

Chinese Economic and Budgetary Prospects

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I have been asked to address the economic and budgetary outlook of China for the next decade.

The Economy

Three economic features of China stand out. First, it is a very populous country, 1,265 million people by the census of 2000 (excluding Hong Kong, Macao, and Taiwan). Second, it has grown exceptionally rapidly over the past two decades, real GDP having risen by 10.4 percent a year over the period 1990-2000, on official statistics. Third, despite its rapid growth it remains a poor country, with 48 percent of its labor force in agriculture and a per capita income of only \$780 in 1999 (\$3291 on a purchasing power basis, on which more below), only 2.5 percent of the \$30,600 per capita income in the United States in 1999. But it is much less poor than it was 20 years ago, and is less poor now than many other countries (it ranks #128 out of about 200 countries).

Measuring the total output of a large, complex, and rapidly changing economy, in ways that are comparable over time and permit comparisons with other countries, is a technically challenging and expensive task. It is widely agreed among specialists that China's official reported growth rates are too high, perhaps by more than two percentage points, in part because China understated its level of output 20 and 10 years ago, in part because it has under-reported rates of inflation (Maddison (1998, tables C.3, C.8, C.10) reckons Chinese GDP was about 10 percent higher than official figures in 1987; see also Yeh (2001, pp.70-72)).

For a variety of reasons, China's growth in the next ten years is likely to be significantly lower than it was recorded to be in the 1990s -- partly because measurements have improved, partly because of a genuine slowdown. A reasonable projection on official figures is that the annual average growth of China 2000-2010 will be seven percent, the current official aspiration. The World Bank's China 2020, written before the Asian financial crisis of 1997-98, projects a growth rate of 6.9 percent. Maddison (1998, p.97) assumes 5.5 percent over the period 1995-2015. Wolf et al. (2000, p.36) assume 4.9 percent. The eight percent assumed by Hu (2001, p.108-110) would be possible, although it would be a stretch. (Japan grew by more than 8 percent a year over the period 1960-1975, and South Korea's annual growth exceeded 8 percent over 1970-1985.)

With growth of seven percent a year, China's GDP would be 17.5 trillion yuan in 2010, in prices of 2000, up from 8.9 trillion in 2000. To compare these figures with the United States, we need to convert them into US dollars. Controversy surrounds the rate of exchange that should be used, the main contestants being the market exchange rate or some average of recent market exchange rates and the so-called purchasing power parity (ppp) exchange rate, which for our purposes means re-pricing Chinese output at US prices. Some variant of a ppp rate is clearly necessary for international comparisons of the standard of living of the average citizen. But for geo-political or geo-economic purposes, the market exchange rate is far more relevant. (An appendix addresses both the conceptual

reasons for preferring the market exchange rate and the practical problems in calculating a satisfactory ppp rate.)

We do not of course know what China's exchange rate will be in 2010. While it has been essentially unchanged at 8.28 yuan/dollar since 1994, WTO membership will require substantial liberalization of China's imports by 2007, and accommodation to that may require some depreciation of the yuan over the next decade. Increased foreign investment in China, however, would push in the other direction. And over the long term low income countries generally experience some real appreciation of their currency as their incomes rise, that is, the dollar value of GDP grows more rapidly than the real value in local currency. These conflicting considerations suggest that a neutral assumption would be that the relevant exchange rate in ten years will not be radically different from what it is today. On this assumption, at seven percent growth China's GDP will be \$2.11 trillion in 2010 (at prices of 2000), 15.9 percent of US GDP of \$13.3 trillion in 2010 if the United States grows at a plausible average rate of three percent a year over the decade. (If China were to grow at 8 percent a year, its GDP would reach \$2.31 trillion, 17.4 percent of US GDP in 2010; but current estimates place plausible US growth higher than three percent annually, thereby reducing the ratio.)

It is not correct, as is sometimes claimed, that the Chinese economy will overtake the US economy in any meaningful sense by 2015 or 2020; at best it will barely reach one quarter the US GDP by 2020.

