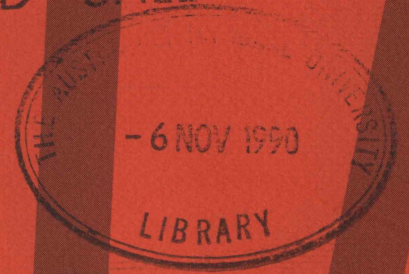




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China Working Paper No. 90/5

China's macroeconomy in the 1980s
The impact of reform on structure and performance

Gavin Peebles

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Research School of Pacific Studies

Abstract

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The impact of reform on structure and performance

Gavin Peebles

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Abstract

This paper presents a descriptive and analytical study, from a macroeconomic perspective, of the impact of economic reform in China on the structure and performance of the economy. The first section briefly reviews some of the problems associated with the macroeconomic analysis of a reforming administered economy. The second section discusses the major reforms in agriculture, industry, trade and finance and examines changes in the supply side structure of the economy. A related chronology of major events over the period 1978 to 1989 is contained in Appendix A. The third section examines the performance of the economy and presents several important macroeconomic time series. The economy's growth performance and the increase in factor productivity is examined. The problems of monetary growth, excess demand for consumer goods and retail price increases are analysed. The fourth section examines two different theories which attempt to explain the nature of the relationship between money and prices in China and whether economic reform changed this relationship significantly. A final section offers some conclusions. Appendix B is a simple economic analysis of the implications of the two-tier pricing system in industry which came into evidence in early 1985. It shows that there are two forms of such a system and that existing western interpretations have concentrated on the 'optimistic version' ignoring the possible effects of an alternative system which Chinese economists criticize. A testable economic implication of this alternative system, is derived. Appendix C shows the money supply process in China in detail, identifying the main causes of narrow monetary growth during the reform period.

China's macroeconomy in the 1980s: the impact of reform on structure and performance

Problems of macroeconomic analysis of China in the 1980s

There are two major problems in analysing China's macroeconomic developments in the 1980s. These have not been adequately addressed by writers on the subject. The first is due to the fact that China's economy has changed from being a dominantly 'directed' economy (a term that is more accurate than 'planned', but one which still conveys the fact that resources are allocated because of orders from superiors) to one in which market forces play a greater role. Aspects of this change are detailed below. This means that changes in the economy must be explained as either being the result of directives or market forces. Some writers have not been clear on the reasons for certain events, being content to describe them and implicitly assume they were the natural result of market processes. Some analysts, however, do point out the importance of directives in allocating resources. For example, it is well known that the early agricultural reforms increased rural incomes substantially. Over the period 1978-81 virtually all of the increase in real retail sales was in rural areas. One view would see this as the natural result of rising rural incomes and demand and find nothing peculiar about it. As Travers (1984) points out, however, this was the result of planners diverting state-supplied goods to the countryside rather than continuing to sell them in urban areas. The planners were responding to areas of political demand rather than economic demand, and the supplies were intended to maintain farmers' incentives to earn state-issued cash. He argues that rising urban savings were due to the unavailability of urban retail goods. The main implication of this is that without there having been a change in planners' retail distribution policy this change might never have occurred; it cannot simply be ascribed to market forces.

A second example is provided by the similarly well known increase in imports, mainly of consumer goods, in 1985, which saw China's foreign trade deficit increase to twelve times the level of the previous year. Was the increase in imports the result of rising incomes and demand, the open-door policy after years of isolating Chinese consumers from world markets, and the effects of comparative advantage? Komiya (1989) argues that the increase in imports was a deliberate part of government monetary policy and calls it 'merchandise huilung', a term meaning to use commodities to withdraw currency from circulation (*shangpin huilong* in *pinyin*). This way of looking at things very much belongs to the traditional concept of monetary policy in China in which state-supplied goods or services can be

marketed to reduce currency in circulation. Here again, a major change in the economy occurred because of a change in planners' policy and not because of market forces.

The second major problem is the place of econometrics in analysing the economy. Since the early 1980s there has been the publication of statistical yearbooks, almanacs, specialized statistical sources and the re-emergence of many economics journals. China has joined the International Monetary Fund, the World Bank and the Asian Development Bank. World Bank teams visit China, conduct joint research projects and publish reports. There is no shortage of macroeconomic data for China.¹ Is the Chinese economy of the 1980s a suitable subject for use in macroeconomic analysis? This question has not been adequately discussed. Western macroeconomics, like most economic theory, is based on the view of the economic system as a mechanism, a view which was obviously influenced by the development of science in the eighteenth century. In such a view similar quantitative forces will produce similar quantitative effects in roughly similar circumstances. Econometrics seeks to quantify these relationships. It is recognized that even in free market economies the strongest of relationships can be modified during extreme periods. For example, it is generally conceded that wars modify macroeconomic relationships, mainly because governments place restrictions on the permissible value of certain variables. Breakdowns in macroeconomic relationships for seemingly normal periods are coped with by the use of dummy, or shift, variables to ensure that the resulting equations fit the data adequately

In China, during the 1980s there were major changes in the economy due to economic reform and these are likely to have changed the nature of the relationship between the major macroeconomic variables, making econometric study very difficult. Price reform is an obvious example. In the early years the vast majority of retail goods were supplied by the state at state list prices. As price reform progressed more goods were sold at negotiated or floating prices and a greater proportion of supplies came from private traders. This would change any relationship between money and prices. In fact, it is a hypothesis applied to the planned economies of eastern Europe and the Soviet Union that there is no observable relationship between monetary expansion and price rises because of pervading price control. In the case of China, it might be expected that the relationship between money and prices would change from year to year as more and more prices were decontrolled. The quantitative relationship between money and prices throughout this period would not be the same. In

¹The data are assumed to be basically reliable and not deliberately faked for political reasons. This is another major question that has been given inadequate discussion. Some series contain mistakes and do not add up to give the published total. In some balances the 'other' item is distressing large.

other words, the institutional nature of the Chinese economy changed significantly in certain areas in a relatively short period of time. This institutional background is usually assumed to be constant in econometric studies of capitalist economies and is rarely invoked to explain changes in the relationship between the major macroeconomic variables.

Another problem relates to the use of theory in macroeconomic analysis. Despite the availability of relevant macroeconomic time series back to the early 1950s many analysts stick to simple descriptive analysis, often on the basis of an implicit theory about the direction of causation between two variables. An implicit belief about cause and effect is contained in such an analysis but it is rarely made explicit. In some cases it is used to explain the data for a longer period than the one or two years described. At the other extreme we have some macroeconometric studies of thirty-year periods of data. Some studies, such as Chow (1987) do use an explicit theory to examine the data and this is a strong point of his paper. Some, such as Chen (1989), are atheoretical, although they use econometric techniques to try to determine the direction of causation between the major macroeconomic series.

This paper takes a descriptive approach to China's macroeconomic performance. However, some simple econometric techniques are used to quantify certain relationships and to examine two alternative approaches to the nature of the relationship between money and prices and other variables in China.

Major policy changes - December 1978 to 1988

The chronology of major policy changes contained in Appendix A was assembled from a number of sources and cannot claim to be comprehensive. It does identify the timing of the major changes which will be reviewed in this paper.

First, a background to the reform program. Zhou Enlai and Mao Zedong both died in 1976 and the 'gang of four' were arrested and subsequently tried. Hua Guofeng, chosen personally by Mao Zedong to be his successor, became general secretary of the Party. He adopted Zhou Enlai's policy of the 'four modernizations' (of agriculture, industry, science/technology and national defence). China's development strategy had always been based on rapid industrialization, a point that is hard to accept for many who saw the Communist Party as a peasant party dedicated to the interests of the 80 per cent of the population in rural areas. In contrast to this belief, industrialization based on collectivization of agriculture and low procurement prices and farm incomes was the policy adopted from the early 1950s. As Lardy (1983:159) has pointed out, China

is unique in modern times for being able to double, in a twenty-year period, real national income per capita, while keeping per capita food consumption constant. It has been well remarked that the Stalinist development strategy sees labour and food as the necessary inputs to produce steel. Maoist development was no different in terms of this attitude. Hua Guofeng's strategy was different to the extent that foreign capital could now be used, as many countries had recognized China diplomatically. The former Maoist policy of self reliance could be abandoned. An important part of the modernization strategy became known as the 'foreign leap forward' (*yang yuejin*) as it involved the whole-scale purchase and installation of foreign plant and equipment. Complete secondhand foreign factories were often bought and installed.

