China's Economy on the Eve of Reform

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Pressures for change are inherent in leadership succession under any political system. In China, because of his longevity and close involvement in major strategic initiatives, Mao Zedong's passing was bound to intensify such pressures. When he died in September 1976, Mao had held supreme power, largely unchallenged, for four decades. Since 1949, China's economic development had been uniquely, if not consistently, influenced by his personal prejudices and idiosyncratic view of how best to realize the country's development potential.

To argue that post-1978 Dengist reforms were shaped by the Maoist economic legacy is not to suggest that they were its *inevitable* outcome. Analysis of the recent comparative experience of China and the former Soviet Union shows the fallacy of such simplistic logic. But the origins of those reforms lie in the prior accumulation of experience. It is with these origins and this experience – judged in their own terms, as well as from the comparative perspective of conditions in the former USSR – that this article is concerned. It seeks to determine whether, as of the late 1970s, China's prior pattern of development or existing economic structure gave it inherent advantages in implementing reforms. Contrary to what others have argued, we find that such advantages were by no means self-evident and in some respects China was *disadvantaged* vis-à-vis the former Soviet Union.

The three core sections which follow have separate but related goals. The first analyses the Maoist economic legacy, inherited by the new government in 1976. The second examines the impact of this legacy on economic policy and perceptions of reform in the aftermath of Mao's death. The final section investigates China's capacity for accelerated economic and social development on the eve of reform, compared with that of the other Communist giant, the former Soviet Union.

The Maoist Legacy

Behind the Maoist economic system lay a highly centralized bureaucratic apparatus, which facilitated an unprecedented degree of socio-economic control by the Chinese Communist Party.[1] The basic framework of the command economy was set up, under Soviet tutelage, during the First Five-Year Plan (1FYP) (1953–57) and thereafter remained largely intact.

1. Such control generated powerful negative economic consequences. Decisions were frequently taken by Party members, who lacked appropriate training and skills. Ideological orthodoxy constrained economic debate – for example, insisting that "planning" provided a framework in which resource allocation could take place without reference to such fundamental economic concepts as price, cost and profit. The centralized system also contained the potential for major errors, the most outstanding examples of which (in the Chinese case) were the Great Leap Forward (1958–59) and Cultural Revolution (1966–76).

At the heart of the system was a comprehensive material balances supply matrix, which controlled the allocation of many major products. Most output and investment decisions were determined in accordance with plan instructions. Almost all profits were remitted to planning bodies.

Planning was intended to substitute for the supposed "anarchy" of competitive capitalism. Instead, it generated problems of its own. The inherent complexity of constructing a material balance plan generated in-built, permanent imbalance between supply and demand. A pervasive atmosphere of shortage gave rise to a seller's market, while the specification of production targets in physical terms resulted in a narrowing of product variety towards goods which were easy to produce, without regard for their quality.

Thus, instead of eliminating the shortcomings of the capitalist system, planning exhibited many of the same deficiencies in an even more acute form. Far from abolishing waste, it generated waste on a grand scale. It abolished production for profit, but failed to replace it with production for use. It eliminated the short-termism of competitive capitalism only to substitute the short-termism of current plan fulfilment. It steered economic activity in socially undesirable directions, but was unable to alter the underlying pattern of economic behaviour.

The origin of China's post-1978 reforms lies in the economy's disappointing growth record since the end of the 1FYP and in the structural problems which stemmed from it. To speak of a "disappointing performance" demands qualification. Between 1960 and 1981 China's average growth of per capita GNP (5 per cent p.a.) was one of the highest among developing countries.[2] It is in terms of China's own development aspirations and against the background of a declining growth trend since 1957 that a more pessimistic assessment seemed justified.

The figures in Table 1 highlight the distinct deceleration of growth, which characterized China's economic performance after 1957. They also indicate that the growth momentum was significantly slower during the second half of the Cultural Revolution decade (1966–76),[3] even though the campaign's most disruptive phase is usually thought to have occurred before 1970.

Agriculture is the basis of a poor country's economy, not only because food is such a large share of consumption, but also because light industry depends critically on raw materials from the farm sector. In the 1FYP, the agricultural growth rate was 3.7 per cent p.a. – significantly higher than the population growth rate; by the Cultural Revolution decade, it had

2. See World Bank, *World Development Report* (*WDR*), 1983 (New York: Oxford University Press, 1983), pp. 148–49. The corresponding figure for low-income countries (excluding India and China) was 0.88%; for India – in many ways, the most relevant comparator country – it was 1.4% p.a.

3. An exception is the performance of China's merchandise trade, whose annual growth accelerated from 1.54% (1965–70) to 17.89% (1970–76) (State Statistical Bureau (SSB), *Zhongguo tongji nianjian* (*TJNJ*) (*Chinese Statistical Yearbook*), 1993 (Beijing: Zhongguo tongji chubanshe, 1993), p. 633). Even so, by the end of the 1970s, the export earnings of the "four Asian dragons" – whose combined population was about the same as that of Guangdong province – was more than four times larger than that of the whole of China!

Table 1: **China's Historical Growth Record** (average rate of growth, % p.a.)

	1952–57	*1957–76*	*of which: 1957–65*	*1965–70*	*1970–76*	*1976–78*
NMP	8.88	4.82	3.24	8.34	4.08	10.03
NVAO	3.73	1.49	0.29	2.61	2.18	0.66
NVIO	19.60	8.96	8.73	12.56	6.36	15.94
GVIO	17.98	9.47	8.91	12.01	8.12	14.08
GVIO (light)	12.88	8.00	8.21	8.70	7.16	12.68
GVIO (heavy)	25.45	10.78	9.68	15.02	8.80	15.14

Notes:
Data given in comparable prices. NMP: net material product; NVAO: agricultural net value output; NVIO: industrial net value output; GVIO: industrial gross value output.
Source:
State Statistical Bureau (SSB), *Zhongguo tongj nianjian* (*TJNJ*) (*Chinese Statistical Yearbook*), 1993 (Beijing: Zhongguo tongji chubanshe, 1993), pp. 33 and 55.

fallen to 2.6 per cent – hardly above the rate of natural increase. Table 1 shows that after 1957, the industrial growth also declined sharply.

