

THE REAL REASONS FOR CHINA'S GROWTH

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The 15th Congress of the Chinese Communist Party (CCP) in September 1997 was an important milestone in China's convergence to a normal market economy. The resolutions to privatise most of the state-owned sector, to reduce legal discrimination against non-state and non-collective forms of ownership, and to increase the economic opening to the outside world clearly reflect the CCP's recognition that economic liberalization, economic opening, and diversification of ownership structure were responsible for the high growth of the past 18 years. More fundamentally, the CCP recognised that the logic of its economic reform program would eventually produce a (predominantly private) market economy that is integrated into the international division of labor.

It is therefore jarring when one looks at the academic literature written in the West and finds a group of economists claiming that China's high growth is the result of successful economic experimentation. It is claimed that this experimentation has fostered the emergence of new, non-capitalist institutions that have promoted growth; and that other countries would do well to study these "lessons from China." We will call this school of thought the Experimentalist school (the E-school). Prominent members of the E-school include Gary Jefferson, Thomas Rawski, Barry Naughton, and Peter Nolan.¹

Disputing the claims of the E-school is a group of economists who emphasize comparative analysis of reform experiences. We call this second school the Convergence school (the C-school) because it sees China's good economic performance since 1978 to be caused by the same factors behind the fast-growth of the East and Southeast Asia economies: the increasing liberalization, internationalization, and privatization of economic activities. Members of the C-school include Michael Bruno, Gang Fan, Geng Xiao, Jeffrey

¹ Gary Jefferson and Thomas Rawski, "Enterprise Reform in Chinese Industry," *Journal of Economic Perspectives*, Vol. 8 No. 2, Spring 1994, pp.47-70; Barry Naughton, *Growing Out of the Plan: Chinese Economic Reform, 1978-1993*, Cambridge University, Press, 1995; and Peter Nolan, *State and Market in the Chinese Economy: Essays on Controversial Issues*, MacMillan, London, 1993.

Sachs and Wing Woo.²

The conclusions of the E-school were derived by working backward from China's impressive growth to the partial economic deregulation that were implemented on many fronts, and identifying the *deus ex machina* of the incremental reform strategy to be the "ex-post coherence of Chinese reforms". Specifically, China's seemingly disparate reforms have generated high growth because incremental experimentation has unleashed an unintended virtuous cycle:

After fifteen years, it is clear that there is substantial ex-post coherence to the Chinese reform process. It should also be clear that this coherence is not the result of a carefully plotted reform strategy. Indeed, during some crucial periods, the coherence of the reform process emerged in spite of, not because of, the policies of the Chinese leaders. Coherence was a characteristic of the economic environment in which the transition path unfolded, rather than of the explicit choices of policymakers ... There are certain critical, or core, features of the command economy, and once these are eliminated or weakened, the system has a tendency to devolve into another type of system. Provided there is some political will to move the system in the direction of a market economy during this dissolution process, a positive process of transformation may be set into motion even without a clear or comprehensive commitment to a reformed market economy at the outset.³

The E-school proposes two basic economic propositions concerning China's reforms:

- * Gradualism in market reforms has been key to China's rapid growth; and China's gradualist strategy is transferable to other economies in transition from central planning;
- * China's experiments in non-capitalist institutions are proving to be successful in (a) agriculture, (b) township and village enterprises (TVEs) in the rural areas, (c) state owned enterprises (SOEs); and China is evolving towards a unique set of economic institutions, as a result of experimentalism in policy design.

The convergence school, on the other hand, rejects Naughton's and Rawski's alleged ex-post coherence as a fallacy, and as guilty of *post hoc, ergo propter hoc*. The C-school holds that China's

² Michael Bruno, "Our Assistance Includes Ideas As Well As Money," Transition, World Bank, Vol. 5 No.1, January 1994, pp. 1-4; Gang Fan, "Incremental changes and dual track transition: understanding the case of China," Economic Policy, Volume 19 supplement, December 1994, pp. 99-122; Jeffrey Sachs and Wing Thye Woo, "Understanding China's Economic Performance," National Bureau of Economic Research Working Paper No. 5935, 1997; and Geng Xiao, Property Rights and Economic Reform in China, China Social Science Press, Beijing (in Chinese), 1997.

³ Naughton, 1995, op. cit., pp. 309. Thomas Rawski ("Implications of China's Reform Experience," The China Quarterly, No. 144, December 1995, pp. 1150-1173) also provided a similar unintended virtuous cycle description of China's reform

successes are the consequences of its institutions being allowed to converge with those of non-socialist market economies, and that China's economic structure at the start of reforms is a major explanation for the rapid growth. China had a high population density heavily concentrated in low-wage agriculture, a condition that was favorable for labor-intensive export-led growth in other parts of East Asia. The C-school also holds that China's gradualism results primarily from a lack of consensus over the proper course, with power still divided between market reformers and old-style socialists; and that the "innovative" non-capitalist institutions are responses to China's political circumstances and not to its economic circumstances.

Specifically, the counter-propositions of the C-school are:

- * China's rapid growth has come *despite* gradualism, in areas of the economy characterized by radical rather than gradual reforms. China's ability to grow rapidly *despite* gradual reforms reflects China's particular economic structure. China's gradualist strategy is therefore not transferable to Eastern Europe⁴, because of fundamental differences in their economic structures.
- * China's experiments in non-capitalist institutions are proving to be unsuccessful in (a) agriculture; (b) rural industry; (c) state industry, and are therefore in need of further reform towards more typical capitalist institutions.⁵ China is gradually harmonizing its economic institutions with those of East Asian market economies.

Table 1 sums up the key differences between the two schools in how they interpret China's

process (pp. 1152).

⁴ We are using "Eastern Europe" to cover what are now called Eastern Europe, Central Europe and countries of the former Soviet Union.

⁵ While we do not address here the reasons for the agricultural growth slowdown after 1985, we want to draw particular attention to the continued farmers' uncertainty about future land use rights. Despite the 1984 government decision that farmers could get leases up to fifteen years (recently increased to thirty years), Roy Prosterman, Tim Hanstad and Ping Li ("Can China Feed Itself?" Scientific American, November 1996, pp. 90-96) found in their field work that "local officials have not implemented this policy to any significant degree... [In] many villages, representatives from the collective take back all the land in the village every three to six years and reallocate the plots [to adjust for changes in household size]" Their finding (confirmed in "No Rights Mean No Incentive for China's Farmers," New York Times, December 15, 1996.) is very important because the frequent redistribution of land reduces the farmers' incentive to make long-term investments (e.g. digging wells and small feeder drains, applying more organic fertilizer) in the land. In Yiping Huang's assessment, this well-known problem has caused "widespread decay of agricultural infrastructure ... [and helped to stagnate] agricultural yields in the second half of the 1980s." (Agricultural Reform in China: Getting Institutions Right, Cambridge University Press, 1998, pp.160.).

