

Reform in China and Russia

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Summary

China's experience does not show that gradual reform is superior to the shock therapy undertaken in Eastern Europe and the Former Soviet Union (EEFSU). Diverging performance primarily reflects different economic structures prior to reform: China was a peasant agricultural society, EEFSU was urban and overindustrialized. In both, jobs in state enterprises were so heavily subsidized that workers refused to move to new industries elsewhere, even when productivity in the latter was much higher. In EEFSU the large state sector impeded structural adjustment. Curtailing subsidies would have produced many losers who used their power to resist this outcome; failure to curtail subsidies then cut off the potential supply of labour and other factors to new emerging firms. China's state enterprises have not performed as well as the rest of the Chinese economy and do not explain its success; rapid growth was possible because the large agricultural sector contained vast surplus labour, and did not enjoy subsidies and soft budget constraints. Once constraints on migration across regions and jobs were removed, this labour was available to fuel expansion in new industries. Unlike the distributional conflict in EEFSU, in China reallocation of labour allowed all groups to gain.

In both, partial liberalization also unleashed macroeconomic pressures, manageable in China because of rapid growth and adequate monetary policy, but explosive in much of EEFSU because of deeper structural problems and gross monetary mismanagement.

Structural factors in the economic reforms of China, Eastern Europe, and the Former Soviet Union

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1. Introduction

The divergent reform experiences of Eastern Europe, the Former Soviet Union, and China raise important questions about the strategy of economic transition. China has grown rapidly since market reforms began in 1978, while Eastern Europe and the Former Soviet Union (EFSU) have faced continued economic turmoil and significant declines in output, as shown in Table 1. The reasons for these divergent trends have been heatedly debated.¹

The Chinese experience is variously held to demonstrate the merit of 'gradualism' compared with 'shock therapy' (McMillan and Naughton, 1992) or the superiority of 'experimentation' to 'top-down reform'; the fallacy of the 'orthodox' view that rapid stabilization, liberalization, and privatization are keys to successful reform²; the wisdom of beginning reform in agriculture before reform of industry; and the advantage of economic reform prior to political reform rather than vice versa.

All these explanations miss the principal point. It was neither gradualism nor experimentation, but rather China's economic structure, that proved so felicitous to reform.³ The reform experience

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¹ Singh (1991) asks whether these differences reflect 'a professional schizophrenia on socialist reform'. See Perkins (1992) for a review of Chinese reforms.

² Singh (1991) argues that China's success raises many challenges to the orthodox view: reforms were partial, incremental, and often experimental; caused no initial downturn; made no use of large-scale privatization; avoided declining incomes and high unemployment; targeted agriculture first; reformed prices and trade controls only gradually; maintained exchange controls; and adopted active industrial policy.

Table 1. Economies in transition: annual growth (% per annum)

	Average 1986-89	1990	1991	1992
China	8.7	4.1	7.7	12.8
Russia	2.4	-2.0	-9.0	-19.0
Bulgaria	5.2	-11.6	-22.7	-7.9
Czechoslovakia	1.6	-3.0	-15.5	-5.0
Hungary	1.4	-4.0	-10.5	-4.6
Poland	2.7	-11.4	-7.7	1.5
Romania	-0.9	-7.1	-13.4	-10.2

Source: *China Statistical Yearbook 1992*, IMF, *Economic Review: Russian Federation, 1992*, World Bank, *World Tables 1993*, and IMF, *World Economic Outlook 1993*.

Notes: Output measure is GNP for China, Net Material Product for Russia, and Gross Domestic Output for other countries.

elsewhere in East Asia reinforces this conclusion.⁴ China began reform as a peasant agricultural society, EFSU as urban and overindustrialized. China faced the classic problem of normal economic development, the transfer of workers from low-productivity agriculture to higher-productivity industry.⁵ In EFSU, the problem is structural adjustment: cutting employment in inefficient and subsidized industry to allow new jobs in efficient industry and services. For many reasons, normal economic development is easier than structural adjustment, both politically and economically (see also Fischer, 1993a, 1993b).

Policy differences also mattered, but not in the ways usually assumed. China's structural policies (enterprise reform, trade liberalization, price

⁵ In our view, China's gradualism in embracing private ownership and market reforms reflected not an economic judgement on the most effective strategy for the transition, but rather the continuing ideological commitments of China's Communist Party. Xiao (1991d) notes the strong link between non-state ownership and productivity growth across different regions of China. Gradualism also reflected political paralysis caused by disagreements between conservative and pragmatic reformers (see Woo, 1993).

⁴ A clear example is Vietnam, whose gradual reform during 1985-88 failed to address serious macroeconomic imbalances. Output and trade stagnated as inflation took off (Drabek, 1990). In 1989 Vietnam adopted a 'big bang', liberalizing prices, devaluing 450% to unify the exchange market, sharply tightening credit, and returning collective farms to families with long leases. Growth accelerated, inflation ended, agricultural productivity soared, and small enterprises proliferated outside the state sector (Leipziger, 1992; Dollar, 1993). Unlike EFSU, output did not fall after the big bang. As in China, Vietnam enjoyed surplus agricultural labour that flowed to jobs in the new sector. This flow was accelerated not by the gradualism of reform but the adoption of strong market-oriented reforms.

⁵ Chen and Hu (1993) discuss surplus labour more fully. The *China Daily* (4 June 93) reported 'At present there are still 130 million surplus farm laborers in the countryside [out of an agricultural labour force of 342 million], according to the Ministry of Agriculture'.

reform) were not unusual; Eastern Europe's post-1989 reforms did as much or more to stimulate exports and new enterprises. The main policy differences have been macroeconomic. China was more cautious than Russia and many other EEFSSU countries in monetary policy. Although China is now experiencing inflationary pressures, its monetary policy was never as reckless as that in the Soviet Union in 1989-91 or in Russia in 1992.

Broadly speaking, normal economic development is usually Pareto-improving: all major groups can benefit from the flow of workers from agriculture to industry, especially if the new industry is export-oriented and labour-intensive, as in East Asia. Structural adjustment, however, is likely to be conflictual. Workers in the declining sectors fight to maintain their previous status and living standards. Crucially, China's agricultural workers had nothing to lose, indeed much to gain, from the dismantling of socialism, while much of the industrial and even agricultural work force in EEFSSU has plausible fears that dismantling the old system could leave them worse off, at least in the short run.

The economic structure in EEFSSU has three interrelated flaws not present in China. First, industry is overbuilt: too much heavy industry, too little light industry, consumer goods, and services. Second, virtually all workers before 1992 were in jobs heavily subsidized by the state, seriously impeding structural change. Third, virtually the entire EEFSSU population was covered by an extensive social welfare system, with many of the benefits linked to the place of employment. The EEFSSU population is therefore used to economic security: job tenure, pension benefits, guaranteed income, health and housing. Even though such guarantees are beyond the financial capacity of the state, they remain a potent rallying cry for much of society.

China is very different. In Gershchenkron's famous phrase, it had the 'advantages of backwardness'. Even though the agricultural commune system was brutally regimental before 1978, it did not suffer the rigidities of heavy subsidies, soft budget constraints, and guaranteed employment of state industry. When the communes were dismantled, nearly three-fourths of Chinese workers found themselves outside the socialized economy and subject to hard budget constraints with little social protection. This spurred enormous flows of workers out of subsistence agriculture into new sectors of the economy, including township and village enterprises (TVEs) and new labour-intensive manufacturing exporters set up in coastal regions. The latter used offshore Chinese capital, technology and management.

China's strategy involved a 'two-track approach': continued state control of state enterprises while permitting growth of a new non-state sector largely outside of state control. Although some countries in EEFSSU

tried a similar course during the 1980s, their two-track approach failed. Chinese peasants left farms to join the non-state sector; industrial workers in EEFSSU did not leave the state sector in sufficient numbers until industrial subsidies were cut sharply. In the meantime, the liberalization of the economy in both cases contributed to macroeconomic instability, which got out of hand in most of EEFSSU, because of egregious monetary mismanagement. The turn to a 'big bang' in EEFSSU came in the wake of the failures of the two-track approach and in response to growing macroeconomic destabilization (see Berliner, 1993; Brada, 1993; Sachs, 1993).

The paper is organized as follows. Section 2 details structural differences between China and EEFSSU, and discusses briefly the theoretical implications of these differences. Section 3 reviews the reform experiences of China and EEFSSU during the 1980s, showing the success of the two-track approach in the former and its failure in the latter. We argue that the results of state enterprise reform in China have been disappointing, and certainly not the source of China's improved economic performance. In Section 4 we discuss the differences in monetary policy, stressing the high costs of macroeconomic mismanagement in EEFSSU. We conclude in Section 5, discussing some key areas in which China and EEFSSU face similar reform problems: macroeconomic stabilization, fiscal federalism, privatization, and political reform.

2. The economic structure of China and EEFSSU

In this section we identify the basic structural characteristics that underlie the success of the two-track approach in China and its failure in the EEFSSU.

2.1. Structural differences between China and EEFSSU

2.1.1. *The preponderance of peasant agriculture in China.* China and EEFSSU began reforms at very different stages of economic development, China as a peasant society (not unlike Russia in 1910 in the share of labour in agriculture), EEFSSU as overwhelmingly urban and industrial. Under central planning the Soviet Union developed a considerable division of labour, but one that was inefficient and difficult to reorient. Since pre-reform rural China had much less division of labour, creating a market-based division of labour was much easier.

Some of the sectoral differences are shown in Table 2. In 1978 China had 71% of the labour force in agriculture, only 15% in industry, just half of which was in state-owned enterprises (the rest being in urban or rural

Table 2. Distribution of employment by sector (% of total employment)

	Agric.	Industry	Construction	Transport	Commerce	Other
China (1978)	71	15	2	2	3	7
Russia (1985)	14	32	10	10	8	26

Source: IMF, *Economic Review of the Russian Federation*, April 1992; *China Statistical Yearbook 1992*.

collectives, and rural individual enterprises). In Russia, by contrast, only 14% of the labour force was in agriculture, but 32% in industry.⁶

There was also a big difference in the gap between urban and rural living standards in China and EEFSSU. China's peasants were living near subsistence levels in 1978, far below the levels of the non-agricultural sectors: rural real consumption averaged around one-third of that in cities (see Table 3).⁷ In the Soviet Union in 1990 agricultural workers on the state farms and collective farms had incomes only 15% below those of urban workers. Even these smaller differentials probably overstate the actual differences in living standards, since measured agricultural compensation excludes income from private plots, and since the cost of living is lower in the rural areas (Nove, 1986). The wider income spread in China probably reflects three things: a vast supply of surplus labour in the Chinese countryside at the start of reforms, held in place by restrictions on migration and on starting non-agricultural enterprises; prior elimination of most of the Soviet Union's earlier peasant labour force by industrialization or violent deaths during 20th century upheavals of war, revolution and collectivization; and large subsidies to Soviet agriculture in contrast to heavy taxation of Chinese agriculture.

The rural sector in China enjoyed a one-time jump in productivity after 1978 as the chaos of the Cultural Revolution faded and private agriculture was reestablished. For rice output per hectare, during 1952-57 (before the period of the Great Leap Forward), productivity grew at 2.3% a year. During the Cultural Revolution, productivity growth fell to 1.1% because

⁶ We emphasise the distribution of labour rather than of capital or output because we focus on the political economy of reform. The focus on labour, not output, also sidesteps problems in interpreting highly distorted prices and hence output values during the period before liberalization.

