Argentina are classified as high-income economies by the World Bank as of 2016<sup>1</sup>. Some observations are as follows. First, despite significant differences in the dynamic pattern of movement, the consumption shares in these countries seem to have a lower bound at around 50 percent; moreover, in most cases the shares were considerably higher than 50 percent in those countries during the



**Figure 2.** Rise and fall of consumption share: cross country comparison.

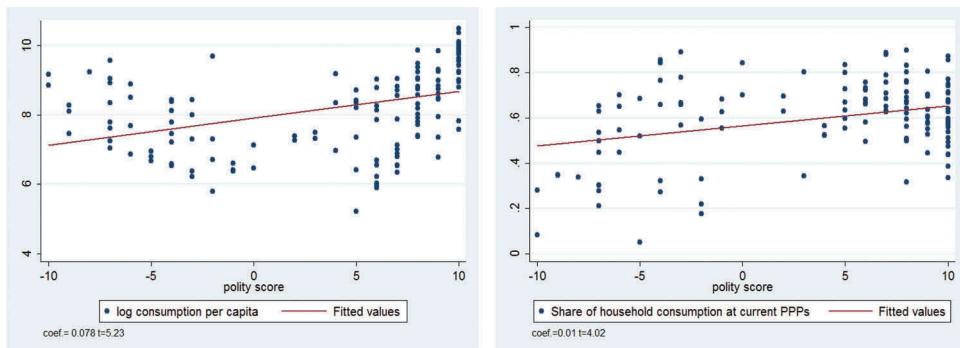
Each graph plots the consumption share for one country over time. The straight line demonstrates the year when GDP per capita (expenditure side at chained PPPs, in 2005 dollars) first reached 10 000 dollars.

upper middle-income stage. Second, in the majority of the countries, the consumption share followed an either increasing, or flat, trend after its GDP per capita reached 10 000 dollars. Two exceptions are Sweden, in which a large share of government consumption is devoted to welfare programs for the purpose of subsidizing household consumption, and Spain, which reversed from a level of consumption share as high as 70 percent. It is worth noting that the decline of consumption share in the latter during the 1980s is coupled by robust economic growth. Finally, although some countries with considerably high consumption shares suffered from economic fluctuations from time to time, such as Mexico and Argentina, most others are able to register robust growth without a reduction in the consumption share.

Compared with the sample presented by Figure 2, China has followed a quite unusual model of continuous decrease in consumption share for a long time while maintaining robust GDP growth. Perhaps the path of Korea was the closest to China's, both in the light of the level and the trend of consumption share in history. Of course, one cannot use cross-country patterns to establish any causal mechanisms between household consumption and long-term growth trajectory. However, such a comparison provides meaningful lessons for understanding the potential and limits of economic growth in China for the decades ahead. In what follows, I further explore cross-country evidence with regard to the effect of inclusive institutions to shed light on the growth potential in China.

#### 4. Democracies consume more

Figure 3 shows simple correlation between the degree of political democracy, as measured by the Polity IV score, and the household consumption for all countries in 2008. The household consumption is respectively measured on per capita base and as



