

Can China Sustain Rapid Growth Despite Flawed Institutions?

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No observer, participant, or analyst, either in Beijing or elsewhere, anticipated China's enormous economic surge, now entering its fourth decade, which has rocketed the People's Republic to unprecedented global prominence. Following in the wake of equally unexpected growth spurts in Japan, Taiwan, and Korea, China's recent experience underlines an unfortunate lacuna in economic analysis: the general inability of the dismal science to anticipate major discontinuities in development.

China's protracted boom, like its Asian predecessors, has left in its wake a considerable roster of intellectual casualties – theories or prescriptions that crumble in the face of Chinese realities.

Prominent among these victims is the “big bang” approach to socialist reform, which postulates that the shift from plan to market must occur abruptly, and the related view that more or faster reform will surely improve economic outcomes. Imagine a statistical analysis in which real GDP growth among former socialist economies is “explained” by the extent of market orientation. If the observations included China's 31 province-level units (average 2005 population 42.18 million) as well as the more thoroughly reformed states included in Jan Svejnar's (2008) analysis of 13 transition economies of Central and Eastern Europe (CEE) and the former Soviet Union (average 2005 population 22.86 million), the results would surely associate the fastest growth with the middling pace of transition from plan to market represented by China's provinces. Leaving aside the initial decade of decline and recovery in the latter group of ex-socialist states, cumulative growth in real GDP for the CEE/former Soviet Union states during 1998-2005 ranged

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from approximately 20-60 percent vs. 77-128% for China's provinces.² Evidently, there is no simple relation between marketization and growth.

Recent Chinese experience severely undermines the "Washington consensus," which advised that low-income nations could accelerate growth by implementing a policy package that includes liberalization of prices, market pricing of capital and foreign exchange, and privatization of state-owned enterprises, among others. The slow advance of Chinese privatization, with the state sector still accounting for perhaps one-third of total output, the glacial pace of legislative changes embedding private property in China's legal system, and the gradualism surrounding price liberalization all indicate that the "Washington consensus," like previous policy prescriptions, overstates the centrality of its main features in determining development outcomes.

China's growth path is equally destructive to the view, advanced by Douglass North in the context of European industrialization and recently expanded by Daron Acemoglu and others, that clearly defined property rights, strong judicial enforcement of ownership prerogatives and contract provisions, and other market-supporting institutions play a crucial role in determining long-term economic outcomes.³ If China's rickety financial structures, shoddy corporate governance, grudging recognition of private property, weak judiciary, and widespread corruption can coexist with record-beating growth, the institutional perspective also seems incomplete and overdone.

It is possible that, as occurred in Japan around 1990, institutional shortcomings may suddenly and unexpectedly derail what many observers regard as China's boundless growth prospects. Leaving aside the wishful thinking of analysts who regularly predict China's impending demise, there is no shortage of sober analysis suggesting that flawed institutions will burden China's economy with high and rising costs. Christine Wong and Richard Bird, for example, conclude that without systematic fiscal reform, China's "attempt to build a new economy. . . may yet come to a grinding halt, pulled down by the morass of ad hoc, piecemeal, and often illicit arrangements that continue to be hastily put

² Such an analysis could use the marketization index created by Chinese economists Wang Xiaolu and Fan Gang (see for example Fan, Wang, and Zhu 2006) to assign quantitative measures of reform progress to China's provinces. Population figures for 2005 are from Yearbook 2006, p. 100 and from U.N. estimates accessed 25 September 2008 from http://en.wikipedia.org/wiki/List_of_countries_by_population_density; data on real GDP growth during 1998-2005 are from Svejnar 2008, p. 75, Yearbook 2006, p. 63 and GDP Compendium 2007, p. 55.

³ North and Thomas 1973; Acemoglu et al 2001.

into place in attempts to avert imminent fiscal calamity in one or another part of the public sector.”⁴

Chronic budget problems confronting local governments, for instance, which, especially in lagging rural areas, tend to be overstaffed, chronically indebted,⁵ and corrupt, threaten to undermine the quality of rural education. Ironically, Beijing’s recent decision to abolish agricultural taxes as well as rural school fees, while intended to relieve financial pressure on village households, could worsen matters by causing local leaders to focus less on the needs of their constituents and more on potential sources of funds at higher levels of administration. This could intensify a possible mismatch between the knowledge of young rural graduates and the requirements of future urban employers. The worst-case result: structural unemployment on a scale that might dwarf similar difficulties in the United States, France, and other market economies.

We pursue the issues surrounding China’s economic prospects by reviewing the growth record, summarizing current institutional arrangements, and examining the prospects for future growth and for institutional development.

China’s Record of Economic Growth

No one can doubt China’s achievement in the sphere of economic growth. Applying prices of the year 2000, which, unlike prices during China’s plan era, reflect approximate market values, to official indexes of real output growth for the three main economic sectors: primary (agriculture, forestry, fisheries, and mining), secondary (industry and construction) and tertiary (transport, communication, and services), Perkins and Rawski find that average annual GDP growth accelerated from 4.4 percent during 1952-78 to 9.5 percent during 1978-2005. Addition of 2006 and 2007, for which official measures show double-digit expansion of real GDP, would marginally raise average growth during the reform era. They argue that, once the bias inherent in plan-era prices is removed, official data provide “the best available benchmark for appraising the long-term evolution of China’s economy.”⁶

⁴ Wong and Bird 2008, p. 463.

⁵ China Daily places the “huge debts local authorities have incurred” at RMB625 billion (roughly equivalent to US\$89 billion) – see Debt Clearance 2007.

⁶ Perkins and Rawski 2008, pp. 834, 839.

This view is not universally shared. Anand and Segal, referring to results from Angus Maddison and the Penn World Tables, suggest a “scholarly consensus that official estimates overstate [China’s GDP growth over the past 30 years].”⁷ Such conclusions seem premature. Although official Chinese data remain subject to many qualifications, including temporary deviations from reality during the late 1950s and, in this author’s opinion, between 1998 and 2003, efforts to replace official measures of real output growth typically fail to improve on Chinese data. I comment here on the work of Angus Maddison and Harry X. Wu because it is both clearly documented and widely followed.

Their alternate measures of Chinese output growth have appeared in several versions. Their efforts revolve around two key revisions: i) Wu’s alternative index of industrial output growth; and ii) Maddison’s independent measure of output in “non-material services” – i.e. “banking, insurance, housing services, administration of real estate, social services, health, education, entertainment, personal services, R&D activities, the armed forces, police, government and party organisations.”⁸ When applied to China’s economy during the reform era, each substantially **underestimates** real output growth. For this reason, the observation that the Maddison-Wu estimates of Chinese GDP show slower growth than the official figures is neither surprising nor indicative of any shortcoming in the official data.

Harry Wu constructs new estimates of Chinese industrial growth in the following manner:

Compile time series of physical output for large numbers of products
 Use 1987 price and cost data from the national input-output table and other sources to obtain measures of unit value-added for each product
 Combine this information to calculate a new series of industrial value-added at 1987 prices

Wu has assembled a large body of data, with coverage of 56-62 percent of industrial output in the 1987 base year.⁹ Recourse to input-output data gives his measures a degree of sophistication that eluded earlier efforts to apply similar methods.

⁷ Anand and Segal 2008, p. 86.

⁸ Maddison and Wu 2008, p. 10.

⁹ Wu 2002, pp. 187-189.

The difficulty with Wu's method is the implicit assumption that product quality remains constant at the base-year level. For the plan-economy era, this is a plausible, even a generous assumption. For the reform era, however, the constant-quality assumption is untenable. Partial information on the manufacture of televisions illustrates the devastating impact of quality change on results obtained using Wu's method of analysis. Wu's data show 1987 prices and output for black and white and for color televisions, allowing him to determine the average sales price for TV sets in the base year, which is then used to value output of televisions throughout the period of analysis.¹⁰ However, as is evident from Table 1, the share of color sets in total output rises steeply over time, leading Wu to exaggerate the value of output prior to 1987 (when the share of color sets was less than in 1987) and to undervalue television output after 1987 (when the share of low-priced black and white sets declined swiftly toward zero). Retaining the 1987 prices but adjusting annual values to accommodate the changing proportion of color sets raises the estimated annual growth of output value for television sets during 1987-2005 from 8.4 to 11.7 percent. If we crudely allow for other improvements – larger screen size, etc. – by raising unit value in the terminal year by an additional 10, 25, or 50 percent, the discrepancy between average growth obtained from Wu's method and from an alternate calculation that allows for quality change rises from 3.3 percentage points to 3.9, 4.7, or 5.9 percentage points.