⁷ The urban-rural gap was sustained by the household registration system. Until free markets became widespread after 1980, ration coupons for food were dispensed at an individual's permitted place of residency, namely the place of birth. During 1960-80 travel restrictions on the purchase of train tickets further segmented rural and urban labour markets.

Table 3. Ratio of urban to rural per capita consumption

	1957	1966	1978	1980	1985	1990	1991
China	2.3	2.3	2.9	2.8	2.2	2.5	2.6
Russia	na	na	na	1.3	1.2	1.2	1.2

Sources: *Chinese Statistical Yearbook 1992*, *The Russian Federation in Figures in 1992*.

Notes: For China, indexes of real per capita consumption in the urban and rural areas. For Russia, the average monthly nominal wage for workers in industry and agriculture.

of political turmoil and the pursuit of radical commune policies. Post-1978 liberalization allowed a rebound of productivity during 1979-84, as it caught up with the past trend.⁸ Since 1984 productivity growth has stagnated, averaging a mere 0.7% a year during 1985-91. In Russia productivity growth in agriculture has been low but not held back by specific events. Improvement in Russian agricultural productivity will require more than 'bouncing back' to a previous trend.

2.1.2. The preponderance of state-sector employment in EEFSSU. The Chinese state enterprise sector is small, employing just 18% of the workforce (Table 4). Urban collectives, typically attached to state enterprises, employ another 5% of the labour force. Rural communes, with over 70% of the labour force in 1978, were not state enterprises and were subject to a hard budget constraint. In Russia 93% of the labour force in 1985 was in state and municipal enterprises and organizations (including state farms) with soft budget constraints,⁹ and a further 6% in collective farms and consumer cooperatives that, in organization and financial dependence on the state, differ little from their state-owned counterparts. Individual and private enterprises employed only 1% of the labour force in 1985.

Russian state farms (*sokhozes*) and collective farms (*kolkhozes*) are classic manifestations of state enterprises with soft budget constraints, and in this way are distinct even from pre-reform Chinese communes. Russian farm workers are salaried with guaranteed incomes and employment, and

⁸ Similar surges in rice productivity took place in Taiwan after World War II and the Communist Revolution, and in Indonesia after 1966.

⁹ Distinguishing state from non-state is difficult in both China and Russia. For Russia we treat enterprises leased from the state as state enterprises since the absence of clear ownership allows perverse incentives (e.g. asset stripping) to survive. For China we treat township and village enterprises (TVEs) as non-state, although collective organizations, they operate with a hard budget constraint. This latter classification is standard among Chinese scholars and makes sense here since the hardness of the budget constraint is the chief concern.

Table 4. Distribution of employment by type of organization (% of total employment)

	China			Russia	
	1978	1984	1991	1985	1991
State enterprise	18.6	17.9	18.3	93.1	86.1
Collective agriculture	72.0	67.0	63.9	6.0	5.3
Urban collective	5.1	6.7	6.2	na	na
Industrial TVEs	4.3	7.6	10.0	na	na
Private and other	0.0	0.8	1.6	0.9	8.6

Source: *China Statistical Yearbook 1992*.

Notes: For China, all agricultural activities and non-industrial TVEs are put in the 'collective agriculture' category. For Russia, state enterprises include leased state enterprises as well as traditional (pre-1985) consumer cooperatives (mainly in retail distribution). Post-1985 cooperatives are counted in 'private and other'. For Russia, collective agriculture is kolkhoz employment. As described in the text, the organization of the kolkhoz sector is virtually indistinguishable from the state-farm sector (sokhov).

are covered by the extensive social welfare system that applies to urban workers. In 1992 Russian sokhovs and kolkhozes received soft loans of about 8% of GDP, as well as direct budgetary grants. Overall, Russian state enterprises received soft credits on the order of 20% of GDP in 1992, after the start of reforms! In China direct and indirect subsidies of state enterprises was about 8% of GDP in 1991.

2.1.3. *Over-extensive social welfare system in EEFSSU.* Some observers claim that East Asian two-track reforms offer a 'kinder, gentler' path than the 'big bang' approach in parts of post-1989 EEFSSU. In fact, China's two-track approach also includes a two-track social policy: extensive protection for urban workers but virtually no social guarantees for rural workers. EEFSSU social protections are deemed to be universal, and the commitments are often very generous, at least on paper. Extensive social protection in EEFSSU probably slows down reform in three ways: many benefits are linked to the site of employment, and therefore reduce job mobility; the broad social coverage probably encourages longer spells of unemployment and more resistance to accepting new jobs; and the high level of social welfare spending is a major factor in the large budget deficits in many EEFSSU countries, thereby contributing to overall macroeconomic instability.

In contrast, China's structural change is probably accelerated by the absence of social guarantees in the countryside: rural workers flood into the cities in search of jobs at extremely low pay, and are absorbed by the burgeoning export and construction sectors. Yet true social conditions in

China are often hidden from view. Unemployment is not counted in the countryside, and is vastly undercounted among the estimated 50 million 'floating population' of Chinese workers in urban areas without residence permits.¹⁰

Ahmad and Hussain (1989) and World Bank (1990) offer detailed accounts of Chinese social security programs. There are four broad categories of social security: labour insurance (laodong baoxian); occupational and communal provisions (shehui fuli); social relief (shehui jiuji) and disaster relief (ziran zaihai jiuji); and public provision of health care. Direct budgetary expenditures by the central government on these items is minuscule; most coverage is provided through enterprise funds or local governments. Moreover, the coverage is almost entirely for urban workers. Labour insurance, for example, includes disability, maternity, and sickness benefits, and old age pensions. In the 1980s, the coverage was fairly steady, around 23% of the labour force, essentially the state-enterprise employees. Rural workers were not included. This is why the aggregate expenditure on social security benefits in 1991 came to only 5.5% of GDP.

Social relief directed at the countryside mainly covers the elderly who lack direct family support. In 1986 an estimated 6.4% of the rural population was covered by social relief, a mere 16.4% of those deemed to be below the rural poverty threshold. Public provision of health care is also mainly limited to the cities. An earlier rudimentary rural health insurance system was largely dismantled after 1978, and just 5% of villages were covered by rural health insurance in 1985 compared with 80% in 1979.¹¹

In EEFSSU the social relief system aspires to universality, though it is no longer feasible for governments to finance the system at the levels committed in the past (and still expected by large parts of the population today). In Poland¹² in 1991 expenditures of the three social funds (social insurance, social insurance for farmers, and labour fund) were 14.9% of GNP (cf 5.5% of GNP in China). The bulk of this spending (12.3% of GNP) was on pensions. Pension coverage is nearly universal, for farmers as well as urban residents. 5.5 million pension recipients rely on only 12 million contributors in a pay-as-you-go system. Early retirement is easy, and the average retirement age is 58 for men and 57 for women. Attempts to rein in the pension benefits have been repeatedly defeated by the

¹⁰ World Bank (1992).

¹¹ Data in this paragraph from Ahmad and Hussain (1989). The delivery of social services to the poor areas has not improved with the reforms (see e.g. World Bank, 1992).

¹² Graham (1992) provides a recent view of the situation in Poland.

Polish Parliament. In Hungary in 1991 pension benefits were 11.3% of GNP, similar to the Polish level; and there was an astounding 509 pensioners for every 1,000 people economically active.

2.1.4. *Over-industrialization in EEFSSU.* EEFSSU entered reform with a service sector that previously had been severely repressed to promote heavy industrialization (see Berg and Sachs, 1992, on Poland; Lipton and Sachs, 1992, on Russia; and Winicki, 1993). Market-oriented adjustment tends to require the shrinkage of industrial output and employment, as resources move to the service sector.¹³ In China, by contrast, industrial employment was a small share of the labour force (15%) and could be expected to rise after reform. We illustrate with the case of steel production, which in the USSR in 1990 was 160 million metric tons, or 580 kilos per capita; in China 59.2 million metric tons, or 53 kilos per capita; in the United States 90.1 million metric tons, or 365 kilos per capita, above that in China but below that in Russia.

2.1.5. *The deeper penetration of central planning in the EEFSSU than China.* Economic planning was far more deeply entrenched in EEFSSU than in China. Most Soviet workers were in state enterprises; in China, most were not. The specificity of state planning was far greater in the EEFSSU, where it had been carried out for decades, than in China. Qian and Xu (1993) note that around 25 million commodities entered the Soviet economic plans; in China only around 1,200 commodities were included. Regional governments were given greater autonomy in China than in the EEFSSU, especially during the Cultural Revolution. Fairbank (1992) notes that: 'Local governments were given autonomy to set up small-scale rural industries outside of central planning. In 1965 there had been under the control of central ministries a total of 10,533 nonmilitary enterprises that produced 47% of state-run industrial output. By 1971 these had been reduced to 142 factories that produced only 8% of the output'.

Wong (1986) gives a striking example of the increased local role: 'even in the strategic iron and steel industry, local investment accounted for 52% of the total during the Fourth Five Year Plan (1971-75) compared with only 8% during the First Five Year Plan'. In addition to increased oversight of existing state enterprises, local governments were given much

¹³ Winicki (1993) tries to measure the structural misallocation by estimating the sectoral shares of employment and GDP that would be expected if EEFSSU followed patterns elsewhere, as determined by per capita income and population. For example, he concludes that the share of industry in Soviet GDP in 1980 was 62% compared with an 'expected' level of 38%; services were 22% instead of an 'expected' 55%.

wider freedom to establish small scale enterprises, leading to the rapid growth of the TVE sector even before 1978.

2.1.6. *Political conditions on the eve of reform*¹⁴. China began reform after more than a decade of tumult and stagnant (or falling) living standards in the countryside. The Cultural Revolution had directly undermined the control of the party apparatus. Fairbank (1992) reports that 60% of party officials were purged during this period. Local and regional autonomy rose markedly in the chaos. The Cultural Revolution also contributed directly to rural impoverishment and a growing disparity between urban and rural incomes. In 1966 urban consumption was 2.3 times higher than rural consumption; by 1978 it was 2.9 times higher. Peasants, seething with discontent, were eager to reclaim their property rights. Not only did they receive few financial transfers from the state, they were heavily taxed through the administratively-set rural-urban terms of trade. Chen and Hu (1993) cite an estimate that in 1978 agricultural prices were set on average 33% below equilibrium levels but industrial prices 20% above equilibrium levels. The peasants had no financial attachment to the commune system.

In Russia there had been no decisive breakdown in economic performance in the early 1980s. The economy stagnated, but political control of the central apparatus remained intact. Gradual decay encouraged a policy of 'decapitalization' in which the physical and financial capital stock was allowed to run down in order to sustain real consumption levels in the short term. Many governments in EEFSSU also borrowed abroad to maintain living standards in the face of economic stagnation. Poland borrowed heavily in the 1970s, Hungary and Bulgaria in the mid-1980s, and the Soviet Union in the late 1980s; all eventually faced foreign debt crises.