Judged by these macro indicators, as well as by those for key industries (grain, steel and coal are the most notable examples),[4] post-Mao economic assessments were understandably informed by an underlying concern. Per capita estimates suggested an even more discouraging picture, for apart from the abnormal demographic impact of the "great famine" of 1959–61, the rate of natural increase of population remained high throughout the Maoist period.[5] There is evidence too that the effectiveness with which resources were used declined over the long term. Official figures show that the incremental output–capital ratio[6] was halved between the First and Fourth FYPs. Studies of state industry's performance show a similar long-run deterioration in capital productivity.[7]

The estimates in Table 1 show the lagging performance of agriculture and light industry vis-à-vis that of heavy industry. Concealed in such varying sectoral rates of growth were marked changes in China's

4. Previous peak levels of steel and coal production (1960) were not re-attained until 1971–72. The growth of total grain output between 1965 and 1976 was almost identical to that of the 1FYP, although it too demonstrated a declining trend (*TJNJ*, 1993, pp. 364 and 446–47).

5. Some 30 million "excess deaths" may have resulted from mainly policy-induced errors during the Great Leap Forward (J. Banister, *China's Changing Population* (Stanford, CA: Stanford University Press, 1987), p. 85. The average rate of natural increase during the 4FYP (1965–70) was 2.33% p.a. – virtually identical to that of the 1FYP years (2.35%) (*TJNJ*, 1993, p. 81).

6. That is, the increase in national income per 100 *yuan* of accumulation.

7. See Kuan Chen *et al.*, "New estimates of fixed investment and capital stock for Chinese state industry," *The China Quarterly* (*CQ*), No. 114 (June 1988), pp. 243–266.

Table 2: **Structural Characteristics of China's and Other Economies (1980)**

	China	*USSR*	*LIEs*	*MIEs*	*IMEs*
As percentage of GDP					
Agriculture	31	16	45	15	4
Industry	47	62	17	40	37
Services	22	22	38	45	62
As percentage of employment					
Agriculture	71	14	73	44	6
Industry	17	45	11	22	38
Services	12	41	19	34	56

Notes:
LIE = low-income economies (excl. China and India); MIE = middle-income economies; IME = industrial market economies.
Source:
WDR, 1982.

economic structure. Agriculture's share in GDP declined steadily at the expense of that of industry during the Maoist period.[8] Meanwhile, the Stalinist strategy of forced industrialization was reflected in the growing weight of heavy industry in the industrial sector's overall expansion.[9] The outcome of these developments is summarized in Table 2, which shows the relative output and employment contributions of the three main sectors[10] (including some comparative indicators) at the beginning of the reform period.

So far as changes in living standards and welfare during the Maoist periods are concerned, estimates of per capita income suggest that after a quarter of a century of planned development China remained a poor country.[11] Raising income is admittedly more difficult than improving social indicators and there is clear evidence of a major reduction in poverty, measured by levels of infant mortality and life expectancy.[12] But high and rising rates of accumulation and the bias towards heavy

8. This process was interrupted between 1962 and 1968 in the wake of a strategy which temporarily afforded a higher investment priority to agriculture. See *TJNJ*, 1993, p. 60.

9. To what extent the two economies can be described as having been "over-industrialized" is considered at length below.

10. The relative size of the service sector was probably greater than Table 2 suggests. Many services, which might otherwise have been generated by specialist suppliers, were provided directly by agricultural and industrial enterprises.

11. Useful international comparisons can be found in World Bank, *China: Socialist Development* (Washington, D.C.: The World Bank, 1981), Annex A. By the late 1970s, the incomes of over a quarter of China's total population (some 270 million people) fell below a poverty line roughly comparable with that used by the World Bank to analyse poverty in developing countries (World Bank, *China: Strategies for Reducing Poverty in the 1990s* (Washington, D.C.: The World Bank, 1992), p. ix.

12. By the early reform period, the infant mortality rate had fallen to 71 per thousand, compared with 124 in LIEs (excluding India and China), and may even have been lower than in MIEs. Life expectancy at birth had risen from 35 (pre-1949) to 71 years (1981) (*WDR*, 1983, pp. 192–93).

industrial investment were reflected in low rates of non-productive investment. The rate of growth of consumption also slowed markedly, from 4.2 per cent p.a. (1FYP) to 2.1 per cent (4FYP, 1971–75).[13]

Transforming the Maoist Economy: Perspectives on Economic Policy and Performance on the Eve of Reform

The new orthodoxy which emerged after Mao's death[14] was openly critical of the economic damage caused by earlier, supposedly "Leftist" policies. Disproportions and imbalance – between major economic sectors, between production relations and productive forces, between consumption and accumulation – were the generic factors which defined an emerging structuralist critique. They were reflected in the differential sectoral growth performance of the economy under Mao (see Table 1), as well as in the absence of any significant improvement in mass consumption standards for more than two decades. As it evolved, the critique also made reference to deeply-rooted systemic problems and the need to reform economic management methods in order to reverse declining levels of efficiency and productivity.

The emerging view of the Maoist legacy was not uniformly negative.[15] But it did suggest that the most notable economic achievements since 1949 had occurred when policies had *least* embodied Mao's own developmental vision. To endorse the "healthy" development of economic structural relations during the Stalinist 1FYP period[16] was implicitly to condemn the subsequent decision to adopt a more expressly indigenous (Maoist) developmental strategy – the Great Leap Forward. From the perspective of the 1980s, approval of the readjustment policies of 1962–65 is less surprising,[17] for they bore a striking resemblance to the pragmatic measures adopted in the countryside in the early years of post-1978 reform. But the recovery which they facilitated derived from an economic approach towards development that was the antithesis of Mao's.

The urgency with which the immediate post-Mao economic situation was viewed is evident from measures which Hua Guofeng's government introduced as early as the last quarter of 1976. They included a cutback

13. In 1978, only 52% of rural households possessed a clock, 27% a wristwatch, 31% a bicycle, 20% a sewing machine and 17% a radio (*TJNJ*, 1988, p. 835).

