Democracy, Governance, and Inequality: Evidence from the Russian Regions

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1. Democratization and inequality: post-communist transitions in comparative perspective

A fundamental difference between democratic transitions in states where the old regime featured authoritarian politics and capitalist economic institutions and democratization in the communist world concerns the effect of political change on the distribution of wealth and income. Before democratization, capitalist or feudal societies often are characterized by gross inequality. Much recent research demonstrates that the structural conflict between the propertied and the poor in non-communist authoritarian states affects the likelihood, timing, and outcome of democratization. In highly unequal societies, democratization has a strongly redistributive effect since, given that the median voter’s income is considerably below the mean income level, majority rule brings about taxing and spending policies that tend to reduce inequality. Indeed, recent models of democratization assume that privileged strata in societies characterized by gross income and wealth inequality anticipate this redistributive effect and either resist democratization or, to avoid revolution, accept democracy as a bundle of institutions that will protect their property and avert a violent confiscation of their wealth (Acemoglu and Robinson 2006; Boix 2003). Lindert (2004) has shown that democratization in Europe and the United States brought dramatic increases in spending on public education and social transfers. Baum and Lake (2003) present cross-national evidence that democratic mechanisms for electing and removing policy makers tend to induce them to provide more public goods and services.

Under such conditions, the challenge for democratizers is to provide mechanisms that preserve incentives for productive behavior, such as guarantees of the security of property rights and contracts, while mitigating the sources of social conflict associated with severe inequality in the distribution of opportunity and risk. Where successful,

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1 This paper is part of a larger project examining the effect of political transition among Russia’s subnational regions on economic and social change since 1991. I am grateful for research assistance by Alexander Remington, John Reuter and Dimitry Doohovskoy, for statistical advice from Nealia Khan and Marcus Alexander, for data shared by Daniel Berkowitz, Ekaterina Zhuravskaiia, Rudiger Ahrend, Elina Treyger, and Scott Gehlbach; and for a Senior Fellowship from the Davis Center at Harvard University for the 2007-2008 academic year, which made it possible to assemble much of the data reported here. I am also deeply indebted to Tim Frye, Eddy Malesky, Henry Hale, and Elina Treyger for comments on earlier versions of this paper.
therefore, democratization brings about policies and institutions yielding both higher aggregate income growth than would have been achieved under authoritarian rule and lower income inequality. Some studies find such an effect. For example, on the basis of a large-scale cross-national study, Helliwell (1994) finds that democratization is associated with both higher growth and more equitable distribution. Przeworski et al. (2000), reporting that rises in per capita income tend to stabilize transitional democracies whereas falling incomes pose a risk to the stability of both democracies and dictatorships, observe that the distribution of income also appears to affect the probability of survival of democracies: higher inequality reduces the likelihood of democratic survival, particularly if mean incomes fall at the same time that inequality increases. In turn, they find that per capita growth under democracy tends to be less volatile and less labor-intensive, even though controlling for all other factors, growth rates themselves differ little between the two regime types.

Alesina and Perotti (1993) argue that high inequality reduces the security of property rights and poses a greater threat of political instability, reducing incentives compatible with growth. Muller (1988) finds that young democracies with high inequality have substantially higher rates of breakdown. Friedman (2005) observes of new democracies that: “Historical experience strongly suggests that among these new democracies the ones that succeed in achieving a rising standard of living for the broad majority of their citizens will be those most likely to survive” (p. 325).

The literature drawing from the experience of regime transitions in authoritarian regimes in the non-communist world thus suggests that mature democracies are likely to feature higher growth and lower inequality than dictatorships but that the young democracies may be unable to overcome the dilemma of establishing strong property rights and at the same time meeting the demands for redistribution of wealth and income.

The effect of democratization on the distribution of wealth and income is quite different in postcommunist countries. This is because they began their transitions with relatively low inequality and correspondingly extensive state ownership and control over the economy. Under communist rule, the absence of private property in most means of production,² the deliberate policies of wage compression, the widespread availability of income-support mechanisms, and the importance of collective consumption funds in such social goods and services as housing, healthcare, education, transportation, cultural goods and recreation, both income and consumption differentials were quite narrow compared with democratic capitalist societies at similar development levels. Careful studies of income distribution in the late communist world confirm that, for most of the Soviet and East European countries, inequality was lower than in most capitalist democracies. Table 1 presents estimates by Atkinson and Micklewright (1992, 81) of the Gini indexes for pre-tax income of selected European countries in 1986-87.

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² Note that the existence of de jure or de facto property rights in some assets, such as land parcels and small businesses, tolerated in some communist countries before the transition, meant that the Marxist-Leninist prohibition on the private ownership of productive assets was not absolute.
Table 1: Selected European Country Gini Indexes, mid-1980s

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Gini</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czechoslovakia</td>
<td>1987</td>
<td>19.7</td>
</tr>
<tr>
<td>Hungary</td>
<td>1986</td>
<td>22.1</td>
</tr>
<tr>
<td>Poland</td>
<td>1986</td>
<td>24.2</td>
</tr>
<tr>
<td>USSR</td>
<td>1986</td>
<td>27.6</td>
</tr>
<tr>
<td>Great Britain</td>
<td>1986</td>
<td>26.7</td>
</tr>
</tbody>
</table>

As many authors have noted, the regime change in the Soviet and East European countries beginning in the late 1980s brought a simultaneous dismantling of the political monopoly of the communist party and of the state monopoly in ownership and control of the means of production. As early analyses of the political economy of communism, such as Milovan Djilas’s New Class model, argued, the communist party maintained its power by controlling the distribution of goods and services. Although the ruling elite (variously termed the “new class,” the “nomenklatura,” or by other loosely-defined names) did not have property rights in state assets (political elites could not buy and sell them, or pass them on to their heirs, for example), they enjoyed the benefits of exclusive access to their use. Elites could therefore appropriate privileges to themselves, including the right to determine who would be admitted to the political elite.

Therefore in most countries of the communist world, political democratization was accompanied by the replacement of the communist political economy with capitalism and market relations. Private property was instituted, administrative controls on prices and supplies were mostly relinquished, and fiscal and monetary policy was radically reoriented so as to achieve macroeconomic stability through the policies of market-clearing prices, fiscal austerity, and a stable currency. Many forms of collective consumption were replaced with private consumption as social assets were privatized. To the extent that postcommunist countries pursued a market-oriented reform policy, prices soared and incomes lagged; aggregate output initially declined before recovering; and the distribution of incomes grew markedly more unequal before leveling off. As a result of these factors, aggregate income inequality in all formerly communist countries rose over the 1990s.

Tables 2 and 3 present the World Bank’s World Development Indicators estimates of Gini indexes for income inequality for the most recent years available in selected post-communist and Western European countries. As the tables show, inequality levels in post-communist countries now approximate those of the capitalist West.

Table 2: Post-Communist Gini Indexes

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Gini</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic</td>
<td>1996</td>
<td>25.4</td>
</tr>
<tr>
<td>Slovakia</td>
<td>1996</td>
<td>25.81</td>
</tr>
<tr>
<td>Hungary</td>
<td>2002</td>
<td>26.85</td>
</tr>
<tr>
<td>Poland</td>
<td>2002</td>
<td>34.46</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>2002</td>
<td>39.93</td>
</tr>
</tbody>
</table>
Table 3: West European Gini Indexes

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Gini Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ukraine</td>
<td>2003</td>
<td>28.06</td>
</tr>
<tr>
<td>Georgia</td>
<td>2003</td>
<td>40.44</td>
</tr>
<tr>
<td>Armenia</td>
<td>2003</td>
<td>33.76</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>2001</td>
<td>36.5</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>2003</td>
<td>33.91</td>
</tr>
<tr>
<td>France</td>
<td>1995</td>
<td>32.74</td>
</tr>
<tr>
<td>Germany</td>
<td>2000</td>
<td>28.31</td>
</tr>
<tr>
<td>Italy</td>
<td>2000</td>
<td>36.03</td>
</tr>
<tr>
<td>Great Britain</td>
<td>1999</td>
<td>35.97</td>
</tr>
<tr>
<td>United States</td>
<td>2000</td>
<td>40.81</td>
</tr>
</tbody>
</table>

Source: World Development Indicators.

Although inequality rose throughout the postcommunist world, the range of variation across post-communist countries in the degree of inequality is considerable, indicating that policy and institutional variation has a substantial impact on trends in growth and inequality (eg Hellman 1998). In some post-communist countries, inequality levels rose to levels higher than those of some West European countries. In the case of Russia and other former Soviet states, income inequality has reached United States levels.

This paper examines the effect of the dual political and economic transition on income inequality in the post-communist world more closely, taking Russia’s subnational regions (the subjects of the federation) as the units of observation. Noting that communist countries differed widely in the increase in income differentiation as a consequence of the transition, it seeks to identify the political mechanisms that explain why inequality grew sharply or moderately, and whether inequality declined or not as the early shock of the transition wore off. In particular, the paper asks how democratization affected the policies and institutions that drove variation in inequality.