2.1.7. *Structural linkages to international markets.* Since so much of successful reform involves export promotion and attraction of foreign capital, structural differences in this regard also affect reform prospects. On the whole, the Eastern European countries should be better placed than either the former Soviet Union or China to reintegrate into world markets, given their small size and easy proximity to EC markets. Nonetheless, China has obviously received a vast boost from the offshore Chinese economy of Southeast Asia, which has supplied know-how,

¹⁴ In a perceptive article before the Soviet collapse, Ashund (1989) stressed the differing political conditions in China and the Soviet Union, especially the absence in the latter of any sense of imminent crisis as a spur for fundamental reforms.

management, financial and physical capital, and trade infrastructure, for China's coastal regions. By 1989 Hong Kong accounted for over 60% of cumulated foreign investment in China (Chen *et al.*, 1991). Moreover, roughly 70% of China's overall trade leaves through Hong Kong. China's coastal regions have outstripped interior regions in economic growth in the last 15 years.

2.1.8. The interaction of macroeconomics and economic structure. The USSR was subjected to severe macroeconomic mismanagement which contributed to a flight from rubles in 1990 and 1991. Under the system of price controls, the monetary expansion worsened shortages and widened the gap between official prices and black-market prices. This acted as an implicit tax on the non-state sector, since state enterprises typically were ahead in the queue to receive scarce commodities at official prices. Thus, macroeconomic mismanagement exacerbated the effective protection of the state sector.

2.2. Implications of the differing economic structures

The basic difference between Chinese and EEFSSU reform is that in China, 80% of the labour force was outside the deeply conservative state sector at the start of reforms, whereas in EEFSSU the state sector covered virtually the entire population, even in agriculture. This had several implications. First, the two-track approach could work effectively in China where the state sector was sufficiently small, but could not work effectively in EEFSSU. The non-state sector in China could draw upon a vast rural hinterland, as well as offshore capital and management expertise. Second, restructuring in EEFSSU requires a sharp cutback in existing subsidies, provoking political conflict. Third, the sense of entitlement (e.g. expectation of a guaranteed income with social protection) is much more extensive among EEFSSU workers than among Chinese peasant workers. The result is greater immobility, higher registered unemployment, and significant expressions of social grievance.

Even when non-state activities are permitted alongside state enterprises, and even when non-state activities are much more productive than state-sector activities, it is hard to induce flows of workers, capital, and productive inputs from the state sector to the non-state sector. As long as the subsidies to the state sector are large enough to offset the productivity differences between the state and non-state sectors, resources will remain in the state sector rather than flow voluntarily to the non-state sector.

In the Appendix we outline a formal model to make the point. There are three sectors: subsistence agriculture, state industry, and non-state industry. Productivity is lowest in the first, moderate in the second, and highest in the third. The state sector is heavily subsidized, however, so that workers earn far more than their marginal product. The subsidies to the state sector are paid for by all workers through explicit and implicit taxes (such as inflation). Initially, the more efficient non-state sector is suppressed by law. Then liberalization takes place, so that workers may voluntarily leave their jobs to move to the new sector.

Subsistence agricultural workers happily move, since wages in the new sector are higher than in subsistence agriculture. State-sector workers, however, will prefer to remain in the state enterprises, even though their productivity would be higher in the new firms, if the subsidy to state-enterprise workers is greater than the difference in productivity in the two sectors. This analysis suggests that in China, the non-state sector can grow rapidly, relying on the flow of labour from agriculture. In EEFSSU, the non-state sector will not develop. The two-track approach is not enough.

Subsidization of the state sector stops not only the flow of workers but also of capital and other inputs. For example, in pre-1989 Poland struggling private-sector construction firms had trouble buying bricks, since the output of bricks was automatically flowing to the state enterprises. Of course bricks were available in the black market at prices far higher than official prices, but the price differential rendered the private-sector work unprofitable. Lack of access to financial capital by non-state firms was even more notorious. Thus, although the model in the Appendix focuses on labour mobility between sectors, the analysis is at least as relevant to intersectoral mobility of other production inputs.

Our model stresses that the subsidies must be paid for through some form of taxation, such as inflation. Thus, the net benefits of the subsidies to state workers are much smaller than the gross benefits. Suppose all workers are initially in the state sector (largely true in pre-reform EEFSSU). The subsidy per worker must be paid for by a tax per worker that averages the same amount. The net subsidy is zero. Nonetheless, the presence of the subsidy will still stop the flow of workers to the non-state sector, as long as a non-state sector worker would have to continue paying the tax to cover the subsidy of the state workers, as for example if subsidies were financed by inflation or universal personal income tax.

3. Adjustment under gradual reform in China and EEFSSU

Both China and EEFSSU attempted gradual reform in the 1980s, with vastly different results. We now draw the links between the structural differences and differences in economic performance.

3.1. China's economic takeoff

China's reforms were undertaken in three main stages after Deng's political ascendancy in 1978. The first phase, 1979-89, focussed mainly on rural liberalization. The 'personal responsibility system' allowed farm households to lease land from the state and sell their output on a two-track basis: a fixed quota at state-set prices to official procurement agencies and the remaining output at freely determined prices in agricultural markets. State procurement prices were also raised to ease the financial strain on an impoverished rural sector whose real consumption had been stagnant for more than a decade. Township and village governments were increasingly allowed to establish TVEs for the production and sale of industrial goods outside the central plan. While TVEs had been allowed throughout the communist period, it was after 1978 that they were given the most dramatic encouragement.

The second phase of reform opened the economy to international trade and capital (see Lardy, 1992). Market opening began around 1979, with the devaluation of the highly overvalued exchange rate and establishment of a retention system for foreign exchange for exporting firms. Trade liberalization proceeded gradually throughout the 1980s: further devaluations of the exchange rate, increased rights of exporting firms to hold foreign exchange, creation of special economic zones in the coastal regions, increased scope for foreign direct investment, and finally the establishment of a rudimentary foreign exchange market (in so-called swap centers) at the end of the 1980s.

The third phase of reform involved urban industry, and began around 1984, with the unveiling of the 'Provisional Regulations on the Expansion of Self-Management Powers in State Enterprises'. These reforms aimed to establish greater autonomy for industrial enterprises, including increased freedom to set contract prices, and choose inputs and outputs. Managers and workers received extra incentives by having their pay more tightly linked to enterprise performance. The system of profit remittance was replaced by an income tax (*ligishui*). State enterprises were set into a two-tier framework conceptually akin to that of household farmers: the enterprise had to deliver a portion of its output to the state on a quota basis, while the rest could be sold in an increasingly free market. Other kinds of property ownership (urban and rural collectives, private, joint venture) were liberalized too. From 1987 the 'contract responsibility system' (*chengbao*) were introduced, allowing enterprises to make quasi-contracts with the state to deliver a negotiated amount of taxes. Income in excess of the negotiated tax payment reverted to the enterprise for reinvestment and compensation of workers and management.

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These reforms were gradual in several senses. First, they extended over more than a decade, and indeed are still proceeding. Second, they were not conceived as an integrated strategy to create a market economy, much less a capitalist economy. Only at the CCP Congress in 1992 was there a formal endorsement of the market economy, albeit a 'socialist market economy'. Third, for over a decade there was no attempt to curtail the state enterprise sector, either financially (reduced subsidization) or through privatization. Large state enterprises remain subject to a central plan, though one that applied to an ever-shrinking proportion of national output.

At the same time, some reforms have been breathtakingly rapid. The rural reforms ending the commune system that covered hundreds of millions of peasant farmers essentially took place in the three years 1979-81. Notably, the impetus for reform came both from below and above (Zweig, 1989). In the late 1970s, individual regions began reverting to 'team accounting' rather than 'brigade accounting' (moving the locus of responsibility closer to the household level), and to increased reliance on private plots. Deng Xiaoping halted radical collectivization: the Communist Party adopted his programme entitled 'The New Sixty Articles' in 1978. The rise in centrally-mandated procurement prices in 1979-80 raised peasant income and also fueled pressures to reverse collectivization. By 1981 there was a massive, almost spontaneous, dismantling of collective property in agriculture. In 1983, the People's Communes were formally eliminated, and the individual household was established as the basis of agricultural production.

Turning to the results of reform, we note that most of China's rapid growth came in two areas: rural regions where non-state enterprises at the township and village level flourished, and in the coastal areas where market opening led to an export boom and later to a massive inflow of foreign direct investment. Areas heavily involved in state industry fared much less well, even though initially they were often the richest regions.

Table 5 shows these patterns in the structure and performance of 11 characteristic regions. The two regions of traditional heavy industry, Liaoning and Heilongjiang, are on the Russian border and were favored by the Soviet economic advisors in the early 1950s who came to China to implement the Stalinist strategy of heavy industrialization. The coastal regions, Jiangsu, Zhejiang, and Guangdong, were favored in the 1980s with special economic zones linking them to Hong Kong. The inland regions are overwhelming agricultural, with more than 80% of their population in agriculture in 1990. The two province-status cities, Beijing and Shanghai, have a high proportion of state-owned, heavy industry. We see that the coastal regions started out with a more felicitous industrial structure than either Manchuria, the inland regions, or the independent

Table 5. Economic growth and production structure in selected Chinese provinces

	% output growth 1983-91	Per capita regional income as % of national average		% of gross industrial output produced by					
		1984	1990	SOEs	heavy industry	rural industry	1985	1991	
National	100	100	100	78	53	50	51	18	29
Industrial northeast	80	177	158	80	60	65	69	12	22
Heilongjiang	57	147	129	84	81	66	68	6	9
Coastal									
Jiangsu	124	138	134	61	33	41	47	38	46
Zhejiang	165	127	136	58	29	36	35	37	48
Guandong	157	118	146	67	39	35	34	19	26
Inland									
Henan	88	73	70	82	53	47	55	16	33
Sichuan	83	73	72	80	62	50	54	15	25
Guizhou	83	59	51	86	76	60	58	12	14
Gansu	111	75	75	94	78	77	73	6	13
Province-cities									
Beijing	89	304	284	81	60	54	56	13	23
Shanghai	80	518	383	87	65	44	50	10	20
11 above provinces				71	50	46	50	20	30

Source: China Statistical Yearbook, various issues.

cities: less reliance on heavy industry and on state-owned enterprises, and a higher proportion of output from small, rural industries outside of the national plan.

Coastal regions boomed, traditional areas of heavy industry grew more slowly than the national average, and agricultural regions lay in the middle. We offer a 'Russification' hypothesis: preceding industrialization (along Soviet lines) was a hindrance, not a help, to economic growth in the 1980s. The main sources of growth were the non-state industries; TVEs in rural areas, private firms and joint ventures in urban areas, particularly along the coast. Table 6 reports that during 1980-91, gross industrial output grew by 13% a year (8% in the state sector, 14% in the urban collective-individual sector, and 25% in the rural collective-individual sector). The share of gross industrial output originating in SOEs fell from 78% in 1978 to 53% in 1991.

The small role played by import-substituting industrialization is consistent with the experience of East Asia more broadly. Throughout East Asia, rapid growth was spurred by labour-intensive export-oriented

Table 6. Industrial production by type of organization, China, 1980-91

	Output (trillions of 1980 yuan)				average annual real growth (%), 1980-91
	1980	1984	1988	1991	
SOEs	392	513	772	890	7.8
Collectives	121	226	560	789	18.6
Individuals	0	2	68	126	91.4
Other	2	9	44	129	43.7
Total	515	749	1,444	1,934	12.8
Collectives & Individuals:					
urban	67	112	221	268	13.5
rural	54	116	407	647	25.3

Source: China Statistical Yearbook (CSY).

