

The Experience of Rising Inequality in Russia and China during the Transition
by
James K. Galbraith, Ludmila Krytynskaia and Qifei Wang

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Galbraith@mail.utexas.edu, Lkrytyns@Princeton.edu, Qfwang@mail.utexas.edu

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Abstract.

The collapse of the Soviet Union and the acceleration of economic reforms in the People's Republic of China were hallmark events of the 1990s. The Soviet collapse had adverse consequences for many parts of the post-Soviet population -- including sharply rising mortality rates -- even as the country underwent a transition to apparent multiparty democracy. Meanwhile the Chinese experience produced a continuing rise of average living standards, with political change (mainly at the local level) only within the framework of continuing rule by the Chinese Communist Party. Thus the experiences of the two countries are widely viewed as having been polar opposites.

Nevertheless, in both Russia and China, economic inequality rose sharply. In both countries, regional inequalities rose more sharply than inequalities across sectors but within regions. In particular, major urban centers gained dramatically, relative to the hinterlands. In both countries, moreover, there was a considerable reorientation of sectoral advantage, in both cases toward those sectors exercising the largest degrees of monopoly power. In both countries, the relative position of finance improved sharply, while that of agriculture declined. However the decline of agriculture in China was not as precipitous in China as in Russia, and certain sectors, such as education and science, maintained their position in China in a way that was not possible for them in Russia.

1. Introduction

The collapse of the Soviet Union and the acceleration of economic reforms in the People's Republic of China were hallmark events of the 1990s. In important respects, moreover, they are a study in contrasts. Economic liberalization produced chaos, hyperinflation, industrial collapse, and privation in post-Soviet Russia, whereas the Chinese experienced sustained economic growth and continuing, visible improvement in living standards. On the political front, Russia acquired the trappings of parliamentary democracy, with an independent commercial press. Meanwhile China continued under one-party rule guided by the Chinese Communist Party, and an independent media has not been permitted to exist.

The post Soviet economic implosion stemmed from several main sources: decentralization and the physical breakup of the country, a complete collapse in investment (much of it unproductive, to be sure, but a provider of jobs and income nevertheless), and the cataclysmic effect of lower trade barriers on consumers' willingness to continue to purchase home-made goods. Industrial production fell by nearly half. Meanwhile hyper-inflation devalued the savings of the Russian public, leaving many destitute, and both governments and enterprises sharply reduced social services of all kinds. The adverse consequences for many parts of the post-Soviet population included rising mortality rates, especially among older men, attributed in part to the stresses surrounding economic dislocation, in part to material impoverishment, and in part to the decline in the provision of health care in post Soviet Russia.

These misfortunes occurred even as the country underwent political transition. The transition was not smooth: born in the collapse of a coup d'etat, it involved the bloody suppression of parliament in 1993. A riot of independent press in the early 1990s became consolidated, after a fairly short time, under the substantial control of a small number of media oligarches. The transition from Yeltsin to Putin was a stage-managed event, elevating a figure who had no previous political standing. And the country has suffered an ongoing war in Chechnya, with catastrophic effects on the people of that region. Nevertheless, the Russian population today lives under a formal multi-party democracy, with political liberties never before available to it.

Meanwhile China's GDP per capita roughly quadrupled over twenty years of economic reform, and although growth rates were undoubtedly higher in the early and mid 1980s than in the somewhat turbulent 1990s, economic development and transformation were abundantly visible throughout the country. Chinese growth was fueled by rising agricultural productivity in the first phase of reforms, and then by the development of light industry under the rubric of township and village enterprises, as well as heavy investment in housing and urban infrastructure. The effects are apparent everywhere in the country, though less so in the heavy-industrial Northeast (Manchuria) than in the export-oriented South.. Growth was financed largely by internal savings, which amounted to over 35 percent of income in the middle 1990s, and it was also facilitated by a vast expansion of China's external trade, known as the open-door policy, culminating in China's admission to the WTO.

China reacted to the political upheavals of the late 1980s very differently from the Soviet Union. The confrontation at Tienanmen Square in June, 1989 led to intervention by the military and to bloody battles on the streets of Beijing, which were followed by a wave of repression. Since the early 1990s, the repression eased for most of the Chinese population, although open dissent against the system is still met with harsh measures. Formal political change has occurred mainly at the local level, and only within the framework of continuing rule by the Chinese Communist Party.

Thus the experiences of the two countries are widely viewed as having been polar opposites. Certainly many observers in both China and Russia feel this way, and in this author's experience most agree that the Chinese path was the superior one. The Russian experience is cited, repeatedly, by senior Chinese economists as the model to avoid; if there is sentiment in China favoring Russia's model of political openness at the perceived economic cost this author has never heard it expressed. And in Russia, there is envy of Chinese economic success. Even though Russians are generally persuaded that the Soviet system could not – as of 1991 – have been reformed successfully along Chinese economic lines, most believe (and with good reason) that the process of economic transition was catastrophically mismanaged in post Soviet Russia.

This paper takes a new look at the Chinese and Russian economic experiences in the 1990s. Rather than a comparison of the broad macroeconomic aggregates, such as economic growth, inflation, and industrial production, whose contours are well known, we examine here the changing patterns of economic activity in both countries. We lay particular emphasis on measurements of economic inequality, a key concern especially in countries with a history of communism, and a driving force in the social development of any country. We also examine the pattern of relative gains and losses in two dimensions: regions and sectors. That is, we look at the changing spatial distribution of economic activity in both countries, and in the relative prosperity of different branches of activity.

We find that there are, in fact, major similarities between the economic experiences of Russia and China in the 1990s, when looked at in this way. In both countries, inequality rose as economic liberalization proceeded. In both, regional inequalities rose dramatically, creating major new divisions across geographic space. In both countries, certain sectors gained relative position, notably those which were able to exploit new-found market power to create and retain economic rents. Of these, finance, utilities and transport were the most important in China, and finance and energy production (counted as part of industrial production in the official statistics) were dominant in Russia.

The next section describes methods and data, along with a brief overview of related work. Sections three and four describe the economic experiences of Russia and China, respectively. Section five presents brief conclusions.

2. Methods and Data.

Previous work on inequality in both Russia and China relies on sample surveys. These do exist; surveys have been conducted in both countries on a reasonably regular basis. And surveys do show rising economic inequality to have been a signal characteristic of both countries in the time of liberalization. Nothing presented here is novel in that respect.

Nevertheless, the survey approach to the study of inequality suffers from disadvantages. In the Russian case, questions have been raised about discrepancies between survey-based and macroeconomic measures of income and consumption (Sheviakov and Kiruta 2002), who indicate that the rise in inequality captured in survey measures may be overstated. In China, we are able to find broad measures of urban and rural income inequality up through the mid 1990s (reported in Riskin *et al.*, 2001). But such work, however valuable, goes rapidly out of date.