2. Russia’s regions as units of observation

Russia’s regions are a particularly useful unit of observation for a study of this sort. First of all, they are both numerous and diverse. Russia started its postcommunist history with 89 subnational territorial “subjects of the federation.” These varied widely in many

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3 The concept of subject of the federation was employed by the 1993 Russian constitution in order to recognize the formal equality of all 89 units as constituent territories of the federation. Several of these units had been granted an upgraded status by the Russian parliament in 1991, and in one case (the Chechen-Ingush Republic), one republic-level unit split into two with the consent of the federal parliament in 1992. Thus by the time the new constitution was adopted in December 1993, there were 89 federal subjects, each
respects. Indeed, the disparities in physical and human development of Russia’s regions exceeded those among the republics of the Soviet Union itself or the countries of the communist world. For example, the coefficient of variation for real mean income in 1992 across Russia’s regions was .27, while that of mean income across the Soviet republics in 1988 was .24. By comparison, the coefficient of variation for median household income in the United States in 1999 was .15.\(^4\)

Moreover, Russian regions established quite disparate political regimes following the transition. By now a substantial body of literature has arisen examining the particular political regimes of the Russian regions (examples include Gelman, Ryzhenkov and Brie 2003; Hahn 2001; Melvin 1998; Ruble, Koehn and Popson 2001; McAuley 1997; Mitchneck 2001, 2007; Kirkow 1998; Stoner-Weiss 1997; Stoner-Weiss 2006; Stavrakis, deBardeleben and Black 1997; Matsuzato 2001; Hughes 1997; Soderlund 2006; Dinello 2001; Petro 2004). While much of this literature rests on close case studies and case comparisons, a complementary literature by economists has analyzed the determinants of economic performance cross-regionally (eg Mikhеeva 1999; Zhuravskaya 2000; Berkowitz and Jackson 2006; Sonin 2000; Bradshaw and Trevish 2000; Hanson 2001, 2003; Hanson and Bradshaw 2000; Popov 2001). Many of these studies compare the relative impact of “initial conditions” (such as the level of development of human capital, resource endowments, access to ports and transportation infrastructure, and development of industry) in the transition with policy and institutional changes made by the regional publics and elites at the start of the transition in shaping the long-term economic performance region by region. They thus contribute to a growing body of literature in the

\(^4\) For a given distribution of values, the coefficient of variation is defined as the standard deviation divided by the mean, yielding a dimensionless measure of variation around a central tendency. It is a useful way of comparing ranges of variation for similar types of units in very different settings, such as mean incomes in subnational units in countries at different levels of development.

\(^5\) USSR figure calculated from Alexeev and Gaddy 1993, 31; figure for Russian regions from Table 4, below). US figures calculated from US Census Bureau data.
post-communist field that compares longer-term and deeper sources of political and economic development with more short-term effects associated with the character of the transition in determining long-run patterns of development (eg Pop-Eleches 2007; Ekiert and Hanson 2003; Kitschelt et al. 1999). It has proven more difficult to subject the interaction of political and economic factors to systematic cross-regional comparison, given the paucity of valid and reliable measures. Nonetheless, there have been a number of efforts along these lines. For example, Andrew Konitzer (2005) examined the degree to which voters in gubernatorial elections voted for or against incumbents based on regional economic performance during the incumbent’s tenure in office. Soderlund (2006) investigates the sources of the formal and informal power resources of regional chief executives. Dininio and Orttung (2005) investigate the determinants of variation in the corruption ratings of the regions as a function of political and economic characteristics, and Gehlbach (2006) analyzes variation in the provision of public goods by regional governments to various economic sectors as a function of the ease with which governments can collect taxes from them. These studies show that regimes at the regional level had substantial autonomy with which to respond to the enormous national-level changes in the institutional environment. The challenge is not in the extent of variation in political and institutional change at the regional level; it is in finding valid and reliable indicators of variation in such fundamental political characteristics as the level of democracy or the quality of governance in regional regimes. Below I review some of the indicators that have been devised to measure these attributes.

Given the diversity of initial conditions across Russia’s regions as well as the political arrangements they adopted in response to the breakup of the Soviet Union and collapse of the communist regime, the large number of units available for observation becomes a substantial advantage for comparative research. Comparative studies of the post-communist world can use at most 27 country-level units of observation, of which over half were former components of the Soviet Union. Often the dummy variable for “former Soviet republic” is highly significant in cross-national comparison (eg Pop-Eleches 2007; Bunce 1999, 2003). So are variables such as “length of experience with independent statehood.” By controlling for the effect of belonging to the same country—the Russian Federation—we hold some sources of exogenous variation in political and economic development constant and gain analytic leverage from the variation in starting conditions and regime change across the 89 regions (or, in fact, 77, as note 1 explains). We therefore triple our number of observations for comparative analysis.

To be sure, the use of regional units for analysis carries some costs as well. Some measures are unavailable or are of uncertain validity. As much as possible, multiple measures of like concepts have been gathered and compared in order to minimize measurement error. This problem is most severe in the case of our measures of democratization and governance, where “objective” measures such as the competitiveness of gubernatorial and legislative elections and the level of party saturation tend to reflect idiosyncrasies of a given environment in a given period and are relatively uninformative. As I argue below, it is therefore preferable instead to employ expert assessments. Fortunately, the level of political development of the regions has been assessed by a number of different teams of experts, allowing for some cross-validation of
the indicators. Another difficulty arises with the need to adjust regional-level income data for variation in inflation and cost-of-living. Such variation is enormous. For instance, the ratio of the nominal price of a basket of subsistence goods in 2000 to the Russia-wide average was 80 : 100 for a poor region such as Ulyanovsk; for a high-cost-of living-region such as Magadan, the price ratio for the same basket was 172 : 100. Where possible, therefore, income data have been adjusted for price differentials across regions. On the other hand, Russian statistical services have gathered an immense quantity of series at the regional level on economic and social phenomena and these, in some cases including baseline data reflecting the situation in the regions as of 1990 or 1991. These allow us to track the impact of starting conditions, together with political changes region by region, on trajectories of development from the early 1990s to the present.

3. Democratization, governance and income inequality

This paper argues that variation in levels of income inequality across Russia’s regions resulted from the interaction of political and economic change. Political change is analyzed according to the effect of democratization on governance, where democracy is defined in terms of individual political rights and meaningful political contestation (Dahl 1971; Przeworski et al. 2000) and governance refers to the provision of public goods and services including secure property rights and a minimum of social protection. The literature lays out two incompatible pathways by which democratization affects governance and inequality. In the first, occurring in an ideal world where all good things go together, democratization improves governance by establishing secure property rights and the rule of law, as well as producing policies responsive to broad public demand: this is a model of democracy as a set of institutions (including competitive parties and fair elections) that hold rulers accountable to the median voter. Applied to the postcommunist setting, political democratization would mitigate the inevitable initial rise in income inequality. Although, for the reasons outlined above, inequality would increase following transition in a post-communist society, better governance would reduce the acuteness of the effect. Secure property and contractual rights, combined with better mechanisms for managing distributive conflicts and a more legitimate policy-making system, would spur economic entrepreneurship and productivity gains through its effect on the incentives facing economic agents. A virtuous cycle would result, speeding the flow of capital and labor from low-productivity sectors to more productive ones, encouraging the formation of small businesses and the creation of new jobs to replace those lost through restructuring. For those facing income losses through unemployment and the lag of wages behind inflation, good governance would similarly imply the adoption of effective redistributive fiscal policy and social support mechanisms. In their study of social welfare in Poland, Keane and Prasad (2002) note that although labor earnings inequality rose rapidly in Poland after the transition, post-tax and transfer incomes showed relatively little growth in inequality. Government policies mitigating the effects of the transition for inequality, they argued, reduced resistance to reform and allowed the government to carry out its radical reform program. Berkowitz and Jackson (2006) offer a related observation in their comparison of Russia and Poland. Poland’s
policies and institutions were conducive to the formation of a large entrepreneurial sector, which moderated income inequality by raising incomes at the lower end of the scale. Russia, by contrast, saw only a very modest expansion of small and medium start-up business, with the result that sectoral income differentiation between high-productivity and low-productivity state enterprises tended to drive high income inequality (Aghion and Commander 1999; Commander, Tolstopiatenko and Yemtsov 1999).

If democratization improves governance, therefore, inequality and poverty would rise but not to high levels, and would tend to decline over time, both across income levels and regions. Such a pathway is suggested by many cross-sectional studies of the relationship between democracy, governance, and economic performance (Alesina and Rodrik 1994; Rodrik 2007; Rodrik and Wacziarg 2005; World Bank 2006).