Notes: Industrial output of rural-based collectives and individuals computed from industrial output reported in rural total output in 1992 CSY. From matching employment data in 1991 CSY, we conclude that 'other forms of ownership' are urban-based enterprises. In 1978-83, employment in industrial enterprises below the village level were put under agriculture. Rural industrial employment from CSY. The reader should be warned that output figures in Table 9.56 in CSY are in constant prices but with different base years for different years.

manufactures, developed independently of the heavy industry that had been fostered by import-substitution policies. Workers in the new export-oriented firms came from agriculture not from heavy industrial enterprises. Riedel (1993) confirms that in the export-oriented industrialization in Taiwan, Thailand, and China, know-how, material inputs, and even capital were found abroad more than at home. Furthermore, those who went to work in labour-intensive manufacturing (disproportionately women) in all three countries were recruited for the most part from the rural sector, not the existing industrial work force. And those who started up the small-scale manufacturing activities, which in both Hong Kong and Taiwan account for the bulk of manufacturing output, often had no previous managerial or entrepreneurial experience at all.

Importantly, the state-owned enterprise sector did not actually shrink. Employment in the new non-state sector came entirely from agriculture. Total employment in SOEs actually rose from 74.5 million in 1978 to 106.6 million in 1991. Even the proportion of the total labour force in SOEs has remained unchanged at 18%. The proportion of the labour force in farming fell from 71% in 1978 to 56% in 1991, matched by a sharp rise of employment in rural enterprises (so-called township and village enterprises, or TVEs).

3.2. The disappointments of state-enterprise reform

The results of attempts to reform the state sector have been disappointing, a point acknowledged by the Chinese leadership itself. This sector in China has continued to perform poorly. It is heavily loss-making¹⁵; lagging in total factor productivity growth; dependent on state subsidies; and apparently suffused with economic corruption. China has grown rapidly only because state industrial enterprises account for less than 15% of total employment, and a steadily diminishing share of GNP.

Several recent studies of the Chinese experience have confirmed the poor performance of the state sector, at least relative to the non-state sector. Xiao (1991a,b) demonstrates that productivity growth was significantly higher in the non-state than state sector. Calculating total factor productivity for 29 provinces, he finds a strong correlation between the level of TFP and the proportion of the economy in the non-state sector. The coastal regions Guangdong, Jiangsu, and Zhejiang have non-state shares of industrial output of 50.6%, 63.4%, and 66.7% respectively, compared with a national average of 40.3%. These regions had total factor productivity levels that, respectively, were 26%, 23%, and 39% above the national average. The industrialized Manchurian provinces, Liaoning and Heilongjiang, had non-state shares in industry of 36.0% and 19.4%, below the national average. Total factor productivity levels were 1% and 16% below the national average.

While almost all observers agree that the state sector lags behind the non-state sector in productivity and financial performance (e.g. Lardy, 1989), some have declared its performance to be adequate and to have improved after the reforms of the mid-1980s (Jefferson *et al.*, 1992; McMillan and Naughton, 1992; and Rawski, 1993). Rawski's (1993) criterion for 'success' of SOE reforms is rather weak: it merely stresses that SOEs have become subject to market forces and that the managers have begun to respond to these forces. Even Rawski acknowledges that 'the experience of China as well as of other socialist and non-socialist states demonstrates that, in comparison with feasible private alternatives, state enterprises often perform dismally in terms of productivity, cost control, technical development, customer satisfaction, and even (though not in China) output growth'.

Jefferson, Rawski, and Zheng (JRZ) argue that productivity performance in the SOE sector has improved since the enterprise reforms have

Reform in China and Russia

been implemented, but they too find that productivity growth was faster in collective enterprises (urban collectives and TVEs) than in state-owned industry. However, JRZ's estimates of total factor productivity growth for the SOEs are likely to be biased upward. Woo *et al.* (1993) show that JRZ's use of an implausible price deflator for intermediate inputs accentuates the exaggeration of value added that is introduced by the official real gross output data, which is well-known to be inflated.¹⁶

The debate over technical efficiency has also diverted attention from other areas of SOE failure: heavy financial burdens on the banking system and the budget of loss-making enterprises; the unworkability of bankruptcy mechanisms; the 'investment hunger' of state enterprises, leading to a proliferation of poor projects; and the high level of corruption and politicization of the enterprises. These phenomena relate to the absence of bankruptcy, the low risk attached to making bad investments, and the incentives for managers and workers to strip the state enterprise income and assets to their personal benefit (e.g. by distributing profits in the form of higher compensation), given the fact that nobody is in place to defend the interests of the enterprise capital. One strong symptom of this is the tendency of the SOEs to distribute higher earnings in the form of fringe benefits (see Xiao, 1991c; Hussain and Stern, 1991; Fan and Woo, 1992; and the report of the China Economic System Reform Research Institute in Reynolds, 1987).

3.3. Failed gradualism in EEFSSU

After the start of radical economic reforms in EEFSSU in 1990, some critics argued that the region should instead follow the Chinese gradualist approach. This was a peculiar reaction. Before 1990, many governments in the region (especially Hungary, Poland, and the Soviet Union) had tried their best to avoid a radical break with the old system, and indeed had tried a gradualist approach. Even after the fall of communism in Eastern Europe in 1989, and in the Soviet Union in 1991, many of the new regimes tried to maintain a gradual approach to reform. Governments in Bulgaria, Romania, Slovakia, and Ukraine staked out ideological positions

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¹⁵ Gao Shoguan, Deputy Director of the State System Reform Committee of the State Council (the Cabinet) reported that in the early 1990s one-third of SOEs were explicitly losing money, and another third were making losses that were hidden by creative accounting (Keynote Speech, Conference of Chinese Economic Association of the UK, 1992). *China Daily* (26 Jan. 1993) also reported that only one-third of SOEs were profitable in 1992.

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¹⁶ There is no satisfactory official deflator for intermediate inputs. JRZ construct an index, but it implies that the value added deflator for industrial output *fell* in the 1980s despite high inflation rates observed throughout the decade. Woo *et al.* (1993) point out that the official method of calculating real value added produces two opposite biases: overcounting gross output and overcounting intermediate output. They argue that, given the existence of the first bias, JRZ's over-correction of the second bias therefore greatly overstates the growth of real value added in industrial SOEs, giving too optimistic a picture of their productivity growth.

against radical reforms, only to arrive in 1993 at much deeper crises than their neighbors. The real question is not why shock therapy was adopted in several countries, but why gradualism failed where it was tried.

Hungary began gradual reforms in 1968 with the introduction of its New Economic Mechanism (NEM). This reform programme, reviewed in detail by Kornai (1986), allowed the development of small private firms in industry and services, and widened the role of markets in industry and wholesale distribution. By the end of the 1980s, the non-state sector constituted approximately 30% of employment and GDP. Yet the economy lacked dynamism, was subject to chronic macroeconomic instability, and fell into a serious foreign debt crisis during the 1980s. Kornai's theory of the soft budget constraint (1986, 1992) was developed partly in response to the failure of Hungary's gradual reforms, and in particular, to the difficulty of enforcing market discipline (e.g. through bankruptcy procedures) on the state industrial firms, the same problem experienced in China.

As Berliner (1993) recounts, Gorbachev's economic reforms in the mid-1980s were also designed as a gradual liberalization of the non-state sector. As in China and Hungary, the main idea was to allow non-state enterprises to operate at the periphery of the state-run economy, while at the same time permitting greater flexibility for the management of the state-owned enterprises. The reforms succeeded in spurring private economic activity but, as in Hungary and Poland, the resultant growth in the new private sector was insufficient to restore aggregate growth, while liberalization of the state sector contributed to macroeconomic instability by reducing the tax collection on state firms.

Many details of Gorbachev's programme were similar in conception to the Chinese reforms. The two-track pricing mechanism applied, in effect, after 1987: state enterprises delivered goods under state order at official prices while they were given increased freedom to establish 'contract' prices for deliveries outside of state orders. The trading system was also partially liberalized, extending trading rights to industrial enterprises, and introducing retention quotas for foreign exchange. Joint ventures and foreign direct investment were also legalized. Private farming was legalized by decree in 1987, but notably unlike China, very few farmers nevertheless took advantage of the opportunity to start up their own farms' (Berliner, 1993).

Why did the reforms not become self-sustaining, as in China? Berliner points to the answer:

'The mass of the urban population, while yearning for a better life, were apprehensive about losing job security and relaxed working conditions of Soviet socialism. Nor was the farm population eager to

take on the risks and labors of individual farming. The drive for economic transformation was therefore a revolution from above, imposed on a wary population by a small group of leaders who foresaw that in the absence of a radical transformation the Soviet Union would be left increasingly behind in the world's economic progress...

The Chinese transformation began with millions of peasants and others virtually beating at the gates of government to dismantle the restraints of the past and to let them work and drive. When the gates were let down, they rushed in, and produced that remarkable surge of output. Soviet farmers, however, were not beating at the gates for an end to collective farming, and state enterprise managers were exceedingly chary of radical reform. It was only in the cooperatives and other independent enterprises that one found the kind of economic initiative that burst forth all over China and launched the rapid rise of output'.

Our simple model helps to explain why efficiency-enhancing reforms were viewed with so little enthusiasm. Throughout Russia, in agriculture as well as industry, virtually all employment was subsidized, slowing the flow of workers to the non-state sector, diminishing the political support for reform, and causing high deadweight costs of inflation and other distortionary taxation to pay for the vast system of subsidies.

When gradual liberalization began in EEFSU, 'the flow of workers to non-state firms was significant but much less than in China. During the Gorbachev period, the non-state sector grew in six ways: new enterprises allowed under the Law on Producer Cooperatives (essentially small, private firms), individual businesses, other small private firms (e.g. handicrafts), joint ventures, joint-stock companies, and the leasing of property from existing state enterprises. The last was mostly a change of ownership form of an existing enterprise rather than the creation of a new productive entity. To see the flow into new enterprises (the first five categories mentioned), employment in this part of the non-state sector grew from 0.7 million in 1985 to 6.4 million in 1991, a rise of 8.7% of the labour force.

The discrepancy with Chinese behaviour is yet more marked if we focus just on industry. The proportion of Chinese industrial workers employed by rural industrial enterprises increased from 29% in 1978 to 47% in 1991. There was no TVE phenomenon in Russia under Gorbachev. In January 1993 employment in private industrial enterprises other than leased enterprises was just 4% of the 16.9 million industrial workers. Another 10% of the industrial workforce worked in enterprises leased from state-owned and municipal-owned industrial establishments.

Table 7. Comparison of Hungary and Poland

	1989	1990	1991	1992
Inflation (%)				
Hungary	17.0	28.9	37.0	24.7
Poland	251.1	585.6	70.3	43.0
GDP growth (%)				
Hungary	0.1	-4.0	-10.5	-4.7
Poland	0.3	-11.4	-7.7	1.5
Industrial production (1988 = 100)				
Hungary	96.6	88.4	71.5	64.5
Poland	98.6	72.8	62.6	65.3

Source: World Bank, *World Tables 1993*; IMF, *World Economic Outlook 1993*; EC Commission, *European Economy, Supplement A: Recent economic trends*, August/September 1993.