Our approach relies not on surveys, but on the regularly gathered official measures of income by region and sector. In Russia, this information is collected and published by Goskomstat, the state statistical bureau, mainly in annual hard copy publications. Russian data take the form of payroll and employment figures for fourteen major economic sectors, in each of 89 distinct geographic entities (province, city, oblast, krai). There are 1232 province-sector cells in our data set for Russia, for each of eleven years from 1990 through 2000, inclusive.

In China, data at a sufficient level of detail are published annually in the China Statistical Yearbook, and are available in electronic format. For the year 2000 we have data for each of 16 sectors for 30 provinces in China, or 480 sector-province cells. The Chinese data experience some changes in category structure over the years, which affects the continuity of our measures. They data extend back to 1987 on a reasonably consistent annual basis, and it is possible to extend the analysis as far back as 1979 with more highly aggregated information.

Our method is to compute the between-groups component of Theil's T statistic across province-sector cells for both Russia and China. Theil's T is a very simple measure of inequality, relying only on two bits of information about each cell: its weight in total population (or employment), and the ratio of average income within the cell to average income in the country as a whole. The mathematical properties of Theil's T have been explored in detail elsewhere, and we need not repeat that discussion here (Conceicao and Galbraith 2000, Conceicao, Galbraith and Bradford 2001). Theil's T has properties that make it attractive for this type of calculation; in particular it is possible to sum row and column elements so as to arrive at cross-sector and cross-province measures of inequality. It is also possible to look directly at the contribution to overall inequality of each cell, sector or province, and to gauge the change in that contribution from year to year. This provides a very convenient way to visualize the winners and losers in a process of economic change, as we will show.

3. The Case of Russia.

The Russian transition was marked by two years of profound crisis: the industrial collapse and hyper-inflation of 1991 and the financial collapse of 1998. Measures of inequality reveal the impact of these crises, particularly that of 1991. When measured across 1232 province-sector cells, inequality in Russia doubled between 1991 and 1992. After that inequality stabilized, for six years. But 1998 to 1999, inequality rose another 39 percent, and it continued to rise into the year 2000. Table 1 gives the values of this measure.

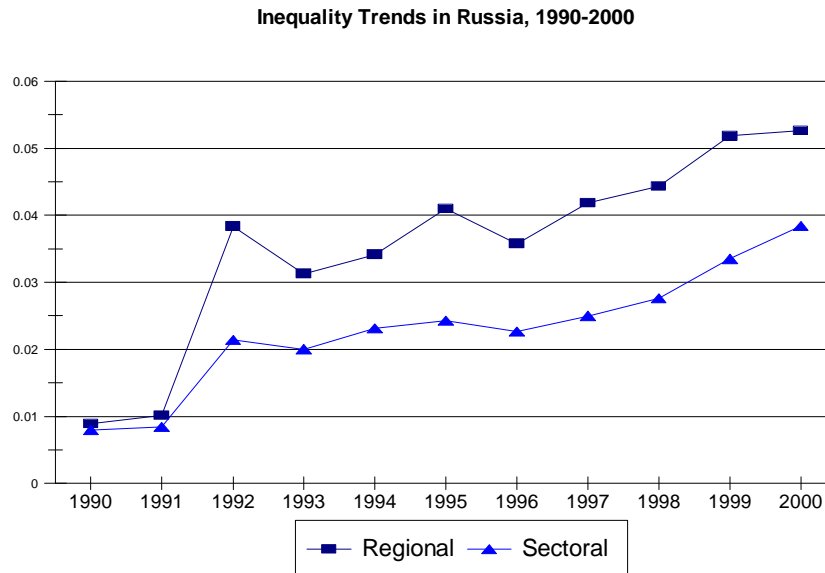
Table 1. A Theil measure of Inequality for Russia, 1990-2001

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
0.031	0.035	0.070	0.059	0.071	0.076	0.068	0.065	0.068	0.095	0.102

Theil's T statistic measured across 1232 province-sector cells in the Russian Federation. Source data: Goskomstat

Figure 1 decomposes this measure of inequality into its two principal dimensions, namely sectoral and geographic, using data reported by Goskomstat at the sector and province levels.

Figure 1. Russian inequality by Region and by Sector, 1990-2001.



As Figure 1 reveals, inequality increased across both dimensions, and especially during the critical transition crisis of 1991-1992. Moreover, inequality across regions increased by considerably larger values than did inequality across sectors. This suggests a strong geographic

element in rising stratification in Russia: choice of place mattered more than choice of occupation or industry. We shall, nevertheless, see shortly that economic fate of places in Russia had a great deal to do with the spatial distribution of economic sectors.

An implication of the finding that geography predominates in rising Russian inequality concerns the welfare implications of rising inequality itself. Because cost-of-living is a regional variable – housing, energy and food costs are place-specific – a changing pattern of relative incomes across Russia was also accompanied to a considerable extent by co-respective changes in the relative cost of living (Sheviakov and Kiruta provide a discussion). For this reason, rising national measures of inequality should be treated with caution, as they will tend to overstate the rise in inequality of place-specific living standards.

This point should not, however, be interpreted as intended to dismiss the importance of rising inequality in the Russian Federation. It points rather to a need to analyze the political and social dimensions of the increase. To the extent that money incomes diverge across places, notwithstanding divergence in costs of living, the relatively impoverished places will lose population to the relatively wealthy. And those who remain in places where money incomes are lower will lose, to some extent, the economic capacity to interact with the rest of their own country. Thus regional disparities tend to promote political regionalism. One aspect of this is the potential for violent schisms, as the experience of the Caucasus demonstrates in Russia.

Figure 2 provides evidence on the particular pattern of place-specific gains and losses in post Soviet Russia. The figure provides a series of stacked bar graphs, one for each year, where each color block within a bar represents the “Theil element” or weighted contribution to overall inequality of each province, oblast, or krai in that year. Regions whose average income is above the national average contribute a positive value to overall inter-provincial inequality; those whose average income is below the national average contribute a negative value.

As the figure makes clear, the rising inter-regional inequalities in Russia occur in two phases. The larger element is a general increase in dispersion in the transition crisis, whose specific character is difficult to make out from the graph. As the 1990s wear on, however, this resolves into a pattern of very rapidly rising relative incomes in just three places, whose color blocks come to dominate the visual field on the right of the figure. These are the city of Moscow, and the provinces of Khanty-Mansy and Tiumen. The latter two are lightly populated West Siberian oil and gas regions, and in this way the figure tells very succinctly the main story of post Soviet distribution in Russia.