Table 1 about here

Steep improvement in product quality is not confined to television manufacture. The rapid growth and shifting structure of China's exports is one of many signs of widespread quality improvement. The list of sectors that have experienced steep quality upgrades during the past 20 years surely includes home appliances, motor vehicles and parts, machine tools, computers and other electronic equipment, garments and many, many others. Among major industrial sectors, perhaps only cement and coal, each with large shares of output originating in small-scale operations, have achieved no major quality improvement. The finding that Wu's method produces lower growth estimates than the official figures reflects the impact of the counterfactual assumption of constant quality rather than any weakness in the official figures.

Indeed, the official figures themselves may harbor downward bias due to insufficient allowance for quality change. Application of hedonic methods to sectors (like motor vehicles) that have experienced the same combination of rapid expansion, steep quality improvements, and falling prices observed in U.S. industries like semiconductors or

¹⁰ Wu 2002, p. 198. I ignore the shift from sales value to value-added, which is included in Wu's analysis.

computers¹¹ seems likely to result in substantial increases in estimated rates of real output growth for Chinese manufacturing.

Turning to the tertiary sector, Maddison dismisses official figures for non-material services because they “show improbably high rates of growth of labour productivity (5.1 percent a year for 1978-2003)” but does not explain why analysts should reject these figures.¹² Bosworth and Collins, working primarily with official data, conclude that labor productivity in China’s tertiary sector (in which non-material services occupy a large share) rose at an average rate of 4.9 percent during 1978-2004 and 5.1 percent during 1993-2004.¹³

After rejecting the official data, Maddison constructs a new output series for non-material services by raising the officially-estimated output level in the 1987 base year to adjust for possible under-measurement, and then uses “employment as a proxy indicator of growth in real value added” after 1987.¹⁴ The assumption that labor productivity remains fixed at the 1987 level might pass muster for some segments of China’s service economy (e.g. government, primary education), but seems deeply flawed elsewhere. The list of service occupations that have witnessed large increases in labor productivity over the past two decades surely includes major segments of banking, insurance, finance, advertising, accounting, real estate, consulting, health care, research and development, design, sports, tourism, and entertainment.

Information about wages, which increasingly reflect the impact of market forces, confirms this expectation of rising labor productivity. Average real wages paid to “staff and workers” (i.e. regular employees, mostly in urban positions, and excluding migrant workers) quadrupled between 1987 and 2006.¹⁵ Furthermore, data compiled in Table 2 show above-average growth of nominal wages during 1987-2005 in every category of non-material services for which data are readily available. Wage growth in all tertiary subsectors exceeds average wage growth in manufacturing even though the latter data exaggerate actual wage trends due to omission of low-paid contract workers from standard employment measures.

¹¹ Boskin et al, 1998.

¹² Maddison and Wu 2008, p. 11.

¹³ Bosworth and Collins 2008, p. 54.

¹⁴ Maddison and Wu 2008, p. 11.

¹⁵ Calculated from real wage data in Yearbook 2007, p. 165 and (for 1987-1989) Compendium 2005, p. 8.

Table 2 about here

Figure 1 shows the tertiary sector's share of GDP during 1978-2005 as estimated in official statistics (current prices), by Perkins and Rawski (using official data recast in 2000 prices) and by Maddison and Wu (1987 prices).¹⁶ The comparison highlights the implausible outcome of the Madison-Wu revisions, which show no increase in the tertiary sector's share of aggregate output during the entire reform era. According to Maddison and Wu, the proportion of GDP originating in services was lower in the terminal year of their analysis (2003) than in any year since the start of economic reform in 1978. Indeed, Maddison and Wu find the output share of services to be lower in 2003 than at any time during 1952-2003 except for the years 1973-1976. This clearly erroneous outcome illuminates the danger inherent in assuming that employment trends offer a sensible proxy for tertiary output growth in China's rapidly evolving economy.

Figure 1 about here

China's statistical system, which until the 1980s reflected Soviet-inspired neglect of broad segments of the service sector, has experienced considerable difficulty in developing comprehensive measures of service output. Despite multiple adjustments that invariably enlarge the estimated scale of tertiary production, continuing revisions, most recently in 2008, suggest that future adjustments to the level (and in all likelihood, growth) of tertiary activity are likely to result in upward rather than downward adjustment to official measures relating to China's service sector.¹⁷

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China's Institutional Structure

The reality of wide deviations between Chinese institutional arrangements and the textbook arrangements prescribed by international agencies and economic researchers is

¹⁶ Sources for Figure 1: official data from Yearbook 2006, Table 3-2; Perkins-Rawski data from author's file r102607GDP 1952-2005; Maddison-Wu data from Table 8 in Maddison and Wu (2008, pp. 25-26) – where tertiary is taken to include all sectors other than agriculture, industry, and construction.

¹⁷ Faster Service Growth (2008) comments that “analysts have underestimated the expansion of the service sector.” Wang Xiaolu, an economist who has studied China's national accounts, suggests that “many new careers have been created in the [services] sector, which might not be covered by the old statistical method” (Wang Xu 2008, p. 4).

widely documented. Here I add new information about what I see as the most problematic feature of Chinese institutions: a flawed investment mechanism that lavishes funds on (often ill-advised) state-sector projects while limiting funding for private entrepreneurs. In 2002, I suggested that “many of China’s economic ills, including slow employment growth, high levels of formal and implicit government debt, vast excess production capacity, slow but persistent deflation, mountains of unrepayable loans, and insolvent banks, are strongly and directly tied to defects in the investment system.”¹⁸ Six years later, much of this critique remains valid.

Brandt, Hsieh and Zhu use data from a limited subset of provinces to provide a fresh perspective on these issues. Building on Alwyn Young’s work, these authors develop a 3-sector analysis that includes agriculture and divides the non-farm sector into state and non-state segments. Their analysis highlights the “nonstate nonagricultural sector. . . [as] the key driver of economic growth” over the past three decades and points to the state sector as a drag on regional growth.¹⁹

We can supplement these findings with information based on quarterly GDP data for all of China’s provinces in 2000.²⁰ Figure 2 shows a positive association between the state sector’s industrial output share and the remarkably large seasonal fluctuations in China’s economy which reflect vast gyrations in quarterly investment spending inherited from the planned economy era. Figure 3 shows a more modest, but clearly negative association between seasonal variations in annual GDP and the provincial index of marketization developed by Wang Xiaolu and Fan Gang.²¹

Figures 2 and 3 about here

These observations reinforce the work of Brandt, Hsieh, and Zhu. They illuminate the process that links China’s investment system, which uses bank lending and organized capital markets to channel state-controlled or officially-influenced capital flows toward state-sector entities, to a roster of unfortunate outcomes, including:

lowering average returns on investment

¹⁸ Rawski 2002, p. 370.

¹⁹ Brandt, Hsieh, and Zhu 2008, pp. 714-720; quotation from p. 720.

²⁰ Professor Yifan Zhang of Lingnan University collected and analyzed these data.

²¹ State sector share of industrial output from from Yearbook 2001, Table 13-3; Fan, Wang, and Zhu 2006 describe the marketization index; for seasonal fluctuations, see Rawski 2002.

slowing non-agricultural growth outside the state sector

delaying productivity-enhancing transfers of labor from the farm sector

distorting domestic factor prices, thus encouraging a premature shift toward capital-intensive technologies and retarding employment growth

elevating the level of risk surrounding China's financial sector

magnifying China's unusually large seasonal economic fluctuations

China's Growth Prospects

Quantitative issues.