3.4. The 'big bang' in response to failed gradualism

Poland, like Hungary and the Soviet Union, attempted gradual reform in the 1980s (Sachs, 1993). It failed in two ways: growth of the non-state sector was insufficient to generate a takeoff into rapid growth; and liberalization of the state sector allowed large wage increases, leading to growing macroeconomic instability. Continuing commitment to gradualism was untenable for macroeconomic reasons alone. Enterprise subsidies had to be cut decisively to head off an incipient hyperinflation. As it turned out, and as our theoretical framework suggests, the cut in subsidies, combined with other liberalization (including unification of the exchange rate, opening the economy to trade, and an end to price controls) was precisely the spur needed to create a booming private sector.

It is useful to examine Poland's big bang using Hungary as a reference point (Table 7). Not only did Poland rein in the explosive inflation, it has been more successful than Hungary in restoring economic growth, probably because it subjected its state sector to a greater shake-out in 1990-91. In 1992 Poland became the first EEFSSU country to resume economic growth, and in 1993 is expected to be the fastest growing country in all of Europe, with a growth rate of around 4.5%.

It is in private-sector development that Poland stands out most dramatically. Sharp cutbacks in credits to industry led to a steeper drop in production in Poland than in Hungary in 1990-91, but then to faster recovery. Growth of the private sector has been rapid, with a total of 1.7 million registered private businesses by the end of 1992, not to mention those operating in the grey market. Table 8 shows that the proportion of non-agricultural labour employed by the private sector (not counting pseudo-cooperative firms that existed before 1990) soared from 13% in

Table 8. Non-agricultural labour force by type of organization, Poland (% of total)

	1989	1990	1991	1992 (June)
Public Sector				
public enterprises	70.6	67.9	61.0	58.8
traditional cooperatives	16.0	12.9	12.7	11.0
'broad' public sector	86.6	80.8	73.7	69.8
New Private Sector	13.4	19.2	26.3	30.2

Source: Berg (1993).

1989 to 30% in 1992. Rostowski (1993) documents the breakthrough in private-sector development following Poland's big bang, after years of unsatisfactory development under the gradual reforms of the late 1980s:

'In 1989 according to official statistics the private sector in Poland accounted for 28% of GDP, by 1991 this proportion had exceeded 42%, and was expected to reach 50% by end 1992... To put these figures in historical context, one should note that, according to official figures, between 1985 and 1989 the share of the private and co-operative sectors in national income remained unchanged at 28%'.

3.5. The political economy of the 'big bang'

In EEFSSU, subsidies in the state sector have to be reduced to encourage the flow of resources to the more efficient non-state sectors. Political conflict therefore intrudes into EEFSSU reforms more deeply than in China: the necessary subsidy cuts create losers in the state sector as well as winners in the non-state sector, at least in the short term. For example, a recent opinion survey in Poland reported that 60% of private-sector workers expressed optimism about the economy, compared with only 32% of state-enterprise workers.¹⁷ Similar divisions exist between generations: young (and presumably mobile) workers are far more optimistic and supportive of reforms than their parents (Lipton and Sachs, 1992). The irony is that small subsidy cuts in EEFSSU may prove more politically damaging than large cuts. It is also possible that an

¹⁷ See Grąjewski, 'Privatization: scapegoat in Poland's election campaign', Associated Press, 15 March 1993.

intermediate cut in subsidies can win more political support than either a small or large subsidy cut.

Subsidies to the state industrial enterprises tend to be borne by all workers in the economy, e.g. through inflation. In the model in the appendix, a subsidy σ per worker in industry leads to a tax rate τ on all workers in the economy, where $\tau = \sigma\lambda_1$, and λ_1 is the proportion of workers in state industry. Clearly, the smaller this proportion, the smaller is the tax, since the tax is paid by all workers. If θ_1 is the marginal product of labor in the state sector, and industrial workers care about $\theta_1 + \sigma - \tau$, their wage net of taxes and subsidies, they can accept a cut in σ if it is matched by a cut in τ that is at least as large. This can occur, for example, if enough workers leave the subsidized industry in response to the subsidy cut (the exact condition is given in the appendix). A small cut in subsidies may generate only a small flow of workers to the new sectors, while a large subsidy cut may generate a large flow. It is quite possible, therefore, that a large subsidy cut actually leaves the state-industry workers in a *betler* situation once the compensating tax changes are taken into account.

Who wins and who loses from a cut in subsidies to state industry? We must consider at least three groups of workers: those already in the non-state sector at the start of the reform; those in the state sector that move to the non-state sector after the reform; and those in the state sector that remain there. Why would some move and some stay? There are significant mobility costs (training, search, geographical change) in changing job, and these vary among workers. Older workers have a higher effective cost per unit of working time than younger workers, since they will have less time before retirement to enjoy the benefits of the higher pay in the non-state sector. Workers also differ according to their mix of job-specific versus general human capital, geographical flexibility, and so on.

Suppose initially that $\theta_1 + \sigma - \tau$ exceeds $\theta_n - \tau$. Disposable incomes are higher in the state sector and state workers choose to remain there. What happens if the subsidy σ to the state sector is reduced, with a corresponding reduction in the nationwide tax τ necessary to finance the subsidies? If the cut in σ is too small to reverse the inequality in earnings between the two sectors, no workers are induced to change sectors. State workers lose (the cut in subsidies σ is larger than the reduction in taxes τ whereas workers in the private sector unambiguously benefit from the reduction in taxes τ). The government will face a firestorm of opposition: the old guard scream at the 'pain' and the lack of positive economic results. With a larger cut in subsidies at least some of the workers in the state sector will shift to the non-state sector. They will be better off than earlier if the combination of higher wages and lower taxes is enough to compensate for the loss of the state-sector subsidy that they used to receive. The workers that stay behind are the least likely to

gain (since they experience a cut in subsidy but no rise in pre-tax wages). They too may be better off if enough other workers leave for the non-state sector.

In some cases, a partial cut in subsidies, large enough to induce mobility but less than a complete elimination of subsidies, can leave all workers better off than before the reform. The idea is straightforward, and an example is presented in the Appendix. A small subsidy cut leads to no readjustment; a complete elimination surely leads to a decline of income of the immobile state-sector workers. A partial cut, on the other hand, can raise the net wage of the immobile workers if the resulting tax cut is greater than the subsidy cut.

3.6. The measurement of economic growth

Part of the difference in economic performance of EEFSSU and China is probably explained by measurement problems. The key intersectoral flows, from agriculture to industry in China, from agriculture and industry to services in the EEFSSU, tend to be systematically mismeasured for two main reasons. First, GNP accounts give excessive weight to industrial production, since industry was favoured by artificially low input prices and therefore artificially high measures of value-added. Indeed, much of Russian industry is probably of negative value added when measured at world prices for energy inputs. At the same time, agriculture and services are given low weights because of artificially low relative prices. As a result, transfers of resources towards industry in China tend to be miscounted as a gain in GDP, while transfers of resources out of industry in Russia tend to be miscounted as a loss in GDP.

Second, it is likely that much of the increase in service sector employment is not counted at all in estimates of GDP: small firms tend to be neglected by state accounting institutions unaccustomed to dealing with the private sector, and incomes earned in services are hidden for tax evasion. This undercounting is strikingly apparent in Poland, for example. In 1990, the number of shops increased by 56% but the national accounts recorded a 0.7% increase in GDP in the trade sector (Rostowski, 1993). Berg and Sachs (1992) demonstrated that Poland's GDP decline was likely overstated by several percentage points in 1990 and 1991, a view subsequently supported by the former head of Poland's statistical agency, Rajewski (1993): 'The rise of the second economy, carefully estimated, has reached the level of 20 percent of GDP in 1992. Therefore, if the second economy is taken into account, the 1989-1992 fall in GDP was of the 5 to 10 percent magnitude [as opposed to the official data of 18 percent.]'

4. Monetary management in China and EEFSSU

Economic structure is only part of the explanation for the differing performance in China and EEFSSU. While reform was inevitably harder in EEFSSU, there have been serious self-inflicted wounds in macroeconomic management in several countries in the region, particularly in Russia. China too has faced serious macroeconomic imbalances but has tended to manage them more appropriately and with better results.

Macroeconomic instability plagued virtually all countries in transition from central planning (see McKinnon, 1993a). Socialist economies relied overwhelmingly on the collection of revenues from state enterprises. State prices were set as markups on costs in part to assure a surplus for budgetary purposes. Economic reforms tend to undermine revenue collection for two main reasons: state enterprise profits fall as increased competition erodes profit margins and as managers allow workers to capture a larger proportion of enterprise revenues in compensation; and tax collection from the new non-state firms lags behind the flow of resources to the non-state sector, largely because of administrative difficulties.

Table 9 shows the sharp fall in government revenues experienced by China and EEFSSU since the early 1980s. Revenue shortfalls lead to increased budget deficits and macroeconomic instability unless compensated by cuts in expenditures or by non-inflationary borrowing. If borrowing is used, there is a risk that a short period of borrowing will be followed by an even greater burst of inflation. Several countries in Eastern Europe (most notably Poland) and the Soviet Union failed to adjust to growing macroeconomic disequilibria in the late 1980s, and

Table 9. Decline in fiscal revenues of economies in transition (Fiscal revenues as % of GDP)

	China	USSR	Poland	Hungary
1978	34.8	47.1		
1984	26.5	49.6		
1987	22.8	52.8	34.3	59.1
1990	19.9	47.2	32.5	57.4
1991	18.4	35.1	22.8	52.4

Source: China Statistical Yearbook 1992; USSR: Alexashenko (1992); Poland: De Crombrughe and Lipson (1994); Hungary: IMF data.

Notes: For China, official revenues are corrected by subtracting government borrowing and adding subsidies that were reported as negative revenues. For Poland, starting in 1992, local government budgets are removed from the national budget. In 1991, local government revenues and expenditures amounted to 3.5 percent of GDP.

arrived at the threshold of full hyperinflation. Ironically, the Soviet and then the Russian government and central bank also took measures that greatly undermined the capacity to borrow from domestic residents to finance the budget deficit (see Boone, 1992, for a theoretical analysis). China also ran large budget deficits during this period but encouraged household saving as a means of non-inflationary budgetary financing; a point rightly stressed by Hofman (1993) and McKinnon (1993b).

Soviet budget deficits grew by the end of the 1980s to around 8% of GDP (Berliner, 1993). The primary Soviet response was to delay adjustment, by engaging in heavy foreign borrowing, sales of gold reserves, decapitalization in the energy sector, and repressed inflation. By 1991 the Soviet budget deficit was about 31% of GDP (IMF, 1992); oil production had declined by 17% in the previous three years, and production in Russia was to fall another 12% in 1992; the foreign debt had risen to about \$60 billion from only \$25 billion five years before; and gold and foreign exchange reserves were depleted.

In the face of this critical fiscal situation, the Soviet Central Bank (Gosbank) and then the Russian Central Bank undertook several actions that gravely undermined public confidence in the currency, and that have prompted a flight into commodities and foreign exchange. On January 30, 1991, Soviet Prime Minister Pavlov and Gosbank Chairman Geraschenko summarily declared that 50-ruble and 100-ruble notes null and void, with limited possibilities for converting such notes into bank deposits or currency notes of smaller denomination. The shift from rubles to commodities was exacerbated several months later when the Soviet Government announced in June, 1991 that consumer prices would be raised at the start of 1992. This announcement led to rampant hoarding and a further flight from the ruble during the rest of 1991.