To grow at eight or even seven percent a year China must overcome many obstacles. The relatively easy tasks have already been done: liberalizing (most) prices, de-centralizing agricultural production, allowing scope for private and village entrepreneurship, permitting foreign direct investment. The more difficult tasks are in process and have made less progress: rationalizing state-owned enterprises to make them profitable; creating an urban social safety net to help the transitionally unemployed and to relieve SOEs from social obligations; rebuilding the financial system, especially the banks, so it can finance efficiently a rapidly growing economy.

In addition, rapid growth will require much additional infrastructure: power, transport for both people and goods, communications, and of course the educational system to develop talent and to produce skilled workers. Growing demand for motive fuel and for higher protein food will require major investments in oil distribution and in agricultural production.

These are all major challenges. Chinese leaders are aware of them. The question is whether they can bring about the required changes without seriously stumbling, or without pulling back out of concern for "instability," a traditional fear of all Chinese regimes.

The Budget

This brings me to the Chinese budget. Table 1 reports Chinese GDP, government expenditures, revenues, and budget deficit since 1994 -- the year in which the tax system and the foreign exchange regime were reformed. Several points are noteworthy. First, as already noted, real economic growth has been rapid (inflation has been low since 1996). Second, government expenditure and revenue have grown even more rapidly than GDP over this period, with the ratio of revenue to GDP rising from 10.9 percent in 1995 to 15.1 percent in 2000. Third, expenditures have risen even more rapidly than revenue, following the fiscal stimulus of 1998, as the government has increased receipts through sale of government bonds to the public, reflected in a budget deficit that reached 2.1 percent of GDP in 1999 and 2.8 percent in 2000. Chinese officials apparently are overcoming their fear of debt.

Fourth, not evident in Table 1, Chinese revenues and expenditures are low by international

standards. All but the very poorest countries often raise 20 of GDP in revenue, rich European countries over 40 percent, compared with China's 15 percent.

China is a complex, multi-layered society, with requirements for public expenditure at every level, from village to central government. Recorded budgetary statistics purport to cover all levels of government, but in fact they undoubtedly miss much local, and even some provincial, expenditure that is financed by local sources of revenue not reported to the central authorities. Local and provincial authorities have found "extra-budgetary" sources of revenue, partly to avoid the complex revenue sharing agreements made with the central government in 1994. Thus official Chinese budgetary expenditures and revenues represent an under-statement, but the reporting shortfalls are primarily at the local and provincial levels. (China's Statistical Yearbook 2000 reports 308 billion yuan of "extra-budgetary" revenue in 1998, 31 percent of total budgetary revenue. Most such revenue is fees and charges of various kinds raised by "administrative units and institutions" at the local level.)

Most government expenditures (69 percent in 1999) in China are at local and provincial levels. According to the World Bank (2001, p.300) China's central government in 1998 took in as current revenue only 5.9 percent of GDP (only Georgia and Myanmar among 79 reporting countries had lower shares). The US Federal government, by contrast, had revenues amounting to 22 percent of GDP in 1998. If the budget deficit is attributed wholly to the central government, and the 1998 GDP share of the central government obtained in 2000, deficit financing accounted for nearly one-third of central government spending in the latter year. Such debt financing of course generates interest obligations in future years.

The general point is that China's central government is strapped for funds, and is likely to continue to be strapped for funds for some years to come, even if total revenues continue to rise rapidly. Provincial and local governments will be major claimants to additional revenues.