**Figure 3.** Polity score and the log of consumption per capita, 2008.

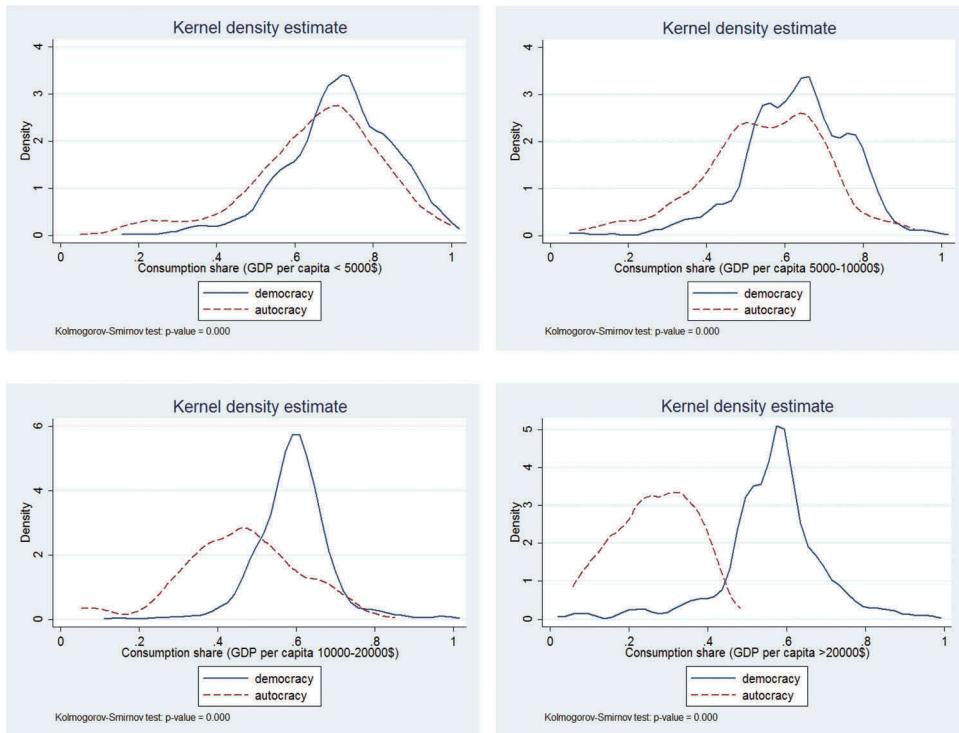
The x-axis represents the polity score and the y-axis the log of consumption per capita of countries in 2008. The consumption per capita is obtained by multiplying the consumption share by the expenditure-side real GDP at chained PPPs in 2005 dollars divided by population in Penn World Table 8.0. The fitted line is obtained by ordinary least square estimate with polity score being the only explanatory variable.

the percentage share in the total GDP. There is clearly a strong and positive correlation between the polity score and household consumption for both measures. Thus, the cross-country pattern for household consumption is consistent with the predictions of the extant political-economic theories.

Moreover, the positive effect of democratic institutions on household consumption is stronger in rich than in poor societies. Figure 4 presents the kernel density of consumption shares for all country-years from 1950 to 2008, conditional on the level of development. For countries whose GDP per capita was lower than 5000 dollars, the distributions of consumption shares in democracies and non-democracies are not identical, but the difference is small. As a matter of fact, the consumption share is typically very high in countries with the lowest income, as a large share of populations live barely above the subsistence level. The disposable incomes available for households are thus severely constrained and only a small share can be saved, taxed, and reinvested. It is likely to be the case that political institutions do not make a significant difference for income distribution and the consumption-investment pattern in extremely poor countries. For countries with GDP per capita located within the range between 5000 and 10 000 dollars and those between 10 000 and 20 000 dollars, the discrepancies between democracies and non-democracies are larger. Finally, the distribution of consumption shares is utterly different between democracies and non-democracies when the GDP per capita is above 20 000 dollars: the majority of democratic countries consume more than half of their GDP in each year, while the consumption share in non-democracies almost never exceeds 40 percent.

## 5. Consumption and growth

The discrepancy between democracies and non-democracies in consumption shares provides a new perspective for evaluating the economic effect of institutions. In addition to standard growth-enhancing channels, such as the electoral accountability for incumbents, the constraints on executive power, and a more transparent process for

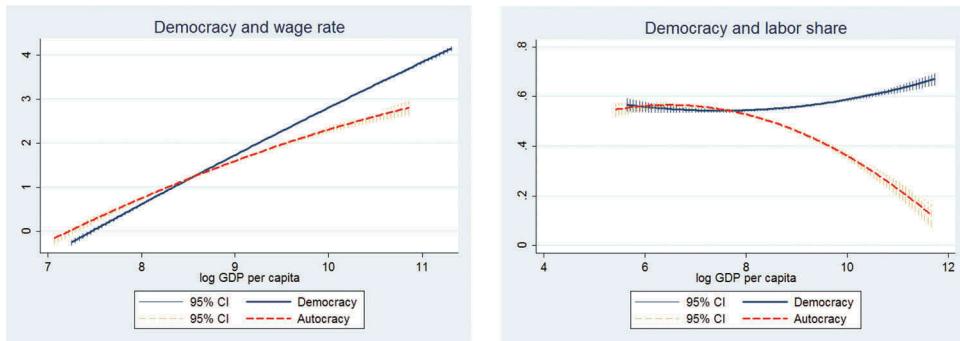


**Figure 4.** Distribution of consumption shares: democracy versus autocracy.

Kernel density distribution of consumption shares for all countries, 1950–2008. Data for consumption share is from Penn World Table 8.0. Data for democracy combines Przeworski et al. (2000) and the Polity IV project. Bandwidth = 0.2. The p-value for a two-sample Kolmogorov-Smirnov test is reported.