Agricultural output fell in 1976 and 1977 as a result of both natural disasters and bad weather. In 1978 the accumulation rate reached 36.5 per cent, compared to an average of 29.4 per cent over the period 1967-76, reflecting the continued industrialization strategy. (The accumulation rate is the proportion of national income that is not available for consumption and is used to increase the country's stock of productive capital assets (e.g. factories) and stocks of materials, fuels etc. and to increase the stock of nonproductive fixed assets (e.g. houses) as well as increasing stocks of consumer goods in the retail trade network.) The Third Plenum of the 11th Party Central Committee in December 1978 adopted a policy of stressing the importance of agricultural development. Experimental agricultural reforms had been conducted in Sichuan and Anhui provinces under the eyes of Zhao Ziyang and Wan Li respectively. By 1979 these reforms became national policy. At first agricultural procurement prices for many crops were increased. The bonus prices paid for over-quota deliveries of grain and edible oils were also increased and a bonus price for cotton was introduced (Peebles 1985:42-4).

From 1979 onwards private trade in many agricultural products was legalized and rural and urban markets proliferated. The organization of agriculture also changed dramatically. By 1983 the entire country had adopted some form of the household responsibility system in place of collectively organized agriculture. Land was leased to individual households which contracted with the government to deliver agreed quantities of crops. Any surplus could be disposed of freely by the producers. Leases on land were eventually set at fifteen years, with some for thirty or fifty years in cases of orchards and forests which involved a longer payback period for any investment. Rural households diversified into cash crop production, fish farming, private trade, handicraft production, transport and construction activities.

Industrial reform proceeded on an experimental basis during the early 1980s with most of it becoming national policy from about 1983. An

important aspect was the substitution by enterprises of tax payments for their previous direct remittances of profits to the state budget (*li gai shui*). Profits retained after tax payments and after further deductions could be used for a number of things, such as workers' welfare facilities, and worker bonuses. Enterprises were required to rely on bank loans for short and medium term borrowing for technical improvements rather than just receiving interest-free grants from the budget. With the Decision of the Central Committee of the Communist Party of China on Reform of the Economic Structure, adopted on 20th October 1984, urban industrial reform became the main aspect of reform.²

A major innovation in industry became widespread from early 1985 (Wu and Zhao 1987: 309). This is the system whereby industrial goods are marketed along 'two tracks' (*shuang gui*). The system has also been called the 'dual pricing system', (Wu and Zhao 1987), and the 'two-tier plan/market system' (Byrd 1987). Under this system enterprises remained responsible for supplying part of their output to their designated customers according to the state plan and at fixed prices, and customers were supplied a certain proportion of their inputs by the state. The remainder of output was to be sold at freely determined market prices. The generally higher market price was supposed to become the marginal price influencing the producers' production and marketing decisions. The planned allocation at generally lower prices was a sort of tax on the producer. This system in industry is obviously similar to the system created by the agricultural reforms in which the contracted amount was to be supplied to the government at a fixed price but all surplus output could be marketed on the emerging free markets at market prices. Under the agricultural system the planned quota amount was fixed in absolute terms and was announced to be fixed for a number of years. The intention of the industrial reform was obviously to allow prices, and hence demand, to guide producers' marginal output decisions, (Perkins 1988:620-1), and to produce some elasticity in the supply curve of industrial output.

Appendix B shows the effect of the dual price system on enterprise behaviour under two forms of this system, the fixed quota system and the fixed proportions system. Perkins (1988) and other analysts simply take the fixed quota system as the norm without any evidence of how widespread it is in Chinese industry. Chinese economists complain about the bad effects of the fixed proportions system, (Diao 1986:52-4, 1987a:41-2), which obviously shows that a fixed proportion system is also widespread. The two systems have very different implications for the willingness of enterprises to meet market demand and to respond to increased market prices and this is illustrated in Appendix B. A fixed proportions system is less likely to

²Published by the Joint Publishing Co. (Hong Kong) under that title in 1984, also in *China Daily*, 23rd October, 1984 and Liu and Wu (1986:672-700).

lead to an increase in marketed output when demand and market price increase than is a fixed quota system. The whole future of industrial reform could now be debated in terms of the future of the dual pricing system (Wu and Zhao 1987:316-8). Issues such as whether the planned system should be abolished immediately and the market mechanism be allowed to take over, should the planned allocation track be allowed to return and dominate the market mechanism, or should the two track system be changed gradually to allow a greater scope for the market track, were debated.

There were also major reforms in the financial and banking sectors of the economy. In 1984 the People's Bank of China became the country's central bank, transferring most of its day-to-day business to the newly created Industrial and Commercial Bank of China which became the retail bank, taking deposits and making short-term loans to enterprises. It took over the required assets and premises that had been operated by the People's Bank. The Construction Bank of China provided investment funds and the Bank of China remained responsible for the international aspects of China's economic activity. However, in the late 1980s more competition was allowed and domestic banks began to compete with the Bank of China.

The objectives of financial reform can be easily understood in terms of the basic proposition Adam Smith put forward for explaining how a country could grow. He remarked that development would follow if a country increased the proportion of its population that was working and also increased the productivity of that labour force. He thought the latter factor would be the more important. His whole explanation of the policies necessary to secure economic development were analysed in terms of these two effects. Applying this insight to finance and development we can say that development will be encouraged if a country can increase the proportion of its income available for investment and also increase the effectiveness with which this flow of investment funds is invested. This can be achieved by reducing the costs of allocating the funds and ensuring that they go to the projects that offer the highest possible returns. These latter two factors of effectiveness are probably more important than the former. China had always been able to secure a high accumulation rate (by international standards) by means of the government's ownership of industry and its right to receive industrial profits and later taxes. However, the efficiency with which those funds were used has been questioned many times. The purpose of financial reform was to ensure that funds were channelled at the lowest cost to the most efficient potential users.³ This was to be done by making the new specialized banks responsible for their losses

³It is argued that independent, competing banks reduce the transactions costs of bringing lenders and borrowers together. This reduction in the cost of financial intermediation increases the return that can be offered to savers, reduces the loan interest rate for borrowers, hence increasing both saving and investment. *World Development Report 1989*, summarizes this familiar argument (World Bank 1989).

and profits and to allow them to charge variable rates of interest on loans. Hence, market allocation was to be used to channel investment funds. In addition to the traditional borrowers in the form of state enterprises there were many private and cooperative enterprises that had emerged as a result of economic reform.

China's involvement in world trade and capital markets increased substantially after 1978 as trade and borrowing expanded. Within ten years China's trade volume increased five times and by the late 1980s total trade value (about 28 per cent of output) is said to have exceeded that of Japan (16 per cent of output)(Shan 1989:34). Joint venture investments in China have been encouraged, special economic zones established and coastal cities opened to foreign direct investment. Hong Kong entrepreneurs have invested in textile and electronic industries as well as in tourism in the Pearl river valley in nearby Guangdong province. A large number of the products of well known western electronics companies have been made in China. These aspects of China's reforms will not be discussed in this paper. Interested readers are referred to Shan (1989), Hsu (1989) and Jao and Leung (1986).

Table 1 presents the changing sources of supply of gross industrial output over the period 1978-88, showing the decline in the share of the state sector from 78 per cent to 57 per cent and the increase in that from the collective sector from 22 per cent to 36 per cent. Urban and rural individual enterprises saw their share in 1984 at 0.2 per cent increase to 4.3 per cent in 1988, most of which growth occurred after 1984. The individual sector's greatest share of gross output was in 1950 when it was 26 per cent. Part of this structural change was due to the policy of leasing small state enterprises and shops to individuals or just to turning them into collectives, (Jiang, You and Zhou 1989:274). This was a reaction to the pre-reform belief that when it came to the issue of ownership and size the view was 'the bigger and the more state owned, the better' (*Yue da, yue gong, yue youyue*).

Table 1 Origin of gross industrial output value, by form of ownership, China, selected years

| | Percentage of total output urban and rural | | | |
|------|---|------------|------------|-------|
| | State | Collective | Individual | Other |
| 1978 | 78 | 22 | . | - |
| 1984 | 69 | 30 | . | 1 |
| 1988 | 57 | 36 | 4 | 3 |

Source: *Zhongguo Tongji Nianjian 1989*, China Statistics Publishing House, Beijing, 1987, p.267.