The decline in demand for rubles was exacerbated by the policy of maintaining interest rates on household deposits at the state saving bank (Sbergatelny Bank) far below inflation. Moreover, the Government defaulted on various 'commodity loans' made by individuals to the government in return for the right to purchase various consumer goods, such as automobiles, at favourable prices. Around \$5 billion in hard-currency deposits of Russian enterprises at Vnesheconbank (the state international trade bank) were frozen at the end of 1991, after the Soviet government had spent the international reserves supposed to be backing the deposits. In July 1993 the currency confiscation debacle was repeated when Mr Geraschenko, now Chairman of the Russian Central Bank, again peremptorily declared invalid a part of the currency issue, this time banknotes printed before 1993.

The Chinese government also ran large deficits during the latter half of the 1980s, partly hidden from the budgetary accounts in the form of

Table 10. Subsidies and central bank credits to SOEs in China (% of GDP)

	price subsidies	+	enterprise loss subsidies	=	total subsidies	+	central bank credits to banks	=	Total
1978	0.3		3.2		3.5				
1984	3.1		2.9		6.0				
1988	2.2		3.2		5.4		2.6		8.0
1989	2.3		3.7		6.1		2.6		8.7
1990	2.1		3.3		5.4		3.8		9.2
1991	1.9		2.6		4.5		3.4		7.8

Sources: *China Financial Statistics, 1950-1991*; *China Statistical Yearbook 1992*; *Almanac of China's Finance and Banking 1991*; *Annual Report 1991 of The People's Bank of China*.

Note: To calculate the total resource flow to state-owned enterprises, we assume that half the new central bank credits not financing the central budget deficit are used for financing of state-owned enterprises.

credits from the central bank to the enterprise sector. We have already noted that the loss-making state enterprise sector imposed a heavy fiscal burden. As shown in Table 10, direct fiscal support came in two forms, price subsidies and enterprise-loss subsidies. In total, these amounted to around 5% of GNP. In addition, the central bank issued credits to the banking system (seigniorage not used for budgetary finance) of about 6% of GNP. Since a third of SOEs were running open losses and another third were running hidden losses, we estimate that half of the new (nonbudget-related) seigniorage was enterprise loss subsidies. Adding these two forms of support for state enterprises, total fiscal and monetary support came to about 8% of GNP.¹⁸

China managed these large deficits without an explosive inflation, principally because Chinese households substantially increased their real money balances during the 1980s: seigniorage was collected without inflation. While the ratio of money to GNP collapsed in Russia, it rose sharply in China (Table 11). The Chinese government reaped approximately 8% of GDP in seigniorage each year in the early 1990s, in effect financing the budget deficit and substantial needs of loss-making enterprises through money creation but without inflation.

There are two interrelated phenomena at work: very high saving rates, and a high marginal propensity to hold wealth in the form of bank

¹⁸ Data on enterprise losses and subsidies are incomplete and hard to reconcile. Summing enterprise losses across provinces in 1991 yielded 78 billion yuan, yet a national total of 93 billion yuan is also given. It has been claimed, wrongly, that most subsidies went to the energy sector. In 1990 energy did receive 75% of the loss subsidies to industrial SOEs, but the latter received only 12% of the loss subsidies to all SOEs.

Table 11. Money M2 as % of GDP

	1979	1985	1989	1990	1991	1992
China	37.5	60.8	74.6	86.5	97.8	106.1
Russia				67.7	59.8	16.6

Source: *China Statistical Yearbook 1992*; *Almanac of China's Finance and Banking 1991*; *Annual Report 1991 of The People's Bank of China*. *Russian Economic Trends, 1991, 1992*.
Note: Russian 1992 data is for June 1992.

deposits. The Chinese government maintained positive real interest rates on household bank balances through most of the period (except 1988, when inflation started to accelerate). Overall Chinese saving rates have been extraordinarily high, more than 30% of GNP in the 1980s rising to nearly 40% in the early 1990s. Much of household saving was held as money balances in the state banking system.

5. Some implications for further reforms in China and EEFSSU

Our analysis has helped to expose the difficulties of reform in EEFSSU and the limitations of reform to date in China. EEFSSU reforms are hampered by the likelihood of continued, large redistributions of income as the old system of extensive protection and subsidies is dismantled. There will be little political consensus for years as a result of the divisive adjustments still to be absorbed. Reform government will have little room to maneuver, however, since subsidy cuts are urgently needed both for structural adjustment and macroeconomic stabilization, which remains fragile in Eastern Europe and is not yet achieved in the Former Soviet Union.

China, on the other hand, was able to avoid the difficult choices of state-enterprise restructuring during the past decade, but that luxury may be disappearing for both macroeconomic and microeconomic reasons. On the macroeconomic side, the burdens of the inefficient state-enterprise sector have remained large despite the overall rapid growth of the economy. Losses in the state sector amount to about 8% of GNP, when hidden subsidies in the form of state credits are added to overt budgetary subsidies. Until now, China has been able to pay for these losses through extensive seigniorage, as households accumulated remarkably large money balances in the state banking system. This option may be over, as households now seek to hold more of their portfolios in non-monetary assets, an option increasingly available in the liberalized economy. If the demand for real balances peaks, as seems likely, or even starts to decline, urgent budgetary adjustments will become necessary, and state-enterprise reform will take centre stage.

Microeconomic problems are also exposing the reforms to new dangers. A major problem is the significant widening of the income gap between urban and rural workers in recent years after the spurt of higher agricultural productivity after 1978 came to an end in 1985. The widening of the gap has been exacerbated by continued restrictions on migration from the countryside, special privileges granted to non-agricultural regions (e.g. foreign-exchange retention rights of non-state enterprises in the coastal areas), the increased ability of capital to flow from poor agricultural regions to wealthy coastal regions, and the falling relative prices of foodstuffs in recent years. While it is hard to judge, absolute living standards in the countryside may actually have declined in the past couple of years.¹⁹ In 1993 there was a surge of rural protest against the prevailing economic conditions.

Property rights reform is generally much more advanced in EEFSSU than in China. This is especially true in the Czech Republic, Hungary, and Poland, where standard company law is now in place, and where there is a rapid shift towards private ownership. In Russia too, privatization as a formal process is proceeding very rapidly, though with the serious weakness that insiders in the firms (managers and workers) are receiving the lion's share of ownership, without a strong role for outside investors. Thus, at least to this point, Russia has failed to establish an active system of corporate governance in which capital markets effectively discipline state managers (Boycko *et al.*, 1993).

Conditions in the TVEs and state industries show the limitations of China's muddled property rights. Privatization of large state-owned enterprises is coming to the fore in view of the continued failures of SOE reform in the past 10 years. The continued losses of SOEs despite rapid economic growth in 1992-93 is the clearest sign that SOE problems are chronic, not cyclical. The larger TVEs are outgrowing their peculiar and ill-defined collective ownership structure. There are widespread attempts to re-register TVEs as joint-stock companies to give an adequate long-term basis for growth. According to widespread reports, official and unofficial, corruption is rampant, in significant part because of the lack of clarity in ownership rights. 'Spontaneous privatization', in which managers redefine part of state property as their own, has reached alarming proportions (Yang, 1993).²⁰

¹⁹ Conditions in the countryside vary widely. There is insufficient data on local taxation and other transfers to enable a precise picture to be constructed.

²⁰ This includes money laundering (e.g. through Hong Kong); the use of state funds to invest in private firms, in return for which the state manager receives privileged access to shares in the private enterprise; and leasing of SOE facilities to a private firm controlled by the manager.

The TVEs in southern Jiangsu which received wide attention in the 1980s for being successful despite being tightly controlled by the local authorities are now facing financial difficulties. 'Ambiguous property relationship' has been identified as the source of their poor performance, and the authorities have been leasing and selling deficit-ridden TVEs by auction since mid-1992.²¹

The largest reform challenges in Russia and China, however, will almost surely be political: how to establish stable, legitimate political systems in vast countries undergoing rapid change. Both countries face the profound task of defining relations between a weakening central government and strengthening regional governments, which threaten to undermine even basic fiscal stability at the center. China's long-term political crisis is likely to be more grave than Russia's. Russia seems fitfully to be on the path to democratic government, though of course the ultimate success of multiparty democracy is still in question. In authoritarian China, struggling with rapid change, macroeconomic tensions, and widening income disparities by regions and sector, the path to long-term political stability seems even less clear.

Discussion

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The facts with which Jeffrey Sachs and Wing Woo have to contend are, first, that Chinese economic reform has been successful in producing extraordinary growth – the greatest increase in economic well-being within a 15-year period in all of history (perhaps excluding the period after the invention of fire); but second, that reform in Eastern Europe and the Former Soviet Union (EEFSU) has been accompanied not by growth but by massive output declines (in countries that are reforming as well as in those, such as Ukraine, which are not).

The interpretation of these facts with which they have to contend is that Chinese reform – described variously as piecemeal, pragmatic, bottom-up, or gradual – has been successful because it has been gradualist and EEFSSU reform has failed because it has applied shock treatment. The conclusion is that EEFSSU should have pursued a gradualist reform strategy, perhaps one that started with economic rather than political reform. Many also imply that there is still time for gradualism.

²¹ See *China Daily* (June 2 1993; 15 December 1993).

Sachs and Woo reject the view that economic reform in EEFSSU should have been gradualist, though they do approve of the gradualist Chinese approach to the creation of a non-state industrial sector. They argue that the structure of the economy was responsible for the success of the Chinese reform strategy, and that there are no useful lessons for EEFSSU from the Chinese case.

Reform in China started in an economy in which 80 percent of the population was rural, in which planning had never been pervasive, and in which economic control was in any case quite decentralized. Further, Chinese industrial growth has come largely from new firms, largely town and village enterprises, and there has been no reform of the state-owned enterprise (SOE) sector. In EEFSSU by contrast, the industrial sector was extremely large, and there was no hope of starting a significant private sector without restructuring industry.

The authors make this argument with the aid of a model, basically one that says that the private sector in a reforming EEFSSU economy is so heavily taxed that it does not pay an individual to move to that sector from the subsidized industrial sector. In China by contrast, agricultural reform freed up labour whose opportunity cost was below the earnings available in the industrial private (or at least TVE) sector – and in addition, because the SOE sector was relatively small, the industrial private sector was taxed less than in EEFSSU. The model is linear and ignores uncertainty, but there can be no doubt that it is very difficult to start new firms in much of EEFSSU. That, more than the earnings of an individual already in that sector, seems to be the equivalent of the tax that Sachs and Woo include; indeed, earnings for those who succeed in moving to the private sector are typically higher than they are in the state sector.

Sachs and Woo also argue that the data exaggerate China's success and EEFSSU's output declines. I was initially inclined to discount this argument, but now believe it has a real basis, and that all that needs doing is to fill in the numbers. The firm basis is that: first, welfare in EEFSSU has surely fallen less than recorded output, partly because both quality change and the activities of the small scale private sector are not being measured; and second, as work by Bergson shows, Soviet industrial output growth from 1928 to 1941 declines by more than 5 percent per annum when measured in 1941 prices rather than 1928 prices. When the numbers are filled in, I believe they will show that Chinese growth has been exaggerated, but that it has still been amazingly impressive.