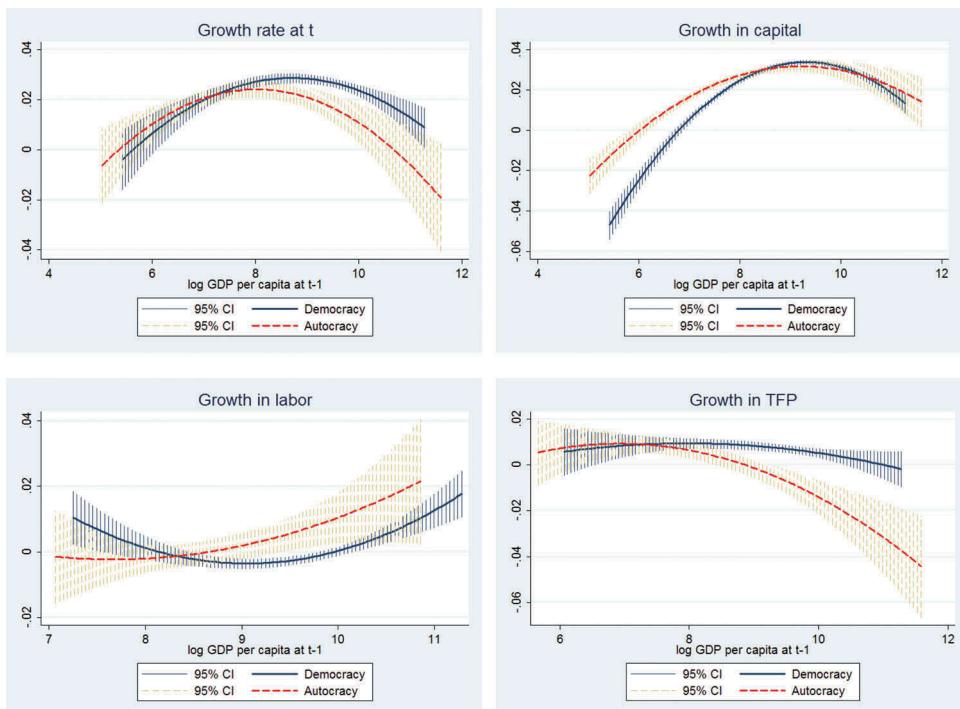
information aggregation, political democracies may also affect economic performance by shifting the growth pattern toward one based more on household consumption. Because democracies accommodate more institutional inclusiveness and more redistribution from the rich to the poor, as shown by Figure 5, the consumption-saving pattern may be biased more in favor of labor. This implies that the rate of capital formation can be somewhat lower in democracies than in non-democracies, and hence democracy may have negative impacts on growth through the promotion of consumption. In light of models on political competition, parties may pander to the median voter and their policies are unlikely to lead to any radical cuts in the current consumption for the purpose of increasing investment and growth in the future.

With competing predictions offered by different theoretical models, the empirical literature on the effect of democratic institutions on economic growth are far from conclusive. Findings range from positive effects on growth, no effects, heterogeneous effects conditional on economic and social environments, and negative effects under certain circumstances (Barro 1991; Papaioannou and Siourounis 2008; Persson and Tabellini 2006; Przeworski et al. 2000). Figure 6 provides an intuitive glimpse of empirical regularities on the difference between democracies and non-democracies with regard to the rate of growth and the increase in factors of production. The first graph on the upper left corner plots the distribution of growth rate conditional on the



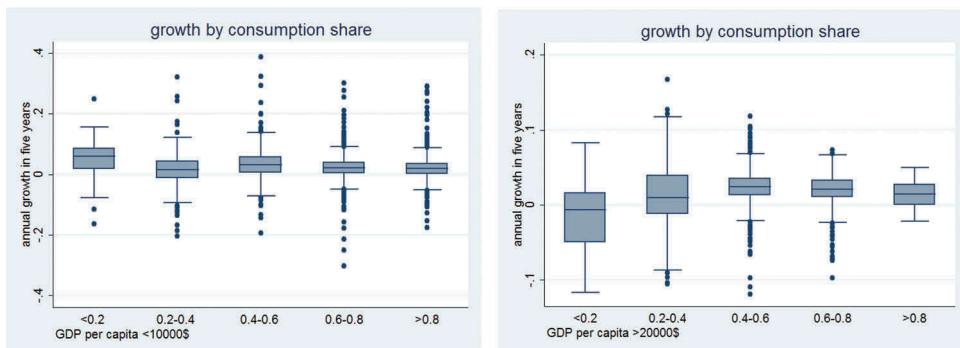
**Figure 5.** Democracies pay more to labor.