Figure 2: Inter-regional contributions to inequality in Russia,

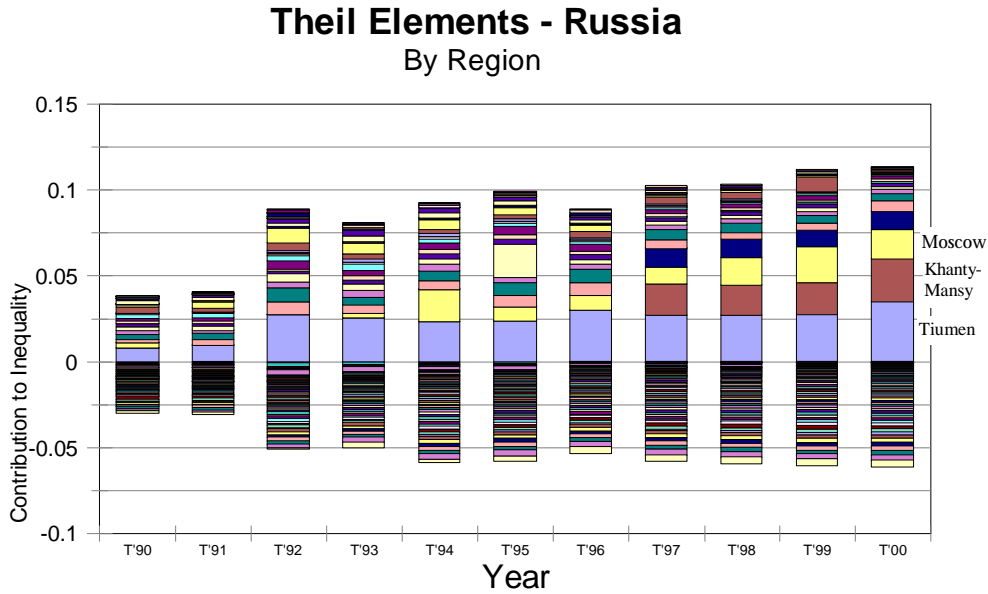
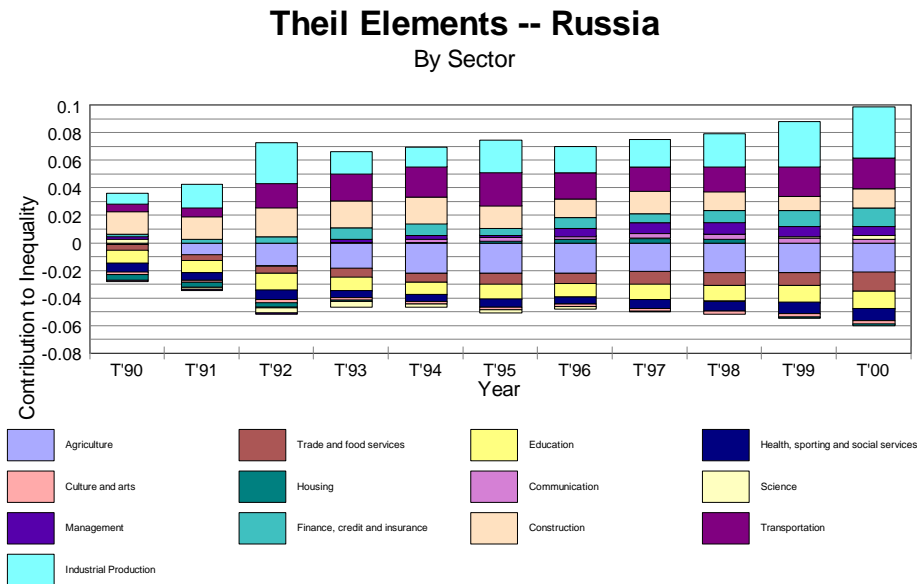


Figure 3 presents a similar picture for the main sectors of the Russian economy (where, unfortunately, energy production is subsumed in the larger sectoral category of industrial production, which it comes by the end of the 1990s to dominate.) Transportation also experiences a rising relative share, while the previously dominant sector of construction experiences a loss of standing. There is a notable increase in the relative share of income in the financial sector, an average earner in Soviet times. And there are major losses, especially in agriculture, but also in science, culture and the arts, and education, health and sports. None of this is, of course, mysterious to any observer of the Russian scene.

Figure 3. Inter-sectoral contributions to inequality in Russia.



Maps provide a useful way to visualize the spatial redistribution of wealth in Russia. In the figures that follow, the regional Theil elements are arrayed in a color scheme. Regions are divided into ten groups, using natural breaks in the data to allocate regions to groups. The highest values, representing high shares of total income, are shown in red, with a shading to yellow for the second and third groups. Intermediate deciles, whose contribution to inequality is slight either because they have low population shares or incomes close to the national average, are shown in green. Blues indicate those regions with below average incomes and significant population shares: they are the centers of relative poverty in modern Russia. The color scheme is geared to the values of inequality in the year 2000; thus the maps are designed to show the evolution of inter-regional inequality in Russia toward their recent values. (For presentation purposes, the Far East is not shown; unfortunately also, due to restrictions in the software, Moscow City is not seen independently on these maps.)

Figure 4 thus presents the spatial pattern of inequalities in European Russia and West Siberia in 1990. Overall inequality was much lower in this period than it later became; hence the map is almost entirely in shades of green. Touches of yellow indicate the higher money incomes in the Far North (costs were higher there too, of course), and light blue shows the lower incomes of the Caucasus regions in the South. But the pattern is not extreme either way.

Figure 4. The Regional Distribution of Income in European Russia and West Siberia, 1990.