14. The critical re-appraisal of Mao's legacy began during the interregnum of his chosen successor, Hua Guofeng, although it was left to Deng Xiaoping to complete the revisionist process.

15. The economic legacy was not devoid of positive features. The centralized system bequeathed a strong organizational framework, as well as a large task-force of people who were capable of mobilizing popular energies, who thought in strategic terms and who viewed themselves as members of a team rather than individuals.

16. E.g. see Ma Hong and Sun Shangqing (eds.), *Zhongguo jingji jiegou wenti yanjiu* (*Research on Problems Relating to China's Economic Structure*) (Beijing: Renmin chubanshe, 1981), p. 23.

17. A characteristically positive assessment is given in Cao Bi-jun and Lin Mu-xi (eds.), *Xin Zhongguo jingji shi, 1949–1989* (*A New Economic History of China, 1949–1989*) (Beijing: Jingji ribao chubanshe, 1990), part 4, pp. 170–224.

in basic construction investment, the freezing of institutional bank deposits and the readjustment of economic plans for 1977.[18] They were supplemented by efforts to bring inflation under tighter control and the granting of wage increases to some 60 per cent of industrial employees. Further initiatives were introduced in 1977 and 1978, the most important of which was explicit official encouragement of foreign capital inflows and imports of advanced technology.

Such measures no doubt helped facilitate rapid recovery during 1976–78 (see Table 1). Even if natural disasters left the 1977 agricultural plan unfulfilled, GVAO registered positive growth (by 1.6 per cent), which accelerated to 11.9 per cent the following year. The total output of grain and oil crops meanwhile rose to record levels. Industrial recovery was also in evidence, GVIO rising by more than 13 per cent in both 1977 and 1978. Modest expansion of foreign trade in 1977 (by 10 per cent) was the prelude to a spectacular rise (by almost 40 per cent) during 1978.[19]

The post-1976 initiatives were, however, far from constituting fundamental system reform and although they facilitated short-term recovery, they did not solve the more deeply-rooted structural problems. Indeed, in order to lend proper perspective to developments during Hua Guofeng's interregnum, the pragmatism of some aspects of economic strategy must be weighed against its more conservative features. Riskin has referred to the "hybrid ideological atmosphere" which prevailed after Mao's death,[20] and there is certainly evidence of backward as well as forward-looking policies during this period.[21]

Hua Guofeng's recognition of the urgent need for economic rehabilitation made possible the first critical reassessment of Mao's legacy. But it was Deng Xiaoping's belief in the pre-eminent role of economic construction which encouraged a more radical reappraisal to take place and thereby paved the way for economic reforms. The true significance of the Third Plenum of the 11th CCP Central Committee (December 1978) lay in its endorsement of the very "economistic" philosophy which Mao had condemned and for which Deng and his supporters had come under attack.[22]

The absence of clear objectives, let alone a visionary blueprint, is thought by many to have worked to China's advantage by encouraging a

18. Note too that a rapid rise of state financial revenues during 1977 generated a sizeable budget surplus – the first in four years. For details of all these measures, see *ibid.* pp. 290 and 298.

19. Significant in this regard was the transformation of a small surplus in China's balance of merchandise trade (US$0.38 billion, 1977) into a record deficit (US$1.14 billion, 1978).

20. C. Riskin, *China's Political Economy: The Quest for Development Since 1949* (Oxford: Oxford University Press, 1987), p. 259.

21. E.g. in agriculture there was advocacy of replacing the production team by the brigade as the basic accounting unit, while private plots and household sideline activities were condemned for exhibiting "capitalist tendencies."

22. Thus, the Third Plenum communiqué: "... the emphasis in the work of the whole Party should ... shift towards the task of socialist modernization" (Documentary Research Department of the CCP Central Committee (ed.), *Sanzhong quanhui yilai – zhongyao wenxian xuanbian* (*Selected Important Documents Since the Third Plenary Session of the 11th CCP Central Committee*) (Beijing: Renmin chubanshe, 1982), Vol. 1, p. 1.

gradual, evolutionary approach towards economic reforms.[23] Caution and gradualism certainly came to characterize that approach, although it is likely that their advocacy followed, rather than preceded, the earliest reforms.[24] There was no shortage of arguments in favour of espousing a gradualist reform programme in China. Recent direct experience of the potential disastrous consequences of policy "leaps," the perennial Chinese fear of policy-induced "chaos" (*luan*), the benefits of compromise for securing a pro-reform consensus – all underlined the advantages of caution. But evidence that such arguments were used to advocate a strategy of explicit gradualism and caution from the outset is lacking.[25] In the wake of the Third Plenum, consensus embraced economic objectives; much greater uncertainty surrounded the economic strategy and tactics needed to secure such objectives.

In short, the fundamental ideas of the reformers at the end of the 1970s were simple. They arose logically from their perception of the shortcomings of the inherited economy. Premised on the fundamental need for political stability, policy pronouncements extended no further than advocacy of a greater (but supplementary) role for the market mechanism, less emphasis on egalitarianism, the pursuit of proportionate and balanced growth, the decentralization of economic decision-making, and the closer integration of China in the world economy.

The Potential for Accelerated Economic Growth: China and the Soviet Union on the Eve of Reform

Systematic comparison of the reform experiences of the Chinese and Russian economies remains limited.[26] The most influential proposition to have emerged from this literature argues that the different outcomes of reform in the two countries derives not from choice of policy but from contrasting initial conditions. Thus:

> It was neither gradualism nor experimentation, but rather China's economic structure, that proved so felicitous to reform. China began reform as a peasant agricultural

23. E.g. see Barry Naughton, "Deng Xiaoping: the economist," *CQ*, No. 135 (1993), pp. 491–92.

24. The earliest institutional reforms in the countryside seem to have reflected a spontaneous peasant response, which only later received official – and grudging – endorsement.

25. One of the most interesting early comments against the adoption of rapid, comprehensive system reform and in favour of an incremental and experimental approach was made by Liu Guoguang and Wang Ruisun. See their "Restructuring of the economy," in Yu Guangyuan (ed.), *China's Socialist Modernization* (Beijing: Foreign Languages Press, 1984), esp. pp. 119–120.