As suggested above, China will require major public expenditures if it wishes to continue to grow rapidly. Dahlman and Aubert (2001) suggest that education expenditures alone need to rise from the current 2.3 to 4.9 percent of GDP. Agriculture will require large expenditures for water control and irrigation (the recently announced decision to transfer water from the Yangtze to the Yellow River drainage basin will cost an estimated \$60 billion, nearly a year's central government revenue, spread over ten years), and for agricultural research and extension work. Extending the road, rail, pipeline, electrical, and communications networks will require large investments; as will seaports and airports. Rapidly growing urban centers must be provided with water, sewage treatment, and housing. The banking system must be further re-capitalized, at perhaps a quarter of GDP, to relieve banks of bad loans. Pensions must be provided to retired workers of many SOEs if they are to be made commercially viable, and temporary relief provided to those subject to severe import competition following entry into the WTO. The dispute settlement mechanism, including the courts, must be reformed and enlarged. And of course the military establishment demands and requires modernization.

Some of these many demands for public funds can and will be handled at the local and provincial levels, or even (e.g. pipelines, toll roads) by private firms. But many will inevitably fall on the central government, partly because of their nature (e.g. military modernization, recapitalizing national banks, inter-regional projects), partly to correct the inappropriate or inadequate incentives that influence local governments. For instance, to develop the West, as is now national policy, will require direct engagement by the central government.

Thus the major battles the People's Liberalization Army will face in the coming years will be in Beijing, struggling for a suitable share of a highly constrained budget.

Appendix: Measuring China's GDP in Dollars

There is some confusion about the level of China's GDP in relation to other countries, and about China's recent rate of growth. Gross Domestic Product (GDP) purports to measure the economic value of the total production of an economy, eliminating double counting and excluding strictly illegal activities. So the first problem is to measure total output as accurately as possible, a difficult task for any economy and especially for one that has only recently acknowledged the importance of some economic activities (especially services in all their manifestations) and developed its statistical services. Of course, China measures its output in Chinese currency, yuan, while the United States measure its output in US dollars. Thus international comparisons require translation into a common unit, even when prices may be very different in the two economies.

There are two broad approaches to the issue of conversion. The first is to rely on some variant of recent market exchange rates between the two currencies. The second, more demanding and more complicated, re-prices output in each country in terms of prices in the other country, or in some set of standard international prices, and re-calculates GDP with the alternative prices. The result is referred to as GDP in terms of purchasing power parity (ppp).

Using the first technique, the market exchange rate, results in a GDP of \$991 billion for China in 1999 (calculated from IMF, May 2001), with a per capita GDP of \$790. On a purchasing power parity basis as calculated by the World Bank, China's per capita GDP was \$3291 in 1999 (World Bank, 2001, p.274), which when multiplied by population suggests a ppp-based GDP of \$4130 billion, over four times as large. The main difference is that many local services, some locally produced goods, and housing are much cheaper in China than in the United States; re-pricing them at US prices greatly increases the measured value of output.

For cross-country comparisons of material well-being, ppp-based comparisons are superior to exchange rate-based comparisons. But for relation to the world economy, exchange rate-based comparisons are more relevant -- these determine the effective weight of the country in question on world trade and payments.

Calculating per capita output in China at ppp is itself problematic. In his widely-cited 1995 book Maddison chooses \$2700 as the best among five estimates for 1990 (international dollars). By his 1998 book on China he had reduced the figure for 1990 to \$1858, adapting work by Ren and Chen, who based their work on some 200 bilateral price comparisons between China and the United States. Their work shows a per capita output for China for 1986 of \$1818 using US expenditure weights, but only \$571 using Chinese expenditure weights, which give much greater weight to food, less to housing -- more than a three-fold difference! Maddison adjusts these figures upward to make them comparable, in his judgement, to his figures for other countries. The World Bank's per capita output of \$3291 for 1999 when adjusted back to 1990 in 1990 prices would yield \$1238 -- only two-thirds of Maddison's (revised) figure of \$1858. These are substantial differences for estimates that purport to measure the same thing. The fact is, calculating ppp is something of an art, with many judgements required, especially regarding the comparators and the weights, and involving a number of ad hoc adjustments to modify or discard figures that seem implausible. In contrast, we know the market exchange rate.