To us, this finding of widespread uncertainty about future land use rights explains the long time puzzle why rural

achievements.

Table 1: Experimentalism versus Convergence

	E-school	C-school
Speed of reform	Sequential trial-and-error	Rapid and comprehensive liberalization of agriculture, and of international trade in coastal provinces; slow deregulation of SOEs and of international trade in interior provinces
Reasons for gradualism (incrementalism)	Economic experimentation	Political compromise; ideological commitment to state ownership
Sources of rapid growth	Unintended virtuous cycle, and few dislocations from large shifts in policies	Existence of surplus agriculture labor; East Asia pattern of labor-intensive export-led growth
Outcomes in the SOEs	Substantial improvements in production efficiency	Little technical progress; and over-compensation of SOE personnel and over-investment that weaken the fiscal situation
Interpretation of the TVEs	Adaptations to China's economic conditions of still-developing markets	Continuing legal restrictions on private ownership
Future directions and pace of reform	Policies will change to reflect evolution in material conditions and lessons from continuing experiments	Policies will push China toward a normal private market economy with characteristics similar to other East Asian economies

The central argument in this paper is that little institutional experimentation is needed or desired.

The long-run goals of institutional change are clear, and are found in the economic models of existing market-based economies. In our opinion, both the E-school's sense of wonderment about China's "institutional innovations" and Rawski's claim that China's reform experience challenges the "fundamental tenets of economic theory"⁶ derive from an inadequate understanding of growth experiences elsewhere in the world. The "innovative institutions" so admired by the E-school are simply imperfect substitutes for

land markets in China have been surprisingly inactive despite the legality of lease transfers.

normal market institutions that would have provided China with at least as rapid growth, and at less cost in terms of long-run distortions. We will make our argument by drawing upon comparative experiences in economic development and in economic transition.

GROWTH BECAUSE OF, OR DESPITE, GRADUALISM?

The E-School postulates that rapid comprehensive reforms ("shock therapy" or "big bang") necessarily dislocate production relations, and hence inevitably forces output down and incurs considerable social costs:

“Big bang transitions inevitably involve large short-run adjustment costs, generally including discontinuous changes in the price system, and sharp increases in unemployment.”⁷

In the E-school's opinion :

“The economies of Eastern Europe and the former Soviet republics are now enduring great suffering. Much of the pain is knowingly inflicted by reform-minded governments. Supporters of current policies believe that long-term economic progress is unlikely without an initial process of creative destruction... China's experience raises the possibility that "growing out of the plan" is a feasible alternative to creative destruction.”⁸

The C-school, on the other hand, believes that China's rapid growth reflects the same forces that have underpinned rapid growth throughout East Asia: market-based, export-led growth of labor-intensive manufactures. China's reforms have gone far enough to permit such export-led growth, even though they have not gone far enough to overcome many of the debilities of the preceding socialist era. China is outperforming Eastern Europe mainly because of China's economic structure rather than its gradualism. In comparison with China, Eastern Europe is plagued by an inheritance of overindustrialization under socialism, and has therefore been subject to a sharp downturn in industrial production upon the outset of

⁶ Rawski, 1995, op. cit., pp. 1173.

⁷ Naughton, 1995, op. cit.

⁸ Thomas Rawski, "Progress without Privatization: The Reform of China's State Industries," in Vedat Milor (ed.), The Political Economy of Privatization and Public Enterprise in Post-Communist and Reforming-Communist States, Lynne

market reforms.

China's Economic Performance in Comparative Perspective

The immense quantitative differences in the structures of China and Russia at the start of their market reforms is epitomized by the sharply different distribution of employment in each; see Table 2.⁹

Table 2: Distribution of Employment by Type of Organization (% of total employment)

	<i>CHINA</i>			<i>RUSSIA</i>	
	1978	1984	1991	1985	1991
State enterprises	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

While only 18 percent of China's workers were in state-owned enterprises at the start of Deng's reforms in 1978, the share in Russia was effectively 99 percent¹⁰ at the start of Gorbachev's reforms in 1985 (and 91 percent at the start of Yeltsin's reforms in 1991). This makes clear that the Soviet Union, and Soviet-type economies in Eastern Europe, had no reserve of labor outside of the SOE sector that could provide the engine of growth for a new non-state sector. The growth of the non-state sector required the decline of the state sector almost as a matter of accounting, since the state sector dominated the economy.

Rienner, Boulder, CO, 1994, pp. 27-52.

⁹ From Jeffrey Sachs and Wing Thye Woo, "Structural Factors in the Economic Reforms of China, Eastern Europe and the Former Soviet Union," Economic Policy, April 1994, pp. 102-145.

Only by ending the subsidization of the state sector was it possible to free resources for the new sectors in the economy. Two-track gradualism could not work in that context. In short, the marketization of a centrally-planned economy means normal economic development for China but structural adjustment for an Eastern European country.

It should be noted that gradualism had been tried in Eastern Europe several times (e.g. Kadar's Hungary, Jaruzelski's Poland and Gorbachev's Russia), and it failed each time. The liberalization there unleashed financial destabilization, without promoting the growth of a new private sector because subsidies to the SOEs were not cut.

The experience of Vietnam confirms that it is structural conditions, rather than a gradual reform process, that mainly account for the superior growth performance of China vis-a-vis the Eastern European countries. During 1985-88, Vietnam had implemented a gradual reform strategy that did not address serious macroeconomic imbalances, and the program had failed: inflation accelerated while growth and trade performance remained unchanged. In 1989, Vietnam enacted an Eastern-European style "big bang," including price liberalization, a 450 percent devaluation to unify the exchange market, and a tight credit policy. The collective farms were returned to family farms with long-term leases. Growth accelerated, inflation ended, agricultural productivity soared, and small, non-state enterprises proliferated.¹¹

The "big bang" did not cause an output decline in Vietnam as in Eastern Europe. The difference lies in Vietnam's economic structure in 1989, with 77 percent of the labor force engaged in agricultural activities. As an overwhelmingly agricultural economy, Vietnam enjoyed the same gains as China from the flow of peasants to the non-state, non-agricultural sector. Strong market-oriented reforms

¹⁰ This counts the state collective farms as state-owned enterprises, for reasons explained in Sachs and Woo, op. cit., 1994.