However, much literature, both reflecting the experience of the post-communist world and more generally the experience of democratic transitions, suggests that democratization weakens governance (Clague, Keefer, Knack and Olson 2003; Keefer 2007; Colton and Holmes 2006: Bäck and Hadenius 2008). Clague, Keefer, Knack and Olson (2003) find that that newly democratic states do a worse job than the average autocracy in protecting property and contract rights, although mature democracies perform better. Keefer (2007) confirms this finding, observing that studies of the effect of democracy on governance, growth, inequality, and the security of property rights need to distinguish between young and old democracies. Younger democracies, he shows, have lower observance of the rule of law, lower bureaucratic quality, lower levels of media freedom, and higher clientelism than older ones. He attributes this to the difficulty political elites have in newly competitive polities to making credible commitments to the voters to deliver broadly beneficial public policies. Instead, he argues, they hold power by ensuring targeted benefits to selected narrow clienteles. Richard Rose and Doh Chull Shin (2001) attribute the poor performance of post-Soviet and other post-authoritarian states to the fact that the mobilization of mass participation preceded the establishment of a modern state, which they understand to mean a state apparatus that is efficient, rational, and honest. Grzymala-Busse (2007) finds that in post-communist democracies lacking effective political contestation, politicians tend to exploit and colonize the state for particularistic purposes. Bäck and Hadenius (2008) suggest a “J-shaped curve” in the relationship between democratization and state capacity, where in its early stages, democratization weakens the former “from above” accountability mechanisms in the state, without establishing effective new institutions for accountability “from below.” Scott Gehlbach (2006) finds evidence to support a model in which the state’s ability to tax firms affects its willingness to supply public goods to them: in the former Soviet states, inherited tax systems that made it easy for the state to rely on taxes from natural resource and heavy manufacturing sectors gave officials an incentive to rely on those taxes for state revenues and in turn to supply them with favorable government policies. Harder-to-tax sectors, in turn, tended to receive little or no benefit from state-provided

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6 But see Rodrik and Wacziarg (2005), who find that democratization does not lower economic growth in the short-term, and does smooth out volatility in growth over the longer run.
services. Both cross-national and Russian-specific literature thus suggests that the capacity of the state to deliver honest and efficient administration, including public goods and services, is compromised by the political conflicts opened through democratization.

In post-communist settings where the social protection, public goods and services provision, and observance of the rule of law suffer as a result of democratization, therefore, we would expect inequality to rise more sharply and remain high for longer than in states where democratization improves governance. Inequality’s increase would result from changes at both ends of the distribution. Continuing inflation would result in a protracted lag of wages behind prices for large segments of the population. The breakdown or absence of social support institutions would mean that the poor, disabled, retired, and unemployed would be left to their own devices. On the other end of the spectrum, the enormous returns to the material and human capital assets that accumulated under the communist system would yield high income gains to their owners, with little redistributive taxation or spending by the government. In short, although incomes at the high end of the distribution would rise rapidly as a response to the new opportunities created by the transition, most members of society would suffer relative losses of income for protracted periods, and those at the bottom would suffer catastrophic welfare losses. Moreover, these engines of inequality would produce a substantial increase in inequality in mean incomes across regions, as those regions where initial conditions favored growth increased output and incomes rapidly while others lagged behind, and redistributive policy by the center lagged behind economic and social change.

Why should we care about the effect of democratization, via governance, on income inequality? And why the emphasis on regional differentiation? One reason has to do with the way in which inequality ultimately affects governance and democracy. For instance, it is at least arguable that sharply rising inequality—in both its structural and regional dimensions—helped fuel the backlash against democratization manifested in the return to authoritarian rule under President Putin, taking the form of the selective campaign against the oligarchs. More generally, a growing body of literature suggests that inequality subverts governance—including in the United States, where inequality has steadily risen since the late 1970s (Glaeser, Scheinkman and Shleifer 2002; Hellman 2004; Jacobs and Skocpol 2005; McCarty, Poole and Rosenthal 2006; Bartels 2008; Hacker and Pierson 2005). Several studies have shown that polarized societies (whether polarization stems from ethnic antagonism or mutual hostility of wealthy and impoverished strata) are less likely to support policies that provide public goods to all (thus reducing the dominance of one group over another), still less redistributive policies that tax the wealth in order to improve the income security of the poor (Easterly and Levine 1997; Alesina, Baqir and Easterly 1999; Easterly 2001; Boix 2003; Acemoglu and Robinson 2006). If good governance can reasonably be defined both in terms of the protection of property rights and the provision of redistributive social assistance, the rapid growth in inequality following the transition might have been expected to compromise the quality of governance in both respects. Poor governance, in turn, would have hurt both growth (by undermining the security of property and contractual rights) and perpetuated inequality through the absence of redistributive taxing and spending.
4. Insecurity in the transition

Studies of governance in Russia’s regions following the transition tend to confirm the impression that democratization weakened governance (Gelman, Ryzhenkov and Brie 2003; Afanas’ev 2000; McAuley 1997). Mikhail Afanas’ev exaggerates only slightly when he observes that the breakdown of the old regime came as a “natural disaster” for regional rulers: they were forced to assume responsibility for maintaining social stability but with fewer levers of power than in the past. The modal response was to assert ownership control over productive assets at the regional level rather than to promote open market competition—“to capitalize their existing administrative rents,” as Afanas’ev puts it (Afanas’ev 2000, 211). Gelman, Ryzhenkov and Brie (2003) observe that Russian regional chief executives (hereafter, governors) faced significant challenges as a result of the economic and political transition of the late 1980s and early 1990s. The imposition of new democratic institutions—notably legislative elections, political party competition, and elective local self-government—left governors insecure. They were called upon to maintain stability in their regions but were caught between an aroused, mobilized electorate, challenges from rivals, and a president in Moscow who demanded loyalty and good performance. In order to preserve stability in the face of an extremely uncertain environment, they needed to continue to provide basic social services. This required forming a series of exchange relations with local industrial and agricultural enterprises, as well as other influential social leaders, including criminal bosses. But enterprise directors also were now autonomous with the end of central planning and central supply. Many were in a position to dictate the terms of their relations with the governors.

Governors responded to the new insecurity and opportunity in various ways, some establishing relatively open and democratic regimes, others recreating forms of autocratic and patrimonial rule. In many regions, struggles for power broke out. Challengers to the sitting governor sought to ally with enterprise leaders, insurgent popular democratic movements, or ambitious second-echelon figures from within the old elite. The outcome reflected the relative balance of resources and opportunities prevailing in a given region. Gelman, Ryzhenkov and Brie outline four generalized outcomes of these struggles. In one, no clear winner emerged. In another, the struggle proceeded within a generally accepted set of institutional rules. In a third, a dominant player tacitly agreed to share control over some sectors with less powerful rivals. In the fourth, the dominant player dictates the terms of the settlement to his rivals. In none did the democratic movement succeed fully in overcoming the power of elites whose power bases lay in the old party-state apparatus and in the enterprises that the Soviet system bequeathed to the regions (McAuley; Kirkow 1998; Gelman, Ryzhenkov and Brie 2003; Mitchneck 2001, 2005; Gel’man 1999). Popular mobilization, new democratically minded leaders and nascent political parties were never strong enough to hold on to power even in those rare regions (such as, improbably, Altai krai) where they gained control of the regional legislative or executive branch. In her study of governance across Russia’s regions in the mid-1990s, Kathryn Stoner-Weiss found that it was the cohesiveness of the political and economic elite that determined whether government was efficient and responsive, not the strength of the democratic movement (Stoner-Weiss 1997).
The transition set in motion a struggle to redistribute gains, risks, costs, and opportunities from the new political and economic institutions. Regional political elites were motivated by the urgency of protecting their positions in the face of sharply increased insecurity. At the same time, new and old elites also sought to acquire control of new sources of wealth and power, for example by claiming title to formerly state assets, or winning political positions opened up by democratization. Second secretaries of the old obkom or chairs of ispolkoms moved up to become governor. Enterprise managers won legal title to controlling packages of shares in their enterprises. Enormous uncertainty existed over the relative importance of the new arenas of political and economic competition. For example, elites had to calculate whether an elected mandate would be preferable to being appointed by President Yeltsin to their position. A telling indication of the common desire by regional chief executives to use presidential authority to secure their hold on power is the fact that Yeltsin’s decree of October 3, 1994, postponing the time when governors would begin being elected rather than appointed, was itself drafted by the Union of Governors, and contained provisions providing them with social benefits such as life insurance and higher salaries, and giving them the right to veto the president’s choice of federal officials in their regions (Kirkow 1998, 54-5).^7^7

The transition brought democratic electoral competition and the liberalization of economic activity on the regions. Both created enormous risks for regional elites. Elite recruitment now depended on some combination of regional elections and central appointments in place of the old nomenklatura system. Economic liberalization and privatization replaced the old state-administered planning and supply system for enterprises. Ministerial control and support broke down, and in many cases ministries turned into or formed quasi-commercial holding companies and “concerns.” New political institutions—parties, legislatures, elections, local self-government—were created but there was substantial uncertainty over how effective they would be in exercising power over the former executive bodies of regional government.

The institutional changes also opened new opportunities for political and economic gain. Political and economic officials claimed rights of control over formerly state assets or

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^7^ Another indication of the uncertainty surrounding political processes was the fact that there were no clear criteria across the regions for determining whom Yeltsin would choose to serve as head of the regional administration in fall 1991 following the August 1991 coup. He named 55 governors (he did not appoint heads of administration in the ethnic republics) in the October-December 1991 period. Of these 21 were from senior positions in the Communist Party or Soviet state organizations (ie at the level of obkom or gorkom secretary in the party or Komsomol, or chairman or deputy chairman of the executive committee of the regional, city or district soviet. The regions of the 40% who were “insider” appointments did not differ from the other 60% in any observable way—not in the economic or social development of the region, the state of political mobilization, physical infra-structure, or any other measurable attribute. Yeltsin’s decisions were evidently based entirely on judgments about the political competence and loyalty of the individuals concerned. Little wonder incumbents were insecure.
created money-making “small enterprises,” cooperatives, or private businesses operating under the auspices of state enterprises. The state enterprises absorbed the risks and losses, demanding credits from the state banks to stay afloat. Another opportunity for collecting rents was through charging registration fees to businesses; often such fees went into off-budget funds that were not subject to monitoring or control by the legislative assembly. Offering tax exemptions to businesses was another way to create opportunities for sharing rents and illicit income. Regional officials could direct subsidies and policy benefits to favored enterprises and sectors in return for benefits such as assured tax payments, maintenance of social services, provision of infra-structure, or illicit kickbacks to political officials (Melvin 1998).