The x-axis represents the logarithm of GDP per capita (expenditure side at chained PPPs, in 2005 dollars) and the y-axis reports the average wage (the left panel) and the labor share (the right panel). The average wage is computed via the following expression: mean(wage) = (real GDP \* labor share) / (employment \* average working hours). The data for labor share and employment are from Penn World Table 8.0. Quadratic estimates with 95% confidence interval are reported. The solid curve is conditional on democracies and the dash line is conditional on autocracies.



**Figure 6.** Democracy and growth.

The x-axis represents the logarithm of GDP per capita (expenditure side at chained PPPs, in 2005 dollars). The y-axis in the four graphs respectively reports the growth rate of GDP per capita, capital per capita, labor input, and TFP growth in the following year. Quadratic estimates with 95% confidence interval are reported. The solid curve is conditional on democracies. The dash line is conditional on autocracies.



**Figure 7.** Average annual growth in five years, by consumption share.

Average annual rate of growth in five years, grouped by the initial level of consumption share. The left is based on observations with GDP per capita less than 10 000 dollars. The right is based on those higher than 10 000 dollars.

logarithm of GDP per capita in the preceding year, respectively for democracies and non-democracies<sup>2</sup>. As the graph suggests, the rate of growth does not significantly differ between democracies and non-democracies when the GDP per capita is below 5000 dollars. For countries richer than that, democracies maintain higher GDP growth and the confidence intervals under democracies and non-democracies for the estimated rate almost do not overlap. Further decomposition of growth into factors inputs shows the following. (1) Capital formation is slower in democracies for relatively poor countries (whose GDP per capita are below 5000 dollars). (2) The growth of labor employment is slightly faster in non-democracies, but the sample variance is large and the difference is statistically insignificant. (3) Democracies maintain a significantly higher quality of growth in terms of total factor productivity (TFP), particularly for countries with GDP per capita beyond 5000 dollars. These correlation analyses explain the existence of democratic advantage in growth for rich countries but not quite so for lower income countries. The growth in labor employment is slightly slower in democracies, presumably because the price of labor is higher and there are more regulatory protections in favor of labor unions. This effect was compensated, however, by the higher rate of TFP growth in democracies when the income reaches a certain level.

To what extent can the difference between democracies and non-democracies in economic growth be accounted for by their consumption patterns? Figure 7 provides a summary of the five-year growth perspective for all countries with different shares of household consumption in GDP. When the level of income is below 10 000 dollars, the growth prospect looks slightly better for countries with the lowest share of household consumption, but the variance of growth is typically high and the result is not statistically significant. For countries with income per capita higher than 10 000 dollars, the growth prospect looks particularly bad for countries consuming the least. At the same time, countries appear to have more satisfactory performance when consumption shares were located between 0.4 and 0.8, but the sample variance is also too high to provide a definite answer. By and large, the growth rate does not differ for countries with different consumption shares.

To explore different growth effects in democracies and non-democracies through the channel of household consumption, we conduct regression analyses for the determinants of economic performance in a panel of 167 countries from 1950 to 2010. The results are presented in Table 1. In columns 1 and 2, the dependent variable is the annual growth rate for GDP per capita, and the independent variables include the lagged consumption share, the lagged growth rate, the lagged logarithm of GDP per capita, the presence of political democracy, and the interaction between democracy and the lagged consumption share. In column 1, we control for country and year fixed effects to account for country-specific and cyclic effects that might be related to growth rate. Because we include the lagged dependent variable, our estimates can be biased due to the correlation between the lagged growth and the error term. To deal with this problem we estimate the growth rate using the system generalized method of moments (GMM) following the method developed by Arellano and Bond (1991) in column 2. In columns 3 and 4, the dependent variable is a dummy variable indicating whether the economy was in a recession, i.e. when the growth rate was negative. Contrary to some recent findings that democracy has an unambiguous effect on promoting economic growth Acemoglu et al. (2014), we find that the coefficient for democracy is positive but insignificant after controlling for the preexisting trends of growth and consumption share. Consumption share does not have significant effects on growth, neither does the interaction term. Thus, the claim that democracy may hinder growth by consuming too much and investing too little is not supported by statistical evidence.