¹¹ James Riedel, James and Bruce Comer, "Transition to Market Economy in Vietnam," in Wing Thye Woo, Stephen Parker and Jeffrey Sachs (ed.), Economies in Transition: Comparing Asia and Europe, MIT Press, Cambridge, Ma., 1996.

(macroeconomic stabilization and liberalization), not gradualism *per se*, tend to accelerate this shift.¹²

Both the Chinese and Vietnamese experiences confirm a well-known point in the economic development literature: the economic liberalisation of an autarkic, over-regulated developing economy would raise its growth rate. Economic liberalisation integrates a developing economy into the international trade and financial systems, and allows it to exploit, what Gerschenkron has called, “the advantages of backwardness.”¹³ Economic backwardness is not sufficient to guarantee higher growth, economic liberalisation is a necessary ingredient.¹⁴

The Political Necessity for a Gradual Reform Strategy

Gradualism in China is not so much the result of a particular theory of reform, as it is the result of political deadlock and compromises within the CCP between the conservative reformers and the liberal reformers, and a general lack of consensus in the society at large. The conservative reformers enunciated what Chen Yun has labeled the doctrine of a "bird cage economy": the central plan is the cage and the bird is the economy. The premise is that without central planning, production would be in chaos; i.e., without the cage, the bird will fly away. The amount of market activity that is to be tolerated to keep the economy working is analogous to the amount that the cage needs to be swung to create the illusion of greater space that is required to keep the bird happy.

¹² This conclusion of the inapplicability of China's reform strategy to EEFSU was also reached by the 1996 World Development Report, after a comprehensive review of transition experiences: “Differences in initial conditions and structural characteristics therefore explain a good deal of the divergence of transition outcomes and policies across countries. They do not explain all - the sustained application of market-oriented reform policies, within a broad “right” macroeconomic environment, has been a crucial ingredient in success. However, the right reform mix must reflect initial conditions and so cannot simply be transplanted between such starkly different countries as China and Russia.”

¹³ Alexander Gerschenkron, Economic Backwardness in Historical Backwardness: A Book of Essays, Harvard, 1962.

¹⁴ A simplistic reading of Gerschenkron could lead one to predict that poor countries would grow faster than rich countries, a prediction that does not hold when the sample is extended beyond the OECD countries. Recently, Jeffrey Sachs and Andrew Warner (“Economic Reform and the Process of Global Integration,” Brookings Papers on Economic Activity, Vol. 2, 1995) showed that this prediction held only for economies with liberal trade regimes. In short, there is only conditional

The liberal reformers, on the other hand, reject the bird-cage ideal as a bird-brain idea because they recognize that the capitalist market economies have been more successful than the socialist planned economies. The East Asian developmental experience convinced the liberal reformers that only a market economy that is open to the outside world could promote long-term economic development.

With these basic differences in economic strategy, it is not surprising that partial reform was the compromise solution - both conservative reformers and liberal reformers were able to implement part of their programs.¹⁵ This repeated factional struggle and compromise is the primary reason why the CCP has continually altered its stated goals for economic reform, as summarized in Table 3.

Table 3: The Evolution of Reform Objectives

<i>Period</i>	<i>Desired Endpoint Upon Completion of Reform</i>
Pre-1979	A planned economy under the law of exchange value.
1979 to October 1984	A planned economy supplemented by market regulations.
October 1984 to October 1987	A planned commodity economy.
October 1987 to June 1989	An economy where the state regulates the market and the market regulates the enterprises.
June 1989 to 1991	An economy with organic integration of planned economy and market regulations.
1992 to present	A socialist market economy with Chinese characteristics.

The demise of the Communist Party of the Soviet Union in 1991 enabled the Chinese reformers to re-start the economic convergence that had been suspended after the 1989 Tiananmen mayhem. The agenda of the conservative reformers was overturned because the Soviet experience convinced the leadership of the CCP that "centralized control, enforced egalitarianism, international isolation and

convergence; convergence is conditional on a policy of economic openness.

¹⁵ This is a major factor why the CCP located all the Special Economic Zones in southern China, far away from the important

ideological dogmatism" was suicidal.¹⁶ In November 1993, CCP officially identified ambiguous property rights to be a major cause of low inefficiency in the state enterprises; and in July 1997, CCP committed itself to convert most of the SOEs to publicly traded shareholding corporations.

HOW SUCCESSFUL HAS SOE REFORM BEEN?

The E-school disagrees with the dominant view among Chinese officials and Chinese economists that SOE reform in China has been a failure. The E-school sees China, unlike anywhere else in the world, as having succeeded in reforming its SOE sector (a case of "Chinese exceptionalism"), even though Chinese officialdom is not aware of it. This paradoxical stance of the E-school is seen in the following thesis, antithesis and suggested synthesis.

THESIS: "This review leads to the conclusion that reform has pushed China's state-owned enterprises in the direction of "intensive" growth based on higher productivity rather than expanded resource consumption ..., we observe a consistent picture of improved results - higher output, growing exports, rising total factor productivity, and increased innovative effort - against a background of gains in static and dynamic efficiency that reflect the growing impact of market forces." (Jefferson and Rawski, 1994, op. cit., pp.58)

ANTITHESIS: "The current problems of SOEs are: excessive investments in fixed assets with very low return rates, resulting in the sinking of large amounts of capital; and a low sales-to-production ratio, giving rise to mounting inventories. The end result is that the state has to inject an increasing amount of working capital through the banking sector into the state enterprises." (Vice-Premier Zhu Rongji, 1996)¹⁷

SUGGESTED SYNTHESIS: "Focusing on profitability, [state bureaucrats] see the erosion in state sector profits as a profound crisis of the state sector. Without good measures of total factor productivity, they conclude that state sector performance is deteriorating. Foreign observers, hearing the cries of alarm from the state planners, shake their heads knowingly as they perceive still further evidence that state ownership is intrinsically inefficient. Neither party sees that the difficulties are the result of an ultimately beneficial transition to a different type of economy, and are entirely compatible with gradually improving efficiency." (Naughton, 1995, op. cit., pp.314)

political centers.