Many regional officials formed government enterprises that owned or controlled local enterprises and provided streams of revenue to local government and individual officials. Tatarstan’s government created an “Investment-Financial Corporation” in February 1995. Its aim was to attract foreign investment into the region by offering regional government-backed shares in regional enterprises and banks (Slider 1997). In Primorsk, the governor created a joint-stock company (PAKT) that became a conglomerate of several profitable regional enterprises, including defense plants, fishing companies, firms in chemicals and electronics. PAKT acquired a controlling package of shares in the firms at half-price with credits from a local bank and criminal syndicates (the latter also supplied security services). Eventually PAKT came to control all privatization in the region (Kirkow 1998, 114-140). In Samara the regional government organized barter trade with other regions, buying production from local enterprises in return for arranging for the supply of necessary inputs. It enforced its control over enterprises by providing tax exemptions, land to workers so that they could grow enough food to feed themselves, and consumer goods, but also by threatening to cut off the supply of raw materials, electric power, or other necessities if the enterprises resisted the authorities (Woodruff 1999, 70-72).

Similar conglomerates of factories and financial intermediaries formed in Udmurtia, Kemerovo, Murmansk, Saratov, Vladimir and other cities as well (Slider 1997, p. 112). These moves were defensive, in the sense that they helped avert the collapse of the regional economies, but they were also predatory, in that they gave regional officials enormous opportunities to profiteer and expand patronage networks.

Examples of the types of rent-distribution patterns between public officials and enterprises that Hellman, Jones, and Kaufmann laid out—capture, in which government officials supply otherwise under-provided public goods to strong enterprises in return for kickbacks; collusion, in which the rents from monopoly control are shared between public officials and enterprise directors, and predation, where public officials use their coercive powers to extort rents and bribes from enterprises—can be found across the regions (Hellman, Jones, and Kaufmann 2000). Case studies such as those of Mitchneck (2001, 2005, 2007), borrowing the concept of urban regime used in the United States (eg Stone 1989), and in Gelman, Ryzhenkov and Brie (2003) offer fine-grained analyses of the balance of advantage across economic and political elites in particular regions and of the degree to which their relations were beneficial or harmful for regional governance. For example, Mitchneck (2001) contrasts the “preservation regime” in Yaroslavl’, where elites cooperated for the purpose of maintaining regional economic stability, with the
“financier” regime in Udmurtia, where the elites competed with one another to broker deals for foreign and domestic investors, from which they themselves frequently benefited personally. The regional case studies suggest that there is no one universal pattern, although Kathryn Stoner-Weiss’s research suggests that collusion (rent-sharing) as a defensive strategy against efforts by the central government to extract resources may have been the modal pattern in the 1990s (Stoner-Weiss 2006). Regional variation in such factors as the dispersion vs. concentration of industrial production, mobility of labor and capital, and level of social development varied across regions, giving rise to different types of regimes. Cross-regional diversity in these factors helps us to explain differences in the effects of democratization on governance.

Much of the political economy literature suggests that in settings where elites collude in rent-seeking (or there is either high predation or high capture), incentives for productive behavior by economic agents are weaker. The poorer institutional environment would yield lower rates of income and output growth than in environments where elites are credibly restrained from predation and rent-extraction. In North and Weingast’s classic analysis of the Glorious Revolution, credible self-restraint on the part of the Crown enforced through the institution of parliamentary supremacy encouraged capital markets to become more efficient (North and Weingast 1989). A similar logic is reflected in the distinction between the “extractive” and “productive” bundles of institutional arrangements imposed by European colonial rulers on their overseas empires in the 17th through 19th centuries outlined by Acemoglu, Robinson and Johnson (2002). They argue that where new the sets of institutions favored productive activity, the former colonies grew to be more prosperous than their one-time colonial rulers. But where (as in more densely settled and easily plundered areas) colonial institutions promoted the rule of law, industrialization enabled the former colonies to take advantage of economic development and foreign trade and to grow prosperous. Similarly, Russian regional elites could respond to the revolutionary changes occurring in the polity and economy by extending regional political control over the economy to reward clienteles and maintain stability, or they could establish institutional arrangements favorable to productivity, investment, and entrepreneurship. Or they could combine elements of each strategy. However, if, as Acemoglu, Robinson, and Johnson suggest, there is a “co-evolution” between bundles of economic and political institutions, we would imagine that, over the long haul, the development of democracy would be associated with the consolidation of institutions favorable to investment, productivity and growth.

Under some circumstances, however, collusion in rent-extraction by post-transition elites might be consistent with high rates of economic growth. If the elites take advantage of the new institutional environment of a post-communist state and capture control over productive assets for themselves, they might well use them to increase their own incomes, yielding rapid aggregate growth the benefits of which are concentrated in a narrow elite. The institutional advantages of secure property rights might be restricted to those holding post-transition monopolies over property, and not broadly shared. Over the long run, we would expect the ruling elite’s rent-extraction strategy to yield sub-optimal growth rates. But in the short term, over a time span measured in years and decades rather than centuries, elites might well be in a position to take advantage of previously
unrealized opportunities to capture the gains from accumulated human and physical capital. An institutional environment unfavorable to asset mobility and to open competition might well yield high returns for a narrow elite. Such an environment would be likely to see high levels of inequality and rapid rates of economic growth. Political and legal institutions would protect the gains of those already favored to benefit from the transition. We might well observe a positive correlation between a measure of democracy and mean income. But median income might not be well correlated with democracy, although income inequality and democracy would be positively correlated. We might observe such a pattern if our indicators of democracy capture those aspects of democracy that favor the participatory dimension of democracy (electoral participation, rights of association, media freedom) over the dimensions that facilitate accountability to the median voter (efficiency of aggregative institutions, effectiveness of opposition challenges to ruling elite, programmatic competition). Democracy would work not to favor the interests of the median income-earner but to reward those who contribute the most to growth. If the incomes of those below the median are not falling (and poverty is declining), the gap between the median and mean incomes might widen for some time, but there would not be a growing middle class. Instead of a majoritarian democracy, we would be dealing with democracy of an oligarchic cast.

Applied to Russia, such a model would lead us to expect that in regions well endowed in marketable productive resources, both human and material, democratization might have produced institutions favorable to growth (and a decline in poverty) after the initial shock—but not necessarily to a reduction in inequality. In such a region, if effective aggregative mechanisms such as stable, viable, cohesive political parties are lacking, the rulers would be punished or rewarded according to their ability to serve the strata best positioned to take advantage of the market economy. By the same token, regions with a limited legacy of productive assets should see governance arrangements fostering predatory, extractive, non-accountable government. In such regions, although inequality might remain low, economic growth would be modest as well, while poverty would remain high. Note that if this argument is correct, differences across regions in mean incomes would grow: rich regions would grow both richer and less equal, while poor regions would remain poor and egalitarian in their income distributions.

Is it meaningful to speak of democracy in this case? At least some features of any meaningful form of democracy are likely to be beneficial to a new ruling elite in a post-transition environment because they undermine the political bases of the old ruling elite. For example, the new rulers might employ democratic institutions to mobilize the populace against the threat of a communist revanche. Media freedom and open elections would undermine the power base of the old elite, entrenched in the institutions of the old regime. The new rulers’ policies would lead to higher growth rates after an initial period of disorganization was overcome. They and their supporters would be eager to capitalize on their accumulated stocks of human and social capital, as well as their access to previously underutilized stocks of physical capital, including raw materials. (The communist regime, remember, deliberately underpriced raw materials and human capital in order to carry out leveling policies across social strata and regions.) But the benefits of the growth would be distributed unequally. An oligarchic democracy would complement
an oligarchic form of capitalism for a time. Eventually, one of two outcomes would be likely. A reform coalition representing the interests of a broad stratum of excluded groups might call for a more open and representative political regime through the end of corruption and rent-extraction by the rulers. Alternatively, a coalition of forces at the center and in the regions representing have-not regions and resentful bureaucratic groups might call for a renationalization and recentralization of power, aiming at a redistribution of control of existing productive assets. The point is that at least some aspects of procedural democracy are entirely consistent with a model of oligarchic democracy, where effective mechanisms for aggregating mass preferences and enforcing electoral accountability are weaker than institutions guaranteeing rights of political participation.

These observations leave us with two rival sets of expectations about the effect of democratization on income inequality. In a majoritarian democratic model, more democratic regions should produce better governance than less democratic regions, as reflected in higher rates of income growth, declining poverty, better conditions for entrepreneurship, and a more equitable distribution of access to wealth and income after the initial shock. The alternative hypothesis—associated with the oligarchic democracy model—would be that in more democratic regimes, governance favors income growth but concentrates its benefits in a relatively narrow segment of society. Inequality, therefore, would grow as mean incomes grow. According to the oligarchic democracy model, at the end of the period under observation—from the early 1990s to the present—those regions with the highest incomes should therefore be the most democratic but also the most unequal. Finally, recognizing that democratization is itself partly endogenous to economic development, the oligarchic democracy model should reflect the different relationship between democracy, income, and inequality in regions at different levels of social development before and after the transition.