26. E.g. see A. Aslund, *Gorbachev's Struggle for Economic Reform* (London: Pinter, 1991); M. Goldman, *What Went Wrong with Perestroika?* (New York: Norton, 1992); Jeffrey Sachs and Wing Tye Woo, "Structural factors in the economic reforms of China, Eastern Europe and the former Soviet Union," *Economic Policy*, Vol. 9, No. 18 (April 1994); and Peter Nolan, *China's Rise, Russia's Fall: Politics, Economics and Planning in the Transition from Stalinism* (Basingstoke: Macmillan, 1995).

society, EEFSU[27] as urban and overindustrialized .... In Gerschenkron's famous phrase [China] had the "advantage of backwardness."[28]

Implicit in Gerschenkron's "advantage of backwardness" is the belief that a country coming late to development enjoys the potential for faster growth than its predecessors. Not only does a latecomer have access to a larger pool of advanced technology than early industrializers, but new fixed asset formation promises to confer a more efficient vintage profile on its capital stock. The large size of its farm sector may be another advantage, agriculture often being considered more susceptible to reform than industry. Further, a large surplus of rural labour may be the source of rapid growth in labour-intensive industries, where gestation lags are shorter and technological coefficients more flexible than in large-scale industry. Finally, latecomers may also benefit from an increasing pool of international capital.

The validity of such arguments to conditions in pre-reform China and the USSR is questionable. Although more than 70 per cent of China's workforce were employed in agriculture, compared with only 14 per cent in the USSR, the Soviet share remained significantly higher than in advanced capitalist countries (Table 2). Soviet agriculture contained the potential to release large numbers of surplus workers for productive work elsewhere in the economy. But the implicit assumption that a large share of agriculture in national output and employment is necessarily an advantage is not self-evident. In a densely populated country like China, the capital requirements of agricultural expansion are large. It is not coincidental that the economic success of the East Asian NIEs derived from accelerated growth in economies which had *small* farm sectors.[29]

But what of the industrial sector? In 1980, it accounted for 62 per cent of Soviet GDP – a higher share even than in advanced market economies (Table 2). Interestingly, industry in China also contributed a larger share of GDP (47 per cent) than in such economies. As discussed below, there were serious inefficiencies in both Chinese and Soviet industry, but "over-industrialization" may have been a greater burden in China, where lower incomes generated less savings with which to finance investment (especially in heavy industry).[30]

The accelerated globalization of capital during and after the late 1970s offered a major catch-up opportunity to reforming Communist countries.

27. Eastern Europe and the former Soviet Union.

28. Sachs and Woo, "Structural factors," pp. 102–104.

29. "It is very rare for agriculture to grow faster than 5% in any country where agriculture is an important part of the economy. Therefore, the less important is agriculture, the easier it is to strike up very high growth rates of GDP. This is what people have in mind when they dismiss Hong Kong and Singapore as irrelevant" (I. Little, "An economic reconnaissance" in Walter Galenson (ed.), *Taiwan* (Cornell: Cornell University Press, 1979), p. 450).

30. "Over-industrialization" was more evident in the USSR in terms of its employment share (45%). But if labour hoarding and high levels of job security generated over-manning in Soviet industry, such practices were not absent in China. In both countries, appropriate institutional reform promised to raise labour productivity and encourage state enterprise managers to release labour for productive work elsewhere in the economy (not least, in the service sector).

Mere availability of such capital is not sufficient to guarantee access to it, nor does access to it ensure sustained growth. But the formulation of appropriate policies of structural transformation in developing countries can encourage inflows of overseas capital and, as China's own recent experience shows, be the source of accelerated growth. Foreign direct investment (FDI) is especially attractive in this regard, giving the investor a direct and lasting interest in improving efficiency in the firm where investment is taking place.

China also enjoyed the unique potential advantage of having access to enormous volumes of capital controlled by overseas Chinese, especially in their east and south-east Asian diaspora. Significantly too, it was located in the most dynamic region of the world economy, embracing Japan and the Asian NIEs – countries which experienced acute labour shortages, large trade surpluses and appreciating exchange rates just as China was embarking on its economic reforms. As a result, China became a major beneficiary of its neighbours' search for overseas investment opportunities, notably in less technologically demanding lines of manufacturing, where labour costs were lower.

But the USSR too had the potential to become an attractive foreign investment destination. Notwithstanding the inhospitable nature of much of its Central Asian and Far East regions, the core of the Russian economy west of the Urals was essentially part of Europe. Its labour force was more educated and skilful than China's,[31] but its workers were prepared to work hard for much lower wages than people of comparable training in the West. It also possessed a vastly more developed pool of scientific and technical personnel, even if its record in utilizing such expertise to promote technical progress had been disappointing. Its infrastructure too was more developed than that of China. Yet far from attracting significant levels of foreign investment, the appeal of FSU (later, Russia) as an investment environment steadily deteriorated.[32]

Institutional and economic factors were largely responsible for the disappointing return, in terms of *civilian* technical progress, from scientific investment in both China and the USSR prior to reform.[33] The emphasis indicates the major share of scientific expertise absorbed by the military sector in the two countries. The inference is that the end of the

31. PPP estimates for the mid-1970s suggest that the USSR was ahead of all Western countries, except the USA, in its per capita consumption of educational services (G. Schroeder, "Consumption" in A. Bergson and D. Levine, *The Soviet Economy: Towards the Year 2000* (London: Allen and Unwin, 1983), p. 319).

32. This was the outcome of disastrous political and economic policy choices. Based on conditions at the beginning of 1993, an estimate of credit risk by the Economist Intelligence Unit showed Russia to be the second most risky country in the world, next to Iraq. Despite some downgrading because of its overheated economy, China ranked high – between Malaysia and Thailand (*The Economist*, 21 August 1993, p. 88).

33. Most scientific research personnel had no direct contact with economic activities, technical progress being regarded as a public good. In the absence of competition and profit seeking, enterprise managers also had little incentive to pursue technical progress. Pervasive shortages were reflected in the existence of a seller's marker so that in the production of both capital and consumption goods there was little encouragement to use scientific skills to improve product quality.