In the end, Sachs and Woo are pessimistic about China's reform prospects. They argue that the need to deal with incipient macroeconomic instability, with widening income differentials, the establishment of property rights, and the reform of the SOE sector, portend hard times for

China. They are surely right that there are tough problems ahead, but I doubt the prospects for China are bad.

Since I basically agree with the paper, I shall divide the remainder of my remarks into three parts: first, a few specific comments; second, I will ask what the Chinese experience tells us about the standard prescription for EEFSSU reform; and last, I will ask what someone who knew only the Chinese experience would have done differently in EEFSSU. Rather than refer throughout to EEFSSU, and have to draw distinctions among countries, I shall talk of Russia – the country to which the Sinophiles are most prone to recommend Chinese lessons.

I start with a few observations about the paper. One fact in the paper needs further thought. The SOE sector in China has done well by any absolute standard. Even in 1992, over 50 percent of industrial output came from the state sector. Further, SOE output grew by 7.8 percent per year from 1980 to 1991. By several accounts productivity growth in the sector has been positive, although Sachs and Woo argue that the productivity calculations are very difficult to make given existing data. It may well be that the SOE sector's growth was predicated on the growth of the rest of the economy, both because the increasing efficiency of the TVEs made inputs available at declining prices, and because some SOEs own TVEs. In any case, the basis for the view that the SOE sector is a disaster does not emerge convincingly from this paper.

Second, the legal system and property rights in China are incoherent. That has not stopped growth, a fact that should give pause to all those who assert that growth can never begin in EEFSSU until property rights are clarified and established.

Third, the importance of the Hong Kong or Chinese connection is brought out very well in the Sachs-Woo paper. It is hard to know what the equivalent would be in Russia.

Fourth, while it is true that Gorbachev and others pursued gradualist policies in EEFSSU, that does not establish that Yeltsin and Gaidar should not, in November 1991, have also tried gradualism. Gaidar had a very good idea of where he wanted to take the economy, whereas Gorbachev had no coherent notion. The usual China versus Russia argument oversimplifies by not examining the different elements of reform. Some things can be done quickly, others cannot. I therefore turn next to the lessons the Chinese case might provide about the standard six-part reform prescription: macroeconomic stabilization; price liberalization; trade reform and liberalization; privatization; the creation of a social safety net; and the creation of a legal system.

The Chinese example says little about the speed with which macroeconomic stabilization should be attempted. The Chinese have taken care not to let inflation get out of hand, to the extent of using

military force for that purpose. If anything, the Chinese case supports a big bang in macro reform.

China liberalized prices at the margin very quickly when it started its agricultural reforms. Indeed, as Sachs and Woo emphasize, the Chinese agricultural reforms were truly shock therapy. Similarly, China allowed industrial prices to move at the margin when industrial reform began. It may be that maintenance of the contracts for agriculture helped sustain political support for reform in Russia, but it has to be remembered that the Soviet planning system simply broke down in 1990 and 1991, and it is doubtful that a dual price system was feasible then.

The paper is quite unclear about the speed of trade reform. This was almost certainly slower (at least in principle) than in Russia. Note, though, that China has relied throughout on the East Asian international trade strategy to reform, and also that it has encouraged foreign investment from very early in the reform process. This is surely a lesson that the Russians could learn.

The key difference between the Russian and Chinese strategies lies in their approaches to privatization. Here the Sachs-Woo argument that the Russian industrial sector is too big to ignore is convincing. Russia could not have left the state sector alone, for its subsidies and use of resources were far too massive to let the test of the economy flourish. China could afford not to reform the SOE sector, because it was relatively small.

Both China and Russia have failed to create adequate social safety nets, and both may yet face difficulties on that account. And, as already noted, China has not yet developed a clear system of property rights.

The bottom line is that, aside from privatization, and perhaps in trade, China has not done anything very different from Russia. So it is difficult to discern the lessons that should be learned.

Finally, consider what someone who knew only the Chinese model might do differently in Russia. First, since the Chinese planning system was never dismantled, the Chinese expert might want to restore the planning system. But the Chinese system was much less comprehensive than the Soviet system, and the Soviet model had broken down. Probably the only thing more difficult than creating a market economy in Russia would be to recreate the planning system.

Second, the Chinese expert might want to start reforms in agriculture. It is certainly past time for Russia to reform agriculture, but unlike in China, that sector does not want to be reformed. It should be done, and done fast, but the sector is much less important than it was in China.

Finally, the Chinese expert might want to restore strong central political control – the so-called Pinochet solution that many Russians have talked about. This is a delicate issue for Western economists, because very few would like to recommend giving up on democracy to get growth. The

Polish example suggests this is not necessary, and the many economically failed dictatorships all over Latin America prove it is not sufficient either. Here we will indeed have to see whether Russian democracy can deliver economic reform – and I believe it will.

Finally, we should not forget that these are very early days to judge gradualist versus big bang reforms in EEFSSU. Poland and Hungary look very similar now, but the real question is where they will be 10–12 years from now. By that stage they will be 15 years from the start of their post-communist reform programmes, about as far as the Chinese are now. No EEFSSU economy will by that stage have grown as fast as China did in its first 15 years, but it is quite likely that those who delayed reforms in pursuit of a gradualist strategy will be behind those who pressed ahead.

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This is an interesting and important paper which covers many aspects of the reform process in the two countries examined: I will concentrate on three themes which seem to be central to the whole argument:

First, China's path is in no way relevant to the structural problems faced in Eastern Europe and the Former Soviet Union (EEFSSU). China was able to transfer workers out of a low-productivity agricultural sector to the non-state sector without really having to tackle the large problems that continue to exist in the state industrial sector. EEFSSU does not have this option and is thus forced to confront the problems of restructuring the state industrial sector.

Second, gradualism will not work in EEFSSU because the short-run gains are too small; consequently, workers in the state industrial sector are prompted to resist further erosion in their prospects and living standards. On the other hand, a larger step change might enable this resistance to be overcome by realizing sufficient productivity gains as a result of shifting workers to the non-state sector.

Third, macroeconomic stabilization is an essential component of the change because attempts to finance continuing subsidies to the state industrial sector may generate strong inflationary pressures which undermine the process of shifting resources from the state to the non-state sector. (This argument is not really spelled out and it is not clear what mechanisms the authors have in mind.) China was able to manage

¹ These remarks are entirely personal and do not represent the views of The World Bank or of any of its member governments.

this by the seigniorage resulting from high savings rates combined with a high propensity to hold assets in monetary form.

It is easy to agree that China is no guide to what can or should happen in EEFSSU. The only people who have argued this seem to know little about one or the other country. The paper develops a simple variant of the classic dual economy model which is clearly the right way to think about the process of structural change in China. In this respect the comments on the potential application of the Chinese model to Vietnam and other predominantly rural socialist economies mentioned in footnote 4 highlight some comparisons which deserve a paper in their own right.

However, at no point does the paper focus on what seems to be the key difference between China and EEFSSU. There have been large – in some cases almost catastrophic – declines in output in all of the EEFSSU countries, whereas this did not happen at all in China. The analysis in the paper sheds little or no light on this key issue, largely because it focuses exclusively on the supply and neglects the demand side of the macroeconomic balance. Let me try and contrast China with EEFSSU in different versions of the dual economy story that take account of demand-side factors:

China. By the end of the Cultural Revolution there was a substantial shortfall in the growth in agricultural productivity relative to its trend level. At the same time the country was having difficulty in meeting demand for food – cereals as well as vegetables and minor luxuries – so that it needed to import rice and other foodstuffs in poor crop years. Agricultural reforms liberalized incentives including some prices, access to inputs, and rights to market output and they were followed by more general changes in property rights. These stimulated a rapid catch-up in agricultural productivity. The additional output allowed China to switch from being a marginal importer of rice to a significant exporter in the course of a few years. Peasants switched part of their effort to vegetables and other products for which there was substantial excess demand in urban markets. These shifts allowed the large increase in output to be absorbed without any large decline in real farm-gate prices. This was helped by the fact that the income elasticity of food demand at Chinese income levels is relatively high.

The growth in agricultural incomes and productivity did two further things. It created a large market for the products of light and consumer goods industries, and it generated a reservoir of savings which could be used to equip workers moving out of the agricultural sector. By removing workers from food production the development of non-farm rural or small town employment dampened the growth of agricultural output and avoided the danger of a sharp decline in real food prices which might

have resulted if agricultural production had outstripped demand for its output. Thus, in the classic dual economy (and Stalinist) manner, the surplus of the agricultural sector could be used to finance the development of the industrial sector. The critical twist is that this was not achieved by transferring resources from peasants to large-scale industry by a combination of government expropriation and manipulation of the terms of trade between agriculture and industry – the Stalinist and earlier Chinese approach. Instead, a high level of rural savings was achieved voluntarily and these were used to fund the expansion of the non-state industrial sector. Demand for the goods produced in this sector was sustained not only by the growth in internal demand as incomes continued to rise but by an increasing volume of exports from some parts of the country.

All in all, the Chinese story is close to being a rerun of the path followed by Japan, Korea and Taiwan before it. Indeed, even India has gone down the same route – e.g. Punjab, Gujarat and Maharashtra under the influence of the Green Revolution – though with less success because it has never found the recipe to ensure sustained rapid growth of agricultural production in all parts of the country. There are two crucial conditions for success:

- (i) The inefficiency of the state industrial sector must not be allowed to penalize the rest of the economy to the extent that it cripples growth. Since this sector was initially quite small relative to the whole economy while savings rates were very high, the danger was largely avoided.
- (ii) The government must ensure macroeconomic stability so that incentives to invest in real assets in the non-state sector are not undermined by inflation. As Sachs and Woo point out, this was just about achieved, again because of high and rising savings rates, though there has always been a danger of tipping over into serious inflation – as in the late 1980s and again at the present time.

Eastern Europe and the Former Soviet Union. Here again we have the equivalent of the agricultural sector in the state industrial sector. Total factor productivity was low and could have been raised rapidly by a shift in incentives and management if the demand for the additional output had been there. As we all know, it was not for three main reasons:

- (i) Prior to the reforms the level of demand had been sustained by heavy external borrowing. It was the closure of this avenue which created the crises that led to economic reform.
- (ii) The countries may be over-industrialized, but what really matters is the excessive weight of investment goods defence in the output mix.

Both categories of spending were bound to suffer a large decline under any attempt at macroeconomic stabilization.

- (iii) The collapse of trade between EE and FSU and later within the FSU reduced the level of demand for the output of many industrial sectors. Some of the goods could be redirected to world markets, but much of the output was effectively unsaleable.

What has happened in EEFSSU is almost the mirror image of China. It is the collapse on the demand side which has shaped economic events over the last four years. The initial response, as implied by Sachs and Woo, has been a dramatic decline in labour productivity, rapid inflation, and a sharp drop in domestic savings, which inhibits the accumulation of assets in the non-state sector as well as the achievement of substantially higher productivity in the state sector. That is why the break-up and privatization of state industrial assets is so important. In the Sachs and Woo story the state sector is, in a sense, unreformable, as that higher industrial productivity can only be achieved through the non-state sector. This is almost a definition rather than an empirical assertion, so what matters is the way in the change occurs. Large state enterprises control capital assets which could be put to alternative uses, but which are left idle in the face of the overall collapse in demand for their output. By shifting these assets to non-state enterprises it becomes possible to employ them in different ways and thus to respond to the large external opportunities implied by the dramatic depreciation in real exchange rates. If you look at detailed output figures for the Central European countries, this is indeed what is happening, with heavy industry continuing to decline while light industrial sectors are rapidly expanding their share of total industrial output.