Building on a detailed review of performance between 1952 and 2005, Perkins and Rawski project China's likely GDP growth for the period 2005-2025 in a range between 6 and 8 percent (in real terms).²² Our purpose is to extend the analysis in both quantitative and qualitative terms.

On the quantitative side, recent developments in global energy markets focus attention on issues that Perkins and Rawski did not consider. In a working paper and a somewhat abbreviated publication, Daniel Rosen and Trevor Houser offer a stimulating and comprehensive analysis that links China's energy economy to broader social and economic issues.²³ The authors make two key points:

1. Following a long decline that started shortly prior to the onset of China's economic reforms in the late 1970s, energy intensity suffered an unforeseen reversal early in the present century.
2. Despite policy moves aimed at limiting the growth of energy use and fostering conservation, "the steel mills, cement kilns, and glass factories that are driving

²² Perkins and Rawski 2008.

²³ Rosen and Houser, 2007a and 2007b.

current demand [for energy] are feeding an infrastructure boom **that is quickly locking in China's energy and environmental future.**"²⁴

Both observations seem premature. The first rests on questionable data. The second confuses trend and cycle.

While a careful review of energy data is beyond the scope of this paper, the energy intensity reversal theme seems exaggerated. Rosen and Houser rely on a commercial data base that extracts information from Chinese statistical publications,²⁵ but appears to overlook revisions that would lower the magnitude of the increase in energy intensity during the early years of the current decade. Furthermore, these authors overlook a subsequent turnabout which has pushed the growth of energy use and the energy-GDP elasticity continuously downward from peak levels attained during 2003/2004. Official figures show the rise in energy consumption associated with a one percent increase in real GDP plummeting from a peak of 1.59 during 2003/04 to 0.68 during 2006/07 and 0.66 in the first half of 2008.²⁶

Regardless of the actual trend of energy intensity, Rosen and Houser are surely correct in anticipating that future increases in production and income levels will propel further growth of China's already massive energy consumption, with powerful implications for international energy markets and for global emissions. However their expectation, quoted earlier, that new manufacturing facilities are "locking [China] in" to a future of high energy intensity misreads the consequences of recent developments in energy-using industries.

The current phase of China's long boom certainly includes massive investments in steel, cement, and other energy-using industries. Rosen and Houser err, however, in overlooking the bimodal structure of new production facilities, which encompass modern plants that will attain world-class levels of energy economy as well as get-rich-quick

²⁴ Rosen and Houser 2007a, p. 15, with emphasis added; see also *ibid.*, 44.

²⁵ Rosen and Houser 2007b, p. 25.

²⁶ Communique 2008. Data for 2008 are from http://news.xinhuanet.com/english/2008-07/17/content_8560003.htm (for GDP) and http://news.xinhuanet.com/english/2008-08/07/content_9024131.htm (for energy use), both accessed 25 September 2008.

operations that throw up (often dirty) plants with the intent of capitalizing on boom-time markets.

In steel, for example, where top-tier firms report labor productivity and material input figures that are converging toward results from plants in Western Europe and even Japan, there is a long “tail” of low-quality producers who can profit despite low productivity and high material use, but only in an environment of surging demand and peak pricing.²⁷ At some point, demand shifts will curtail the market share of China’s low-end steel producers. A sudden decline in domestic steel demand (or even in its rate of growth) could precipitate such a shake-out, which may already have begun in aluminum, where “some small and medium-sized smelters could. . . be cutting production due to losses of 1,000 to 2,000 yuan for every 1 ton of aluminum produced.”²⁸ Alternatively, ongoing expansion of high-end producers, coupled with gradual demand shifts favoring complex products and high-quality goods, could gradually curtail sales from low-end steel-makers.

Such changes seem likely to deliver steep reductions in unit energy requirements. Tighter regulation, for example, in the relocation of Capital Steel from Beijing, in which “not a single piece of equipment has actually been transported from Beijing. . . . [because at the new Hebei site] everything . . . is new and complies with much stricter environmental protection laws,” shows how an increase of 5 or 10 percentage points in the market share of China’s leading steel firms (an important objective of current government policy) might reduce the steel industry’s energy consumption by 10-20 percent.²⁹ This exact combination of rapid growth and falling energy use, which seems “astounding” in an advanced economy with relatively uniform technical standards (Schulz 2008), may already be underway in China’s thermal power sector: during 2006/07, “authorities closed down 553 small power plants, and coal consumption in the sector fell by 2.5 percent” while output of thermal power rose by 14.9 percent.³⁰

²⁷ Brandt, Rawski and Sutton 2008, pp. 593-604.

²⁸ Yu Tianyu 2008, p. 14.

²⁹ Raymond Zhou 2008, p. 4.

³⁰ See Wan Zhihong 2008 and Communiqué 2008. The meaning of “the sector” is unclear – it could refer either to the entire thermal power sector or merely to its small-scale segment. However an earlier report, noting that “large power units may consume 290 to 340 grams of coal. . . while medium and small-sized units need 380 to 500 grams” to generate 1 kwh of electricity, predicted that plans to “phase out 50,000 megawatts of. . . capacity in small thermal power plants before 2010, including 10,000 megawatts this

We conclude that , whether not the sudden decline in energy prices of late 2008 persists, neither the direct cost of energy nor the environmental consequences of rising energy use seems likely to impose major constraints on China’s growth during the next 10-20 years.

Qualitative matters

Chinese experience rules out absolute versions of the “good institutions or bust” approach. Evidently, rapid and sustained growth can coexist with weak institutions – a reality confirmed by the experiences of Japan and Korea, as well as contemporary China. The wisdom of Alexander Gerschenkron, who wrote in the European context of industrialization, seems relevant: “a journey through the last century may. . . help in formulating a broader and more enlightened view of the pertinent problems and in replacing the absolute notions of what is ‘right’ and what is ‘wrong’ by a more flexible and relativistic approach.”³¹

In this context, following Gerschenkron’s expectation that researchers will come to recognize “the significance of. . . native elements in the industrialization of backward countries,”³² I argue that China’s prospects will continue to benefit from a variety of “good” historical and institutional circumstances. Furthermore, available information suggests substantial improvement in important areas of institutional weakness. We discuss each in turn.

Writing of the 1920s and 1930s, Tim Wright describes China’s economy as blessed with “an abundance of small-time entrepreneurs.”³³ This reflects a legacy that extends far beyond China’s long history of markets, mercantile activity, and interregional and international exchange. In my view, China’s traditional village society produced individuals who, on average, were better-prepared to function in modern market systems than their counterparts in most pre-industrial societies. It is not that Chinese individuals

year [2007] alone. . . . [will] save around 14.5 million tons of raw coal on a yearly basis. . . .” suggesting that actual coal use may have fallen in 2007 (see Sun Xioahua 2007).

³¹ Gerschenkron 1962, pp. 26-27.

³² *Ibid.*, 26.

³³ Wright 1984, p. 325.

are greedier or quicker to spot bargains than individuals in other cultures, but rather that Chinese society equips its members with an unusually rich and flexible portfolio of organizational skills with which to pursue economic advantage.³⁴

Fortunately for China's economic prospects, a quarter-century of socialist planning, including intense efforts to extirpate "penny capitalist" thinking as well as individual entrepreneurship, failed to eliminate these historically-rooted organizational skills. Indeed, I believe that the commune experience, which combined two decades of inadequate nutrition with unprecedented pressures that required every rural adult to monitor and respond to external circumstances to a degree unequalled in any previous era, actually strengthened the entrepreneurial component of village culture that collectivization was in part meant to eradicate.

It was this revitalized entrepreneurial potential that transformed China's modest rural reforms of the late 1970s and early 1980s, which restored only a fraction of the market circumstances observed during the early 1950s (not to mention the full market economy of the 1920s and 1930s), into an explosive economic boom that is now entering its fourth decade.