5. Initial conditions and trends over time: descriptive statistics

Much of the difference in economic performance and income differentiation across Russia’s regions in the post-transition period can be accounted for by differences in their starting conditions. Both human and material resources were distributed unevenly across the 89 territorial subjects. However, due to the Soviet regime’s policies of promoting universal education, health care, media access and other services, the regions differed much more in some respects than others. Table 4 provides a picture of these baseline differences, listed in rising order of disparity across regions.

The reported indicators are:

a. income concentration (share of income to top quintile), 1995
b. the size of the pool of educated specialists relative to the population (specifically, the number of persons with higher or specialized secondary degrees per 1000 persons as of 1989)
c. share of children enrolled in pre-school educational institutions, 1990
d. urbanization rate, 1990
e. real income, September 1992
f. nominal income, 1990

g. share of regional production represented by manufacturing, 1994

h. total one-time print run of newspapers, copies per 1000 population (1990) (excluding Moscow)

i. poverty rate, 1994

j. density of transportation and communications infrastructure, 1990

k. Effective number of industrial enterprises, normalized to log population, by employment, as of 1990

Also, for comparison’s sake, I report adult literacy rates for the 55 regions of the RSFSR in 1926 that correspond to contemporary Russia’s territorial subjects, based on the 1926 census figures. Below I return to this measure.

For each measure, Table 4 reports the (unweighted) mean and median values as of 1989-1991. It also lists the coefficient of variation (see footnote 4).

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8 The “effective number of enterprises” measure was constructed from data kindly provided by Scott Gehlbach from a dataset compiled by J. David Brown and John S. Earle from the Goskomstat registry of industrial enterprises. The measure uses the Herfindahl-Hirschmann index of enterprises (the sum of squared shares of enterprises, in this case weighted by output), divided by the log of population for the region. The index covers manufacturing, mining, electricity, and industrial services. Agricultural and construction enterprises are not included in the industrial registry. The measure is a rough indication of the degree to which industrial employment was dispersed or concentrated in each region at the time of the transition.
Table 4: Cross-regional differences in initial conditions

<table>
<thead>
<tr>
<th></th>
<th>mean</th>
<th>median</th>
<th>cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income share of top quintile, 1995</td>
<td>40.16</td>
<td>38.7</td>
<td>0.11</td>
</tr>
<tr>
<td>Pool of educated specialists, 1989 (per 1K)</td>
<td>385.32</td>
<td>373.5</td>
<td>0.12</td>
</tr>
<tr>
<td>Preschool coverage, 1990⁹</td>
<td>66.36</td>
<td>65.5</td>
<td>0.17</td>
</tr>
<tr>
<td>Urbanization, 1990</td>
<td>0.69</td>
<td>0.7</td>
<td>0.19</td>
</tr>
<tr>
<td>Total one-time print run of newspapers, 1990¹⁰</td>
<td>328.2</td>
<td>310.5</td>
<td>0.25</td>
</tr>
<tr>
<td>Real income, December 1992 (rubles/ month)¹¹</td>
<td>387.22</td>
<td>352</td>
<td>0.27</td>
</tr>
<tr>
<td>Nominal mean income, 1990 (rubles/ month)</td>
<td>220</td>
<td>198</td>
<td>0.31</td>
</tr>
<tr>
<td>Literacy rate, 1926 (55 regions)¹²</td>
<td>51.8</td>
<td>50.7</td>
<td>0.31</td>
</tr>
<tr>
<td>Share of output in manufacturing branches, 1994</td>
<td>0.36</td>
<td>0.36</td>
<td>0.45</td>
</tr>
<tr>
<td>Poverty rate, 1994</td>
<td>26.43</td>
<td>24</td>
<td>0.52</td>
</tr>
<tr>
<td>Residential telephone lines per 100 persons, 1990</td>
<td>8.17</td>
<td>7.8</td>
<td>0.54</td>
</tr>
<tr>
<td>Effective no. of enterprises by output, 1990</td>
<td>3.78</td>
<td>3.42</td>
<td>0.67</td>
</tr>
<tr>
<td>Railroad density, 1990¹³</td>
<td>167.54</td>
<td>143</td>
<td>0.69</td>
</tr>
<tr>
<td>Effective number of enterprises by employment, 1990</td>
<td>4.15</td>
<td>3.74</td>
<td>0.69</td>
</tr>
<tr>
<td>Paved road density, 1990¹⁴</td>
<td>88.81</td>
<td>95</td>
<td>0.75</td>
</tr>
</tbody>
</table>

As is apparent, in indicators of human capital, particularly urbanization and depth of the pool of educated specialists, Russian regions varied relatively little at the point of transition. But in physical development and economic well-being, particularly the number of industrial enterprises, roads, and telephones, they differed widely.

It is interesting to note that the divergence across regions in literacy rates in 1926 was approximately the same as the divergence in (logged) nominal mean income 1990.

How did the transition affect the regions? Figures 1-8 present the trends in the form of box and whisker plots. The plots show the cross-regional median value, the 25th and 75th percentile values, and the outliers for all 77 regions at each indicated point in time (the regions are not weighted by population). Series for output per capita, life expectancy,

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⁹ Preschool coverage = % of children of pre-school age enrolled in pre-school educational institutions

¹⁰ Copies per 1000 population, 1990, excluding Moscow


¹² Literacy rate, 1926 = Reported rate of literacy for all persons aged 9 and above, per 1926 Soviet census, for the 55 regions that correspond to 1993 federal subjects. Source: 1926 Soviet census, as reported in Tsentral'noe upravlenie narodno-khoziaistvennogo ucheta Gosplana SSSR: Vsesoiuznaia perepis' naselenia 1939g.: Kratkie itogi. Vyp 1. Chislennost' naseleniia SSSR po polu, vozrastu, gramotnosti, obrazovaniyu i natsional'nosti (Moscow: Izdanie Gosplanizdata, 1940)

¹³ Railroad density = km of track per 10K square meters of territory

¹⁴ Road density = km of paved road per 1K square meters of territory
unemployment, inequality, poverty, and crime are presented. Finally, figure 9 plots mean income in 2005 (adjusted for inflation) against mean income in 1992 (also price-adjusted). The positive and clearly linear trend suggests that over time, there were positive returns to accumulated human capital. As a result, regional differences grew.

Data limitations prevent reporting of other series from the full period. The Russian statistical service does not report Gini indexes before 2002, for example. However, as Figure 10 shows, the median region’s Gini index has continued to rise in the 2000s under President Putin.

In some respects, the rising average well-being of the population has spread throughout the regions. Figures 11, 12 and 13 present trends for ownership of automobiles, fixed telephones, and cell phones, showing that the median region had substantially higher averages in all three. On the other hand, as Figures 14 and 15 show, small enterprise development has been largely flat since the mid-1990s, with little change in the number of enterprises or their share of the workforce for the great majority of regions.

6. Explaining trends in social and economic development

Over the 1990s, the differences in regional incomes widened. Table 5 shows the sharp rise in the coefficient of variation for real income in the 1990s, together with a narrowing of the gap in the 2000s. Relatively well-off regions became even better-off.

Table 5: Inflation-adjusted per capita income

<table>
<thead>
<tr>
<th></th>
<th>mean</th>
<th>median</th>
<th>cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>real income, 1992</td>
<td>387.22</td>
<td>352</td>
<td>0.27</td>
</tr>
<tr>
<td>real income, 1993</td>
<td>412.03</td>
<td>384</td>
<td>0.29</td>
</tr>
<tr>
<td>Price-adjusted income, 2000</td>
<td>1813.45</td>
<td>1709.2</td>
<td>0.40</td>
</tr>
<tr>
<td>Price-adjusted income, 2005</td>
<td>6425.56</td>
<td>5977.57</td>
<td>0.31</td>
</tr>
</tbody>
</table>

Our question is: how did the political and economic changes launched by the transition interact with the inheritance each region received from the Soviet regime to shape the

---

growth and distribution of incomes? First, consider the effect of accumulated human capital on income and output growth. A simple regression of real income in 2005 against real income in 1992, controlling for the pool of educated specialists as of 1989, coverage of children in preschool institutions in 1990, urbanization in 1990, and natural resource endowment, accounts for 80% of the variance, suggesting that the human and physical capital with which a region began the transition had considerable impact on its income level 15 years later. Figure 16 shows the predicted values of this model (Figure 16 about here).\footnote{A simple regression of 2005 income on 1992 income (as plotted in Figure 9) yields an $r^2$ of .27; adding controls for depth of specialist pool, preschool coverage, urbanization, natural resource endowment, and dummies for particularly rich regions thus triples the variance explained.}

Similarly, Figure 17 plots the predicted value of (logged) gross regional product per capita in 2005 against GRP per capita for 1995, again controlling for human capital stocks and fuel endowment at the point of transition. Almost 90% of the variance is explained. These results suggest that growth of both income and output is closely related to the accumulations of exploitable human and physical resources with which the regions began the post-Soviet period. (Figure 17 about here).

A similar inertial tendency is observed for inequality, although it is less marked. Figure 18 shows the predicted values of a regression of income concentration in 2006 against income concentration in 1995, simply controlling for Moscow, St. Petersburg and Tiumen. The relationship is very strong. (Note that for reasons of data availability, many of the models estimated in this paper use income concentration in the richest quintile as the base measure of inequality rather than the Gini index. However, these two measures are extremely closely correlated (for example, the pairwise correlation between the Gini index and the share of income received by the top quintile in 2005 is .998). Therefore they are equivalent measures of the same underlying concept. (Figure 18 about here).