I would hope that Sachs and Woo would not disagree substantially with the version that I have given above. However, the difference between our two ways of telling the story is that mine makes it clear that the differences between China and EEFSSU are much more profound than the fact that China had agriculture as its labour reservoir, whereas EEFSSU has the heavy industrial sector playing the same role.

On other matters, I note also the very defensive tone of the discussion of gradualism versus shock therapy. This would not have mattered if the authors had been more careful in defining what they understand to be the key differences between the two strategies and in classifying countries as having pursued one or the other. However, literary analysis suggests that gradualism in this paper means little more than any strategy that the authors think will not work, while shock therapy is the complement of that set. The characterization of some countries in EEFSSU is bizarre. To say that Bulgaria has followed a gradualist strategy is a patent misreading of

what happened in that country. How should we classify Romania? Certainly they are reluctant reformers, but the country has undergone the most traumatic changes of any the FSU. Finally, what about the Czech Republic? Put aside Mr Klaus' rhetoric and we have an archetypal gradualist strategy on the industrial front combined with tight monetary and fiscal policy. My conclusion is that the classification is effectively useless and the sooner it is abandoned the better.

Finally, the paper puts too much reliance upon assertions about the structural features of EEFSSU economies without allowing for the effect of distorted prices and different accounting conventions. Two points will highlight the difficulties involved:

- (i) The Winiecki argument about over-industrialization is wrong, and I will admit that I have fallen into the same trap. If you calculate Russia's national income according to (rough) SNA conventions and revalue at world rather than domestic prices, it turns out that the contribution of industry to GDP is about 36%. The energy sector contributes another 8%, but this is nothing surprising for a country with the largest energy resources in the world.
- (ii) The path of value-added at world prices during the changes that are taking place in EEFSSU follows that of GDP/output measures in some cases and a very different pattern in others. There are no simple conclusions to be drawn from what has happened.

General discussion

The panel discussion focused on three main themes: first, on what the terms 'shock therapy' and 'gradualism' meant; second, on the adequacy of the model of intersectoral shifts to describe either China or the EEFSSU; and third, on the accuracy on the paper's empirical assertions.

Gérard Roland said it was very hard to understand what was meant by the term 'big bang'. Reforming everything at once was a physical impossibility, so all programmes were a mixture of rapid and slow elements. Few people would disagree that it was desirable to be radical and decisive where possible, but political constraints sometimes made this impossible. Good reform packages should take such constraints into account, and sometimes gradualism might help in overcoming them: China was a good example of the way in which early successes could create a constituency for further reform.

Richard Portes added to Gordon Hughes' objections to the paper's characterization of actual reform programmes, by pointing out that to call the experience of Eastern Europe in the 1980s failed gradualism hardly made sense of either Czechoslovakia or Romania. Dariusz Rosati

suggested that Eastern Europe's experience showed the problems with a piecemeal and unfocused approach rather than with gradualism. Portes also said that when comparing the results of such different programmes as those of Poland and Hungary it was essential to take account of differences in the handling of those countries' foreign debt.

The paper's underlying model also came in for considerable criticism. Gérard Roland pointed out that the initial success of China's reforms had been in raising agricultural output and had nothing to do with inter-sectoral shifts. Kym Anderson added that this showed one benefit of reforming agriculture early on, since agriculture could deliver a quick response of output. Richard Portes said that a model driven by labour supply made no sense for Eastern Europe, where cutting subsidies to state-owned enterprises (SOEs) resulted in forced labour shedding, not the voluntary transfer of labour from public to private sectors. It was hard to square the idea that reform was being obstructed by the unwillingness of workers to leave SOEs with the presence of 16% unemployment in Poland, for instance.

Finally, there was much discussion of the accuracy of the paper's empirical claims. Mathias Dewatripont argued that comparing the Chinese SOE sector adversely with the private sector was hardly appropriate; more important was the observation that the SOE sector had done fairly well in absolute terms, and this in itself might have lessons for Eastern Europe. Richard Portes suggested that the statistical basis for the comparison was itself dubious, since many town and village enterprises had easy access to credit and were not so very different from SOEs; furthermore, joint ventures by SOEs were counted as private sector, which tended to depress SOE performance data since it tended to be the better SOEs that engaged in them. Wing Woo disputed the claim that TVEs had easy credit access, and pointed out that output growth was not the appropriate indicator of SOE performance, since SOEs had benefited from much higher levels of capital investment than it was realistic to expect in Eastern Europe.

The overall GDP performance of EEFSSU was also the subject of much argument. Roman Frydman pointed out that the world prices used for comparison usually failed to take account of quality changes; this would tend to understate the performance of EEFSSU relative to a heavily agricultural economy such as that of China. Jeffrey Sachs argued that there had not been a large collapse in consumption in EEFSSU, regardless of what GDP statistics might say: much of the fall in GDP reflected a collapse in the output of heavy industry (particularly in defence) that had never been at all beneficial to consumption. While there was general agreement among panellists that its large agricultural sector gave China the potential for greater medium-run gains in output through

intersectoral shifts than in EEFSSU, there was much less consensus about either the depth of the recession in EEFSSU or the extent to which it might have been avoided through different policies.

Appendix: Intersectoral mobility and the political economy of subsidies

There are three sectors of the economy: peasant agriculture (subscript a), state-owned industry (s), and the non-state sector (n). For simplicity, imagine that output Q in each sector is produced just with labour L , though the analysis applies equally to problems of intersectoral mobility of other factors as well. Thus

$$Q_i = \theta_i L_i \quad i = a, s, n \quad (\text{A.1})$$

where θ_i is the marginal product of labour in sector i . Assume $\theta_a < \theta_s < \theta_n$. For simplicity ignore the demand side, by assuming that relative prices are fixed (e.g. at world levels), and by choice of units we set $p_a = p_s = p_n = 1$. The labour force L is divided among the three sectors

$$L = L_a + L_s + L_n \quad (\text{A.2})$$

and $\lambda_i = L_i/L$ is the proportion of labour in each sector. Prior to reform, the non-state sector is repressed ($\lambda_n = 0$). In China, λ_s was initially 0.2, in EEFSSU it was 0.8. In the short run, labour markets are segmented; labour flows gradually between sectors in response to post-tax wage differentials and capacity constraints in each sector.

State enterprises are highly favored by subsidies, directed credits, centralized investments, and priority access to underpriced (and therefore scarce) inputs; the 'soft budget constraint' that allows state-owned enterprises to pay wages far in excess of productivity and to maintain employment despite a shortfall in demand for the enterprise's output. In China, the system of privileged employment in the state sector is dubbed the 'iron rice bowl'. We assume that subsidization is equivalent to an employment subsidy σ . State enterprises pay a gross wage $\theta_s + \sigma$. These high-paying jobs are rationed, with the limit determined by the amount of capital in the state enterprise sector (not explicitly shown). Therefore, we consider cases where λ_s can fall but cannot rise.

The total subsidy $S = \sigma L_s$ must be paid by society. We assume a specific tax levied on all workers at rate τ such that $\tau L = S$. Hence $\tau = \sigma \lambda_s$. After-tax wages in the non-state and agricultural sectors are given by $\theta_i - \tau$ where $i = n, a$. Workers in all sectors bear the cost of the soft budget constraint in the state-owned industry. In most economies in transition, at least part of the tax has been implicit: industrial subsidies are frequently

financed by inflationary central bank credits to industry, and indirectly by central bank credits to the government to cover budgetary subsidies to industry.

Social welfare is maximized when all workers shift to the non-state sector, where productivity is highest. However, if the subsidy σ exceeds the productivity differential $(\theta_n - \theta_s)$, then after-tax wages w are given by

$$w_s = \theta_s + \sigma - \tau > w_n = \theta_n - \tau > w_a = \theta_a - \tau \quad (\text{A.3})$$

After-tax wages are highest in state-owned industry, whose workers will not wish to move to new private firms. Since employment is limited by available capacity, peasant cultivators will wish to move to the state sector but no such jobs will be available; however peasants will still wish to move into jobs in the new private sector now that intersectoral mobility has been legalized.

When the state sector is large, as in EEFSSU, it is likely that $(\theta_n - \theta_s)/(1 - \lambda_s) > \sigma$, so that

$$\theta_n > \theta_s + \sigma(1 - \lambda_s) > \theta_n - \sigma\lambda_s \quad (\text{A.4})$$

When (A.4) holds, workers will not voluntarily leave the state sector while the subsidy remains, but will be made better off by a complete cancellation of the tax-subsidy scheme combined with a transfer to a job in the non-state sector. However, the initial subsidy to state-sector employment might be so high that the first inequality in (A.4) does not hold. Then state-enterprise workers will oppose an elimination of the tax-subsidy scheme even if it is combined with a transfer to a more productive job in the non-state sector. Such is certainly the case with the subsidies received by the senior communist nomenklatura, many of whom therefore remain implacable foes of subsidy cutbacks.

Suppose the subsidy-tax scheme is abolished and that (A.4) holds, but that the flow of labour among sectors takes time. Before labour starts to move between sectors, workers initially in agriculture and non-state sectors will benefit, while state-sector workers suffer because the taxes had been paid by all and the benefits had been reaped only by state workers. As workers move to the non-state sector, they end up with a real wage above that in the pre-reform period, while workers remaining behind in the state sector continue to lag behind their pre-reform real wage, at least initially.

Can workers that remain be made better off by a cut in their subsidy? Yes, if the tax cut that corresponds to the subsidy cut is enough to compensate them, as, for example, if the subsidy cut is partial rather than complete and enough workers flow from the state sector to the non-state sector as a result of the subsidy cut. Consider an initial situation with

parameters σ, τ, λ_s . The wage level net of taxes and subsidies is $\theta_s + \sigma - \tau$, or $\theta_s + (1 - \lambda_s)$ since $\tau = \lambda_s \sigma$. Now cut σ to a level $\sigma^* < \sigma$, so that the inequality in the first part of (A.3) is reversed. Workers start to exit the state sector. If $\theta_n - \theta_s > \sigma^* > \sigma(1 - \lambda_s)$, there exists a value λ_s^* such that if the share of state employment falls below λ_s^* , then:

$$\theta_s + \sigma^* - \tau^* = \theta_s + (1 - \lambda_s^*)\sigma^* > \theta_s + (1 - \lambda_s)\sigma = \theta_s + \sigma - g \quad (\text{A.5})$$

When (A.5) holds, the post-tax wage of workers remaining in the state sector will be higher than before the cut in subsidies.

Taxes that finance subsidies can be so distortionary that workers that remain in the state sector might benefit even from a complete cut in subsidies. For example, if subsidization is financed by an inflation tax, the damage from high inflation could undermine productivity in the economy so much that even immobile state sector workers benefit from a complete elimination of subsidies combined with an end to inflation.

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