Table 2 shows the change in the sources of total retail sales, indicating a fall in sales from the combined state and collective sector from 98 per cent in 1978 to 79 per cent in 1988. Individual traders saw their share rise from negligible amounts to nearly 18 per cent of the total by 1988 and peasant sales to the nonagricultural population rose from 2 per cent to 8 per cent of total sales over the period 1978-88. Much of these sales occurred on the re-opened free markets, the number of which are shown in Table 3. As is clear, urban markets increased markedly in number over the period 1978-88, especially in the period 1984-88 when their number doubled. Average turnover per market is shown and the ratio of an average urban market's turnover to that of an average rural market rose from 1.6 to 2.5 over the period 1984-88.

Table 2 Origin of retail sales, by form of ownership, selected years

| | Percentage of total sales | | | | |
|------|---------------------------|------------|-------|------------|---|
| | State | Collective | Joint | Individual | Peasant sales to nonagricultural population |
| 1978 | 55 | 43 | - | . | 2 |
| 1984 | 46 | 40 | . | 10 | 5 |
| 1988 | 40 | 39 | . | 18 | 8 |

Source: *Zhongguo Tongji Nianjian 1989*, China Statistics Publishing House, Beijing, 1989, pp.600-1.

Table 3 Number of urban and rural trade markets and turnover per market, selected years (million yuan)

| | Total number | Urban Turnover | Urban Number | Rural Turnover | Rural Number | Urban/rural turnover ratio |
|------|--------------|----------------|--------------|----------------|--------------|----------------------------|
| 1978 | 33,302 | 0 | - | 33,302 | 0.38 | .. |
| 1984 | 56,500 | 6,144 | 1.30 | 50,356 | 0.76 | 1.7 |
| 1988 | 71,359 | 12,181 | 4.48 | 59,178 | 1.81 | 2.5 |

Sources: *Statistical Yearbook of China 1983*, Hong Kong Economic Information and Agency, p.386; *Statistical Yearbook of China 1986*, Hong Kong Economic Information and Agency, p.472; *Zhongguo Tongji Nianjian 1989*, China Statistics Publishing House, Beijing, p.627.

These figures reflect the declining share in industrial output and retail sales of the state sector. More of output is being produced and retailed by either collective or individual producers and retailers, free from government control. More retail supplies are sold at freely determined market prices. In 1985, for example, 47 per cent of social commodity retail

sales were made at state determined prices (*guojia ding jia*), 19 per cent at prices under state guidance (*guojia zhidao jia*) and 34 per cent were at prices subject to market regulation (*shichang tiaojie jia*). By 1988 the proportion of retail sales at market prices had risen to 49 per cent, leaving 51 per cent to be sold at government fixed prices (29 per cent) or at prices subject to government guidance (22 per cent) (*Zhongguo Wujia Nianjian* 1989:351). Even by 1988 one half of retail sales were still being marketed at prices subject to government decision or guidance. More industrial output would be sold at market prices under the two track pricing scheme. This would be expected to produce a greater degree of price elasticity in the supply of retail commodities and industrial output.

Important structural changes occurred during the reform period. The structure of output in terms of sectoral origin and the balance between consumption and accumulation changed. The intention of the early reforms was to boost per capita consumption by encouraging agricultural output and switching the emphasis of policy away from heavy industry to light industry. In 1978 43 per cent of total industrial output value was from the light industry sector and by 1988 the proportion had reached 49 per cent (*Zhongguo Tongji Nianjian* 1989:269, *Statistical Yearbook of China* 1987:220). The attempt by Hua Guofeng to implement the 'four modernizations' using the 'foreign leap forward' strategy led to a marked increase in the accumulation rate. In 1978 this proportion was 37 per cent, the highest since the great leap forward policies had pushed it to 44 and 40 per cent in 1959 and 1960 respectively. By 1981 the accumulation rate had been reduced to 28 per cent. Early interpretations of this aspect of reform likened it to similar changes that are said to occur in both capitalist and socialist economies when a new leadership succeeds an old one (Perry and Wong 1985:7-8). This 'succession connection' explanation stresses that new leaders will always favour the consumption sector to obtain support for their policies. However, as Peebles (1986b) pointed out, the range of evidence supporting this proposition is less persuasive than generally thought and, the Chinese reform program was soon shown to be concerned with more fundamental changes than just favouring the consumption sector in a generally unchanged planned economy.

Although the accumulation rate fell over the period 1978-81 it soon began to rise again, reaching 35 per cent in 1985. For the period 1978-84 it averaged 32 per cent and, over the period 1985-88, averaged 35 per cent, the highest average figure ever sustained for a period of four years except for the period 1957-60 (*Zhongguo Tongji Nianjian* 1989:36).

Table 4 shows the sectoral structure of national income. These figures are likely to be misleading because of the nature of the Chinese price structure and because of the fluctuations in the harvest. Agriculture's rising

share over the period 1978-83 (when it reached nearly 41 per cent) was due to a run of good harvests and, probably, to increased relative agricultural prices. By 1988 agriculture's share of output was not really different from what it had been in 1978. Chinese industry's share in output has always been higher than one would expect from a country of its per capita income level, even after corrections necessitated by the odd structure of relative prices have been made (*China: Socialist Economic Development: Volume 1, 73*). In the process of economic development we expect agriculture's share in output and employment to fall as the shares of industry and services rise. China started its reform program with an over-developed industrial sector, an emphasis on heavy industry and a high accumulation rate.

Table 4 Changes in the structure of national income, China

| | Percentage share of national income | | | | |
|------|-------------------------------------|----------|--------------|-----------|----------|
| | Agriculture | Industry | Construction | Transport | Commerce |
| 1978 | 32.8 | 49.4 | 4.2 | 3.9 | 9.8 |
| 1984 | 39.8 | 44.5 | 5.4 | 3.6 | 6.7 |
| 1988 | 32.4 | 46.2 | 6.7 | 3.7 | 11.0 |

Source: *Zhongguo Tongji Nianjian 1989*, China Statistics Publishing House, Beijing, p.32.

Performance of the economy in the 1980s

When talking of the macroeconomic performance of an economy economists too frequently concentrate on the negative aspects of performance such as inflation, government budget deficits, trade deficits, etc. The purpose of China's reform program was to increase growth rates, efficiency and living standards and so these elements of performance in the 1980s should be dealt with in more detail than is usually the case. The more familiar questions of macroeconomics concerning inflation, imbalances, instability etc. will be covered subsequently.

Output and productivity

Table 5 shows the increase in real output by sector of the economy. The figures show substantial increases in growth rates of national income and agricultural output. The intention of the reform program was announced at the Twelfth Party Congress of September 1982 to be the quadrupling of real output by the end of this century. The starting point for this program is usually taken as 1980, implying a doubling of output in the first ten years and then a redoubling in the next ten. The first stage had been achieved by 1988 when that year's output was twice that of 1980. Despite the fact that

rates fell in the period 1985-88 (see Figure 1). Chinese economists believe that the agricultural sector usually follows a cycle of two good years followed by two less good and the run of good harvests in 1983 and 1984 surprised them (Macroeconomic Research Office:1988). Harvests and procurement timing play an important role in the Chinese money supply process and this is discussed in the next section.

Table 6 Change in consumption levels, China, 1978-1988

| | Ratio 1988/1978 |
|--|-----------------|
| Peasants per capita income (nominal) | 4.1 |
| Staff and workers average wage (nominal) | 2.8 |
| National consumption level (per capita real) | 2.1 |
| Peasants | 2.2 |
| Urban | 1.7 |
| Grain consumption | 1.3 |
| Pork consumption | 1.9 |
| Poultry consumption | 4.0 |
| Cloth consumption | 1.5 |
| Housing space | |
| Urban | 2.1 |
| Rural | 2.0 |
| Consumer durables (per capita) | |
| Sewing machines | 3.4 |
| Watches | 3.6 |
| Bicycles | 3.1 |
| Television sets (1985-1988, 1978s level negligible) | 2.1 |
| Washing machines (1985-1988, 1978s level negligible) | 2.0 |
| Refrigerators | 4.5 |

Source: Calculated from *Zhongguo Tongji Nianjian 1989*, China Statistics Publishing House, Beijing, pp.719-24.