¹⁶ John Garver, "The Chinese Communist Party and the Collapse of Soviet Communism," The China Quarterly, No. 133, March, 1993, pp. 26.

¹⁷ "Guo you qiye sheng hua gaige ke burong huan," (No time shall be lost in further reforming state owned enterprises), speech at the 4th meeting of the 8th People's Congress, People's Daily, Overseas Edition, March 11, 1996.

We find Naughton's suggested synthesis to be implausible. We do not believe that Chinese officials are ignorant of elementary economic theory (“competition from new non-SOEs erodes SOE profits”), and ignorant of the technically sophisticated literature on total factor productivity (TFP) estimations. The fact is that there is a wide range of TFP estimates, going from large negative to large positive, and they could be due to a whole array of different factors like the possibility of Potemkin data sets, the functional form, the estimation method, and the use of stock data on capital and labor instead of the actual hours of equipment operation and the actual labor hours spent in production.¹⁸

The Case of Disappearing SOE Profits

There has been a steady increase in SOE losses since additional decision-making powers were given to SOE managers in 1985. In the first quarter of 1996, the SOE sector slid into the red for the first time since the establishment of the People's Republic of China in 1949. It reported a net deficit of 3.4 billion yuan.¹⁹ The literature has identified three factors as being responsible for the disappearing SOE profits. The first is the emergence of competition from the non-state enterprises; the second factor is the failure of the SOEs to improve their efficiency despite the new profit incentives from the decentralizing reforms²⁰; and the third factor is the over-compensation of SOE personnel.

The difference between the E-school's and the C-school's explanations for the sharp collapse in SOE profit rates lies in the different weights that they put on each of the above three factors. The E-school

¹⁸ See, for example, Wing Thye Woo, Hai Wen, and Jin Yibiao, “How Successful Has China Enterprise Reform Been?” (in Chinese) Jingji Yanjiu, Issue 6, 1994, pp. 20-32. For a review of the empirical findings, see Yiping Huang, Wing Thye Woo and Ron Duncan “Understanding the Decline of the State Sector in China,” MOCT-MOST: Economic Policy in Transitional Economies, forthcoming.

¹⁹ “Record loss suffered by state sector,” South China Morning Post International Weekly, June 29, 1996.

²⁰ An exasperated view commonly found in official Chinese statements, e.g. Vice-Premier Wu Bangguo stated that: “The situation as regards the economic efficiency of [state] enterprises has remained very grim ... And the prominent feature is the great increase in the volume and size of losses” (The Washington Post, “Losses of State-Owned Industries Pose Problems for China's Leaders, November 3, 1996).

considers only the first and second factors, and dismisses the empirical validity of the second factor on the basis of the empirical work done by its members.²¹ The C-school, on the other hand, sees similar forces behind the increasing SOE losses during the decentralizing reforms of pre-1990 Eastern Europe, and post-1978 China. In both cases, the SOE losses were increasingly the result of embezzlement of profits and asset-stripping by employees (managers and workers), and of continued inefficiency, with the qualification that the erosion of profits in China's small SOEs was exacerbated by competition from TVEs.

Naughton's evidence in support of competition being the only factor behind the SOEs' losses consisted of showing the sector-wide (average of SOEs and non-SOEs) rate of return to capital in different sectors of industry in 1980 and 1989.²² In 30 out of 38 cases, the 1989 profit rates were lower than in 1980. The main difficulty with Naughton's explanation is that the profit rates of SOEs in the sectors of industry that experienced little entry by non-SOEs showed the same dramatic drop as the profit rates of SOEs in sectors with heavy penetration by non-SOEs. Fan and Woo compared the SOE profit rate and the proportion of output sold by SOEs in different sectors of industry in 1989 and 1992.²³ In four of the five cases where the degree of SOE domination was unchanged, the profit rates were lower in 1992, e.g. the profit rate of the tobacco industry dropped 82 percentage points, and that of petroleum refining dropped 13 percentage points. The 1992 profit rates were lower in six of the seven cases where the degree of SOE domination had declined by less than five percentage points.²⁴

The C-school emphasizes *de facto* asset-stripping and embezzlement of firm profits by managers and workers as the most important cause for the general decline in SOE profits, unlike the E-school, which

²¹ For example, Naughton, op. cit., 1995, did not even mention the third factor, and Naughton ("What is Distinctive about China's Economic Transition? State Enterprise Reform and Overall System Transformation," Journal of Comparative Economics, Vol. 18, No. 3, June 1994, pp. 470-490) explicitly rejected the third factor as an explanation.

²² Naughton, op. cit., 1995, pp. 238.

²³ Fan Gang and Wing Thye Woo, "State Enterprise Reform as a Source of Macroeconomic Instability," Asian Economic Journal, November 1996, pp. 207-224.

²⁴ A regression of the change in SOE profit rate on the change in SOE market share yield an insignificant negative relation

dismisses this explanation completely. With the end of the central plan and the devolution of financial decision-making power to the SOEs, the key source of information to the industrial bureaux regarding the SOEs were reports submitted by the SOEs themselves. This reduction in the monitoring ability of the state in a situation of continued soft-budget constraint meant that there was little incentive for state-enterprise managers to resist wage demands because their future promotion to larger SOEs was determined in part by the increases in workers' welfare during their tenure. The reduction in the state's monitoring ability combined with the steady reduction in discrimination against the private sector also made it easier for the managers to transfer state assets to themselves.

The financial weakness of SOEs destabilized the macroeconomy by increasing money creation through three channels. The first channel is the monetization of the growing state budget deficits caused by declining financial contributions from the SOE sector. SOEs paid income taxes that amounted to 19.1 percent of GDP in 1978, 6.6 percent in 1985 and 1.7 percent in 1993; and they remitted gross profits of 19.1 percent, 0.5 percent and 0.1 percent respectively.²⁵ The second channel for money creation is the financing of mounting SOE losses by bank loans. The third channel is the disbursement of investment loans to the SOEs to make up for their shortage of internal funds to finance capacity expansion and technical upgrading.

The general reform strategy of decentralization is intrinsically inflationary. Decentralization necessarily worsens the principal-agent problem, and given the soft budget constraint the SOEs' appetite for investment soars because they can now, to a much larger extent, privatize the profits and socialize the losses. The local governments, in the interest of local development, inevitably lobby the local branches of the state banks to grant the SOEs' applications for investment loans. The evidence overwhelmingly shows

between the two variables and an R^2 of 0.3.