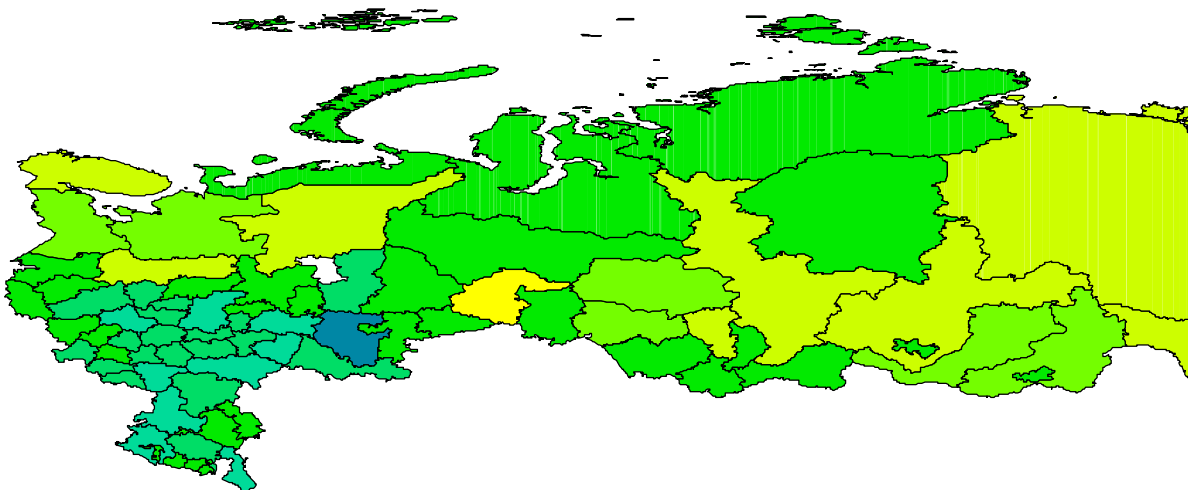
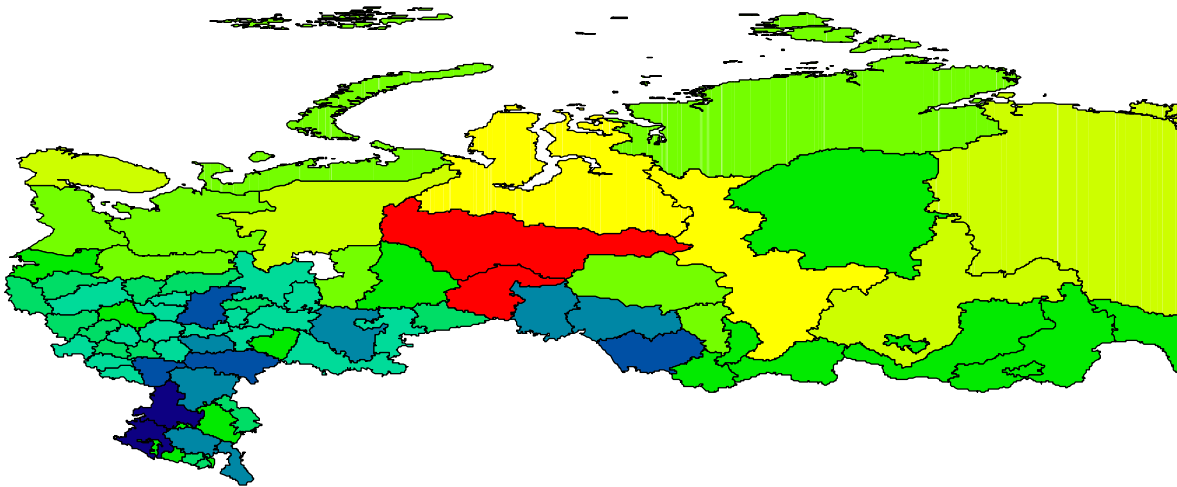


Figure 5 shows the developments as of 2000. A pattern of regional cleavage has emerged, with a flood of wealth attributed to the lightly populated oil regions of Tiumen and Khanty-Mansy (and also to Moscow City, which is not shown). Of equal significance is the stark relative decline of the Russian South, the scene of course of many conflicts including the Chechen war.

Figure 5. The Regional Distribution of Income in European Russia and West Siberia, 2000.



As a final exercise in this vein, Figures 6 and 7 present regional and sectoral data together in a single graph. The device is a stacked line graph. Each of the 89 regions is represented by a line, whose value at each of fourteen points on the x-axis is given by the contribution to overall inequality in Russia of the sector represented at that point. The provinces are arrayed by the size of their total contribution to inequality (from bottom to top), and the values are cumulated, so that the height of the stack at any sector represents total contribution to inequality of that sector. The sectors are arrayed along the x-axis in accord with their total contribution to inequality, so that reading along the axis provides a guide to the relative wealth and poverty of different economic activities in Russia. The charts present data for 1990 and for 2000.

Figure 6. Province and Sector Inequality in Russia, 1990.

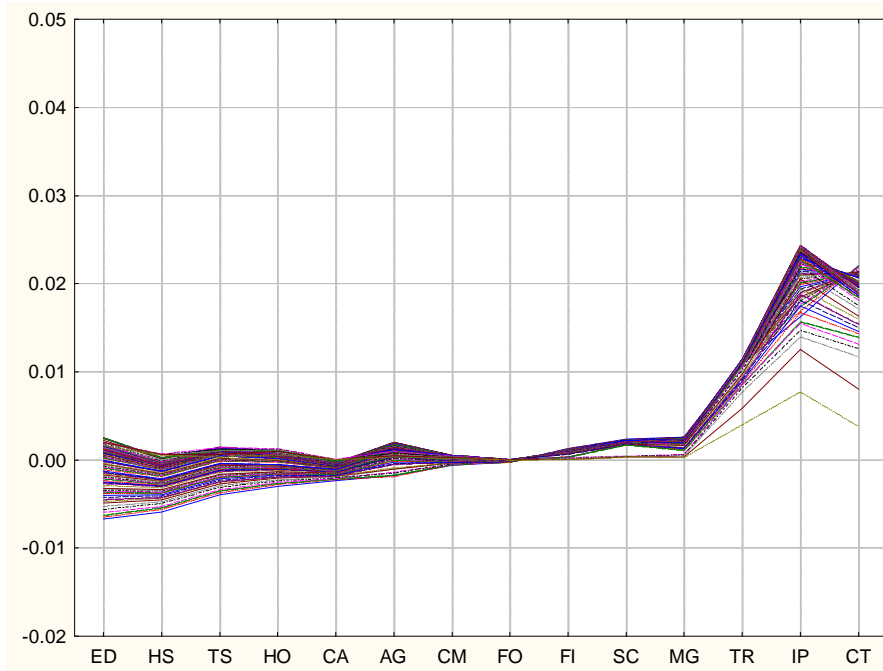
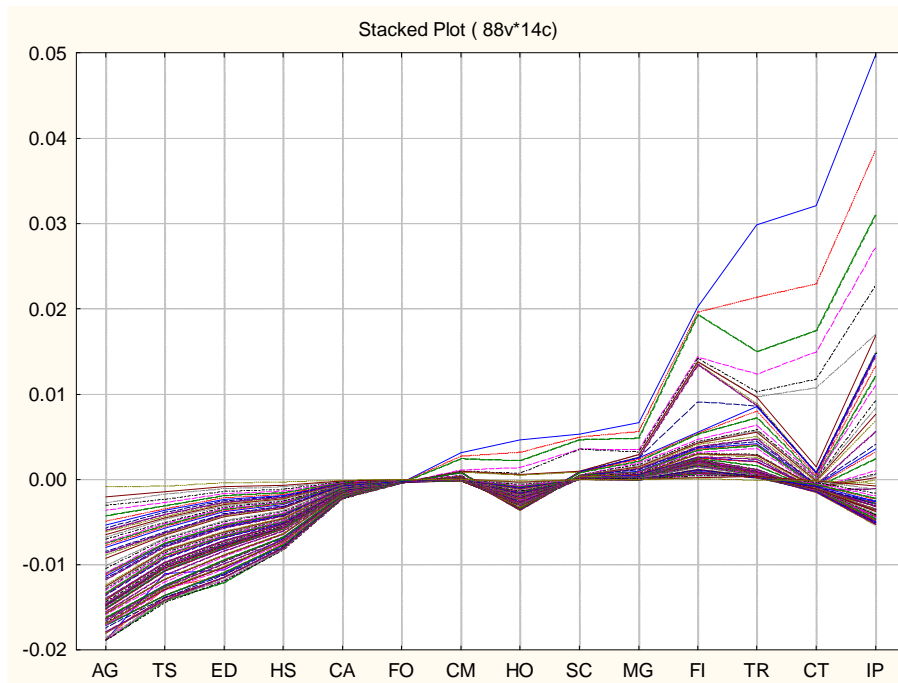