Business observers often describe successful companies as having a "deep bench" of managerial talent. As a nation, China benefits from an exceptionally "deep bench" of entrepreneurial verve and management skill. Retrospective studies of China's farm sector tell of many failures, including the great famine of 1959-1961, but there is little evidence that Chinese villagers were unable to keep accurate records of grain stocks and flows, work points, income or outlay in the collectives and communes into which they were herded during the mid-1950s. Indeed, the indexes of research volumes on rural China rarely mention "accounting" or "bookkeeping," except to note that the basic level of accounting was bounced back and forth between the production teams and brigades – apparently without disrupting the capacity of local communities to maintain suitable records.³⁵ At the start of reform in 1978, China's rural communes and brigades operated over 1.5 million enterprises, including 794,000 in industry. Once reform commenced, rural China witnessed an unprecedented expansion of rural enterprise; by 1990, the number of "township and village" firms had jumped to 18.5 million, including 7.2 million industrial units.³⁶ How did these firms, many of which recorded substantial growth of output, employment, sales, profits, and exports, recruit competent managers?

³⁴ Rawski 2007.

³⁵ For example, Barker and Sinha 1982, Donnithorne 1967, Lardy 1983, Riskin 1987, and Yang (1996).

³⁶ Yearbook 1991, p. 377.

Here again, the literature is largely silent, apparently because finding managerial talent was not a major obstacle to success.

As a result of this process of business expansion, China's traditional "abundance of small-time entrepreneurs" continues, now joined by an equally rich pool of big-time operators, some backed by the deep pockets of favored state entities, but many others building on their own accumulations of individual or corporate wealth.

Administrative competence surely enhances China's economic prospects. In my experience, national and provincial office-holders as well as business managers appear to be intelligent, well-informed, energetic, and competent. My (quite limited) interaction with local officials, mainly in coastal areas, points in the same direction. The functionaries that I meet may be corrupt – short-term visitors cannot judge such matters. If so, my guess is that they encounter a strong positive correlation between succeeding in their formal governance or managerial duties and increasing flows of informal incomes to themselves, their families, and their associates.

This contrasts with circumstances elsewhere, particularly in Africa, where Uma Lele, presumably describing circumstances of the early 1970s, writes that "in Ethiopia the local-level administration. . . lacked developmental capacity almost completely," that "agricultural projects in East Africa. . . suffer from a shortage of well-trained African accountants. . . . [who can master] a simple cost-accounting system," and, more generally, that "autonomous programs have usually had expatriate management from the outset."³⁷ If Lele's observations are correct, many African nations routinely relied on expatriates to direct tasks that formed part of the normal routine for commune and brigade-level units throughout rural China during the 1960s and 1970s.

More recently, foreign firms, including those in "high technology" sectors, are rapidly transferring leadership responsibilities to local Chinese employees. Expatriate managers are routinely assigned to groom local executives for top positions in their firms' Chinese operations.

Beyond these elements surrounding what might be called "Chinese economic culture," China's future growth prospects benefit from tangible and concrete legacies of the past:

³⁷ Lele 1975, pp. 127, 132, 171.

China's political system rests on an informal, but real bargain between the party-state and the people: citizens acquiesce in one-party rule in return for the promise of prosperity and national prestige. As a result, policy elites at all levels focus on promoting economic growth with an intensity that is rarely matched (Japan's performance during its high-growth period comes to mind). While this growth orientation does not prevent the adoption of bad policy – consider the current gap between domestic energy costs and global prices – it does ensure that serious economic difficulties will command immediate and concerted attention from top echelons of the policy community. China is unlikely to suffer the sort of policy drift that hampers efforts to confront serious economic difficulties in Japan (prolonged slowdown) or the United States (structural fiscal and trade deficits, runaway entitlement spending).

the international community of overseas Chinese – prosperous, entrepreneurial, oriented toward business and technology, and often motivated by an unusual blend of profit-seeking, kinship, old home ties, and linguistic/cultural affinity – will continue its immensely significant role in conveying capital, skills, information, and networking opportunities to the People's Republic. Looking ahead, we can expect growing numbers of PRC citizens to deploy their own experience of overseas education, residence, employment, business development, and networking to further expand these valuable inflows.³⁸ Few low- and middle income nations – perhaps India or Mexico – can come close to matching the advantages that China's growth prospects derive from the overseas Chinese connection.

More generally, China has already reaped massive benefits following its decision to adopt a policy of growing openness to international trade and foreign investment. The rapid expansion of incoming foreign investment to encompass design and R&D as well as manufacturing holds the promise of further large payoffs to openness, as does the prospect of further expansion of foreign investment in China's service sector. In addition, recent increases in China's own overseas direct investment, which jumped from under US\$1 billion in 2000 to a 2007 level of US\$18.7 billion (excluding financial sector transactions that contributed \$3.53 billion in 2006), promise to develop new return flows of valuable technical, managerial, and market intelligence that

³⁸ The Ministry of Education reported a cumulative total of 1.067 million Chinese studying abroad during 1978-2006, of whom “275,000 have returned, 42,000 in the past year alone” (Hu Yinan, 2008).

will surely enhance China's future growth prospects.³⁹ Recent Chinese experience demolishes the argument that globalization endangers the economic prospects of poor nations and their workers. To be sure, China's size confers unique benefits that skilled administrators have been quick to grasp. The inability of smaller states to match China's success in manipulating foreign corporate partners creates the possibility that globalization may diminish welfare in some poor nations. For China, the largest poor state, the outcome is precisely the opposite.

China's economy continues to benefit from some legacies of the plan system – for example the dense array of technical universities, industry-oriented research establishments, and cross-national personal ties established by the former ministries of metallurgy, machine-building, textiles, and so on. In most low-income nations, producers of steel (or silk, machine tools, etc.) cannot recruit graduates from institutes of metallurgy, obtain technical support from long-established metallurgical research institutes, or hire managers through networks surrounding national associations of metallurgical engineers. In China, these opportunities are routinely available to firms in many sectors of the economy.⁴⁰

Finally, China's future prospects will benefit from the impact of domestic and international competition in virtually all sectors of the economy. Unlike Japan and Korea, which show an unusual combination of world-class export sectors and inefficient, heavily protected domestic industries, China's WTO commitments, together with intense domestic competition (the latter another beneficial legacy of the planned economy which outfitted most provinces with “complete sets” of industries), ensures that fierce competition prevails in most sectors of China's economy. Since the consequences of China's WTO membership are widely appreciated, I focus on the latter, more contentious observation.

Audrey Donnithorne characterized China's pre-reform economy as a “cellular” system of loosely connected and highly self-sufficient local entities.⁴¹ During the 1970s and 1980s, regional governments, seeking to preserve markets for

³⁹ Brandt, Rawski, and Zhu 2007, p. 25; Jiang Wei 2008.

⁴⁰ Brandt, Rawski, and Sutton 2008, p. 602.

⁴¹ Donnithorne 1972.

incumbent local producers, often resisted efforts of outside firms to make or sell goods locally. They also obstructed outflows of scarce or under-priced materials, again seeking advantage for local manufacturers and, in the case of food products, for consumers. Several researchers have produced substantial analyses aimed at demonstrating that such “local protectionism” continues.

I reject their arguments, which derive mainly from faulty data. I will not review the controversy here,⁴² but rather focus on new evidence that undermines the “cellular economy” view of contemporary China.

The key question is not whether local protectionism exists – it surely does – but whether it is important. We know that foreign and domestic firms have established new manufacturing facilities in which productivity is far higher, and unit cost far lower, than in many existing producers. My question: how do incumbent producers react to the arrival of low-cost, high-productivity rivals?

Under the “cellular economy” hypothesis, there is little need for low-end incumbents to respond. Their markets are safe. Their official patrons will prohibit interlopers from selling into protected local markets. Customers in isolated sub-economies cannot escape the clutches of incumbent suppliers. As a result, the productivity gap between low-end and high-end suppliers in specific industries must expand.