²⁵ Data are from Table 7.3 in World Bank, *China: Macroeconomic Stability in a Decentralized Economy*, Washington D.C.,

that the local bank branches generally have not been able to resist the enterprises' demand for easy money.

The "disappearing profits" at the SOEs have also contributed to social instability. In December 1995, the State Bureau for the Administration of State Property reported that asset-stripping in the SOE sector "has been about 50 billion yuan [annually] since the early 1980s."²⁶ This would mean that the cumulative loss of SOE assets in the 1983-1992 period was equivalent to some 34 percent of the net value of fixed assets in the SOE sector as of 1992. In our opinion, this steady stripping of state assets may subvert political legitimacy much more than a transparent method of privatization would.

The increasing public outrage over the inequity of the informal privatisation of the SOE sector is well captured in a recent book by He Qinglian who wrote that the SOE reform has amounted to:

a process in which power-holders and their hangers-on plundered public wealth. The primary target of their plunder was state property that had been accumulated from forty years of the people's sweat, and their primary mean of plunder was political power.²⁷

Cutting the Gordian Knot at the 15th Party Congress

There can be little doubt that the Chinese leadership recognizes the increasingly serious economic and political problems created by the agency problem innate in the decentralizing reforms of market socialism. This is why the debate between the conservative reformers and the liberal reformers has progressed from whether privatization is necessary to the question of the optimal form and amount of privatization. Since Deng Xiaoping's pronouncement, during his 1992 *nanxun*, that leftism was more harmful to China than rightism, full-scale sales of small and medium-size SOEs have increased steadily. The best known example is Zhucheng city in Shandong province, which started privatizing SOEs in 1992 when two-thirds of its SOEs were losing money or just breaking even. Other provinces, including Sichuan,

1995; and Table 23 in World Bank, *The Chinese Economy: Fighting Inflation, Deepening Reforms*, Washington D.C., 1996.

²⁶ "State asset drain must end," *China Daily*, December 13, 1995.

²⁷ He Qinglian, *Zhongguo de Xianjing*, (China's Pitfall), Mingjing Chubanshe, Hong Kong. The translated quote is from Liu Binyan and Perry Link, "China: The Great Backward?" *The New York Review of Books*, October 8, 1998, pp. 19.

Guangdong, and Heilongjiang, have also joined in privatising SOEs since 1994.²⁸

Just as the CCP finally recognised the household registration system in farming in 1983 only after it had become a widespread phenomenon,²⁹ the CCP sanctioned the privatisation process in July 1997 only after it had gathered steam in the provinces. All but the thousand largest SOEs and the defense-related SOEs are to be corporatised, with part of their shares sold to employees and the general public. The preferred privatisation method for small and medium-sized SOEs has been employee (insider) privatisation. Even for the larger SOEs that are to be corporatised, the state need not be the biggest shareholder.

The thousand largest SOEs will be given preferential financing to develop into business groups (like the Japanese *zaibatsus* and the Korean *chaebols*) that allegedly will enjoy enormous economies of scale. The truth is more prosaic. Given the co-existence of conservative and liberal reformers, any SOE reform package needs to contain a component that appeases each group. The upshot is dual-track SOE reform: state-sponsored conglomerates for the conservative reformers, and publicly-traded joint-stock companies for the liberal reformers. However, in light of the external debt crisis in South Korea caused by imprudent borrowing by the *chaebols* since December 1997, the CCP is reassessing the wisdom of creating such large state business groups. Some other form of organisation will have to be formulated.

We must emphasize that the key to SOE reform according to the C-school is not privatisation *per se*, but a transparent, legal privatisation process that society at large can accept, at the minimum, as tolerably equitable. Because an adequate privatisation program must compensate the retired and layoff workers, permit takeover by core investors, and respect the rights of minority shareholders, it is important that legal reforms be carried out simultaneously. Without a transparent, equitable privatisation process

²⁸ Fan Gang, "China's Incremental Reform: Progress, Problems and Turning Points," paper presented at CEPR/CEPII/OECD conference on Different Approaches to Market Reforms: A Comparison between China and the CEECs, Budapest, 1995.

"Heilongjiang puts 200 firms on the block," *China Daily*, June 7, 1996.

²⁹ Kate Zhou, *How the Farmers Changed China*, University of Hawaii, 1996.

(overseen by an adequate legal framework), China is likely to repeat the mistakes of the Russian privatisation program implemented by Premier Chernomyrdin. Just as the creation of the new *kleptoklatura* in Russia has robbed the Yeltsin government of its political legitimacy, its occurrence in urban China could be socially explosive.

THE TVEs AS A VIABLE NON-CAPITALIST INSTITUTION?

To avoid possible terminological confusion, we want to emphasize that we use the term “township and village enterprises” (TVE, *xiangzhen qiye*) in this paper to refer only to rural enterprises that are formally registered as collectively-owned. In short, we exclude small individual-owned enterprises (*getihu*) and larger private enterprises (*siying qiye*), unlike some official statistics which subsume both under the TVE label.

Explaining the Ownership Form, and Fast Growth

In rural areas, non-agricultural enterprise growth has been dominated by TVEs. The TVE share of total industrial output rose from 22 percent in 1978 to 37 percent in 1995. The TVE ownership structure is highly unusual by international standards. In most countries with rural industry, such as Indonesia and Thailand, ownership of small enterprises is private, often within a family. By contrast, TVE ownership is collective, at least officially, and originally. The basic distinction in TVE ownership between the E-school and the C-school is that the former takes the formal registration status as the real situation, while the latter regards the formal registration status to be the cover for an evolving ownership pattern.