A common theme in the assessment of economic reforms in essentially planned economies is that their intention is to increase the efficiency of the economy by raising total factor productivity. It is generally believed by western economists that the planned economies were able to achieve relatively high rates of economic growth because of their strategy of securing high investment ratios and their ability to absorb labour from relatively low productivity sectors such as agriculture. This stage of development is known as 'extensive' growth (Smith 1983:60-1). Reformers have argued that it can only be followed for a limited period before there must be shift to 'intensive' growth, under which strategy the productivity of the existing factors of production must be increased. It is often felt that economic reform is necessary to do this. Planning and administration can

mobilize resources and achieve high accumulation rates but, it is often argued, decentralization, the use of market forces and competition is necessary to force the owners of the factors of production to increase productivity. The generally accepted approach to identifying the reasons for output growth is the growth accounting framework based on an aggregate production function. This approach is very often criticised and does rest on a number of tenuous assumptions. Furthermore, the assumptions about the likely size of certain parameters are rather arbitrary as are the assumptions necessary to estimate, on the basis of available data, such things as the capital stock.

Table 7 Sources of growth, China, 1978-1988 (per cent)

| | Average annual growth rates (contribution in brackets) | | | |
|-----------|--|-------------------|------------------|---------------------------------|
| | Real national income | Capital stock (K) | Labour force (L) | Residual (a) technical progress |
| 1978-1984 | 8.1 | 2.4 (30) | 1.9 (23) | 3.8 (47) |
| 1985-1988 | 9.7 | 3.9 (40) | 1.7 (18) | 4.1 (42) |

Notes: The basic framework is the aggregate production function $Q = AK^bL^c$, where Q is output, A is a shift variable, K is the capital stock, L is the labour force and b and c are the elasticities of output with respect to K and L respectively. In growth terms $q = a + bk + cl$ where the variables are average annual growth rates. Given data on the growth of the labour force and the capital stock the contributions of capital (bk) and labour (cl) can be calculated once an assumption about the size of b and c is made. a is calculated as a residual and it is usually identified as 'technical progress' or 'productivity growth'. Following Perkins (1988:629) b and c are taken as 0.4 and 0.6, respectively, implying a constant returns to scale production function. (Chow (1985:120-2), however, estimates the capital coefficient as 0.6, and hence the labour coefficient as 0.4, in a production function for industrial output. Perkins argues that only a capital coefficient of the order 0.7-0.8 would upset his conclusions.) l can be easily calculated from data of the labour force, k is harder to calculate as it requires data of the capital stock. Following Perkins, this study took 1978s capital stock to be three times that year's national income and then added real investment in each subsequent year, allowing for a 5 per cent depreciation rate of the capital stock each year. Real investment, in 1978 prices was calculated by deflating nominal investment by the implicit national income price deflator obtained by dividing nominal income by a series in constant prices. (Perkins (1988:629) statement that 1980s capital stock in 1980 prices was estimated to be 214.5 billion yuan, at three times that year's national income, must be wrong as that year's national income in current prices was 368.8 billion yuan (*Zhongguo Tongji Nianjian* 1989:29). No justification for a capital-output ratio of 3 is given but it makes sense given the accumulation rate and the growth rate of output. If a country invests 30 per cent of its output in productive investment and has capital-output ratio of 3 then, on the basis of Harrod-Domar growth model considerations, it can expect to grow at 10 per cent per annum, which is not too different from the stylized facts of Chinese reform experiences.)

Sources: Basic data are from *Zhongguo Tongji Nianjian* 1989, China Statistics Publishing House, pp.29, 30, 36, 101; *Statistical Yearbook of China* 1987, Hong Kong Economic Information and Agency, p.93.

Despite these serious problems, estimates of the relative contributions of the labour force, the capital stock and the unidentified residual (generally labelled 'technical progress' or 'productivity growth') to growth during the reform period have been made. These are contained in Table 7

which also outlines the methodology. Assumptions about parameters and the capital output ratio were adopted from Perkins (1988:628-9), making comparison with his results for the pre-reform periods possible.⁵ Perkins's results imply that during the period 1965-76 only 12 per cent of the annual 5 per cent growth rate (that is, 0.6 percentage points of the observed annual average growth rate) was due to increased productivity, whereas for the period 1976-85 productivity growth contributed 43 per cent of the 8.8 per cent annual growth (that is 3.8 percentage points of growth) (Perkins 1988:628). The estimates of Table 7 suggest that productivity growth provided 47 per cent of the growth rate during the period 1978-84 and 42 per cent during the period 1985-88, rough estimates which are very much the same order of magnitude. Chow (1985:122) estimates that increases in the capital stock contributed 75 per cent to industrial output growth and labour only 25 per cent. Generally, in developed countries, productivity growth contributes at least 50 per cent to the growth rate of output (Chen 1979:68-9) indicating that China's reforms have not increased the contribution of productivity growth to output growth as much as is found in developed countries, although its relative contribution has risen substantially. As Table 7 shows, the increased rate of growth of capital stock after 1985, which is reflected in the increasing accumulation rate mentioned above, was responsible for a larger share of output growth after 1985 than previously and the relative contributions of labour and productivity therefore fell.

Table 8 presents data of the major macroeconomic series for the period 1976-88. This covers developments immediately before the reform program was introduced in December 1978 and also the period throughout the 1980s. Most of the series are shown as percentage increases over the previous year except for the accumulation rate and the government budget. The first section of Figure 1 shows developments in the real output of the economy. The second section shows the annual changes in the narrow measure of the money supply, currency in circulation, and the general retail price level. The third section shows the government budget and the balance of trade deficit.⁶

As Table 8 and Figure 1 show that the recovery from the natural disasters and the political disruptions of 1976 led to rapid recovery of growth in industrial output and national income in 1977, but not in agricultural output in that year or 1978. Thereafter, during the first years of

⁵ Giving estimates to two decimal places as does Perkins cannot be justified given the nature of the basic data and the assumptions necessary to generate the estimates.

⁶ Balance of trade data published in the statistical yearbooks come from two different sources. For 1979 and previous years, figures from the Ministry of Foreign Economic Relations and Trade are published and for 1980 and after those of the General Administration of Customs are published (Zhongguo Tongji Nianjian 1989:633). Hishida (1984) explains the differences. Strictly speaking, the series are not comparable.

the reform policies, growth rates tended to fall, only recovering to near trend rates in 1982. Growth rates increased until 1985 and then fell in 1986, recovering again in 1987 and 1988, with the exception of agriculture. Agriculture's growth rate after 1985 remained low.

Table 8 Major macroeconomic variables, 1976-1988 (percentage increase over previous year)

| | <i>RNI</i> | <i>IND</i> | <i>AG</i> | <i>VRS</i> | <i>ACC</i> ^a | <i>BUD</i> ^b | <i>CRC</i> | <i>P</i> | <i>MP</i> |
|------|------------|------------|-----------|------------|-------------------------|-------------------------|------------|----------|-----------|
| 1976 | -2.7 | -3.7 | -2.0 | 5.4 | 30.9 | -2.96 | 11.5 | 0.3 | 4.0 |
| 1977 | 7.8 | 14.8 | -2.5 | 7.0 | 32.3 | 3.09 | -4.1 | 2.0 | -2.6 |
| 1978 | 12.3 | 17.1 | 3.9 | 8.8 | 36.5 | 1.02 | 8.5 | 0.7 | -6.6 |
| 1979 | 7.0 | 8.1 | 6.4 | 15.5 | 34.6 | -17.07 | 26.3 | 2.0 | -4.5 |
| 1980 | 6.4 | 10.9 | -1.8 | 18.9 | 31.5 | -12.75 | 29.3 | 6.0 | 2.0 |
| 1981 | 4.9 | 1.7 | 7.1 | 9.8 | 28.3 | -2.55 | 14.5 | 2.4 | 5.8 |
| 1982 | 8.1 | 6.0 | 11.8 | 9.4 | 28.8 | -2.93 | 10.8 | 1.9 | 3.3 |
| 1983 | 10.0 | 9.8 | 8.5 | 10.9 | 29.7 | -4.35 | 20.7 | 1.5 | 4.2 |
| 1984 | 13.6 | 14.9 | 12.9 | 18.5 | 31.5 | -4.45 | 49.5 | 2.8 | -0.4 |
| 1985 | 13.5 | 19.6 | 2.7 | 27.5 | 35.0 | 2.16 | 24.7 | 8.8 | 17.2 |
| 1986 | 7.7 | 9.6 | 3.0 | 15.0 | 34.7 | -7.06 | 23.3 | 6.0 | 8.1 |
| 1987 | 10.2 | 13.0 | 4.5 | 17.6 | 34.2 | -7.96 | 19.4 | 7.3 | 16.3 |
| 1988 | 11.1 | 17.4 | 2.3 | 27.8 | 34.1 | -8.05 | 46.7 | 18.5 | 30.3 |

Notes:

RNI: Real national income

IND: Real industrial output

AG: Real agricultural output

VRS: Nominal retail sales value

ACC: Accumulation rate

BUD: Government budget balance (Chinese concept, so revenue includes domestic and foreign borrowing)

CRC: Currency in circulation

P: General retail price index

MP: Free market price index of consumer goods.