If competition rather than restriction prevails, the story changes. When products from new, high-end producers enter the market, incumbent producers will quickly feel pressure to respond – because new competition threatens their market share and even their survival. For this reason, we expect the productivity gap between strong and weak firms to first expand (when new, strong firms enter the market) and then to decline (as weak firms either reform their operations or exit through bankruptcy, closure, merger, etc.).

⁴² See the summary in Brandt, Rawski, and Sutton 2008, pp. 575-576.

This dichotomy suggests a statistical test using enterprise-level data. China Industrial Microdata, compiled by the National Bureau of Statistics, records information for all “above-norm” industrial firms – meaning state-owned firms and others whose annual sales exceed RMB 5 million. The calculation shown here focuses on data for 1993 and 2002 – a period in which the classification of industries into sub-sectors remained virtually unchanged. For both years, and for each of 535 manufacturing sub-sectors, our test involves the following:

Calculate the coefficient of variation for sales per worker among all firms in each of 535 sub-sectors in 1993 (CV93) and again in 2002 (CV02) (the roster of firms is not necessarily the same in the two years).

Calculate the ratio $R = CV02/CV93$ for each of 535 sub-sectors

Examine the distribution of the ratio R . If the 535 sub-sector observations cluster in the region $R > 1$, the test supports the “cellular economy” perspective. A preponderance of observations in the range $R < 1$ supports the view that open markets prevail.

Results appear in Figure 4 (prepared with invaluable assistance from Professor Yifan Zhang of Lingnan University). With the median value of R at 0.78 and with 70.7 percent of observations falling below 1,⁴³ the outcome runs strongly counter to predictions linked to the “cellular economy” approach, and underscores the centrality of competition in domestic markets for industrial products.

Figure 4 about here

⁴³ Splitting the sample geographically and conducting separate analyses for China’s coastal and interior regions does not alter the overall implication that competition rather than protection prevails.

We conclude that, along with widely discussed shortcomings, China's institutional structure provides substantial benefits that have contributed to previous economic gains and enhance China's future growth prospects.

Finally, can we observe evidence improvements in areas of major institutional weakness? I comment briefly on three items:

Finance. Recent developments in China's financial sector illustrate the willingness of Chinese leaders to meet festering economic problems with bold initiatives. China's efforts at financial reform provide a long story with no happy ending. Premier Zhu Rongji sounded a clear alarm in his 2002 government work report: "We need to formulate and implement plans for the reform of the investment and fund-raising systems as quickly as possible," implying that twenty-five years of reform had produced no substantial progress in these vital areas.⁴⁴ Recognizing marginal tinkering might not suffice to avoid a major crisis, China's Communist leadership opted for a remarkable departure: selling minority stakes in every major financial institution, excepting only the central bank, to the corporate royalty of global finance capitalism – the arch-enemy of socialists everywhere for a century or more.

Partial foreign ownership offers no automatic escape from the multiple ills that have long afflicted China's financial institutions. Nonetheless, recent signs are encouraging, with major banks, for example, recording large increases in profit (Anderlini 2008). For those, like the present author, who incline toward skeptical view of published accounts for China's financial firms, further inquiry seems essential.

Law. While outside observers often dismiss China's legal system as weak and overly politicized, recent developments point to major advances in its capacity to support economic advance.

New research shows the courts occupying an unexpectedly large role in business behavior. Clarke, Murrell, and Whiting find that considerable numbers of firms include litigation in their strategies for resolving business disputes, resulting in steep increases in the

⁴⁴ <http://english.people.com.cn/npc/2002/zhu/workreport5.html>, accessed 10 October 2008.

volume and monetary value of economic disputes brought to court.⁴⁵ They conclude that “courts are playing an increasingly significant role in dispute resolution and personal relationships are relatively less important at present.”⁴⁶

The specific inclusion of private property in 2007 legislation as equal in formal legal standing to state and collective property represents a considerable advance in an area long marked by excruciatingly slow progress (Brandt and Rawski 2008, p. 19).

Legal support for intellectual property rights (IPR) seems to have entered a phase of rapid expansion, not primarily in response to external pressure, but to encourage further expansion of multinational firms’ China-based R&D activity and to satisfy the demands of China’s growing army of innovative companies. IPR protection has emerged as a new dimension of regional competition to attract and retain dynamic companies and personnel. Guangdong province’s long-term plans for promoting innovation include “a strategic compendium for the development of Guangdong’s IPR over the next 13 years.”⁴⁷ Working with the American Chamber of Commerce, Beijing’s Chaoyang district “instituted an anti-copyright infringement and piracy-free zone” in 2006, backed by seminars with legal and court officials as well as raids on outlets selling bootleg products.⁴⁸ Provinces and municipalities around the Bohai Sea have entered an agreement that “requires intellectual property offices. . . to share investigative information, cooperate, . . . and conduct joint law enforcement efforts.” Interestingly, this agreement includes a call for cooperation “in combating infringements on IPRs related to the Beijing Olympic Games.”⁴⁹ Events surrounding the Beijing Olympics seem to have boosted official enthusiasm for IPR protection by providing powerful evidence of the cost and damage inflicted by violators.

⁴⁵ Clarke, Murrell, and Whiting, 2008, pp. 411-415.

⁴⁶ *Ibid.*, 421.

⁴⁷ Guangdong 2007, p. 4.

⁴⁸ Intellectual Exercise 2007, p. 9.

⁴⁹ Regional Collaboration 2007, p. 9.

A variety of evidence suggests that the balance of forces has begun to tilt toward enforcement rather than circumvention of intellectual property rights. While disagreeing on the scale of piracy, both Chinese and international reviews detect modest declines in “the piracy rate in China’s software industry.”⁵⁰ U.S. courts and Swiss arbitrators have upheld the claims of Chinese manufacturers of batteries, watches, and flash drives following disputes with overseas firms. Amid complaints that the “competitive edge” arising from “highly sophisticated technologies and techniques” developed by small Chinese firms faces threats from “technology theft and other unfair practices” on the part of “large Japanese companies” and “other manufacturing heavyweights,” official claims that IPR enforcement “is vital for. . . spurring the economy and scientific development” increasingly reflect policy-makers’ genuine intent rather than public posturing.⁵¹

These advances raise the possibility that China is moving toward the realization of a hybrid legal system that combines standard approaches (courts, official enforcement of IPR) with unconventional elements, including the high degree of trust within Chinese society⁵² and the use of public criticism to maintain discipline in financial markets,⁵³ in ways that may provide unexpectedly strong support to future economic growth.

Investment mechanism. The question here is whether recent developments in China’s financial sector represent major steps toward the rectification of widely-recognized institutional shortcomings. Institutions and institutional change are notoriously difficult to quantify (for an example, see Clarke, Murrell and Whiting 2008, p. 421). With regard to China’s financial sector, however, I have

⁵⁰ Liu Baijia 2007, p. 9.

⁵¹ Protecting 2008, p. 9; Chen Jia and Wang Zhenghua 2008, p. 2.

⁵² University of Pittsburgh Professor Wenfang Tang reports that while “Political scientists always believed that people in a democratic society trust each other more than in a non-democracy. . . . interpersonal trust in China is one of the highest in the world, higher than in many democracies” (personal communication, 2008).

⁵³ Stocks 2008, citing a forthcoming paper by Columbia Law School professors Benjamin Liebman and Curtis Milhaupt.

suggested that a “reduction in seasonal fluctuations of aggregate output and investment” can provide a useful metric “for monitoring the evolution of China’s investment mechanism” (Rawski 2002, p. 370). This is the objective of Figure 5, which plots the time trend for the ratio of fixed investment in the first quarter of each year to investment spending in the fourth quarter of the previous year. The calculations underlying Figure 5 employ raw data – there is no adjustment for inflation (in periods of high inflation, such adjustments would lower the calculated ratio) or for seasonality – indeed our purpose is to determine whether or not the marketization of China’s economy has reduced the outlandish seasonal shifts in economic activity introduced during the plan system and still visible in the early years of the present century despite a quarter-century of reform (see Perkins and Rawski 2008, p. 864).