Our question, however, concerns the effect that governance has on economic and social development. After accounting for the starting conditions, did differences in the political regimes in the regions make any difference? Here we must first confront the tricky problem of measuring democracy and governance, and then separate out the effect that economic and social development has as an impetus for democratization.

7. Measuring democracy and governance

My conjecture about the effect of oligarchic democracy on income growth and distribution suggests that under conditions where aggregative institutions in society are inefficient, democratization weakens governance, where democratization is understood as adherence to the principles of free and open political participation and effective contestation but not necessarily effective accountability to the majority, and governance
is understood as government provision of security of property rights, universal public goods and services, and minimal social protection.

Valid and reliable measures of these two concepts are no easier to come by in studying Russia’s regions than they are for cross-national comparison, where there has been passionate debate over concept validity and measurement.¹⁷ Some measure of subjectivity is bound to be involved in applying broad, diffuse theoretical concepts to diverse real-world cases. In this paper, it is hoped that at least some measurement error is eliminated as a result of the fact that the same teams of experts are evaluating regions of the same country. We also have objective measures of some aspects of democracy and governance that are less subject to coding bias.

Analysts have devised a number of measures of the political characteristics of the regions in the 1990s and 2000s. Most of the ratings are based on expert assessments. Some, however, are derived from actual behavior, such as voting for reformist candidates in the early 1990s or progress of privatization. I will distinguish between measures of regional behavior, such as voting orientation, from assessments of the degree to which the government was transparent, accountable, and rule-governed. In this paper, I will rely on one measure in particular, called demscore. It was constructed as an additive index of a series of ratings on eight particular aspects of the political regimes in the regions as of the 2000-2004 period. The original ratings were drawn up by a group of experts at the Moscow Carnegie Center under the direction of Nikolai Petrov and Alexei Titkov.¹⁸ The data are available at: http://atlas.socpol.ru/indexes/index_democr.shtml

¹⁷ See, for example, Kurtz and Schrank (2007) and Kaufmann and Kraay (2008).
¹⁸ Each region was rated from 1 to 5 on each of the following items for the 2000-2004 period:

1. regional political structure (balance of power, electoral vs appointment methods for filling offices, the independence of the judiciary and law-enforcement, limits or violations of civil rights);
2. openness or closedness of political life (transparency, inclusion in national processes);
3. degree to which elections are free and fair; how competitive and honest they are; how much the authorities resort to administrative pressures and political interference; limits on rights of participation in elections;
4. political pluralism—the presence of stable parties, factions, and legislative assemblies, coalitions in elections;
5. the independence of the media;
6. civil society (non-governmental organizations, referenda, forms of unsanctioned public activity, eg rallies, demonstrations, strikes);
7. elites: quality, reproduction, turnover, eg via elections; stability of procedures; diversity of elites, effectiveness of methods of coordinating their interests;
Other measures might be used, but after extensive analysis I have found that none of them adds any analytical power to models either explaining variation across regional regimes or in measuring the weight of regime characteristics on economic and social outcomes.

To measure governance, I use the following indicators:

1. Enrollment of children of pre-school age in educational institutions as of 1995, 2000, and 2005 (with the 1990 figure as baseline)
   \textit{ps95, ps00, ps05}
2. Tax collections, per capita, 2000-2003. (Receipt of taxes, fees, and other mandatory payments to the budget system of the RF by subject (as of end of year; millions of rubles). From Rosstat, Finansy Rossii 2004 data set.
   \textit{tax2000pc, tax2001pc, tax2002pc, tax2003pc}
3. Spending on preschool and general education and on social assistance, as a share of the regional budget, 2004 (Source: the “Budget system of the Russian Federation” project of the University Information System ROSSIIA) \textit{www.budgetrf.ru pspercent04, gepercent04, sapercent04}

A number of other indicators were examined, among them the risk ratings from Ekspert.ru; corruption ratings from the Transparency International-INDEM joint project conducted in 2002 (\textit{www.transparency.org.ru/proj_index.asp}); and the progress of economic liberalization in 2000-2004 (one of the removed components of the aggregate democracy rating). For the most part, however, these either yielded insufficient variability or the correlations with other variables of interest suggested considerable measurement error. (See Appendix A for a listing of alternative ratings available in the literature.)

8. Democracy and inequality

The individual component scores are available for the 2000-2004 period. The Institute also published summary scores for the 1991-01 period and 1999-2003. Because the individual scores were available for 2000-2004, I used those in constructing \textit{demscore}.

In calculating \textit{demscore}, note that I omitted two of the components of the Institute’s ratings, those pertaining to absence of corruption and to the extent of economic liberalization. My reasoning was that these may reflect the quality of performance and character of the policies of the regional regime, rather than in level of political democracy. The Cronbach’s alpha for the eight chosen indicators is .938. Each is correlated with the other items at levels of at least .70. The correlation between \textit{demscore} and a principal factor derived from a factor analysis of the eight measures is .9985.
Figure 19 shows that democracy (measured by a rating of democratic development by region in the 1990s) is positively correlated with inequality. However, the effect of democracy quickly disappears in more reasonable specifications. When variables for income in 2005 and for inequality in 1995 are included, the democracy variable loses its statistical significance. Table 6 presents 3 regression models. Inequality, defined as the share of income received by the top quintile as of 2005, was regressed on democracy and a set of control variables.

Table 6. Predicting income concentration in Russian regions, 2005

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
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<tbody>
<tr>
<td>OLS</td>
<td>OLS</td>
<td>OLS</td>
</tr>
<tr>
<td>Dependent variable: share of income received by top quintile, 2005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Democracy rating, 1991-2001</td>
<td>.24 (.054)*</td>
<td>-.025 (.033)</td>
</tr>
<tr>
<td>Mean income, 2005 (price-adjusted)</td>
<td>.001 (.000)**</td>
<td>.002 (.000)**</td>
</tr>
<tr>
<td>Share of income received by top quintile, 1995</td>
<td>.140 (.044)**</td>
<td>.071 (.032)*</td>
</tr>
<tr>
<td>Poverty rate, 2005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-school coverage, 1990</td>
<td></td>
<td>-.039 (.019)*</td>
</tr>
<tr>
<td>N</td>
<td>77</td>
<td>77</td>
</tr>
<tr>
<td>$r^2$</td>
<td>0.578</td>
<td>0.807</td>
</tr>
</tbody>
</table>

***p < .001 **p < .01 *p < .10

Note: Standard errors in parentheses. Coefficients for constant and regional dummies (Moscow, St. Petersburg, and Tiumen’) not reported.

As the second column in Table 6 indicates, the democracy variable loses its significance in a multi-variate model where price-adjusted mean income, income concentration in 1995, and dummies for Moscow, St. Petersburg and Tiumen’ are added. Model 3 explains 90% of the variance by including variables for poverty and (with a negative coefficient) the Soviet legacy of coverage of pre-school age children in educational institutions. Any effect for democracy on inequality appears to be washed away by the effects of the social and economic environment. Note that the effect of inequality in the 1990s on inequality a decade later also fades in significance when other economic and social variables are included. Adding mean income squared (either for 1993 or 2005 real incomes) to test for a possible curvilinear effect for income, as might be suggested by the Kuznets curve model, adds no explanatory weight to the model: the term itself is insignificant and the model fit is unchanged. (Results not shown.)

Perhaps one reason that democracy exerts little influence on inequality is that it has different effects for high- and low-inequality regions. If the theory of majoritarian democracy holds, democracy would be associated with a reduction of inequality over time for high-inequality regions, and possibly with an increase in inequality in low-inequality regions through its effect on income growth. The oligarchic model would predict the opposite: that democracy would deepen inequality where inequality was greatest and least where it was lowest. Table 7 shows the results of an estimation using an interaction term where democracy is interacted with a dummy variable set to 0 for
regions where the inequality level in 1995 was below the median (top quintile’s share of aggregate income lower than 38.7%) and 1 if the region’s income concentration was higher than the median. As it shows, the interaction term is strongly significant, and positive. Where the interaction term is negated because the dummy equals zero, and therefore regional inequality is lower than the median, democracy tends to reduce inequality ten years later. Where inequality is high in 1995, democracy deepens it.

A similar but weaker effect is seen when democracy is interacted with a dummy variable reflecting the relative real income level of the region as of 1993. Where regional income was higher than the median in 1993, the interaction of income and democracy increases income, although the coefficient does not rise to conventional levels of statistical significance, and has no effect where the interaction term is silent. Democracy deepens inequality, but not only through its effect on incomes.

Table 7: Democracy interacts with inequality to deepen inequality

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<thead>
<tr>
<th>Dependent variable: Income share of top quintile, 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction term (democracy * inequality, 1995)</td>
</tr>
<tr>
<td>Inequality (1995) dummy</td>
</tr>
<tr>
<td>Democracy rating</td>
</tr>
<tr>
<td>Mean income, 2005 (price-adjusted)</td>
</tr>
<tr>
<td>Preschool coverage, 1990</td>
</tr>
<tr>
<td>Poverty rate, 2005</td>
</tr>
<tr>
<td>No of observations</td>
</tr>
<tr>
<td>r²</td>
</tr>
</tbody>
</table>

Note: Standard errors in parentheses. Coefficients for constant and regional dummies (Moscow, St. Petersburg, and Tiumen’) not reported.