^a Investment as a percentage of national income.

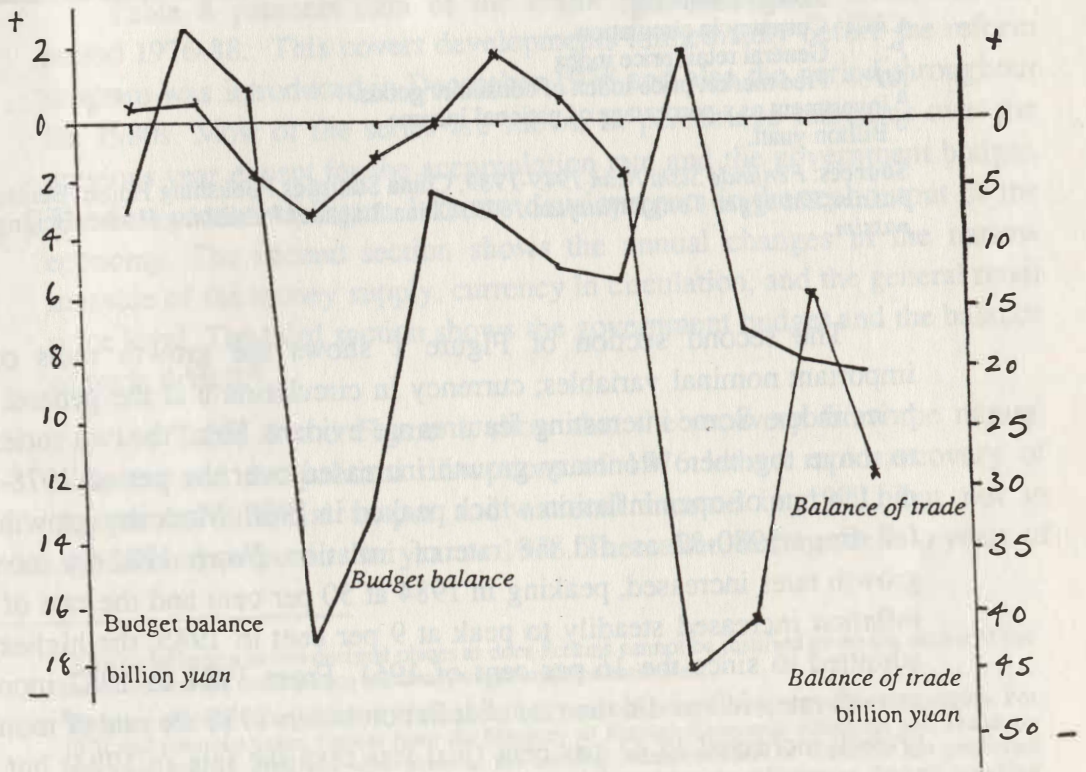
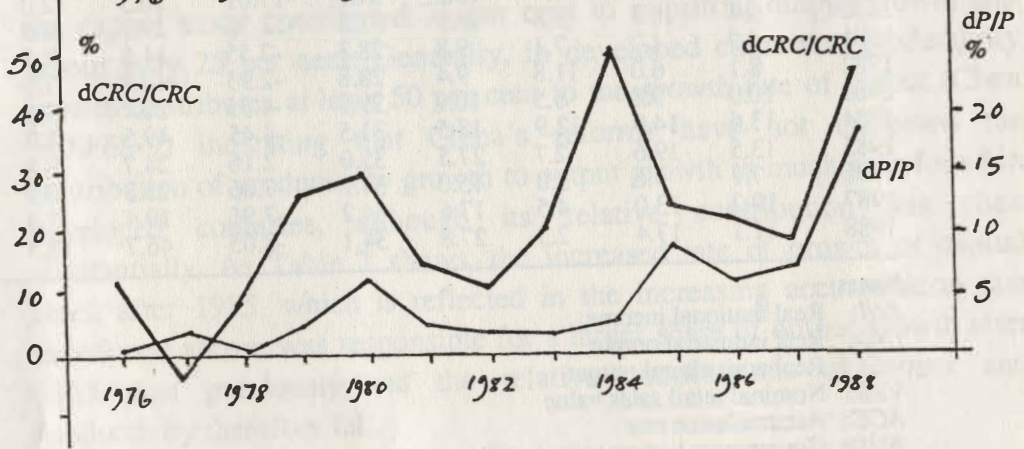
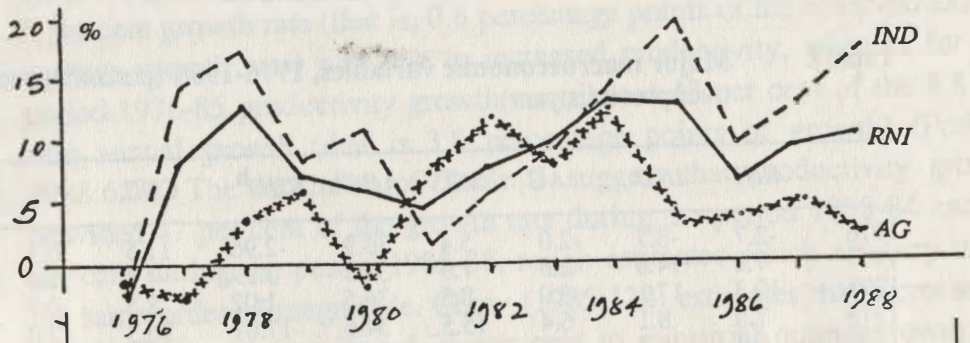
^b Billion yuan.

Sources: *Fenjinde Sishi Nian 1949-1989*, China Statistics Publishing House, Beijing, *passim*; *Zhongguo Tongji Nianjian 1989*, China Statistics Publishing House, Beijing, *passim*.

The second section of Figure 1 shows the growth rates of two important nominal variables; currency in circulation and the general retail price index. Some interesting features are evident. First, the two series tend to move together. Monetary growth increased over the period 1978-80 as did the rate of open inflation which peaked in 1980. Monetary growth rates fell from 1980-82 as did the rate of inflation. From 1982-84 monetary growth rates increased, peaking in 1984 at 50 per cent and the rate of open inflation increased steadily to peak at 9 per cent in 1985, the highest rate admitted to since the 16 per cent of 1961. From 1984 to 1987 monetary growth rates fell as did the rate of inflation but in 1988 the rate of monetary growth increased to 47 per cent (just less than the rate in 1984) but open inflation was recorded at 19 per cent. The market price index of consumer

Figure 1

Growth rates of selected variables, budget balance and balance of trade, 1976-88



goods rose 30 per cent in this year. There is a clear and relatively close relationship between monetary growth and open inflation with peaks in the former in 1980, 1984 and 1988 and in the latter in 1980, 1985 and 1988. However, conclusions about causality between money and prices from such evidence must not be drawn until a theory is proposed to link them in a way consistent with Chinese institutions. Second, as national income growth rates fell over the period 1978-80 currency growth rates rose, and as national income growth rates rose over the period 1981-82 currency growth rates fell. After this period national income growth rates and currency growth rates tended to move together.