**Table 1.** Consumption and growth.

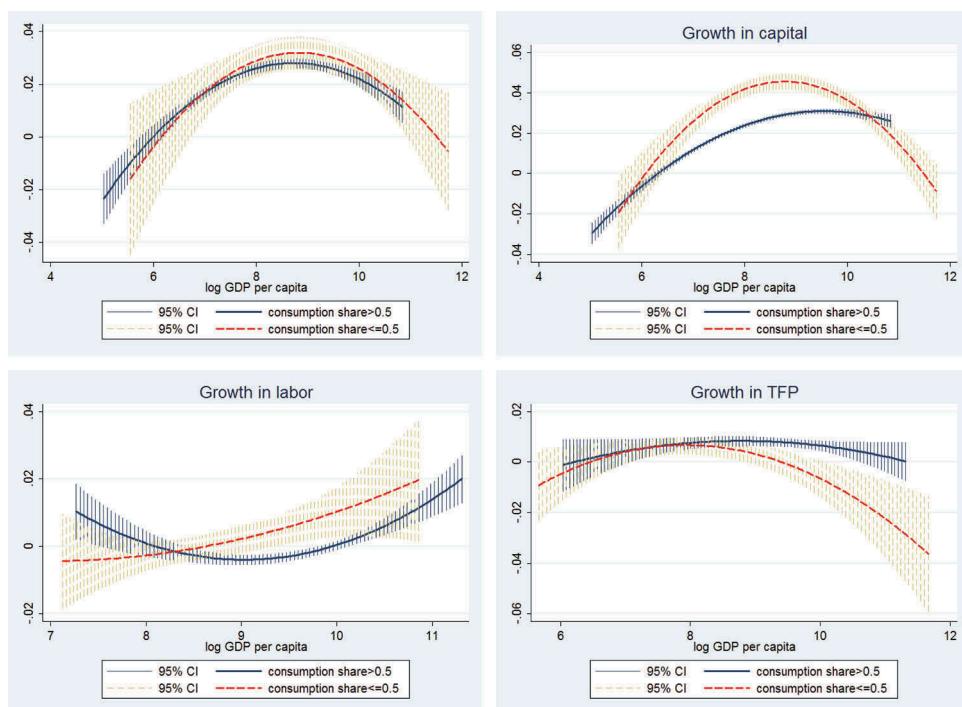
Dependent variable	Growth	Growth	Recession	Recession
	(1)	(2)	(3)	(4)
	FE	system GMM	FE	system GMM
Lag consumption share	2.03 (2.14)	3.22 (4.09)	-4.34 (7.46)	16.39 (14.42)
Lag growth	0.23*** (0.03)	0.29*** (0.03)	-1.15*** (0.14)	-1.50*** (0.16)
Lag log GDP per capita	-3.05*** (0.51)	0.51** (0.24)	12.22*** (2.09)	-2.39* (1.36)
Democracy	1.92 (1.43)	1.52 (2.45)	-8.57 (5.23)	3.37 (9.67)
Democracy * (lag consumption share)	-2.47 (2.05)	-2.82 (3.97)	6.06 (7.21)	-17.98 (14.55)
R <sup>2</sup>	0.12		0.10	
Country FE	Y		Y	
Year FE	Y		Y	
AR(1)		0.000		0.000
AR(2)		0.857		0.948
Hansen J-test		1.000		1.000
# Countries	167	167	167	167
Observations	7940	7940	7940	7940

Standard errors clustered at the country level are reported in parentheses. \*\*\*p < 0.01, \*\*p < 0.05, \*p < 0.1. The measure for democracy is based on a combination of Przeworski et al. (2000), and the Polity IV project, where we follow Przeworski et al. (2000) when the codes disagree. The economic variables are from PWT 8.0. Constant term is included but not reported. All results are in percentage points.