***p < .001  **p < .01  *p < .10
Table 8: Democracy interacts with income to increase income
Dependent variable: Mean income of region, 2005

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction term (democracy * income dummy)</td>
<td>34.99 (33.22)</td>
<td></td>
</tr>
<tr>
<td>Income dummy</td>
<td>-11.08 (800.99)</td>
<td></td>
</tr>
<tr>
<td>Democracy rating</td>
<td>19.42 (24.56)</td>
<td></td>
</tr>
<tr>
<td>Preschool coverage, 1990</td>
<td>11.59 (7.41)</td>
<td></td>
</tr>
<tr>
<td>Poverty rate, 2005</td>
<td>-.9562 (11.00)***</td>
<td></td>
</tr>
<tr>
<td>No of observations</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>$r^2$</td>
<td>.888</td>
<td></td>
</tr>
</tbody>
</table>

Note: Standard errors in parentheses. Coefficients for constant and regional dummies (Moscow, St. Petersburg, and Tiumen’) not reported.

***p < .001  **p < .01  *p < .10

How do we interpret these results? Our theoretical argument links democracy to outcomes such as inequality through its effect on governance, with democracy in a setting where aggregative institutions are inefficient likely to make decision-makers more accountable to those who can bring about income growth. We can get some leverage on this question by examining democracy’s effects on tax collections, spending on schooling and social assistance, and actual enrollments of preschool children in educational institutions. Tables 9 and 10 report estimations for the effect of democracy directly and in interaction with other factors on measures of governance. Both suggest that democracy’s effects are conditioned on the environment. Table 9 indicates that democracy by itself is not related to the size of tax collections in the region, but in richer-than-average regions, it tends to increase tax yields. Table 10 indicates that whereas democracy by itself has no impact on the scale of coverage of preschool age children in educational institutions, it decreases coverage in regions where inequality is higher. In neither case is the interaction term significant at standard levels of statistical significance, but their signs are consistent with the model of oligarchic democracy proposed here. That is, democracy in wealthier regions tends to improve economic growth at the expense of the provision of universal public goods and services.

Table 9: Democracy and fiscal institutions
Dependent variable: Tax collection per capita, 2003

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democracy rating</td>
<td>-.041 (.114)</td>
<td>-.552 (.394)</td>
</tr>
<tr>
<td>(Log) GRP per capita 2005</td>
<td>9.04 (1.59)****</td>
<td>10.66 (1.74)****</td>
</tr>
<tr>
<td>Urbanization (2000)</td>
<td>-12.09 (8.15)</td>
<td>-10.05 (7.41)</td>
</tr>
<tr>
<td>Fuel industry concentration, 1994</td>
<td>13.67 (6.64)*</td>
<td>13.64 (6.28)*</td>
</tr>
<tr>
<td>Interaction term (democracy * GRP per capita, 1995, dummy)</td>
<td>.691 (.428)</td>
<td></td>
</tr>
<tr>
<td>GRP per capita, 1995, dummy</td>
<td></td>
<td>-16.85 (10.17)*</td>
</tr>
<tr>
<td>No of observations</td>
<td>77</td>
<td>77</td>
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<tr>
<td>$r^2$</td>
<td>.863</td>
<td>.871</td>
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</tbody>
</table>

***p < .001  **p < .01  *p < .10
Table 10: Democracy and preschool coverage
Dependent variable: Preschool coverage in 2005

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool coverage, 1990</td>
<td>.794 (.073)***</td>
<td>.798 (.071)***</td>
</tr>
<tr>
<td>Democracy rating</td>
<td>.117 (.162)</td>
<td>.262 (.245)</td>
</tr>
<tr>
<td>(Log) GRP per capita, 2005</td>
<td>-.342 (2.81)</td>
<td>-.853 (2.77)</td>
</tr>
<tr>
<td>Tax collections, 2003, per capita</td>
<td>.263 (.076)**</td>
<td>.244 (.085)**</td>
</tr>
<tr>
<td>Poverty rate, 2004</td>
<td>-.311 (.101)**</td>
<td>-.264 (.097)**</td>
</tr>
<tr>
<td>Income share of top quintile, 2005</td>
<td>-.958 (.457)*</td>
<td></td>
</tr>
<tr>
<td>Interaction term (democracy * inequality dummy)</td>
<td></td>
<td>-.346 (.286)</td>
</tr>
<tr>
<td>Inequality dummy (income concentration, 2005)</td>
<td></td>
<td>4.46 (7.05)</td>
</tr>
<tr>
<td>No of observations</td>
<td>77</td>
<td>77</td>
</tr>
<tr>
<td>$r^2$</td>
<td>.807</td>
<td>.807</td>
</tr>
</tbody>
</table>

***p < .001  **p < .01  *p < .10

Note: Robust standard errors in parentheses. Coefficients for constant and regional dummies (Moscow, St. Petersburg, and Tiumen’) not reported.

Democracy is positively related to inequality even when we take into account the concentration or dispersion of resources in the region across branches of the economy and enterprises. Table 11 indicates that a variable reflecting the share of output in the region produced by market-dominating enterprises (defined as enterprises holding at least 35% of the market share for a given product as of 1997) is positively and significantly related to income concentration in 2006, even holding constant levels of income and inequality in the 1990s. The model’s fit improves further when we add our measure of democracy, which is significantly and positively related to income concentration in the 2000s.
So far we have treated democracy as a characteristic of political processes of the regional regimes. It can also be seen as an orientation of mass behavior, as reflected, for example, in the degree to which voting patterns of the regions reflect support for political and economic liberalization. Data on the share of the vote going to candidates and parties representing a break from the communist past have been used in much of the literature to characterize the political profile of the regions (Kolosov et al. 1991; Smirnyagin, ed., 1995; Berkowitz and DeJong 1989). Taking simply one such vote—the share of the regional vote expressing confidence (doverie) in President Yeltsin in the referendum of April 1993 (where voters were asked whether they had confidence in Yeltsin or not, confidence in the government, and whether they wanted to see early elections for Yeltsin and for the parliament)—we can identify the strongest correlates of a high level of support for Yeltsin. Table 12 presents two OLS models and Figure 20 plots the predicted vote share for Yeltsin against the size of the pool of educated specialists in 1989 from the first model. The first model is the simplest and most efficient. The second reports the results of adding variables reflecting mean income and poverty rate. Doing so lowers the overall efficiency of the model; urbanization loses its significance in favor of poverty and income. Meantime the pre-school coverage variable remains strongly significant and the variable reflecting depth of the specialist pool loses only some of its strength. It is as if the voters in regions endowed with high levels of human capital recognized this vote as a choice between a political and economic system that denied them the opportunities of capitalizing on their human and social capital, and one that afforded them new opportunities to prosper, and voted accordingly. Democracy favored those who were best positioned under the Soviet system to take advantage of it.
9. The missing middle class

The rise in income inequality in Russia has two closely related dimensions, structural and regional. As the analysis here has demonstrated, regions with favorable starting conditions at the time of transition were able to raise their income levels, which in turn increased intra-regional income inequality. Regions with the highest mean incomes also have the highest levels of income inequality, a trend which has remained constant since the transition. This in turn has increased differentiation in the mean incomes, and associated living standards, across regions. Table 4 showed that regional income differentiation, as measured by the coefficient of variation, was about twice as high in 2005 as in 1990 although it has declined slightly in the 2000s. It is also about four times the level in the United States, and somewhat higher than that of India but lower than that of China (See Appendix B).

More generally, it is plausible to suppose that the rapid increase in structural and cross-regional income inequality fueled strong pressure for redistributive policies reflected in the Putin-era reversal of the policies of the 1990s which had resulted in high concentrations of wealth; certainly Putin was adept at playing on the public’s disapproval of the oligarchs of the 1990s.

However, structural inequality under Putin has risen. Regions with high inequality at the start of Putin’s time in office continued to manifest high inequality, as Figure 21 shows. (Figure 21 about here)

Structural inequality has deepened as well under President Putin, even as poverty has fallen significantly and median incomes have risen. Goskomstat reported that Russia’s overall Gini index in 2006 stood at 41.0, a slight increase over the 39.8 figure reported for 2002. Similarly, the decile ratio (the ratio of the average income of the richest 90th percentile to the poorest) rose from 14.0 in 2002 to 15.3 in 2006. Figure 22 shows the change in the ways incomes (aggregated at the Russia-wide level) are distributed across...
income brackets since the beginning of the 2000s. Note that there has been a sharp rightward shift. But at neither time is there more than a modest mode in the middle. (Figure 22 about here)

The continuing rise in inequality and absence of a growing middle class is a matter of some concern to Russian leaders. In his address to the State Council on February 8, 2008, President Putin declared that the current level of income differentiation (referring to the 15-fold gap between the highest and lowest income deciles) was “absolutely unacceptable” and should be reduced to more moderate levels; he called for measures that would bring about an expansion of the middle class. Its share, he declared, should reach 60 or even 70 percent by 2020.19

That the political leadership of Russia has identified the rising disparities in incomes as a serious long-term political challenge is evident. What is less evident is the appropriate set of policy and institutional responses that would be needed to mitigate inequality and facilitate an expansion of a middle class. So far, institutional development has tended to favor the concentration of wealth and income, whether under the pluralistic oligarchy of the 1990s or the bureaucratic oligarchy of the 2000s. Evidently only a thorough restructuring of the institutions favoring universal access to public goods and services such as efficient and honest administration, reliable mechanisms of social protection, and security of rights for all, will the conditions be met that would foster the spread of the benefits of growth to wide segments of society.