Two further points about ppp: First, we do not use ppp when calculating domestic GDP (where the issue of currency conversion does not arise): for example, in measuring China's GDP, apples in Sichuan are priced at Sichuan prices; apples at Shanghai are priced at Shanghai prices, the difference

being (often substantial) transport costs (including losses in transit) and perhaps also differences in quality. Using ppp implicitly prices all Chinese apples, wherever they are, at the same price. To ignore transport costs and quality differences is a mistake.

Second, finding suitable comparators across countries is extremely difficult, particularly for countries that differ greatly in their state of development. With the integration of the Warsaw Pact countries into the world economy, we discovered that products produced in eastern Europe or Russia were not competitive with western products with the same name. We also discovered in the Gulf War that not all tanks are equal, even when they have similar weight and armament. This is a serious problem whenever the goods (or services) are not in direct competition with one another, where significant price differences usually reflect quality (or locational) differences.

These are technical issues; they bear even on international comparisons of standards of living. The pertinent question is: why exactly are we interested in comparing national GDPs (as opposed to per capita GDP)? Is it because we want to know a country's contribution to total world production? Or its contribution to world demand? Its capacity to buy goods or assets abroad? Its potential military capacity? If the last, for what kind of conflict? The motivating question is important for getting the right metric.

China trades at world prices, converted into yuan at the market exchange rate. Foreign investment, in and out, moves at the market exchange rate. China has purchased modern military equipment from Russia, presumably with dollars or rubles purchased with dollars. China can build (equivalent quality?) military equipment at home, using Chinese equipment and "cheap" Chinese labor. But this equipment and labor have an opportunity cost which can be measured at world prices converted at the market exchange rate, not some notional ppp rate.

This is the key point: in any market-oriented economy, which China is rapidly becoming, any expenditure has an opportunity cost that should be measured with reference to the world economy at the prices actually prevailing, i.e. local prices converted into dollars at the market exchange rate.

Protection against imports will of course raise relative domestic prices of protected goods; foreign protection against exports -- mainly apparel in the case of China -- will lower the relative domestic prices of those goods, and these distortions can distort growth rates and international comparisons, making highly protected countries appear more productive than they are. (In comparing defense budgets, we may want to separate personnel from other expenditures; China's soldiers should be imputed a wage matched to their skills. Since most Chinese enlisted men are from rural areas with low skills, however, their market wage may not greatly exceed their military pay, including pay in kind.)

Analytical work on the former Soviet Union in the 1970s could not use a market exchange rate, because the official \$1.4/ruble rate was only symbolic, not a market rate. Domestic prices were not linked to world prices, even for goods they traded. Thus analysts had to simulate a conversion rate, and much work was done on it, both at CIA and elsewhere. We now know the general results valued Soviet goods, both civilian and military, too highly, largely because of inadequate allowance for differences in quality.

This problem does not arise for China: we generally know the prices Chinese goods can command on the world market. If goods of the same name command lower prices at home, it is presumably because of lower quality or costly internal transport.

Market exchange rates can move around a lot, particularly but not only around currency crises. For this reason, they can properly be averaged over several years for international comparisons. However, the Chinese yuan has been fixed at roughly 8.3/dollar since 1994. In my view it is modestly undervalued, as evidenced by the steady growth of China's foreign exchange reserves, the result of

central bank market intervention to keep the yuan from appreciating. China has also had a significant trade surplus in recent years. However, it still maintains controls on outflows of domestic capital. And it is about to enter the WTO, following which under the access agreements China must reduce its import barriers much more than its trading partners do. Many Chinese are fearful of withering foreign competition. If these fears prove to be valid and widespread, the yuan might have to depreciate over the next five years, although my guess is the required depreciation will be modest, e.g. 10-15 percent. Moreover, WTO membership may result in more inbound foreign investment, thus mitigating the required depreciation or even eliminating it altogether.

The bottom line is this: the market exchange rate provides a much better basis for converting Chinese GDP into dollars than does some artificially constructed ppp rate. Following the pattern of Japan and Korea, the real exchange rate of the rmb might appreciate over time, as China develops, but that process will occur at a modest rate, over decades.

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