Table 3: **Educational Attainments: Some Comparative Indicators, 1978** (enrolments as a percentage of appropriate age group)

	Primary school	*Secondary school*	*Higher education**	*Adult literacy rate*
LIES	74	20	2	43
MIEs	95	41	11	72
IMEs	100	89	37	99
China	93	51	1	66
USSR	97	72	22	100
India	79	28	8	36
USA	98	97	56	99

Note:
*The appropriate age group comprises those between the ages of 20 and 24.
Source:
WDR, 1981.

Cold War promised to release a substantial peace dividend by reallocating scientific and material resources to civilian use. The potential gain from technology imports was also considerable,[34] if only adequate foreign exchange could be secured. Overall, however, the potential benefits from technological catch-up were probably greater for the USSR than for China.

In order to understand this last statement, social capability levels in the two countries must be considered.[35] Table 3 presents comparative data relating to educational attainments in 1978. On the eve of reform, China's level of school education was highly advanced by the standards of low-income countries, and in some respects comparable with those of middle-income countries. The data may, however, conceal lower educational attainments among those already working. One source suggests, for example, that in the early 1980s 63 per cent of the labour force had an educational level no higher than that of elementary schooling (including

34. In the mid-1970s, the value of the USSR's equipment imports was equivalent to a mere 2% of total domestic equipment investment (P. Hanson, "The import of Western technology" in A. Brown and M. Kaser (eds.), *The Soviet Union Since the Fall of Khrushchev* (London: Macmillan, 1978), p. 31). In China's machine-building industry, "the stock of Soviet equipment was rapidly becoming obsolete and domestically produced equipment was primitive" (Jack Craig, Jim Lewek and Gordon Cole, "A survey of China's machine-building industry" in U.S. Congress, Joint Economic Committee, *Chinese Economy Post-Mao* (Washington, D.C.: U.S. Government Printing Office, 1978), p. 311).

35. "A country's potential for rapid growth is strong not when it is backward without qualification, but rather when it is technologically backward but socially advanced" (M. Abramowitz, "Catching up, forging ahead, falling behind," *Journal of Economic History*, Vol. 46, No. 2 (1986), p. 38; see also S. Gomulka, *The Theory of Technological Change and Economic Growth* (London: Routledge, 1991)).

more than a quarter who were illiterate).[36] School enrolment levels were even higher in the USSR, comparing favourably with advanced capitalist countries. But the Soviet Union was also more highly urbanized than China and did not have the same problem of a large semi-literate peasantry.

In any case, China's record in the provision of higher education was much less successful. In 1978 a mere one per cent of the relevant age group (20–24) was enrolled in higher educational institutions (HEIs), compared with 2 per cent in LIEs and 8 per cent in India. The cost of the Cultural Revolution in this regard was especially high, HEIs having been closed for much longer than schools.[37] By the late 1970s, the ratio of scientific and technical personnel to total manpower was low – for example, a mere 4.5 per cent in the chemical and machine-building industries. The educational disruption and isolation of China during the Cultural Revolution had also had an adverse effect on the *quality* of technical expertise.

A corollary of the poor record of the USSR in utilizing scientific skills in order to generate technical progress was its allocation of sizeable resources in order to strengthen its manpower base in this area. As a result, the USSR had a much greater pool of scientific and technical personnel than did China. In the mid-1970s, there were 66 scientists and engineers per thousand population, compared with 62 in the United States.[38]

If the general quality of labour in both China and the USSR was high, its motivation under a command system was more questionable. A variety of factors kept the workforce operating well within its capacity. In agriculture, familiar problems associated with large-scale production units (collectives or state farms) arose. In the non-farm sector, the inability to dismiss workers greatly reduced the pressure which enterprise managers could exert upon the workforce. Indeed, the material balances system encouraged managers to hoard labour (and capital) in an effort to ensure fulfilment of key planning targets. Nor did the administrative planning system succeed in maintaining timely deliveries of inputs to keep production processes running smoothly at full capacity. The outcome was an uneven work pace throughout each production period.

Such phenomena constitute an indictment of the planning system as it operated in China and the Soviet Union. But they were not fixed parameters of economic activity. Rather, the slow work pace and low work effort, reflecting stagnating living standards during years of high

36. K. C. Yeh, "Macroeconomic changes in the Chinese economy during the readjustment," *CQ*, No. 100 (1984), p. 693. Remember too that primary and secondary education had been hugely disrupted by the Cultural Revolution, when schools were closed for long periods.

37. "The Cultural Revolution is estimated to have cost China 2 million middle level technicians and one million university graduates ..." (World Bank, *China: Socialist Development*, p. 106).

38. In addition, the low effectiveness of Soviet scientific research was reflected in the high ratio of ancillary personnel per scientist and engineer (5.0 in 1970, compared with 1.3 in the USA) (U.S. Congress, Joint Economic Committee, *Soviet Economy in a Time of Change* (Washington, D.C.: U.S. Government Printing Office, 1979), p. 745).

savings and investment rates, signalled potential windfall gains that were available from existing resources if only appropriate incentive schemes could be found to motivate workers.

The nature of the relationship between China's Confucian heritage and its economic development remains a controversial issue and is beyond the scope of this article.[39] But a factor which does deserve mention is China's powerful entrepreneurial tradition. By the 11th century AD, its economy exhibited well-developed markets and a large urban sector. Despite China's failure to institute its own modern Industrial Revolution, in those areas where there was a semblance of political order, rapid progress in the development of modern industry did occur in the first three decades of the 20th century. If this owed much to foreign influences, it also reflected the emergence of a thriving indigenous bourgeoisie.[40]

Early studies highlighted the supposed absence in Russia of a similar entrepreneurial spirit and degree of capitalist development.[41] Subsequent analysis suggests a more complex reality, indicating that by the late 19th century capitalism was well advanced in European Russia.[42] In short, it is not self-evident that China's reforms were destined to be more successful than those of the USSR because of an inherently greater capacity for entrepreneurial activity in the former.[43]

Overall, there is a strong case for arguing that, through the introduction of competition and the profit motive, considerable potential for large increases in output existed in both countries. It is possible that in terms of availability of education and skill levels, as well as scientific and technical expertise, such potential may have been greater in the Soviet Union than in China. Finally, it is notable that on the eve of reform, China's demographic factors continued to generate large annual incremental increases in total population – a situation which contrasted with that of the USSR. In particular, the Soviet farm population had stabilized and although both economies embarked on reform with large backlogs of surplus labour, demographic pressures gave China a greater problem in absorbing such workers.