According to the E-school, TVEs represent localised socialism just as SOEs represent centralised socialism, that is, ownership by the local community instead of ownership by the national community:

"China's 'collectively' owned enterprises are not cooperatives ... All members of the local

community are *de jure* owners of 'collectively' owned enterprises." (Nolan, 1993, pp. 297)

"The surprising thing about TVE's is not that they function without clearly specified property rights, but rather the fact that local government ownership turns out to be a fairly robust ownership form ..." (Naughton, 1994, pp. 268, emphasis added)³⁰

"An elaborate vocabulary of denial obscures the uncomfortable reality that these firms, widely described as collectives, TVEs, non-state, quasi-private or even private enterprises, are typically owned and controlled by local governments." (Rawski, 1995, pp. 1172, emphasis added)

In contrast, the C-school holds that the TVE label serves mainly the useful political function of sheltering from view the occurrence of economic convergence in rural industries. The C-school sees three main types of TVEs (1) genuine collectively-owned enterprises, (2) partnerships between local officials and private entrepreneurs, and (3) privately-financed and privately-operated enterprises seeking political shelter and avoiding legal discrimination.³¹ The C-school predicts that over time, and if political circumstances permit, the genuine collectively-owned enterprises would evolve toward the other two types of ownership structure.³²

Some scholars have argued that collective ownership is an effective way to raise capital funds for rural enterprises and to reduce the principal-agent problem by shortening the distance of supervision. The E-school has used these reasons to interpret the TVE ownership structure as a good adaptation to market

³⁰ Barry Naughton, "Chinese Institutional Innovation and Privatization from Below," American Economic Review, Vol. 84 Vol. 2, May 1994, pp. 266-270.

³¹ The China Daily, November 4, 1994, reported that: "hundreds of thousands of private companies have registered as branches of publicly-owned units on the condition that they pay money to their so-called owners ... [because private companies face] complicated registration procedures, heavy levies and less preferential treatment than State firms [in fund raising and fund use. For example, one] private company had to write 46 receipts of 10,000 yuan each for goods worth 460,000 yuan because non-state firms were only allowed to issue bills under 10,000 yuan" ("Private firms jump to take 'red caps' off").

This third type of TVE is not rare, its number may be greater than the number of registered private enterprises in many places. This is certainly true for Wenzhou: "In the 1980s, almost all private business people ... described their enterprises as *collective*, which indicated that they *belong* to local governments, or to a State enterprise," China Daily, October 31, 1996. A 1993 survey found that in one county in Hebei province where there were "at least 1000 private businesses, the official number was eight." ("Enterprises shake protection cover," China Daily, March 31, 1995).

³² In recent fieldwork in southern Jiangsu, Wenzhou, Pearl River delta, and Zhengzhou, Jieh-Min Wu found "that most of the rural enterprises were private in disguise" (Local Property Rights Regime in Socialist Reforms: A Case Study of China's

failures caused by China's underdeveloped markets for factors of production:

Banks are ill-equipped in the early stages of transition to process small-scale lending applications and assess risks. Local government ownership in China played a crucial role in financial intermediation. Local governments could better assess the risks of start-up businesses under their control ... and serve as guarantors of loans to individual TVEs. (Naughton, 1994)

We are skeptical of the E-school's functionalist explanation of the TVE ownership form, especially its emphasis on the state's superiority in financial intermediation. Taiwan's small and medium-size private enterprises exhibited dynamic growth in the 1960-1985 period even though they were heavily discriminated against by Taiwan's wholly state-owned banking system. They thrived because informal financial markets (curb markets) emerged to cater to their needs. The power of market forces, when tolerated by the local authorities, to induce financial institutional innovations was also recently seen in Wenzhou city when economic liberalization began in 1979. Yia-Ling Liu reported that "Ninety-five per cent of the total capital needed by the local private sector has been supplied by 'underground' private financial organizations, such as money clubs, specialized financial households and money shops ..."³³

In our opinion, an adequate general theory for the TVE ownership structure needs to be based on the following two considerations. First, private ownership was heavily discriminated against in many areas until recently, and thus collective ownership of rural industry arose as the primary response to the profitable niches created by central planning. Many private enterprises evaded discrimination by registering themselves as collectively-owned, a charade that Chinese observers have called "wearing the red cap". In short, the "market failures" identified by the E-school are not caused by inefficiencies intrinsic to a *developing* private market economy; these so-called market failures are actually created by ideologically-motivated constraints imposed by the state. Specifically, the banks have extended more loans to TVEs than to private enterprises because of state directives, and not because the TVEs are intrinsically more

Informal Privatization, Ph.D. dissertation, Columbia University, 1998, pp. 355).

efficient or because of the local banks' recognition that the local governments were better assessors of risks than themselves.

The second basic consideration for a general TVE theory is that the collective ownership of TVEs reflected the low labor mobility in the countryside, which resulted largely from the household registration system that tied the peasants to the land. In the past, community ownership was plausible because the community members expected to remain in the same place indefinitely, and there was also no complicating factor of inward migration.

The Problems with TVEs that are Registered as Collectively-Owned

We see four major problems for why the rural Chinese economy should not rely mainly on collective ownership of industry for its long-term development. The first problem is the most obvious. Collective ownership invites political intervention by the local government in the workings of the enterprise. While some economists praise this intervention as essential to promoting enterprise formation, the opposite is also likely -- the local government can stifle the healthy development of the enterprises by siphoning off profits to the pockets of local officials. These kinds of negative intervention have a long history in China. The China historian, John Fairbank, even claimed that local bureaucratic intervention in rural industries was a major reason why China did not develop a vigorous market economy in past centuries.³⁴

³³ Yia-Ling Liu, "Reform From Below: The Private Economy and Local Politics in the Rural Industrialization of Wenzhou," *China Quarterly*, No. 130, June 1992, pp. 293-316.

³⁴ John Fairbank, (*China: A New History*, Harvard University Press, Cambridge, Ma., 1992) wrote: "In feudal Europe the merchant class developed in the towns. Since the landed ruling class were settled in their manors upon the land, the European towns could grow up outside the feudal system instead of being integrated in it. Medieval burghers gained their independence by having a separate habitat in these new towns, and new political authority to protect them, in the persons of the kings of nation-states. In China, these conditions were lacking. The early abolition of feudalism and the dependence of the emperor and his officials upon the local gentry left no political power outside the established order to which the merchant could turn for special protection...Between them, the gentry and officials saw to it that the merchants remained under control

The second problem with collective ownership is that it is the opposite of risk-diversification.

When a community puts its wealth only into the narrow range of enterprises in the community, its residents can end up losing everything - their jobs and their savings. The worker is better off investing in financial assets unrelated to the workplace and locality.

The third problem is that collective ownership limits the scale of operations of the enterprise.