## 6. Why did consumption not hinder growth?

The cross-country evidence provided in Section 5 shows that there is not a generic clearcut relationship between consumption and growth. Although the coefficients of the estimates show that increasing consumption may make the economy grow faster in non-democracies, it tends to have a negative impact on growth in democracies. A simple interpretation can be that democracies consume too much and non-democracies consume too little relative to what they should have on the optimal path. However, neither the coefficient for consumption share nor its interaction with democracy is statistically significant enough to support a meaningful causality. This ambiguity in the statistical relationship between consumption and growth suggests the necessity of analyzing the channels through which consumption may affect factor inputs and the TFP.

Figure 8 presents a juxtaposition between high- and low-consumption countries for growth in factor inputs and TFP. The growth rates for GDP per capita, capital, labor, and TFP are respectively plotted as a quadratic function of per capita income. Not surprisingly, growth rates do not differ between countries consuming larger and smaller shares of total GDP. Capital growth becomes faster in countries with lower consumption share for relatively richer countries, so does the growth for labor employment. This



**Figure 8.** The x-axis represents the logarithm of GDP per capita (expenditure side at chained PPPs, in 2005 dollar). The y-axis in the four graphs respectively reports the growth rate of GDP per capita, capital per capita, labor input, and TFP growth in the following year. Quadratic estimates with 95% confidence interval are reported. The solid curve is conditional on countries with consumption share higher than 0.5. The dash line is conditional on countries with consumption share less than or equal to 0.5.

is different from TFP growth, which is faster for higher-consumption countries when the GDP per capita exceeds 8000 dollars. Thus, a simple interpretation of these cross-country patterns between consumption and the mode of growth seems to be that growth is slower when a larger share of production is consumed rather than saved and invested, but at the same time consumption helps maintain a higher-quality growth by facilitating more efficient use of factor inputs. Moreover, rich countries have an advantage for turning consumption growth into TFP growth.

The intuition is supported further by the econometric analyses on the determinants of TFP growth reported in **Table 2**. The dependent variable is the log of TFP in PWT 8.0 and the main independent variable is the consumption share in the preceding year. In column 1, only consumption share, the log of GDP per capita, and the lag of TFP are controlled. Consumption has a significant and positive effect on the growth of TFP. In column 2, we control for the presence of political democracy and the results remain the same. In Column 3, we allow the effect of consumption to be different in countries with different levels of development by interacting the lag of consumption share with a vector of dummies indicating the poor, middle-income, and rich countries. It is shown that the effect previously identified in columns 1 and 2 are mainly driven by the positive effect of consumption on TFP growth in rich countries. Estimating with system GMM yields a similar result. Finally, we use the five-year average for estimations in column 2

**Table 2.** Democracy, consumption, and TFP growth.

Dependent variable: log TFP	(1) FE	(2) FE	(3) FE	(4) GMM	(5) Five-year average	(6) Five-year average
Lag consumption share	5.32** (2.61)	5.47** (2.61)			20.8*** (7.39)	
Democracy		-0.551** (0.256)			-1.09 (0.998)	
Lag consumption share * poor			3.30 (2.87)	1.25 (5.68)		10.00 (8.36)
Lag consumption share * middle			4.61 (2.92)	8.79 (7.88)		18.7** (7.96)
Lag consumption share * rich			7.30*** (2.35)	15.6** (6.11)		25.9*** (6.95)
Democracy * poor			-0.690* (0.411)	-1.73 (1.13)		-2.02 (1.83)
Democracy * middle			-0.599 (0.365)	-1.48 (1.10)		-1.43 (1.39)
Democracy * rich			-0.754 (0.88)	2.33 (2.94)		0.799 (2.54)
Lag log GDP per capita	-0.737 (0.834)	-0.653 (0.841)	-1.43 (0.946)	156.4*** (23.1)	0.246 (1.64)	-0.305 (1.95)
Country FE	Y	Y	Y		Y	Y
Year FE	Y	Y	Y			
Five-year FE					Y	Y
R <sup>2</sup>	0.93	0.93	0.93		0.67	0.68
# Countries	111	111	111	111	110	110
Observations	5,012	5,012	5,012	4,904	981	981

Standard errors clustered at the country level are reported in parentheses. \*\*\*p < 0.01, \*\*p < 0.05, \*p < 0.1. The measure for democracy is based on a combination of Przeworski et al. (2000), and the Polity IV project, where we follow Przeworski et al. (2000) when the codes disagree. The economic variables are from PWT 8.0. Poor: GDP per capita <5000 dollars; middle: GDP per capita 5000 to 12000 dollars; rich: GDP per capita >12 000 dollars. The lag of log TFP and constant term are included but not reported. All results are in percentage points.

and 3 to deal with the problem of serial correlation. The results are significant and the magnitudes of main variables of interest are larger.