The industrial sector. The extreme inefficiency with which the Stalinist economies used investment resources meant that both China and Russia required a large input of intermediate goods to generate a unit of final

39. See Martin Whyte's article in this issue.

40. See Marie-Claire Bergère, *The Golden Age of the Chinese Bourgeoisie* (Cambridge: Cambridge University Press, 1989). On the dynamism of the modern sector in pre-war China, see also Thomas G. Rawski, *Economic Growth in Prewar China* (Berkeley: University of California Press, 1989).

41. E.g. see Maurice Dobb, who argued that by 1914 capitalism had "... as yet touched little more than the hem of Russia's economic system" (*Studies in the Development of Capitalism* (London: Routledge and Kegan Paul, 1966), pp. 35–36).

42. See W. Blackwell, "The Russian entrepreneur in the Tsarist period," in G. Guroff and F. V. Kasteson (eds.), *Entrepreneurship in Imperial Russia and the Soviet Union* (Princeton, N.J.: Princeton University Press, 1983); also P. Gatrell, *The Tsarist Economy, 1850–1917* (London: Batsford, 1986).

43. Nor is it self-evident that almost 60 years of "anti-capitalist" Stalinist planning in the USSR had had a greater inhibiting effect than 30 years of similar experience in China. A large

Table 4: **Intermediate Input Levels Per Dollar of GNP (1979–80)**

	Steel (grams)	*Sulphuric acid (grams)*	*Cement (grams)*	*Energy (kilograms of coal equivalent)*
China	146	31	319	3.21
USSR	136	21	116	1.49
USA	42	17	27	1.16
Japan	109	7	87	0.48
FDR	61	7	47	0.56

Source:
World Bank, *China: Socialist Development*

output. Selected comparative indicators are presented in Table 4. China was even more profligate than the USSR in its use of inputs. In both cases, the quality of much heavy industrial output, especially machinery, was below that required to compete in world markets. The potential ability of enhanced competition to reduce input utilization per unit of output and to raise the quality of capital goods was therefore considerable.

A striking feature of the industrial structures of China and the Soviet Union was the pre-eminent role played by large plants. In the early 1980s, in both countries around 1,000 very large plants (over 5,000 employees) employed 12–14 million workers, accounted for between one-third and a half of the total value of industrial fixed assets, and produced one-fifth to one-third of GVIO. Large plants (over 1,000 employees) accounted for 64 per cent of the total value of industrial fixed assets and 48 per cent of GVIO in China; and 81 and 75 per cent in the USSR.[44]

Consideration of the functioning of the large enterprise in former Communist countries is essential to an understanding of the structural demands of reform. Large plants were characterized by a high degree of vertical integration, stemming from the complexity of material balances planning. Taut planning tended to generate attempts to maximize self-sufficiency within enterprises in order to obviate shortages of materials and fuel inherent in the command system.[45] In addition, many spare parts

footnote continued
"second economy" developed in both countries and private-sector activity characterized their agricultural sectors.

44. Relevant data can be found in Liu Nanchuan, Chen Yichu and Zhang Chu, *Sulian guomin jingji fazhan qishi nian (70 Years of Soviet Economic Development)* (Beijing: Jijie chubanshe, 1988), pp. 120 and 145; and SSB, *Zhongguo gongye jingji tongji nianjian (Statistical Yearbook of China's Industrial Economy)*, 1988 (Beijing: Zhongguo tongji chubanshe, 1988), pp. 7 and 293.

45. In 1978 some 80% of the 6,057 engineering factories produced their own iron castings (Ma Hong, *Xiandai Zhongguo jingji shidan (The Contemporary Chinese Economy: A Compendium)* (Beijing: Zhongguo shehui kexue chubanshe, 1982), p. 231). In the USSR, less

and machinery requirements were produced within large plants, where general-purpose machine tools were used at low utilization rates to produce a wide variety of inputs in small quantities. Far from benefiting from large-scale specialized production, large-scale plants in China and the USSR often produced small-batch output at below-optimal scale.

Ironically, the Chinese and Soviet structural problem was not that of there being too few specialist producers, with large monopolistic propensities. Rather, many areas of industrial activity were characterized by the existence of too many small-scale producers. The task of reform was to construct out of the non-competitive environment of a command economy industrial giants, which would benefit from economies of scale associated with multi-plant operation and be able to compete in world markets. Small-scale, in-house plants, each producing at below-optimal scale, demanded re-organization into large multi-plant companies – a process involving horizontal mergers within the shell of existing enterprises. Further policy implications included the need to select managers on merit, introduce profit-orientated goals and implement gradual price de-control.

The underlying structural problems were common to both China and the USSR, but in China's case they were exacerbated by difficulties associated with the idiosyncrasies of indigenous economic strategies. If China's huge size and poor infrastructure favoured a self-reliant pattern of industrial development, the strategic imperatives of the "Third Front" policy gave it an added impetus. The outcome was a significant increase in the industrial weight of inland provinces at the expense of the coastal region.[46]

But a high cost attached to siting new industrial facilities in the interior. The remoteness of many new factories meant that economic returns to inland industrial investment were often low, and infrastructural – especially transport – costs were extremely high.[47] Out of the emphasis on "self-reliance" came also a rapid increase in the number of small-scale industrial plants, although the urgent need for modern farm inputs in the aftermath of the Great Leap Forward was also a powerful stimulus to their appearance in the countryside. By the mid-1970s some 45 per cent of nitrogen output, half of cement production and much of China's farm machinery was being supplied by such plants.[48] Many of these units were tiny in scale: in 1979, for example, there existed 580,000

footnote continued

than 20% of cast iron and steel was purchased from specialist suppliers, compared with more than 80% in the USA (D. Granick, *Soviet Metal-Fabricating* (Madison, Milwaukee: University of Wisconsin Press, 1967)).