Figure 7. Province and Sector Inequality in Russia, 2000



The figures illustrate three fundamental points. First is the very great scale of increasing inequality in Russia over a decade's time. Second, there is the reorganization of sector ranks. Most notably, whereas in 1990 agricultural incomes were at the middle of the Soviet income distribution, a decade later they were at the bottom. Meanwhile the finance sector had moved up, surpassing science and management, with strong gains especially in Moscow and Saint Petersburg. Third, the high relative incomes in construction and industrial production in modern Russia are due to extraordinary relative gains in just a handful of places; in many places in the country these activities are not high-income. This is consistent with the view that the energy sub-sector has come to dominate prosperous industrial activity in today's Russia.

4. The Case of China.

The Chinese transition to a "socialist market economy" began with the liquidation of the Great Proletarian Cultural Revolution in 1979 and the re-institution of the Household Responsibility System for Chinese agriculture. (For a brief history, see Galbraith and Lu, 2000) There followed a period of rapid agricultural productivity growth, with consequent surplus population which became absorbed in light industry (township and village enterprises). In the early 1980s special economic zones began the process of opening China's coastal cities to foreign investment and inward capital flow, a process which also facilitated technology transfer to Chinese industry.

The tremendous success of the Chinese reforms in the 1980s led to large increases in living standards throughout the country, and a very substantial reduction of absolute poverty. Food deprivation virtually disappeared. However economic slowdown at the end of the decade produced an inflation, particularly in food prices, which contributed to the discontent of urban populations. This factor played a role in building popular support for the political movement for democracy of 1989, which eventuated in the bloody battles of June 4 in Beijing.

Following the profound political shock of 1989, Chinese economic reform continued but along revised lines. Continuing decentralization devolved power from the center to the provinces; sectoral liberalization devolved power toward industries whose strategic position involved elements of monopoly power. Meanwhile the post-Tiananmen government particularly encouraged the municipal authorities of Shanghai (whence the top officials came) to pursue grand plans to restore that city to its position of financial pre-eminence in Asia, while the government also embarked on an extraordinary redevelopment of the capital city.

All of the above developments have visible effects on the pattern of income distribution in the People's Republic of China over the 1990s

Figure 8 presents an overall measure of income inequality in China, calculated across sector-province cells. It is superimposed over two standard, sample-based measures of income inequality in China, one urban and one rural. All show approximately similar patterns, with particularly sharp increases in the early-middle 1990s, however the survey data end in 1995. A drawback of the sector-province measure is that there was a redefinition of sectors in 1994, which almost surely causes the extent of the increase in 1994 to be overstated; nevertheless, that there was a sharp increase in Chinese inequality in 1994 is not in doubt. The extension of the Theil measure through 2000 shows that inequality seems to have stabilized somewhat in China after 1996, though at high levels by historical standards for the country.

Figure 8. Measures of Income Inequality in China, 1987-2000.

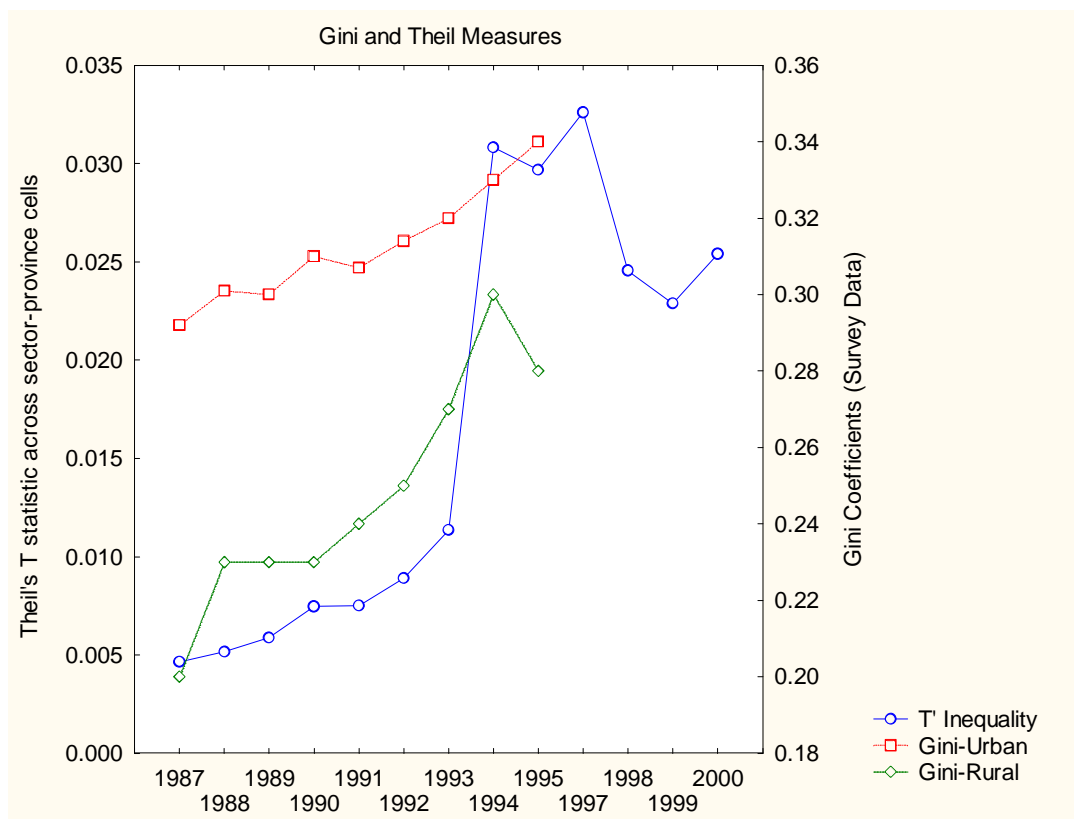
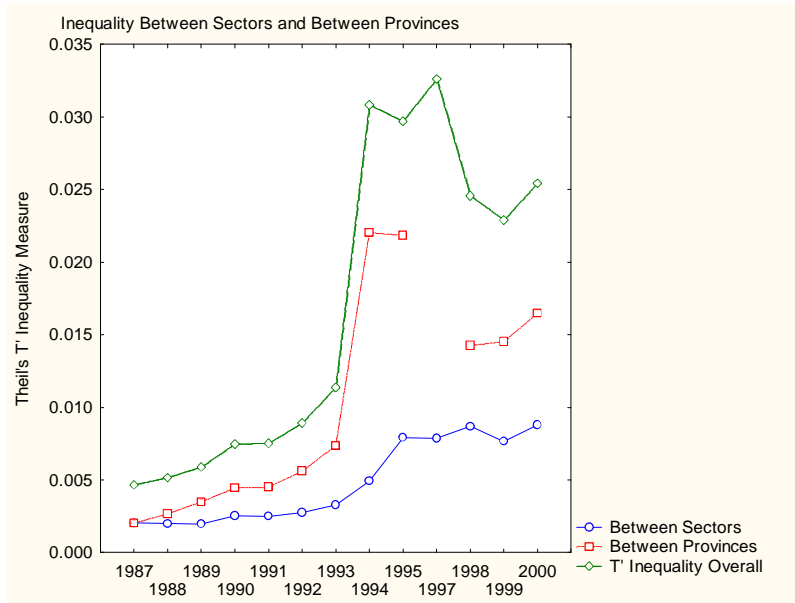