Figure 5 about here

Figure 5 reveals a dramatic reduction in the scale of seasonal fluctuations. Prior to 2000, first quarter investment was invariably less than 30 percent of outlays in the final quarter of the previous year. In market economies, such immense declines in investment appear only amid the most profound systemic cataclysms. Unadjusted U.S. data on employment in residential construction, now suffering a major contraction, can illustrate the order of magnitude of short-term changes in normal market systems.

Between February/March of 2007 and the same period of 2008, U.S. employment in residential construction dropped by 11 percent, from 940.4 to 837.0 thousand (BLS 2008). In percentage terms, this extreme plunge is **one-sixth as much as Chinese investment spending routinely dropped from Q4 to the following Q1 prior to 2000!** The data in Figure 5 show that, beginning in 2003/04, the ratio of Q1 investment to outlays in Q4 of the prior years rose sharply, falling back only in 2005/06. The ratio of spending in Q1 to the previous year’s Q4 exceeds 30 percent, the upper bound prior to 2001, in each year commencing with 2003; from 2006, the ratio exceeds 40 percent. In 2008, the ratio breaks through 50 percent for the first time, reaching the unprecedented level of 55.8 percent.

Following these improvements, seasonal fluctuations in Chinese investment spending remain at levels that must astonish analysts accustomed to market economy business cycles. After all, China’s Q1 investment spending in 2008 is 44.2 percent below the figure

for Q4 of 2007 – and this in a boom period with rising inflation - compared with the “huge” 11 percent decline in U.S. employment in residential construction reported for the year ending in February/March 2008.

Conclusion

The present review reaffirms this author’s impression that, despite many serious challenges, China’s economic prospects, fortified by a long list of beneficial circumstances, including many that are unique to the People’s Republic, remain bright. Although the current double-digit growth rates appear unsustainable, there is ample reason to expect China’s economy to advance at rates that, while considerably below 10 percent, can ensure continued rapid expansion of living standards for China’s immense population.

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Table 1						
Output, Value, and Growth for Chinese TV Manufacture, 1971-2005						
Wu method vs. allowing for changing quality and product mix						
	TV Output		Siding	Output Value (RMB Million)		
	Million Sets	Percent Color	1987 Price (RMB)	Wu Method	Revised Method Amount	Revised Method Index Wu = 100
1971	0.02	1.12	480	13.6	8.5	62.6
1978	0.52	0.73	476	396.0	246.4	62.2
1987	19.34	34.78	766	14809.7	14809.7	100.0
1997	36.37	74.54	1104	27846.9	40141.1	144.1
2005	82.83	100.00	1320	63416.7	109338.2	172.4
Growth rate of output value for television sets, 1987-2005						
	Wu method			8.4		
	Revised method					
	Siding price alone			11.7		
	Add assortment effect		+10%	12.3		
	on 2005 price		+25%	13.1		
			+50%	14.3		
Sources: Physical output of color sets for 2005 from Yearbook 2006, p. 561.						
In the absence of output figures for B&W sets, I assume 100% color sets for 2005.						
Total output and number of color sets for prior years from Fifty Years 1999, p. 41.						
Price data for 1987 from Wu 2002, p. 198.						
Wu's method assigns the 1987 average price of RMB 766 to output in all years.						
Siding 1987 price is the weighted average of 1987 prices for B&W and color sets						

Table 2

China: Tertiary Sector Nominal Wage Growth, 1987-2005
National Average Wage Growth = 1

<i>Material Services</i>	
Transport	1.02
Information Transmission	2.21
Wholesale & Retail	0.94
<i>Non-material Services</i>	
Finance	1.76
Real Estate	1.12
Science, R&D	1.35
Education	1.04
Health & Welfare	1.16
Culture & Sports	1.26
Government, Party etc	1.11
<i>Manufacturing</i>	0.85

Source: Calculated from wage data in Yearbook 1987, Table 4-36 and Yearbook 2006, Table 5-21.

Figure 1: Tertiary Sector Share in China's GDP: NBS, Perkins-Rawski, and Maddison-Wu Data, 1978-2005

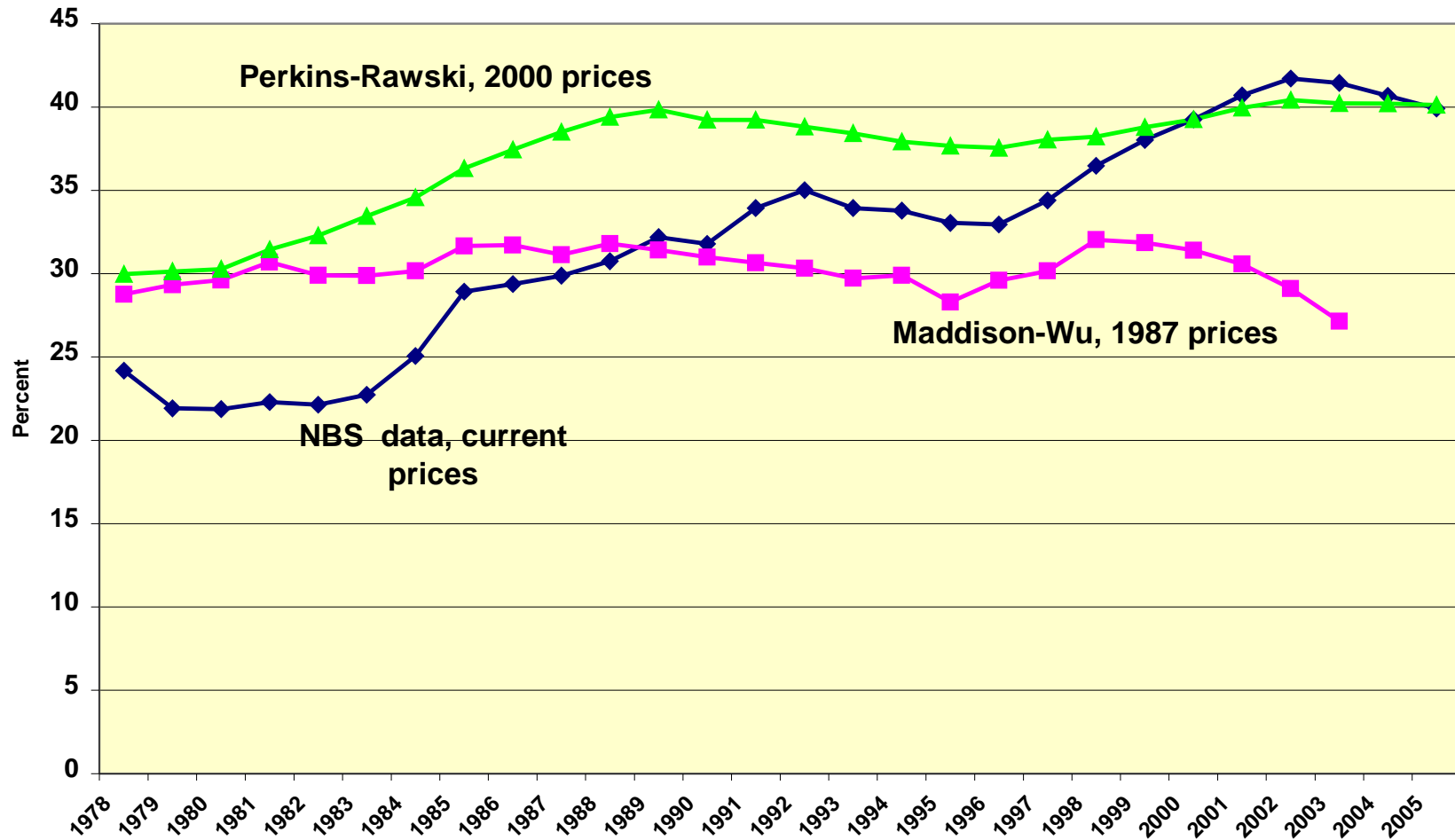


Figure 2: 30 Regions in China: Quarterly GDP Fluctuation vs. State Sector's Share in Industrial Output (2000)