46. Relevant data can be found in SSB, *Zhongguo gongye jingji tongji ziliao* (*Statistical Materials on China's Industrial Economy*) (Beijing: Zhongguo tongji chubanshe, 1985), p. 137.

47. New railways built to the west of the main north–south coastal axis accounted for 84% of total investment in railway construction between 1963 and 1978 (Yu Guangyuan, *China's Socialist Modernization*, p. 168).

48. *Ibid.* p. 156; D. H. Perkins (ed.), *China: Small-Scale Industry in the People's Republic of China* (London: University of California Press, 1977), pp. 156 and 178.

enterprises (62 per cent of all industrial enterprises) at brigade or team level, employing an average of only 17 workers per plant and producing just 3.4 per cent of GVIO.[49]

High costs attached to the industrial strategies pursued by China and the Soviet Union. Large-scale industry failed to benefit from economies of scale, nor did it derive the advantages of specialization and exchange. Material consumption was high and much of the output it produced was of low quality. In China's case, costs of production were also high in many small-scale factories, not only because of their inherent inefficiency[50] but also because they frequently produced capital goods which should have gained from economies of scale in large plants. In consequence, industrial reform in China had to address both the familiar problems of restructuring its large-scale enterprises and the task of reorganizing its small-scale facilities.[51]

The agricultural sector. The two countries' farm sectors differed fundamentally by virtue of climatic conditions and resource endowments. The Soviet Union's harsh climate and relatively low man–land ratio dictated overwhelming reliance on extensive farm practices, as well as a different balance of grain and meat production. By contrast, in China population pressure caused a steady decline in the per capita availability of farmland to a level that was amongst the lowest in the world.[52] This gave rise to a system of intensive farming, which placed a premium on the use of large farm machinery. China's production brigades were about the same size as Soviet collective farms. But whereas in the pre-reform USSR each collective possessed an average of 20 tractors, 14 combine harvesters and 44 trucks, Chinese brigades' access to such facilities was negligible.[53]

In the USSR, agriculture's share of total state investment rose to more than 20 per cent by the 1970s, compared with 5 per cent in the United States.[54] In China, the corresponding figure was around 10 per cent,[55] although this underestimates the true share by ignoring the contribution of

49. World Bank, *China: Socialist Development*, Annex D, pp. 20–21.

50. Perkins has argued that high fuel and other costs in small plants contributed significantly to China's heavy consumption of power and other material inputs (*China: Small-Scale Industry*, pp. 72–76).

51. Cf. Yu Qiuli (January 1978) on the need to restructure small-scale industry and to "convert most small- and medium-sized [machine-building] plants from general equipment producers to producers of specialized components under contract to large plants ..." (Craig *et al.*, "China's machine-building industry," pp. 297–98).

52. In 1979, average arable area per head in China was 0.1 ha., but with significant regional variations. Comparative international indicators include Japan (0.04 ha.), India (0.26 ha.), USA (0.86 ha.) and USSR (0.89 ha.).

53. Detailed data for the USSR can be found in Liu Nanchuan *et al.*, *70 Years of Soviet Economic Growth*, pp. 287, 289 and 303. Figures for China show that in 1980, on average, each production brigade had 1.1 large or medium tractors, and 2.6 walking tractors (SSB, *Zhongguo nongcun tongji nianjian* (*Chinese Rural Statistical Yearbook*), 1989 (Beijing: Zhongguo tongji chubanshe 1989), pp. 232–33 and 244).

54. *Soviet Economy in a Time of Change*, p. 40.

55. See Robert F. Ash, "The peasant and the state," *CQ*, No. 127 (1991), p. 498.

the collective sector.[56] An area in which agricultural fixed investment assumed particular importance in China was that of drainage and irrigation. By the late 1950s, more than a quarter of the total arable area was already under effective irrigation and by 1978 that figure had reached 45 per cent.[57]

China's advanced irrigation ratio, high labour input per unit arable area and rapid increases in the use of working inputs (especially chemical fertilizers)[58] generated high yields per arable and sown hectare.[59] However, the growing scarcity of arable land and the attainment of such high yields pointed to the need for continuing investment in the farm sector – a need which would become even more urgent when post-1978 reforms generated rises in income and demands for a better diet.[60]

Agricultural policies in all socialist countries have been based on the erroneous belief that farming, like industry, should seek to realize economies of scale in all its activities. It was on this basis that the decision to collectivize was premised. China and the USSR shared the same institutional framework of agriculture, although the basic level of daily work organization and income distribution differed.[61]

Methods of organization under collectives and state farms were the source of serious inefficiencies.[62] The peculiar difficulty of labour supervision in agriculture, as well as the role of natural factors, gave rise to large managerial diseconomies of scale in most aspects of direct cultivation. Yet there remained considerable scope for co-operation and the realization of scale economies in many ancillary farm activities, such as research, irrigation, crop spraying, processing marketing and the dissemination of technical information. Indeed, advocacy of a two-tier system, embracing household-based cultivation and higher-level co-operation, was ultimately to define the major thrust of institutional reform in China's agricultural sector.

In general, similarities in the institutional settings of the two countries'

56. E.g. the World Bank estimated that agriculture was receiving around 20% of total national investment in the late 1970s (*China: Socialist Development*, p. 49).

57. *TJNJ*, 1993, p. 349.

58. Chemical fertilizer use rose from 0.4 to 8.8 million tonnes between 1957 and 1978 (*TJNJ*, 1993, p. 349).

59. The distinction reflects the extent of multiple cropping. By 1980, China's multiple cropping index had reached 152 (K. R. Walker, "Trends in crop production," in Y. Y. Kueh and Robert F. Ash (eds.), *Economic Trends in Chinese Agriculture: The Impact of Post-Mao Reforms* (Oxford: Clarendon Press, 1993) p. 166).

60. On the eve of reform, the level and quality of food (especially high-quality food) intake in China lagged well behind those of the USSR, let alone Taiwan and the USA. Remember too that total population in the Soviet Union was growing slowly. It follows that whereas the major thrust of reform in the USSR was to improve efficiency, in China it embraced the twin goals of improved efficiency and higher output.