Figure 9 presents a regional and sectoral decomposition of inequality in China. It shows four measures that can be computed easily from data based on province-sector cells: inequality between sectors, and inequality between provinces. As the figure illustrates, the pattern of Chinese inequality resembles that in Russia, insofar as the spatial dimension of rising inequality dominates the sectoral dimension. Similar considerations therefore apply. On the one hand, differences in regional costs of living undoubtedly mean that real living standards have not diverged as much as money incomes. On the other hand, however, a pronounced spatial pattern of income inequality sets up powerful incentives for internal migration, with resulting pressures on housing, social services, and unemployment.

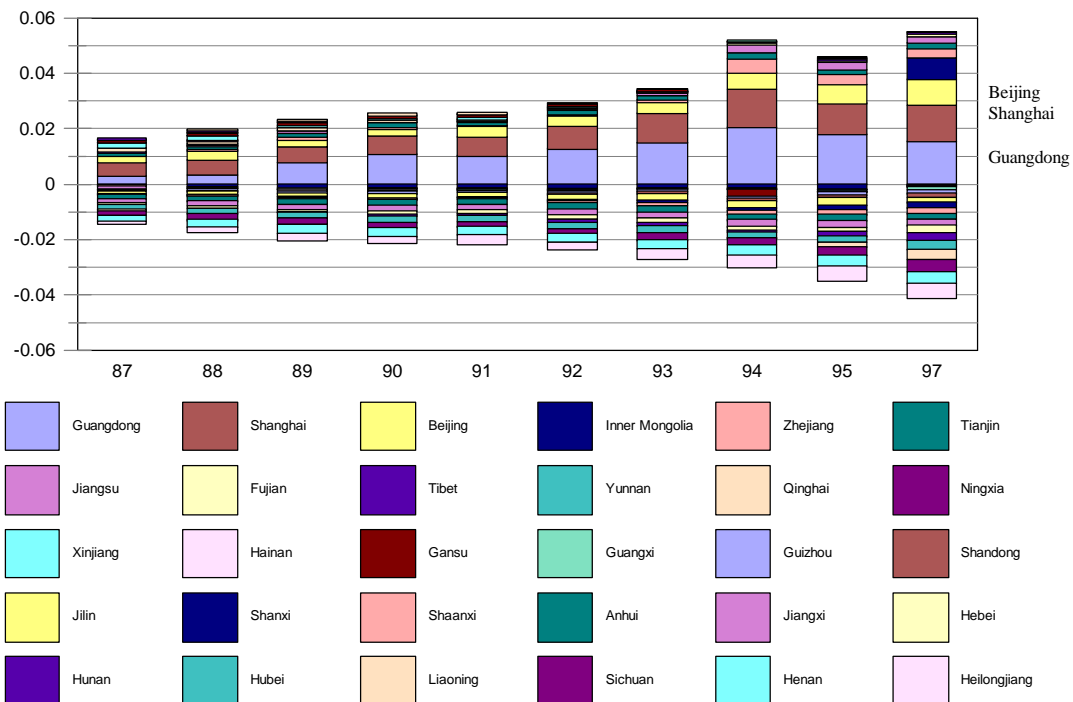
Figure 9. Regional and Sectoral Patterns of Inequality in China, 1987-2000.



The contribution of each province to Chinese inequality is illustrated in Figure 10, using the same principles shown for Russia in Figure 2. Provinces whose income is below (above) the national average contribute a negative (positive) quantity to the Theil index, based on distance below (above) the average and population weight.

Figure 10. Inter-provincial contributions to inequality in China, 1987-1997.