The lower section of Figure 1 shows the government budget balance and the balance of trade deficit. For the entire period 1979-88 the government budget was in deficit, except for the slight surplus in 1985, but if domestic and foreign borrowing is deducted from budget revenue, there was a deficit in this year also. A record deficit of 17.06 billion yuan, about 5 per cent of national income, or 6 per cent if borrowings are deducted from revenue, was recorded in 1979. The budget deficit of Table 8 is equivalent to the concept of the unfunded budget deficit in the United Kingdom. That is, it is the part of the deficit not covered by borrowing from the domestic private sector or the foreign sector and must be covered by borrowing from the banking system or drawing on the government's bank deposits. Thus, a relationship between this measure of the budget deficit and monetary growth would be expected. The importance of this topic warrants further discussion.

In general, there are three main causes of monetary growth in any economy: private sector borrowing from the banking system; government borrowing from the central banks; and the balance of payments surplus, which will be reflected in the change in the banking system's holdings of gold and foreign currency reserves. These three factors have all contributed to narrow monetary growth in China also, but the process is not identical to that of a market economy (see Appendix C). Bank lending to the private sector in China is virtually nonexistent and most of this lending is to state enterprises. Many of these are permanent deficit units, unable to cover their costs because of the relative prices set by state planners that they face. For example, for much of the 1980s grain procurement units and foreign trade corporations continually made losses because the prices at which they had to procure inputs were higher than the prices at which they were either allowed or able to sell.

Chinese economists have adopted the concept of the 'soft budget constraint' (*ruan yusuan yueshu*) from the works of the Hungarian economist János Kornai to describe the phenomenon by which loss making enterprises are continually subsidised by the budget. This means that they

have virtually limitless, nonrepayable overdrafts at the state bank. This reluctance to bankrupt state enterprises, together with the fact that local authorities have some degree of control over local branch banks and can pressure local managers to finance their favourite projects, means that there is a constant demand for loans from the banking system. The newly created central bank seems unable to prevent increases in loans and hence currency in circulation.

Monetary developments

Appendix C explains the money supply process from two points of view. Currency in circulation is the variable to be explained. Its annual changes can be explained in two ways. First the change in currency in circulation in any year must equal the total amount of money paid out to the population by the combined state sector minus the return flows to the state sector from the population. The main channels by which currency is issued to the population are wages in state enterprises and government units, wage subsidies for the urban population to cover rising retail prices, procurements of agricultural produce plus interest payments on savings deposits and government bonds and bond repayments. The main channels through which currency returns to the state sector are through the purchase of retail commodities from the state sector (known as commodity *huilong*, *shangpin huilong* - by far the most important return channel), the payment of direct taxes (which are minimal) and the increase in household savings deposits at state banks. Liu (1980:167-9) and Ma (1982:478-9) provide descriptions of these channels. Previous analysts of Chinese monetary policy have pointed out that the main factors determining the annual change in currency in circulation are mainly external to the People's Bank of China. Such currency creating factors as wages, bonuses, and agricultural procurement prices are determined on the basis of various incentive policies. The withdrawal of currency through retail sales depends on the structure of output, the availability and prices of retail commodities, as well as the attractiveness of savings deposits. This latter flow can be influenced by the People's Bank's policies. It has been traditional to describe monetary policy in China as reactive (Hsiao 1971; Yeh 1985), meaning that currency issue is largely out of the People's Bank's control, so it must follow currency absorbing policies.

Ex post data of the total monetary purchasing power paid out to the population in any year together with the reverse flows from the population to the combined state sector are available. The difference between these two flows must equal the annual increase in the population's holdings of narrow money. The coverage of the available statistics includes social organizations and so the narrow measures of money are the cash in hand of

residents (*jumin shoucun xianjin*) and their savings deposits (*jumin chuxu cunkuan*) (*Zhongguo Tongji Nianjian 1989*: 596-9). Explaining the annual changes in this measure of the narrow money supply (either cash in hand or cash in hand plus savings deposits) is merely an accounting explanation. That is, it can show that various rates of annual monetary growth were due to different rates of growth of total social purchasing power and realized expenditures but does not show why these two aggregates grew at different rates: whether the extent of monetary accumulation accorded with household desires; whether expenditures were constrained by available supplies; or whether they fully reflected household demand. The increase in holdings of cash in hand and savings deposits is not only equivalent to the increase in narrow money holdings but is also equivalent to household saving in monetary assets.

The second way of analysing the money supply process is shown in Appendix C. The annual increase in a narrow measure of the money supply must equal the excess of new loans to enterprises (B_E) over the increase in their bank deposits (D_E) plus the excess of new loans to the government (B_G) over the increase in its bank deposits (D_G). These two items can be thought of as the enterprises' and the government's borrowing requirements, respectively. Increases in savings deposits exert a negative effect on narrow monetary growth, shown as follows:

Increase in currency = $(B_E - D_E) + (B_G - D_G) - \text{increase in saving deposits}$.

As a Chinese economist puts it, loans minus cash equals deposits (Li 1986/7:6) which implies loans minus deposits equals cash, referring to increases in these variables. Newly created loans are used to purchase inputs from other enterprises which result in increases in their deposits.

When there is a cash leak in the form of wage payments or agricultural procurements these expenditures do not directly generate increased deposits and so cause an increase in currency in circulation. Part of the cash leak will result in further deposits, as wages that are spent on state supplied consumer goods do result in currency being withdrawn from circulation as do household savings deposits. In Chinese monetary planning the cash plan is supposed to monitor currency issue in terms of wage payments and currency withdrawal and the credit plan is supposed to monitor currency issued in terms of changed bank loans and deposits. The balance of the credit plan (the difference between new loans and deposits) is identical to the amount of currency issued through the cash plan (Ma Hong 1982:479).

Complete balance sheet data for the Chinese banking system are now published in *Fenjinde Sishi Nian 1949-1989* (pp. 429-32). Currency in circulation is a liability of the banking system or a source of funds (*zijin lai yuan*) and loans and asset are referred to as the use of funds (*zijin*

yunyong). The balance sheets show amounts outstanding at the end of each year. It must be true that the new use of funds (new loans extended) minus the increase in deposits (net of the change in currency) must equal the annual change in currency. Various pairings of new loans and new deposits can be made to show the contribution of currency growth of various sectors of the economy. The above equation only shows enterprises and the government. Table C-1 (Appendix C) shows the various contributions to currency growth on the following basis,

$$CURR = (L - D) + G + R + IMO - F - O - Bonds$$

The increase in currency in circulation equals the excess of loans over deposits to enterprises ($L - D$), plus government borrowing net of any change in government deposits (G), plus any increase in the banking systems reserves of gold and foreign currencies (R), plus any increase in holdings at international monetary organizations (IMO), minus any increase in the banks' own funds (F), minus the item 'other' (O), minus the banks' sale of their own bonds. The latter started in 1985 when the specialized banks were established. The item 'other' is on the source of funds side of the balance and hence restrains currency growth.

Table C-1 shows the contribution of each factor to currency growth over the period 1979-88. Generally, the dominant cause of currency growth was lending to enterprises. The government contribution to monetary growth was most significant in 1979, 1980, 1986 and 1987. In the period 1981-83 the foreign sector contributed to monetary expansion. The foreign sector contributed a restraining influence on currency growth in 1980 and most noticeably in 1985 and to a small extent in 1986. The experiences of 1985 have been remarked upon already. Following rapid currency growth in 1984 a policy of importing consumer goods was adopted. This policy restrains currency growth as the government runs down its gold and foreign exchange reserves by providing them to foreign trade corporations to enable them to finance the balance of trade deficit. When the goods are sold on the consumer goods market they withdraw currency through commodity *huilong*. The excess of lending to enterprises over their new deposits in 1985 was nearly 60 billion yuan but the government increased its deposits markedly, thus restraining currency growth, and, more importantly, gold and foreign exchange reserves were run down by 17 billion yuan. These two factors restrained currency growth in 1985 to just under 20 billion yuan. As a result of planning decisions more consumer goods were obtained in exchange for foreign currency reserves (which were run down in 1985 and 1986) and these were used to absorb much of the excess of loans over new deposits caused by the enterprise behaviour towards the end of 1984 when they increased the payment of bonuses excessively.

This is merely an accounting explanation of changes in currency in circulation. Why there is excessive lending to enterprises, why the government has a deficit and why these items outweigh the restraining effect of a balance of trade deficit on currency growth are questions which still need to be answered. A simple explanation of why government deficits occur and why excessive loans are necessary is offered below. Its aim is to explain variations in the extent of currency growth and to identify planners' reactions. It will be argued that such things as budget deficits and excess monetary growth cannot be taken as exogenous initiating causes of such things as open inflation.