What accounts for the positive correlation between consumption and TFP? The existing literature on development economics provides several clues on how consumption growth may contribute to a robust TFP growth. First, in addition to its effect of current welfare increase, household consumption may consist of a kind of investment in human capital and hence help increase the future productivity. The large amount of literature on the history as well as the contemporary world has shown that the improvement on nutrition and health, which are a natural outcome from enhanced household consumption, has a large impact on productivity growth. Fogel (2004) points out that both work intensity (as opposed to working hours) and the discretionary time for leisure have significantly increased in Europe during the past two centuries through an increase in the supply of calories per adult male per day from about 800 in the 19th century to around 1800 in 1980. The improvement in nutrition status also has a large effect on health, cognitive skills, and educational attainment (Deaton 2003; Grier 2007; Luo et al. 2012). Second, the expansion in the demand for varieties of consumption goods may boom consumption confidence and innovations (Barsky and Sims 2012; Blanchard 1993). Third, consumption smoothing facilitated by public welfare and safety networks may help alleviate social conflicts by increasing the opportunity cost of participating in insurgency groups (Boix 2008).

Moreover, the result suggests that household consumption may indeed be a more important source of innovation and productivity growth by enhancing human capital, as suggested by Ohlin (1938) and Schultz (1961), and its effect is stronger in high income countries where innovation becomes an increasingly important engine for economic growth. The presence of inclusive institutions and political democracy may thus be an important condition for a successful transition from the middle to the high income countries. As Jones and Romer (2010) emphasize, institutional difference may be a key factor for explaining large income and TFP growth among developed countries, one of the notable ‘New Kaldor facts’ in modern economic growth.

In Table 3, we confront theoretical intuitions on the channels from consumption to productivity growth to empirical examinations. We estimate the effect of consumption share in the preceding year on the level of human capital index in Barro and Lee (2013), the rate of university enrollment from the World Development Index, and the index of social conflicts from Banks and Wilson (2016). The estimates based on annual data and five-year averages respectively, are reported. When estimated based on the five-year average, consumption share is positively associated with human capital index and university enrollment, and it is negatively associated with social conflicts. The results for consumption share using the annual data are similar with the only exception of insignificance for human capital index, presumably because the yearly variation in the human capital index is small. Overall, countries that consume more and accommodate inclusive institutions (democracy) tend to have higher levels of human capital and enjoy more social cohesion, both of which seem to contribute to the quality of economic growth.

**Table 3.** Inclusive institutions and growth: possible channels.

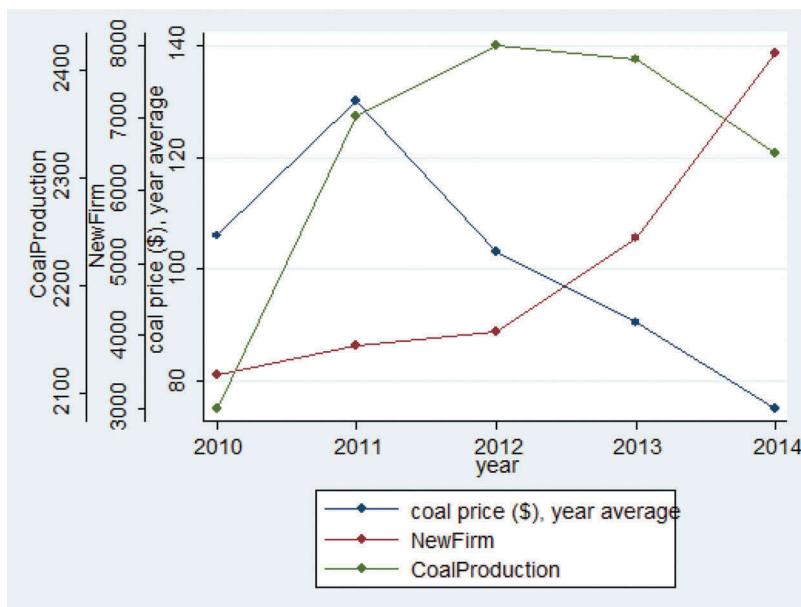
Dependent variables	(1)		(2)		(3)		(4)		(5)		(6)	
	Human capital	Human capital (5 years)	Human capital	Human capital (5 years)	University enrollment	University enrollment	University enrollment (5 years)	University enrollment (5 years)	Social conflicts	Social conflicts	Social conflicts	Social conflicts (5 years)
Lag consumption share	-0.002 (0.006)				0.136*** (0.036)				-0.779*** (0.216)			
Democracy	0.031*** (0.005)				0.061** (0.026)				0.242*** (0.090)			
Log GDP per capita	0.080*** (0.005)				0.617*** (0.027)				-0.912*** (0.095)			
Consumption share (5 years)		0.109*** (0.041)				0.650*** (0.137)				-1.172*** (0.378)		
Democracy (5 years)		0.144*** (0.022)				0.532*** (0.075)				0.223 (0.150)		
Log GDP per capita (5 years)		0.499*** (0.015)				1.495*** (0.051)				-0.928*** (0.104)		
Constant	1.815*** (0.045)				-2.237*** (0.133)				-11.896*** (0.256)			
Observations	6792	1323	6876	1423	7152	1407						
R <sup>2</sup>	0.876	0.534	0.627	0.469	0.065	0.062						
Numbers of countries	134	134	159	159	160	159						
Country FE	Y	Y	Y	Y	Y	Y						
Time FE	Y	Y	Y	Y	Y	Y						