Currently, a TVE can grow as a result of new investments by the community (including reinvestment of profits) or through bank loans. It is difficult, however, to get outsiders to invest in a TVE, since the property rights of the outside investors would not be well defined or well protected.³⁵

The fourth problem is that collective ownership limits the market for managerial control. Suppose that a rural entrepreneur has a good idea for a new enterprise. In a normal market economy, he might be able to raise his own money to start the business, or would be able to purchase an existing business. Both of these options are still difficult in China (albeit less difficult than seven years ago) because of the heavy bias towards collective ownership. Conversely, suppose that an existing enterprise has a bad manager, but one who is favored for political reasons by the local government. In a normal market setting, an outside buyer might approach the owners of the business and make a takeover bid, replacing the manager after buying the enterprise. This is made more difficult with collective ownership of the TVEs.

In addition to the above four problems with the TVE ownership form, recent developments have increased the pressure on the TVEs to "clarify" their property rights. The capacity expansion of many coastal TVEs in southern China has forced them to rely increasingly on migrant labor from the poorer

and contributed to their coffers instead of setting up a separate economy." (pp. 180-81)

³⁵ Outsiders do invest in TVEs, but certainly much less than what they would have if they feel that their rights would be protected. This ambiguity in property rights has even deterred local banks from large investments in TVEs: "Today, most rural enterprises face a severe shortage of funds. Most agricultural banks are unwilling to risk lending money to small rural firms that can easily fall prey to poor management Although the enterprises are nominally owned by townships or villages, no one is actually responsible for the losses or profits of the enterprises. Managers ..[often] take advantage of their power for personal gain, such as hiring their family members or relatives and making extravagant use of

provinces. Because migrant workers are eligible to apply for resident status after a number of years, the original inhabitants in some parts of these richer provinces have converted the collective TVEs into "shareholding cooperatives" by corporatising the TVEs and dividing the shares among themselves, in order to prevent the future new residents from having an automatic share in the dividends of the collective-owned enterprises.³⁶

A second important reason for the development of local pressures to transform the genuine collectively-owned TVEs into shareholding cooperatives is that the local officials have increased the plundering of collective assets.³⁷ The fact that the government has not clamped down on these de-collectivization of TVEs has been viewed as implicit approval, and this has accelerated the conversion of TVEs to shareholding cooperatives.

With the further reduction in discrimination against private ownership since early 1992 (partly, in response to the change in ideological climate after Deng's *nanxun*, and, partly, to ameliorate the rural unemployment caused by the 1989-91 austerity policies), many TVEs have been taking off their "red hats" - albeit with difficulties in many cases:

As China heads toward a market economy, an increasing number of private companies are no longer feeling the need as register as "red cap," or collectively-owned ventures ... [because the] difference in preferential treatment between private and public units has been narrowed ... But there is a problem. The collective units are now arguing that private firms could not have developed without their help. As the so-called "owners" of the companies, ..[they] usually ask for high compensation for the "divorce" or ask the companies to merge with them. ("Private firms jump to take 'red caps' off," China Daily, November 4, 1994.)

public funds," (China Daily, February 14, 1997, "Shareholding system drives rural firms.")

³⁶ This statement is based on fieldwork in Zhejiang, Sichuan, and Henan in the 1994-96 period.

³⁷ For example, China Daily, February 18, 1994, reported: "But ambiguous ownership or property rights in the collective economy coupled with the long standing integration of government administration and enterprises management [have] led to some problems. Among these were incidences where some local officials embezzled or diverted collective enterprise funds or properties to other purposes, and the rights of enterprises or employees were repeatedly infringed upon." ("Rural firms set 3rd reform wave").

And, China Daily, July 4, 1995, reported: "In Guangdong province, for example, rural collective assets are valued at 160.1 billion yuan (\$19.3 billion). However, 7.04 billion yuan (\$848 million) of these assets were handed over as 'loans' to local enterprises and individuals in 1994 alone ..." ("State tries to curb collective asset loss").

Implications of Recent Developments

The C-school interprets the recent changes in effective and registered ownership of TVEs as confirmation of its prediction that the continued marketization of China's economy would greatly diminish the importance of TVEs because of the greater efficiency of the new private firms, and because of the greater incentive for local officials to strip the assets of the TVEs they oversee.

The E-school, however, is split in its evaluation of the sustainability of the TVE phenomenon, and hence on the interpretation of recent developments. Since Naughton (1994) thinks that the development of asset and factor markets will obviate the need for state intervention and make TVEs "less important in the future," the only way that his analysis can accommodate recent developments is to claim that factor markets in rural areas have leaped forward greatly in economic sophistication since he wrote his article some four years ago. As Nolan (1993) and Rawski (1995) are optimistic about the economic viability of TVEs because they reject the standard property rights analysis that concludes that private firms are more efficient than public firms, they might reject recent developments as an aberration. While Putterman concludes "that some form of market socialism could be [economically] viable," he is pessimistic about the future of the TVEs because he views global and Chinese political trends as unjustifiably favoring private enterprises.³⁸

Our discussion has raised several serious defects that are intrinsic to collectively-owned enterprises, and has suggested that large-scale privatization of TVEs is likely to occur. Concern for social stability means that the local officials must be prevented from engaging in the end game of asset-stripping, a repetition of the nomenklatura privatization in Eastern Europe. It is therefore important that a legislated

³⁸ Louis Putterman, "The Role of Ownership and Property Rights in China's Economic Transition," The China Quarterly, No. 144, December 1995, pp. 1047-1064.

process, with better-defined legal standards, community choice, and a voting mechanism among the stakeholders of the TVEs, be established soon, because the alternative is a spontaneous process dictated by the power and tactical prowess of rapacious managers and grasping local officials. The outcome from this spontaneous privatisation would be a sell-off of community assets into the hands of the local officials and their cronies at bargain basement prices.

It now appears that the privatisation of TVEs has gathered enough momentum that the state has come out supporting it, just as it had for the household responsibility system in 1982 and for SOE privatisation in July 1997. In December 1997, Wan Baorui, Vice-Minister for Agriculture,

called for carrying out ownership reforms on rural collective enterprises .. All organisational forms, such as joint-stock partnerships, joint-stock cooperatives, enterprise groups, leasing and mergers, should be utilised boldly.³⁹

An important reason for why the central leadership is now supporting the privatisation of TVEs is because the corruption of local officials is fomenting rural unrest. The E-school's depiction of rural industrialisation as local corporatism may be too harmonious an image. According to Jieh-Min Wu, since a large part of rural industrialisation has been undertaken under cadre leadership, the:

Chinese village seems to have stratified into two groups: the coalition of cadre-entrepreneurs and powerful clans, and the powerless villagers deprived in the process of industrialization ... [The informal approach of privatisation has sowed the seeds of distributional conflict in the village, creating the possibility that a] massive peasant protest movement may erupt at a time of weakened authoritarian control.⁴⁰

The fact is that TVEs are not optimal adaptations to China's economic circumstances, they are adaptations only to China's political circumstances.⁴¹ With the increasing recognition within China's leadership that it is to China's benefit to move quickly to a normal market economy, the great decline in

³⁹ China Daily, "Rural ownership reforms to move forward," December 4, 1997.