10. Conclusion

Earlier I identified two hypothetical pathways leading from democratization through governance to growth and inequality. In one, democratization would improve governance. That is, it would make government more responsive to wider segments of society, more inclined to supply universal collective goods and services such as security of person and property, health care, education, and infra-structure, as well as to provide some minimum level of social insurance against the hazards of catastrophic income loss. These public goods and services should foster productive behavior on the part of economic agents, and thus growth, as well as the mitigation of extremes of poverty and inequality. An alternative pathway, which we termed oligarchic democracy, pictured democratization as the pushing out of an old elite, that had suppressed opportunities to capitalize on accumulated stocks of human, social and material capital, and their replacement with a new elite. In this model, the new elite seeks to take advantage of previously underutilized resources, including human capital as well as natural resources and industrial plant, and thus establishes political and economic institutions designed to yield higher incomes. Political institutions such as elections and freedom of media help

19 Quoted from Vladimir Putin’s address to an expanded session of the State Council, February 8, 2008, “On the strategy of development of Russia to 2020”. From <http://president.kremlin.ru/text/appears/2008/02/159528.shtml>
ensure that the old nomenklatura elite is excluded from power. New economic institutions, including privatization and commerce, foster economic growth. But the new elite consolidates its hold on economic and political power, and excludes others from access to them. Minority shareholder rights are insecure, and small entrepreneurs find it difficult to get establish and to flourish. Growth rates are higher than in regions where there was less turnover of elites and less development of democratic and market institutions. But they are not as high as they could be if institutions were impersonal and universalistic. And the benefits of growth are concentrated, such that there is enough growth in incomes to eradicate poverty but not enough to ensure the formation of a middle class. The data presented here are consistent with the second model. In the long term, oligarchic capitalism and oligarchic democracy are likely to yield economic growth rates somewhat lower than those that would be realized under more effective governance. But, particularly when energy rents are readily at hand, they should be enough to maintain the elite in power for the foreseeable future.
References


Philip Hanson (2003). “Federalism with a Russian Face: Regional Inequality, Administrative Capacity and Regional Budgets in Russia,” Chatham House Russia and Eurasia Programme, Royal Institute of International Affairs.


Peter Kirkow, *Russia's Provinces: Authoritarian Transformation versus Local Autonomy?* (New


Grigore Pop-Eleches, "Historical Legacies and Post-Communist Regime Change," *Journal of*


Kathryn Stoner-Weiss, Local Heroes: The Political Economy of Russian Regional Governance.


Appendix A: Alternative ratings of democracy by region

1. Media ratings from Obshchestvennaia ekspertiza, based on regional media law, independent representation on regional media licensing commissions, and circulation and coverage of regional private media. cf www.freepress.ru/arh_e.shtml

2. measures of government transparency from Media Soiuz. Based on assessment of how transparent and accessible decisions of executive branch, legislative branch, arbitrage courts, and general courts are to public through media publications and websites. cf www.strana.ru/print/128316.html

These measures are modestly inter-correlated, suggesting both that they are tapping different dimensions of the political regimes and that experts differed in their assessments. Table 7 gives the correlation matrix. (Table 7 about here)


Appendix B. Cross-regional variation, selected countries

Table B1. China: gross domestic product per capita by province

<table>
<thead>
<tr>
<th>stats</th>
<th>gdppc80</th>
<th>gdppc85</th>
<th>gdppc90</th>
<th>gdppc95</th>
<th>gdppc00</th>
<th>gdppc05</th>
</tr>
</thead>
<tbody>
<tr>
<td>mean</td>
<td>560.77</td>
<td>986.97</td>
<td>1809.37</td>
<td>5333.43</td>
<td>8717.17</td>
<td>16428.77</td>
</tr>
<tr>
<td>median</td>
<td>418.50</td>
<td>808.00</td>
<td>1542.00</td>
<td>3865.50</td>
<td>6359.50</td>
<td>11963.00</td>
</tr>
<tr>
<td>cv</td>
<td>0.91</td>
<td>0.73</td>
<td>0.56</td>
<td>0.68</td>
<td>0.76</td>
<td>0.67</td>
</tr>
</tbody>
</table>

Source: Source: China Regional Economy: A Profile of 17 Years of Reform and Opening-Up (Beijing: Zhongguo tong ji chu ban she, 1996); http://chinadataonline.org.ezp1.harvard.edu/
All China Data Center: China Yearl Provincial Macro-economy statistics

Table B2: United States: Variation across states, selected indicators

<table>
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<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>mean</td>
<td>0.36</td>
<td>0.42</td>
<td>8.95</td>
<td>16442.94</td>
<td>27565.37</td>
<td>31982.47</td>
<td>41346.75</td>
</tr>
<tr>
<td>median</td>
<td>0.35</td>
<td>0.41</td>
<td>8.10</td>
<td>15823.00</td>
<td>24090.00</td>
<td>32125.00</td>
<td>40624.00</td>
</tr>
<tr>
<td>cv</td>
<td>0.08</td>
<td>0.08</td>
<td>0.33</td>
<td>0.15</td>
<td>0.14</td>
<td>0.17</td>
<td>0.15</td>
</tr>
</tbody>
</table>

Source: US Census Bureau

Table B3: India: Variation across states, selected indicators.

<table>
<thead>
<tr>
<th>Income per capita, constant 1993-94 prices (rupees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>mean</td>
</tr>
<tr>
<td>median</td>
</tr>
<tr>
<td>cv</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>mean</td>
<td>49.98</td>
<td>48.29</td>
<td>37.71</td>
<td>34.25</td>
<td>31.80</td>
<td>21</td>
</tr>
<tr>
<td>median</td>
<td>50.86</td>
<td>53.25</td>
<td>39.25</td>
<td>35.15</td>
<td>34.12</td>
<td>20</td>
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<tr>
<td>cv</td>
<td>0.20</td>
<td>0.25</td>
<td>0.35</td>
<td>0.37</td>
<td>0.35</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Economy Survey of Delhi 2001-02, Department of Planning, Govt. of NCT of Delhi.
Table B4: Brazil: Variation across states, selected indicators

<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>mean</td>
<td>189.5</td>
<td>246.7</td>
<td>.34</td>
<td>.29</td>
<td>.57</td>
<td>.55</td>
</tr>
<tr>
<td>median</td>
<td>180.1</td>
<td>211.4</td>
<td>.33</td>
<td>.30</td>
<td>.57</td>
<td>.55</td>
</tr>
<tr>
<td>cv</td>
<td>.48</td>
<td>.46</td>
<td>.44</td>
<td>.46</td>
<td>.06</td>
<td>.06</td>
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</tbody>
</table>

In constant 2000 Reals

Source: Instituto de Pesquisa Economica Aplicada
(Institute for Applied Economic Research, Brazil)
http://ipeadata.gov.br/ipeaweb.dll/ipeadata?Tick=181747718
Figure 1
Estimated GRP per capita [Mikheeva]

Figure 2
Male life expectancy at birth
Figure 3: Unemployment rate
Based on household surveys

Figure 4: Concentration of Income Gains
Percent of income received by top quintile
Figure 5: Declining median
Share of income received by bottom 60%

Figure 6: Poverty rate
Figure 7: Preschool coverage
percent of eligible children enrolled

Figure 8: Crime
Registered crimes per 100,000 population
Figure 9: Real income, 2005, by real income, 1992

Figure 10: Gini index, 2002-2006
Figure 11: Passenger cars per 1000 persons

Figure 12: Telephones per 100 persons
Figure 15: Small enterprises per 1000 population

Figure 16: Predicted incomes, 2005, by per capita monthly incomes, December 1992
Controls are urbanization (1990), number of persons with higher or specialized secondary education per 1000 adults (1989), pre-school coverage (1990), and concentration of output in fuel production (1994), as well as dummies for Moscow, St. Petersburg and Tiumen.

Adjusted $r^2 = .80$

Figure 17: Predicted (logged) GRP per capita, 2005, by (logged) GRP per capita, 1995

Controls are urbanization (1990), number of persons with higher or specialized secondary education per 1000 adults (1989), and pre-school coverage (1990), as well as dummies for Moscow, St. Petersburg and Tiumen.

Adjusted $r^2 = .899$
The plot shows the predicted values from a regression of income concentration in 2006 against income concentration in 1995, with dummies for Moscow, St. Petersburg and Tiumen as dummy variable controls.

Adjusted $r^2 = .57$
Figure 19: Predicted 2005 inequality by democracy rating

\[ r^2 = .578 \]

No controls other than dummies for Moscow, St. Petersburg and Tiumen’.
Controlling for urbanization, specialist pool, and pre-school coverage at point of transition; Moscow, St. Petersburg, and Tiumen’ dummies included.

$r^2 = .68$
Figure 21: Gini index, 2006, against Gini index, 2002, by region
Figure 22: Russia: Distribution of Population by Average Monthly Incomes, 2000 and 2004

Income Bracket (monthly income, rubles)

% of population

Income distribution, 2004
Income distribution, 2000