Table 9 shows the difference in growth of nominal money, two price indexes and real output in the reform period (1978-88) compared with the period 1965-78 and for two periods during the 1980s. It is clear that monetary growth increased significantly after 1978 but that open inflation remained modest. After 1984, when average monetary growth rates increased no more than 5 percentage points and real output growth increased 2.4 percentage points, the rate of increase in the market price index of consumer goods increased 14.1 percentage points but that of the general retail price index increased 6.6 points. This suggests that excess demand was reflected in free market price increases and that price control had restrained the growth of the general retail price index before 1984. In 1988 the market price index of consumer goods rose 30 per cent.

Table 9 Rates of growth of money, prices and output (per cent p.a.)

| | Average annual growth rates | | | | |
|---|-----------------------------|---------|---------|------|------|
| | 1965-78 | 1978-84 | 1984-88 | 1987 | 1988 |
| Retail prices | 0.1 | 2.8 | 9.4 | 7.3 | 18.5 |
| Market prices | 1.9 | 2.5 | 16.6 | 16.3 | 30.3 |
| Currency | 6.0 | 21.9 | 26.7 | 19.4 | 46.7 |
| Savings deposits plus cash in hand of residents ^a | 7.3 | 25.2 | 29.2 | 31.9 | 29.8 |
| Real national income | 6.6 | 7.9 | 10.3 | 10.2 | 11.1 |

^a*Jumin chuxu cunkuan* plus *jumin shoucun xianjin*, which is also called surplus purchasing power (*jieyu goumaili*).

Source: Calculated from data in *Zhongguo Tongji Nianjian 1989*, China Statistics Publishing House, Beijing, *passim*; *Fenjinde Sishi Nian 1949-1989* (Forty Years of Struggle and Progress), China Statistical Publishing House, Beijing.

Excess demand for consumer goods

Chinese economists characterize the 1980s as a period of sustained excess demand, with social purchasing power growth outstripping the growth of supplies, and remark that it is a long-standing problem which became more

pronounced by about 1986 (*Zhongguo Jingji Nianjian* 1987:V(30)). Planners are responsible for balancing aggregate monetary demand with consumer goods supplies, at both the aggregate level and at the level of individual commodities. For many years they relied on retail rationing to overcome the problem of excess demand. Price rises are attributed to excess demand. Bu Xinhua (1989:33) is typical of the argument.

We know that demand and supply influence the rise and fall of prices. The all round increase of the price level in China is the result of aggregate demand exceeding aggregate supply and the widening gap between them. It is not only this. Within the structure of aggregate supply there is, in every year, a small part of the supplies which are goods that just accumulate, are not demanded on the market, are damaged or are of inferior quality and cannot meet demands of national economic development. This makes the gap between demand and supply even bigger and so prices are even more unstable.

In this paragraph Bu Xinhua is referring to one of the major problems of macroeconomic analysis of planned economies. That is, whether aggregate analysis is sufficient to identify the extent of excess demand on the consumer goods market and explain some of the odd retailing phenomena. Because little use is made of the price mechanism in retail trade and retail prices are held constant for many years it is possible for some consumer goods to be in permanent shortage and for others to be produced in excessive quantities. Consumers are forced to make substitutions between goods. The phenomena usually attributed to aggregate excess demand such as queues, bribes to shop staff for scarce commodities and so on could be due to the irrational price structure causing deficit supplies of many goods. Identifying the extent of excess demand in these circumstances is a problem that has not been solved in the study of such economies as those of the Soviet Union and eastern Europe. The present analysis will proceed at a highly aggregate level using simple indicators of possible excess demand at the aggregate level to try to discover the consequences of this excess demand for the behaviour of retail prices, the money supply and so on.

Chinese economists describe the extent of excess demand by comparing the rate of growth of commodity purchasing power (*shangpin goumaili*) and the rate of growth of supplies of retail commodities (*huoyuan*). They also assess the size of the gap between aggregate demand and available supplies in absolute terms (*Lishide Xiongbian* 1989:436-7). Table 10 (column 1) shows data for the Chinese concept *Gongxu chalü* (rate of excess demand) for the period 1983-88, which, to the best of the author's knowledge is the only period for which this series is available. A precise definition of this series is not available. Column 2 of Table 10

shows a recently published series, again for which there is no precise definition. It is described as the relationship between the rate of growth of retail commodity supplies (*shehui lingshou shangpin huoyuan*) and the increase in some measure of the money supply with the latter being expressed as unity. The larger the ratio the less marked is the extent of excess demand and *vice versa*. The source of this series also gives the ratio of other series to the rate of monetary growth. The published ratio could be used to derive a series for the increase in retail commodity supplies once the coverage of the denominator is established. The Author has tried various definitions of money supply and compared them with the rate of growth of retail sales, national income etc. (some of the other ratios are given) but has not been able to obtain the published figures. The precise definition of this interesting series remains a mystery.

Two other possible simple indicators of aggregate excess demand are shown in columns 3 and 4. Column 3, excess money growth is just the percentage increase in currency in circulation in each year minus that year's increase in real national income. When this indicator is positive then, obviously, the ratio of currency to real national income rises. Column 4, shows an indicator called here purchasing power imbalance (*PPI*), which is the percentage increase in social purchasing power in each year minus the rate of increase of real national income.⁷ When this indicator is positive the ratio of social purchasing power to real output rises. In these latter two indicators the rate of increase of real national income is being taken as a proxy for the increase in potential retail supplies. The latter two indicators tended to move together, except in the period 1985-86. They indicate pronounced excess demand in 1979, 1980, 1984-86 and 1988. The rate of excess demand tends to move in the same direction, also with the exception of 1987 when it shows slightly increasing excess demand whereas the excess money growth and *PPI* indicators show a fall.

The usefulness of these crude indicators is not what they show directly but whether they can be shown to be associated with important subsequent changes in other macroeconomic variables and whether an acceptable explanation of any such association can be provided. The most important variables to be explained are the rate of open inflation, the rate of currency and monetary growth, and the size of the budget deficit. The excess money growth indicator cannot be used to explain currency growth as it is based on the rate of growth of currency. Using this indicator would be equivalent to applying the simple quantity theory of money to the data. As this has been done for China it is worthwhile to discuss the implications of this approach and the results.

⁷The concept of purchasing power imbalance has been adopted by Gardner (1988) and Hsu (1989) although neither uses it to explain anything.

Table 10 Indicators of excess demand

| | Rate of excess demand ^a (%) | Relative retail supply growth ^b | Excess money growth ^c | Purchasing power imbalance ^d (%) |
|------|--|--|-------------------------------------|--|
| 1979 | .. | 0.91 | 19.3 | 11.6 |
| 1980 | .. | 0.67 | 22.9 | 14.7 |
| 1981 | .. | 0.53 | 9.6 | 3.4 |
| 1982 | .. | 0.82 | 2.5 | 1.9 |
| 1983 | 4.57 | 0.55 | 10.9 | 3.9 |
| 1984 | 16.56 | 0.5 | 36.0 | 16.0 |
| 1985 | 11.25 | 0.72 | 12.2 | 14.4 |
| 1986 | 13.45 | 0.84 | 15.6 | 13.1 |
| 1987 | 13.60 | 0.56 | 8.2 | 9.2 |
| 1988 | 16.20 | 0.81 | 35.6 | 15.7 |

^aPrecise definition unknown.

^bThe ratio of the annual increase in supplies of retail commodities to the increase in money in circulation (*huobi liutong liang zengchang sudu tong shehui lingshou shangpin huoyuan zengzhang sudude bijiao*).

^cThe percentage increase in currency in circulation minus the percentage increase in real national income, calculated from the data of Table 8.

^dThe percentage increase in social purchasing power (*SPP*) minus the percentage increase in real national income.

Sources:

Column 1: 1987-88, Lishide Xiongbian, *Zhongguo Jingji 1949-1988 Nian Sumiao: A Sketch of Chinese Economy*, China Economic Publishing House, Beijing, 1989; 1983-88, Li Ping, 'China's Inflation - its causes and plans for control', *Beijing Review*, No.8, 19th-25th February, 1990.