⁴⁰ Jieh-Min Wu. op. cit., 1998, pp. 356-357.

⁴¹ This is why Professor Qi Jianguo of the Chinese Academy of Social Sciences was quoted as saying "Township enterprises were a special product for a special time" in Far Eastern Economic Review, "New Owners: Privatisation comes to China's township enterprises."

state and collective forms of ownership is inevitable and desirable. As pointed earlier in our discussion of SOE privatisation, the maintenance of social stability requires that the privatisation of collectively-owned enterprises be a transparent, equitable process undertaken within an adequate legal framework.

CONCLUSION

We have explained China's economic development using the debate between the experimentalist school and the convergence school to present the different interpretations.⁴² These two broad interpretations of China's growth have vastly different implications for future reforms in China and elsewhere.

The E- school would advise China to continue liberalization in a tentative, incremental manner because this might minimize the cost of any single policy experiment going awry. It would encourage Eastern Europe, North Korea and Cuba to trust the "induced innovations" mechanism to spawn the type of economic system that best suits each country's circumstances. The crux of the E-school's strategy is to create country-specific virtuous cycles through gradual marketization and gradual internationalization of these economies.

In contrast, the C-school recommends that China implement a Meiji-style wholesale adoption of key market institutions from abroad, and modify them through practice. The bold assumption here is that the normal economy, defined within broad institutional limits, is characterized by market-based transactions between private agents. With this preconception of normalcy, the C-school holds that China today has more to learn from Eastern Europe rather than vice-versa; particularly in the establishment of market-based

⁴² We have not attempted to rebut Thomas Rawski's many incorrect claims in the article that follows this. For example, in Rawski's conclusions, he presents what is supposed to be a contradiction between a recent statement by Jeffrey Sachs on the Asian currency crisis, and a statement from our paper "Understanding China's Economic Performance." We do not see any contradiction between recommending the closure of insolvent financial institutions during normal economic times, and recommending general support for financial institutions during a financial panic.

property rights regimes, and the prudent marketization of the banking system. The C-school's message to North Korean and Cuban reformers is that China's dual-track strategy is an option only if the economy is dominated by subsistence peasant agriculture, and that China has achieved its best results in the sectors where marketization has gone the farthest. North Korea and Cuba would serve themselves well by adopting immediately the economic institutions of South Korea and Taiwan, respectively, rather than attempting to re-invent the wheels of 20th-century capitalism.

The experimentalist-convergence debate has unfortunately been often miscast as a slow-fast debate. The key question in the debate about China's economic growth is whether the growth was generated by the appearance of new, non-capitalist economic institutions or by the convergence to a private market economy. The slow-fast characterization of the debate has to be seen in this context.⁴³ The slow-fast depiction misses the fact that instant convergence to all the institutions of a private market economy is not technically achievable. It is possible and desirable to implement big-bang macrostabilisation, and big-bang price and trade liberalisation in a grossly policy-distorted economy, but it is technically impossible to conjure up instantly a legal infrastructure that could ensure a transparent, equitable privatisation process.⁴⁴ An immediate commitment to mass privatisation at the start of reforms is desirable, but immediate privatisation that results in *nomenklatura* privatisation is not. This is the primary difference between the Polish and Russian privatisation programs, and this difference explains a large part of their different economic performances.

Events in China have not waited for the resolution of the debate between the two schools. As documented earlier, China is now intensifying the privatization of small and medium SOEs, and

⁴³ For example, the relevant question in the present policy debate in Vietnam over the strategy of rural industrialisation is "collectively-owned enterprises versus private enterprises" and not "slow development of collectively-owned enterprises versus fast development of collectively-owned enterprises."

⁴⁴ The debate is therefore trivialized when big-bang advocates are unfairly depicted as proposing something that is technically infeasible.

encouraging the conversion of TVEs into share-holding cooperatives and the removal of red caps by pseudo-TVEs. While some members of the E-school are likely to regard these two developments as undesirable (e.g. Peter Nolan), other members appear to regard these two developments as unnecessary for better economic and social performance in China:

“... in the absence of more successful growth stories than that of post-1978 China, it is doubtful that a more economically liberal regime could have produced a significantly better overall record of growth, especially if social equity and stability are accorded any weight.” (Putterman, 1995, pp.1064, emphasis added)

The C-school, in strong contrast, believes that faster privatization of SOEs and TVEs in a transparent and equitable manner, and more sweeping industrial and trade deregulation will produce faster growth.

This difference in views follows directly from what the two schools have identified to be the engine of economic growth in China. The experimentalist school attributes China's high growth to the new, non-capitalist institutions, whereas the convergence attributes it to the quick absorption of surplus agricultural labor.⁴⁵ If the experimentalist school is correct, then, as Rawski (1995) pointed out, the whole corpus of standard neo-classical economic theory should be jettisoned, and that the answer for the differences in economic performance between Poland and Russia should be sought mainly outside of economics. If the convergence school is correct, then the experimentalist school's insistence on gradual reform (in order to give enough time for more new, non-capitalist institutions to appear) incurs the high human costs of absorbing China's large pool of surplus labor gradually.

⁴⁵ Within a growth accounting framework, the C-school predicts that the re-allocation of labor from agriculture to industry and services will explain most of the TFP growth in the economy, while the E-school predicts that net TFP (TFP after deducting the gains from labor reallocation) will be larger. Wing Thye Woo [“Total Factor Productivity Growth in China: The Primacy of Reallocation of Labor from Agriculture,” (in Chinese) *Jingji Yanjiu*, Issue 3, 1998, pp. 31-39] estimated the labor reallocation effects to be 1.3 percentage points and net TFP to be 0.4 percentage points in the 1985-93 period, suggesting that the evidence supported the C-school's position more.