## 7. Lessons for China?

The cross-country evidence on the relationships between consumption, institutions, and economic growth presented above yield two implications for China's growth prospects. First, reforms toward more institutional inclusiveness may be necessary for sustaining growth and improving production efficiency in China. In the absence of contested elections as a primary mechanism for regulating political participation and policy making, however, such reforms require top-down policy adjustments to reduce the barriers to entry, level the playing fields, and clear various kinds of structural distortions. Second, the reforms probably involve a more progressive role of government in income redistribution, welfare provision, and public goods production that will eventually contribute to larger labor and consumption shares in the total GDP. This may lead to a switch in the model of economic growth toward one relying more on the service sector and an expanded domestic market, as opposed to the previous growth model, which is mainly driven by investments and exports. As a result, the growth rate tends to decline due to slow-down in capital formation, but innovations and productivity growth will become an increasingly important source of growth.

The recent policy moves in China seem to be consistent with the conjectures. In the opening ceremony of the Fifth Asia-Pacific Economic Cooperation (APEC) Human Resources Development Ministerial Meeting in 2010, president Hu Jintao elaborated on the concept of 'inclusive growth', a term initially put forward by the Asian Development Bank in 2007. He proposed four dimensions as main areas of government policies to be focused on: the development of human resources, increase in the employment rate, improvement of labor skills, and the enhancement of the social security system. Under Hu Jintao's administration a range of redistributive policies, such as the New Rural Cooperative Medical Service and Minimum Livelihood Guarantee, was implemented in an attempt to alleviate poverty and enhance the income-earning capability of poor households. Recently under Xi Jinping's administration, a new wave of policies are launched to facilitate 'targeted measures in poverty alleviation', which put emphasis on the concord role of local governments in implementing the new policy agendas such that ordinary people can 'can really feel the progress.' Coupling with these new initiatives, in the recent years the growth rate of household income has exceeded the GDP growth and consumption has accounted for 51 percent of the total GDP on expenditure side as of 2014.

Along with policy reforms to enhance household income and consumption, measures were also taken to foster inclusiveness on the supply side. To give one example, following the 'Three in One' reform for business registration implemented by the State Council in 2013, there has been a surge in the number of new firm registrations. While the traditional state-owned and resource-dependent sectors witnessed significant shrinking, the economic downturns were mediated by an energetic growth in the private sector, which predominantly consists of small and medium size companies, as [Figure 9](#) shows. Moreover, the growth in the private sector occurs not only on the extensive margin, but also on the intensive margin, as manifested by technological upgrading, R&D expenditure, and the number of patents ([Wei, Xie, and Zhang 2016](#)).



**Figure 9.** Coal production and the number of registered firms.

Structural transformation toward more inclusive and sustainable growth is taking place despite the seemingly rigidity in China's political institutions.

## Notes

1. The threshold of the gross national income (GNI) per capita is 12 476 dollars.
2. All curves are obtained through a quadratic fit.

## Disclosure statement

No potential conflict of interest was reported by the author.

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