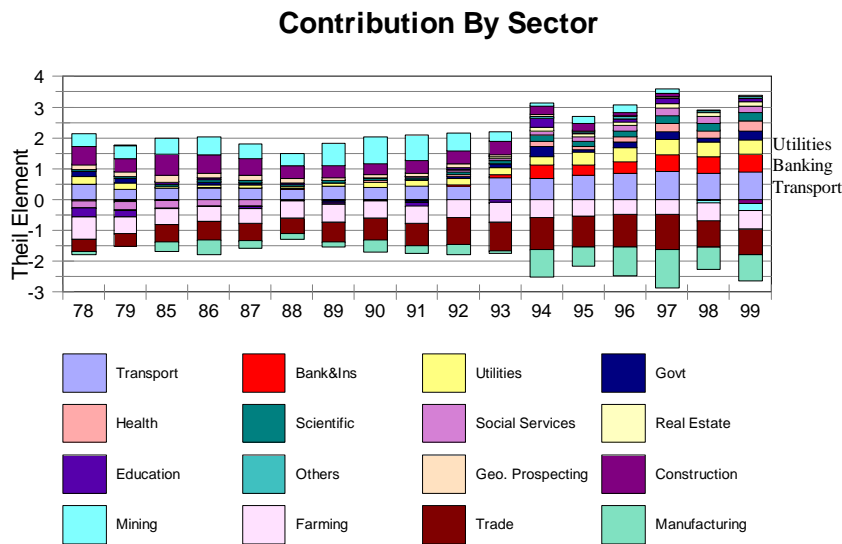
Contribution Across Provinces



The picture that emerges from Figure 10 is, of course, of the dense concentration of high incomes in just three places: Guangdong Province, and the municipalities of Shanghai and Beijing. The first case is explicable, of course, by the fact that Guangdong is the major center for rapidly growing export manufacturing in China. Shanghai and Beijing enjoyed particularly free rein in this period to pursue rapid economic development and redevelopment, as any visitor to either city can attest. What is striking is the extent to which these cases appear to dominate the rise in inter-regional inequality in China, itself the dominant pattern in the rise of inequality in China generally speaking.

Figure 11 presents the inter-sectoral distribution of income in China. Unlike Russia, China does not have a strong natural resource sector. Instead, the chief winners in the Chinese transition have been industrial sectors with monopoly power: transportation and utilities. As in Russia, the banking sector is a major winner, something that is visibly reflected in the construction of bank towers across the country. Manufacturing in contrast emerges as a relative loser, while the position of farming and trade, which was never strong, has also deteriorated. The position of mining, formerly quite high in the Chinese pecking order, has fallen considerably.

Figure 11. Intersectoral contributions to inequality in China, 1978-1999.



Figures 12 and 13 present the evolution of inequality across provinces in China in a pair of maps, organized on principles similar to those shown earlier for Russia. Superficially, the pattern is quite similar: relative income gains are concentrated in relatively small narrow of the country. However it should be noted that, in contrast to the Russian case, the great winners in China are heavily populated. Guangdong province, in particular, holds well over eighty million people. (Note that the city of Shanghai is not represented on these maps.)

Figure 12. The Regional Distribution of Income in China, 1987

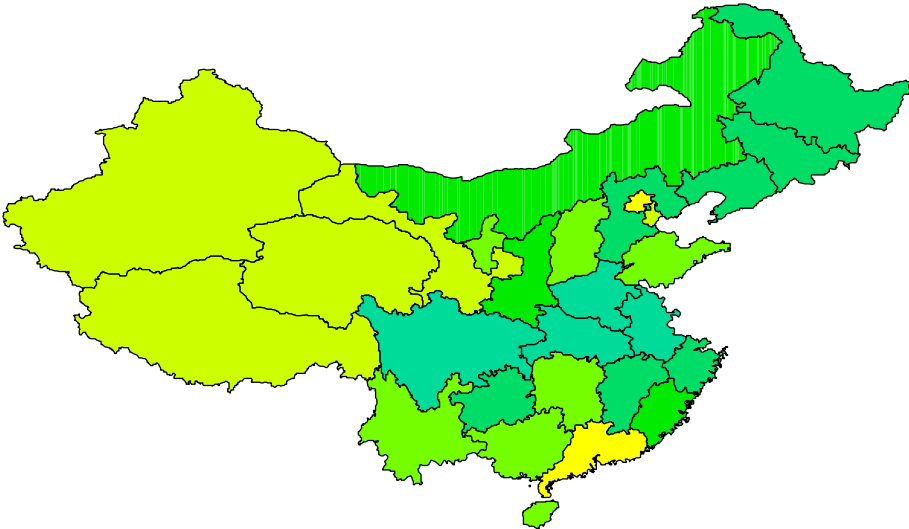
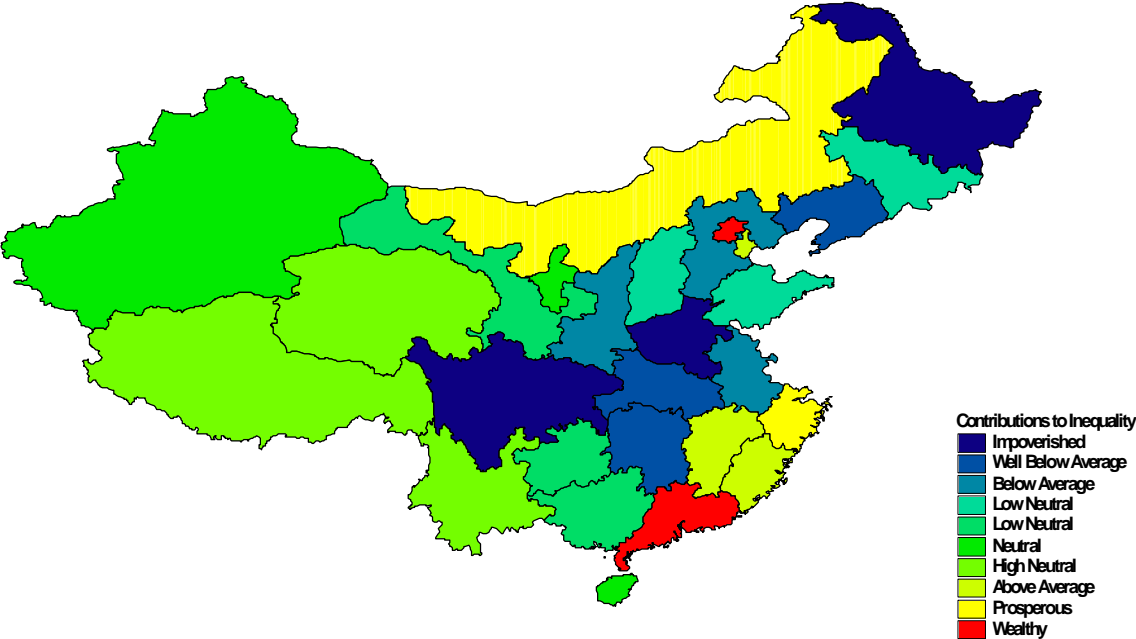


Figure 13. The Regional Distribution of Income in China, 1997



Figures 14 and 15 present sector-province line graphs for China similar to those shown for Russia in Figures 6 and 7. Notable details include the sharp fall in the relative position of construction, formerly the best-paid activity in China, and the decline in the relative position of manufacturing workers (IN in the 1987 figure, MA in that for 2000). On the other hand, the position of science, health and education has held much better in China than was the case in Russia. The rising relative position of almost all activities in the few top provinces is clearly apparent in Figure 15.