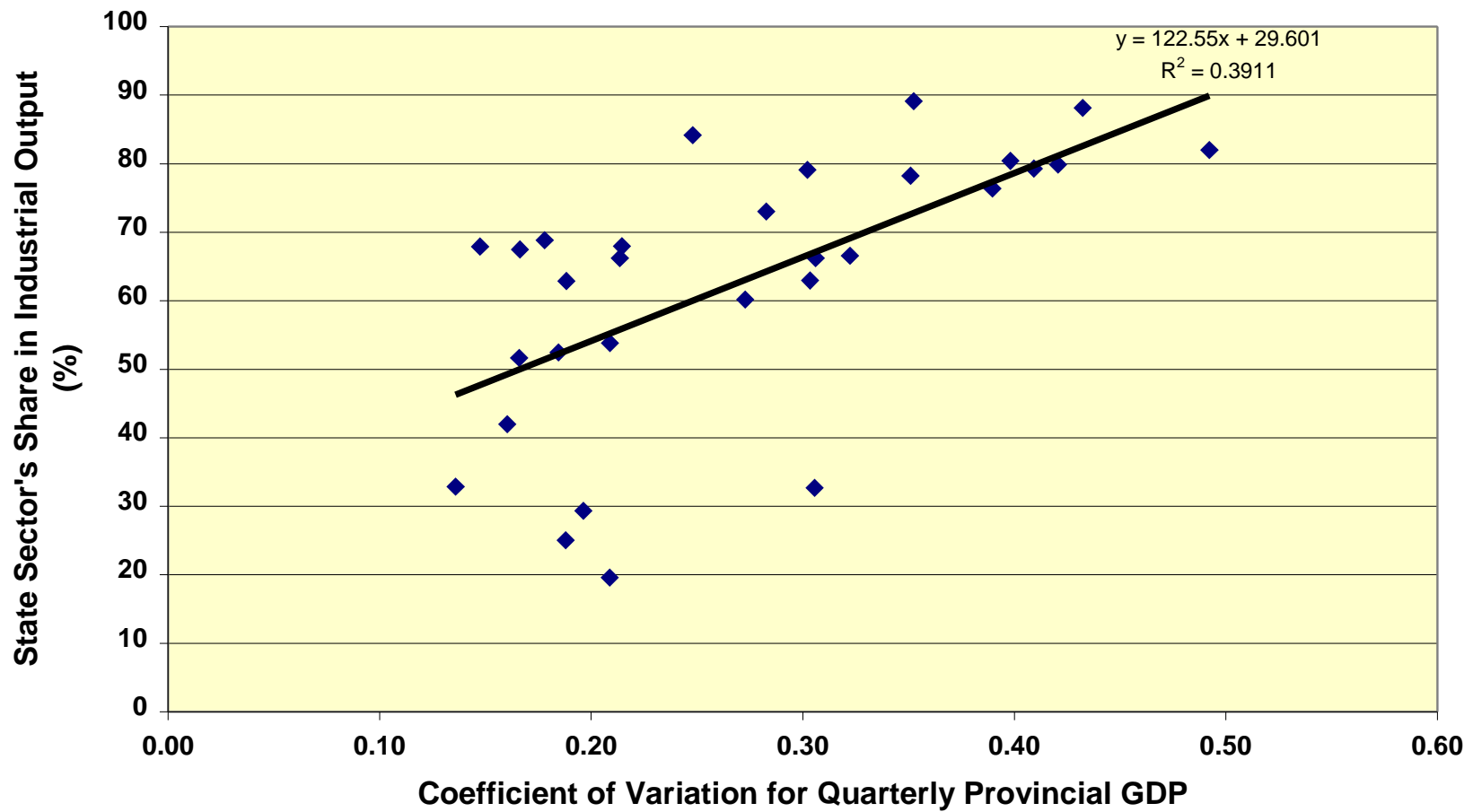
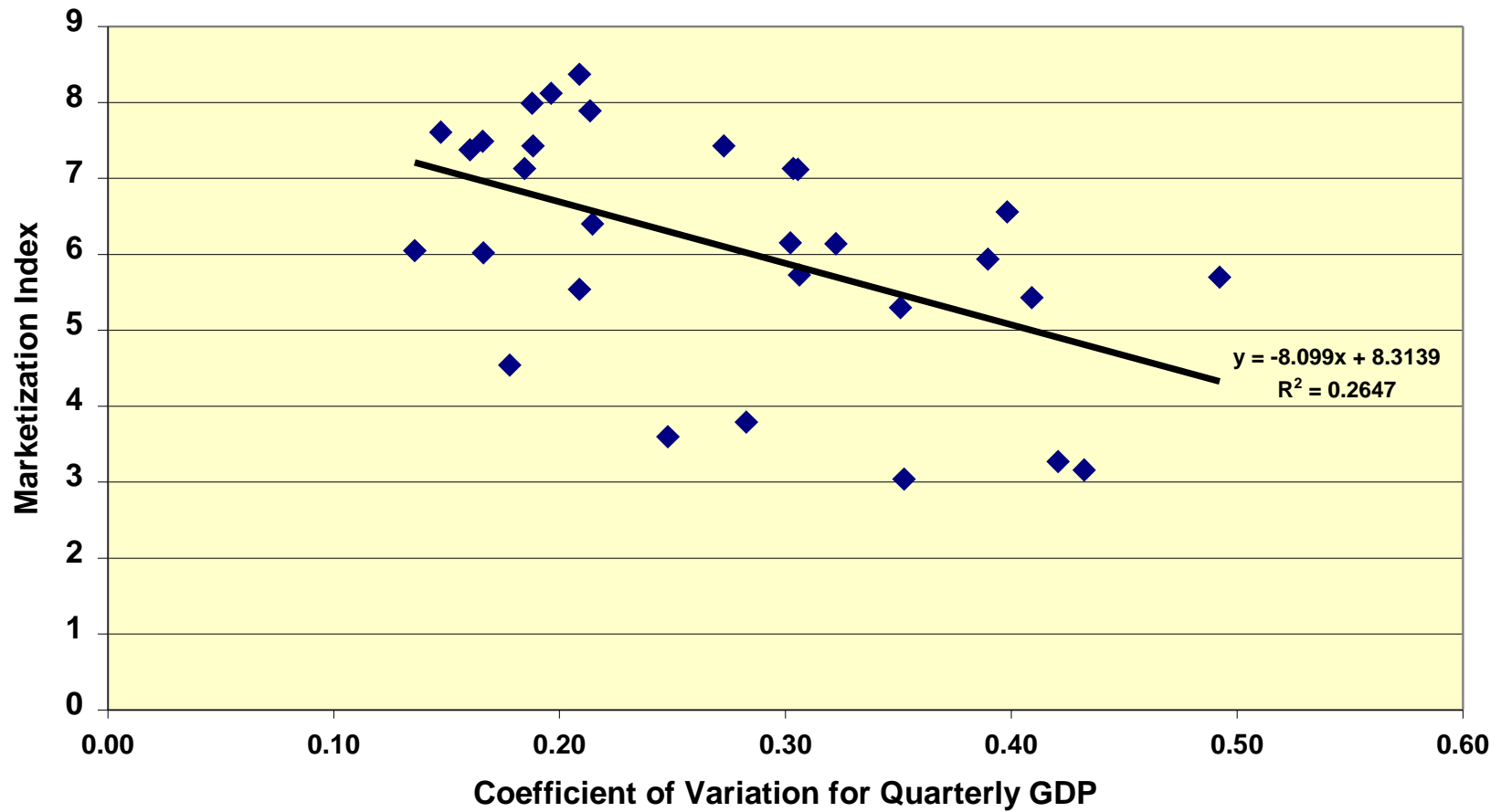
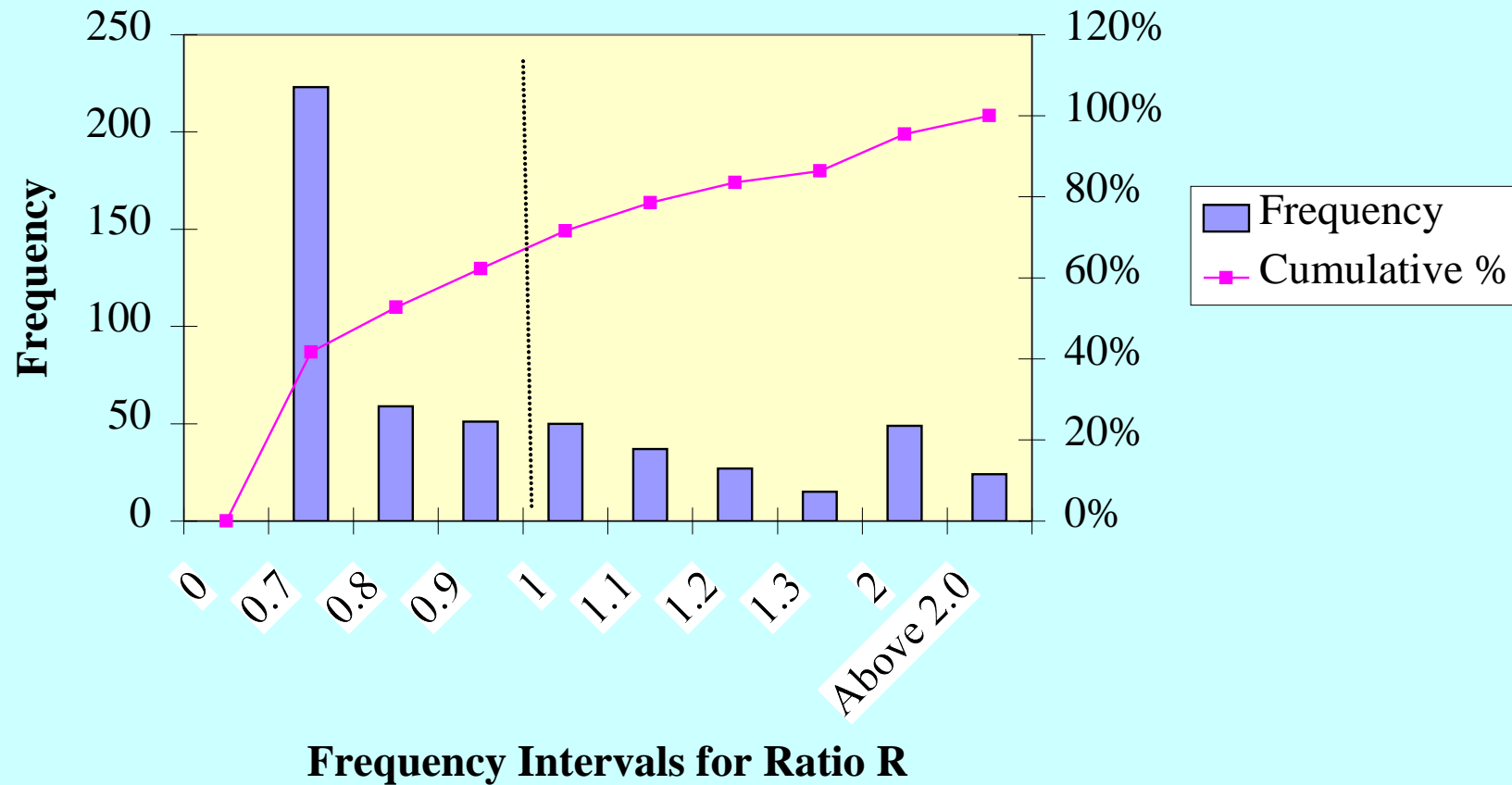
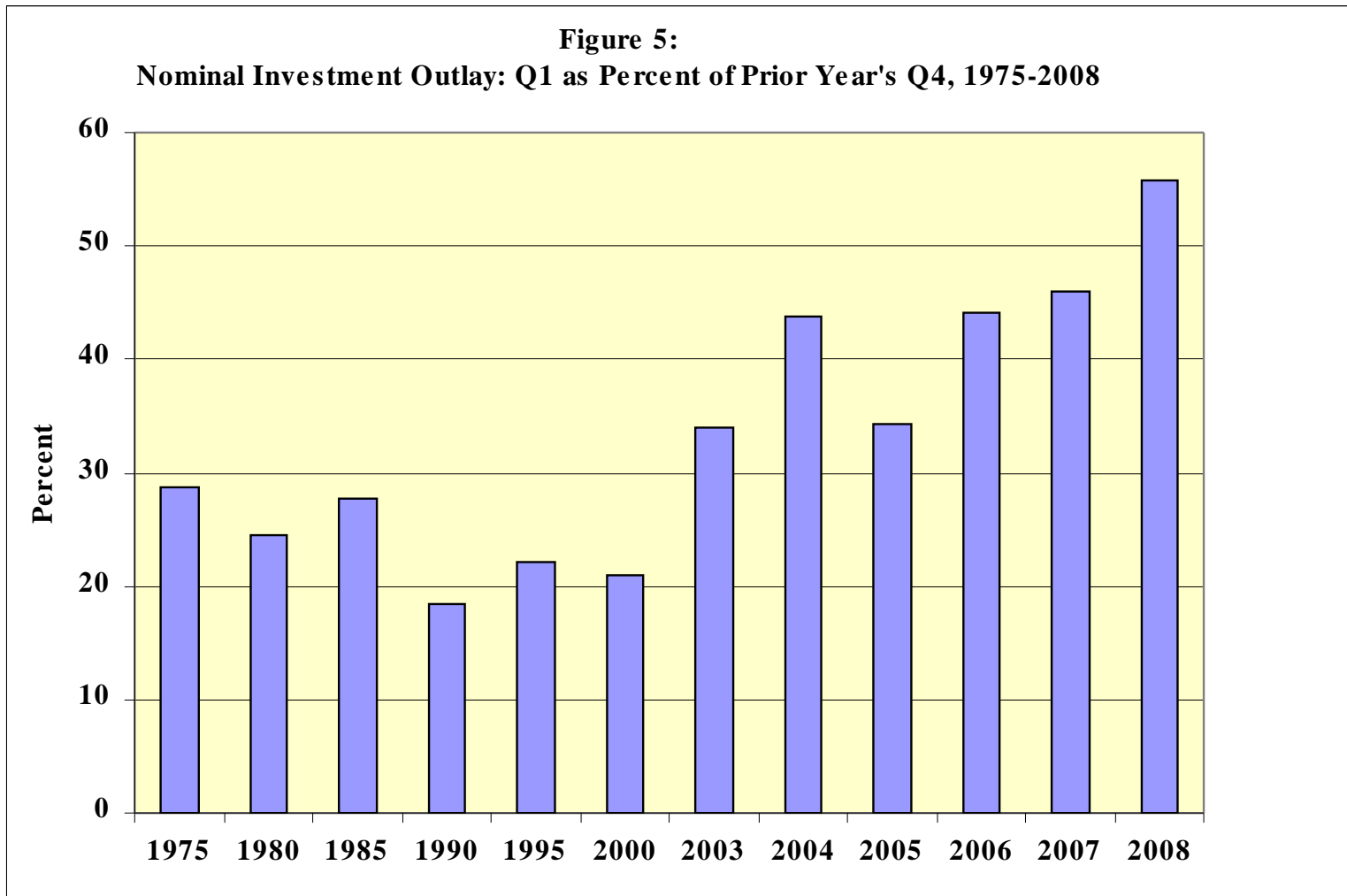


Figure 3: Provincial Quarterly GDP Fluctuation vs. Marketization Index (2000)



**Figure 4: Distribution of Ratio R for 535 Four Digit Industries,
 $R < 1$ Indicates Reduced Dispersion of Productivity During 1993-2002
 $R > 1$ Fits Cellular Economy Approach**





Source: for 1975-1995, from data on capital construction in Investment Yearbook 1950-1995, p. 78; for later years, from data in China Monthly Statistics.