61. In China, the basic unit was the production team, which on average embraced 56 farm workers and 26 hectares of sown area; in the USSR, it was the collective, with 488 workers and 3,485 ha. (Liu Nanchuan *et al.*, *70 Years of Soviet Economic Development*, p. 287; *TJNJ*, 1981, p. 132). Chinese production brigades contained 449 workers, but only 206 ha. of sown area (1980). Another difference with potentially important implications was the much higher average educational and technical level of the Soviet rural workforce.

62. See Peter Nolan, *The Political Economy of Collective Farms* (Cambridge: Polity Press, 1988).

agricultural sectors pointed to the potential benefits, in terms of labour and capital productivity, of similar institutional reform policies. Above all, the delegation of decision-making power to individual households promised to generate significant gains.[63] But contrasting baseline conditions in China and the USSR highlighted the desirability of different policies, whether of kind or degree, in other areas. Providing continued access to lumpy inputs was one example. Their more important role in Soviet farming suggested the need for reforms which would guarantee secure individual access to large inputs that were beyond the resources of a single household. With hindsight, however, the pre-eminent role of irrigation and drainage facilities defined a similar problem of access and a similar challenge to institutional reform in China.

Conclusion

This article has reviewed the economic legacy bequeathed to the Chinese leadership at the end of the 1970s. It has examined in detail economic conditions in China on the eve of reform and sought to capture comparable conditions in the former Soviet Union at a similar point in its history.

At the end of 1978, China's Maoist economic legacy remained largely intact. Ambivalent initiatives introduced during the brief interregnum of Mao's successor, Hua Guofeng, had done little to alter the basic characteristics of the economic system. Structural defects inherent in the former planning system, as well as features more closely associated with indigenous economic strategies, were reflected in sectoral and regional imbalances, and low levels of productivity and efficiency.

A comparative analysis of China and the former USSR indicates that the two countries shared important similarities at the start of their reform programmes. The history of both pointed to the existence of large reservoirs of entrepreneurial skills. The basic framework of planning within a command system was the same, as were key features of collective farming and industrial enterprises. Both countries had large amounts of capital and technical expertise locked up in their military sectors. The economic system of each was massively under-performing relative to the productive potential of existing stocks of physical and human capital.

But there were also important differences. They included China's more severe shortage of arable land, its educational deficiencies and lack of scientific and technical expertise, as well as its lower levels of per capita income, industrialization and urbanization. The greater role of small-scale industrial enterprises and the location of a much higher proportion of its industrial assets in remote areas were characteristic features of China's Maoist developmental model. Its population growth was more rapid,

63. China's experience during the recovery from the Great Leap Forward provided clear evidence of the effectiveness of establishing contractual arrangements with individual farm households.

although national minorities significantly constituted a far smaller percentage of total population than in the USSR. Under appropriate conditions, China also had access to much larger concentrations of capital held by its overseas citizens.

Some of these characteristics worked to the advantage of both countries. Others favoured one of them more than the other. An inference common to both is that conditions were the source of considerable catch-up potential. Relatively simple changes promised to generate immediate improvements in performance, which in turn might promote further reform. It is certainly not apparent to us that inherited economic or systemic differences made it more likely that well-chosen policies would generate faster growth in China than in the USSR.

In reality, however, from the perspective of the mid-1990s there is no doubt which of the two countries has achieved the greater economic success. If our analysis is correct, the main source of the contrasting outcome under system reform in China and Russia must be differences in policy choice. It is beyond the scope of this article to analyse the complex historical factors which generated fundamentally different approaches towards the task of transforming the Stalinist system.[64] Suffice to say that the contrast in policy choice applies not only to narrowly economic considerations but also to the broader relationship between economic and political reform. Under the impact of early reform, hopes of fundamental political reform may have been more widespread in the Soviet Union than in China. The policy decisions of Mikhail Gorbachev, given expression through the implementation of *glasnost* and *perestroika*, transformed such hopes into real expectations. This contrasted sharply with the situation in China, where the central authorities seem to have reached a near consensus that political democratization would not accompany economic modernization.[65]

In sum, the Soviet failure stems primarily from the wholehearted embrace of the "transition orthodoxy" policies of political reform (*perestroika* and *glasnost*) and subsequent economic change ("shock therapy") advocated by foreign advisers and commentators,[66] as well as their domestic counterparts in the USSR and Russian Federation.[67] By contrast, China's reform success stems primarily from its refusal to implement the "transition orthodoxy" policies, which were also urged upon its leaders

64. For detailed consideration of these historical determinants, see Nolan, *China's Rise, Russia's Fall.*

65. This was self-evidently so after the "Tiananmen massacre." But well before that climacteric, a series of campaigns against "bourgeois-liberalization" sought to reduce expectations of political reform.

66. Cf. J. Kornai, *The Road to a Free Economy* (New York: Norton Books, 1990); D. Kennett and M. Lieberman (eds.), *The Road to Capitalism* (Orlando: Dryden Press, 1992) (especially the chapters by D. Lipton and J. Sachs); J. Prybyla, "The road from socialism: Why, where, what and how," *Problems of Communism*, Vol. XL (January–April 1991); and A. Aslund, "Gorbachev, perestroika and economic crisis," *Problems of Communism* (January–April 1990), pp. 13–41 and *Gorbachev's Struggle for Economic Reform.*

67. E.g. the authors of the "500 day plan" for transforming the Soviet economy; also, subsequently, Chubais and Sobchak.

during the 1980s.[68] The outcome for China was to release the potential concealed within the Stalinist system. Meanwhile, the maintenance of an authoritarian political system allowed the gradual development of market forces, helped facilitate fiscal stability, provided a stable environment for large-scale foreign capital inflows and provided a means of intervention in areas of market failure.

Implicit in this analysis are two counter-factual propositions. The implementation of different policies in Russia could have produced rapid growth of output and a significant improvement in popular living standards. By the same token, the selection of different policies in China could have precipitated political and economic disaster, reflected in a major decline in popular living standards.

68. Cf. Liu Guoguang and Wang Ruisun, "Restructuring of the economy" in Yu Guangyuan, *China's Socialist Modernization*.