Figure 14. Sector and Province Inequality in China, 1987.

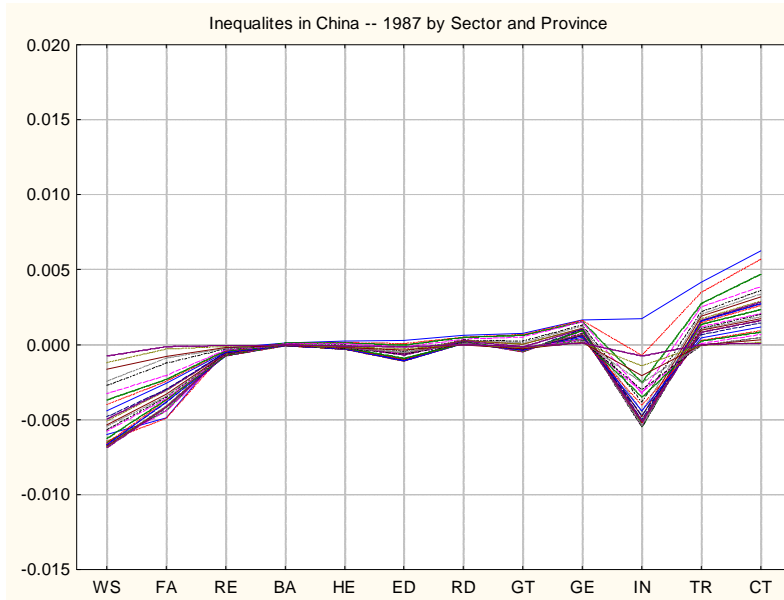
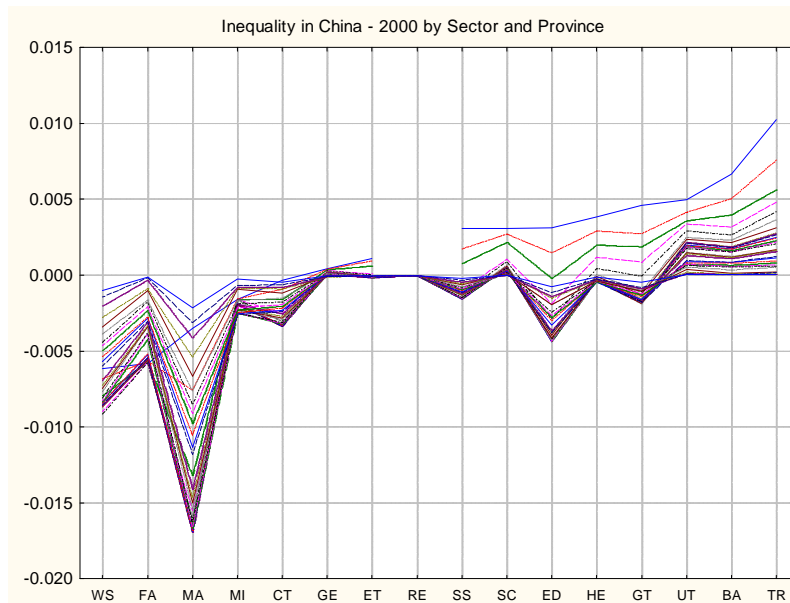


Figure 15. Sector and Province Inequality in China, 2000.



Note: Sector IN is broken up into MA, UT, and MI in 1994, and SS is added at that date. See appendix for definitions.

5. Conclusions

Under the surface appearance of radical differences between the transition experiences of Russia and China, disconcerting similarities can be found. In both countries sharp rises in inequality coincided with macroeconomic crises. This was true of the industrial collapse of 1991 and the financial implosion of 1998 in Russia, and of the growth slowdown of 1993-1994 in China, known euphemistically in China as the period of “soft landing.” In both countries, incomes diverged more sharply on a regional than on a sectoral basis. In both, relative income rose most sharply in the financial and political centers (Moscow, Beijing, Shanghai) and in the regions providing hard currency export earnings (West Siberia, Guangdong). In both, economic liberalization produced economic rents for those sectors enjoying monopoly power in the domestic market (transportation, Utilities). And in both countries, the rise of finance capitalism produced large relative and no doubt also absolute gains for those employed in the financial sectors.

It is no surprise that rising inequality should be a characteristic feature of transition from a socialist to a capitalist system. This is true whether the transition is or is not an economic success. In the absence of strong agricultural support programs and social security systems -- such as exist in the United States and Europe -- a particular feature of redistribution is a sharp decline in the relative income of the countryside. It is apparent that there is no market mechanism that works effectively to offset this trend; despite all of the problems of agriculture in socialist countries, socialism is evidently a system for the countryside.

Whether education, health care, and science suffer major losses of position under economic transition depends, on the other hand, on the tax system and public priorities of the government. China has protected these sectors and indeed expanded them in line with the growth of the Chinese economy overall. Indeed a close analysis of changes in province-sector cells reveals that the education sectors in Shanghai and Beijing are among the most rapidly gainers of relative size and income in all of China during the late 1990s. In Russia these sectors have suffered absolute and relative losses, with serious consequences for the health, education and culture of the population.

It seems certain that the continuing presence of control over the capital account, and the corresponding suppression of capital flight from China, is a major factor in preserving the Chinese capacity to act in the social sectors.

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Appendix

Sector Codes in Russia and China

Russia

IP	Industrial Production
AG	Agriculture
FO	Forestry
CT	Construction
TR	Transportation
CM	Communication
TS	Trade and food services
HO	Housing
HS	Health, sporting and social services
ED	Education
CA	Culture and arts
SC	Science
FI	Finance, credit and insurance
MG	Management

China

FA	Farming, Forestry, Animal Husbandry and Fishery
MI	Mining, and Quarrying
MA	Manufacturing
UT	Electricity, Gas and Water Production and Supply
CT	Construction
GE	Geological Prospecting and Water Conservancy
TR	Transport, Storage, Post & Telecommunications
WS	Wholesale and Retail Trade, & Catering Services
BA	Banking and Insurance
RE	Real Estate Trade
SS	Social Services
HE	Health Care, Sporting & Social Welfare
ED	Education, Culture and Art, Radio, Film and Television
RD	Scientific Research and Polytechnical Services
GT	Government Agencies, Party Agencies and Social Organizations
ET	Others
IN	Industry

Note: Chinese industrial code IN becomes split into MI, MA, and UT in 1994; Sector SS is added at that date. This should not affect calculations of inter-provincial or inter-sectoral inequality presented here, as these are taken from standardized post-1994 definitions.