Column 2: *Zhongguo Tongji Nianjian 1989*, China Statistics Publishing House, Beijing, 1989:65-6.

Column 3: Social purchasing power data; 1952-86, *Statistical Yearbook of China 1987*, Hong Kong Economic Information and Agency; 480, where item is called 'Total money incomes', 1987 and 1988 absolute figures; *Zhongguo Tongji Nianjian 1989*, China Statistics Publishing House, Beijing, 1989:599. The figures were calculated by using the 1987 and 1988 growth rates over the 1986 absolute figure. This is necessary as the series was re-defined in 1986.

Money and prices

Chow (1987) used the simple quantity theory of money to analyse the determinants of the retail price level in China over the period 1952-83. The quantity theory does not seek an explanation of why the money supply changed in the first place. It takes such a change as given and derives a prediction of the behaviour of the price level. The simple prediction is that the price level is proportional to the ratio of the nominal money supply to real output. This is what Chow actually expected to see in the Chinese data. There are problems in applying this approach to China. First, the retail price level is a controlled price level so that changes in it are mainly due to changes in government determined list prices. Chen and Hou (1986) stressed this important factor when they asked why the government

increased prices in the early 1980s and contributed to inflation. As late as the first seven months of 1989 when the rate of inflation was 7 per cent, Chinese sources cited by Solntseva (1990:91) stated that 3.7 percentage points of this rate were due to government price regulation and 3.3 percentage points were due to 'spontaneous uncontrolled growth'. Earlier in the 1980s, particularly before 1985, at least two-thirds of retail sales would have been made at government fixed list prices or at prices under government guidance, making the general price level more dependent on government price changes. This is also true of Hungary, for example, where it is thought that price decontrol has gone furthest of the reforming socialist economies.

However, Chow relies on the free market component included in the general retail price index to produce a relationship between the money ratio and the price level, asserting that 'the theory could still provide a good explanation of the general price level if the remaining uncontrolled prices were able to adjust sufficiently'. For the period 1952-83 the double-log (natural logarithm, \ln) regression of the general retail price level on the log of the ratio of currency in circulation to real national income available (M/y) yields a slope coefficient of only 0.2687 in an equation suffering from positive serial correlation. A regression of first differences yields a slope coefficient of only 0.1266 (Chow 1987:327). Chow concludes that 'the ratio M/y does provide a good explanation of the price level P , as the quantity theory predicts. The t statistic for the coefficient of $\ln(M/y)$ is.....11.76 and the R^2 is fairly high. However, the coefficient of $\ln(M/y)$ is only 0.2687 and very much below unity, contradicting the quantity theory'. In other words, Chow has found what he accepts as a statistically significant relationship but one which is clearly of no great quantitative importance, and far below a coefficient of unity which is to be expected in an economy with a completely free price level and constant velocity. Chow's estimates can be updated and improved on in a number of ways. For example, his data for currency in circulation for 1952 is nearly 40 per cent greater than the figure published in official Chinese statistical sources (his information on the source of his data does not clearly identify its source). An updated regression for the period 1952-88 which includes years after 1986 when there was more price decontrol yields the following result,⁸

⁸All regressions were performed with *Microfit* and are ordinary least squares estimates unless otherwise specified. The substitution of *RNI* for real national income available in replications of Chow's equations for 1952-83 leaves the coefficients unchanged to two decimal places and so is not the reason for any change in estimated coefficients. R^2 is the coefficient of determination, s.e. is the standard error of the regression, DW is the Durbin-Watson statistic and the figures in brackets are the standard errors of the estimates.

$$\ln P = 0.0956 + 0.3224 \ln(\text{Curr}/\text{RNI}) \quad R^2 = 0.9255$$

(0.01732) (0.0155) s.e. = 0.0423

DW = 1.0842

n = 37

A regression of the first difference of logs yields a slope coefficient of only 0.1621. Chow remarked that as the available currency data were end-of-year amounts this might not provide a good relationship with the price index which is almost certainly an average for the year. In this analysis year-end money stocks were averaged to provide a rough estimate of mid-year holdings and the regressions produce very similar slope coefficients. All this shows that despite price reform in the later 1980s the quantity theory remains a poor explanation of the general retail price level even though the slope coefficient has risen to 0.32 showing that a 1 per cent increase in the money ratio results in a 0.32 per cent increase in the retail price level on average for the entire period. For the reform period of 1978-88 the result is

$$\ln P = 0.0640 + 0.3590 \ln(\text{Curr}/\text{RNI}) \quad R^2 = 0.9265$$

(0.0431) (0.0337) s.e. = 0.0472

DW = 0.8229

n = 11

For the regression of differences of logs a slope coefficient of 0.2924 is obtained. There is a slightly greater response of the general retail price level to the money ratio in the reform period but nothing like a coefficient of unity can be obtained. Clearly price control prevented the retail price level showing a proportional relationship to the money ratio and an alternative explanation of this relationship must be sought. This will be done on the assumption that changes in the general retail price level are the result of changes in state list prices and that the index remains dominated by these changes. A second aspect of this alternate approach is the abandoning of the direction of causation implied by the quantity theory which starts from a change in the money ratio generally caused in market economies by a prior change in the money supply which is not explained. The theory just predicts what will happen to prices.

A full explanation of the relationship between money and prices must explain why the money supply changes. As Appendix C shows the money creating activities of state wage payments and agricultural procurements create a flow of purchasing power onto the consumer goods market. If there is not a corresponding withdrawal of currency from circulation then currency in circulation will increase. Assume that supplies of consumer goods, which are the main means of ensuring currency withdrawal, are constrained by the growth of real output. If purchasing power grows more rapidly than real output there is the potential for rapid currency growth.

Historically, Chinese monetary planners have been concerned to restrain the amount of currency in circulation to a fixed proportion of annual retail sales with the ratio of about 12 per cent being accepted up until the early 1980s (Shi 1982). Then it was realized that economic reform would increase the demand for currency. As more and more trade was allowed the demand for currency for transactions purposes would rise more rapidly than output, leading to a fall in desired velocity which is a common feature of developing economies. The assumption that monetary planners wish to restrain excessive currency growth even though they might not be able to formulate firm quantitative ratios or growth rates is retained here. To do this they must fall back on the traditional reactive policies of currency withdrawal. One of these policies is to increase state list prices of goods in excess demand. Such an action increases the sales revenue from a given volume of supplies, provides budget revenue when such revenues are remitted in the form of the industrial and commercial tax and withdraws currency from circulation.

In the difficult years of 1960-62 state retail price increases were commonly used for the express purpose of withdrawing currency from circulation (Xue 1982:69). For the period 1967-76 there was a virtual complete nominal income and price freeze in China. When excess demand and potential inflation problems re-appeared in the early 1980s it seems natural that planners reverted to policies they had used before. In the face of excess demand it is reasonable to assert that they will increase list prices and as these are an important component of the general retail price index this latter index will increase also. If the price rises are not sufficient to absorb all potential excess currency growth then we will see high rates of currency growth in the years of high excess demand and high rates of open inflation (Peebles 1986a). Hence, any association between rapid currency growth and high rates of open inflation is not evidence of causation between currency growth and open inflation. This positive correlation results from them both being dependent on a third factor - excess nominal demand on the consumer goods market. How is the concept of excess nominal demand operationalized?

The *PPI* concept of Table 10 does this in a simple way. It is the percentage increase in social purchasing power minus the percentage increase in real national income. This latter figure is taken as proxy for the rate of growth of available retail supplies. The social purchasing power data are the figures of total money incomes (*Huobi shouru zong e*) taken from the Chinese table 'Origin and distribution of social commodity purchasing power' (*Shehui shangpin goumaili lai yuan he fenpei*). Although it is called 'total money incomes' this figure is not the same as nominal income in a market economy, which can also be called total money incomes. The Chinese concept is the flow of newly created monetary

purchasing power paid out in cash each year to the population and social organizations to enable them to purchase consumer goods and means of agricultural production or, by refraining from spending, to accumulate as unspent monetary balances in the form of cash or savings deposits. *PPI* is thus a crude operational measure of excess demand which planners can monitor during the year and react to in an attempt to narrow the gap between purchasing power and available supplies. The greater this gap the more rapid the increase in the narrow measures of the money supply. The question is whether planners have reacted to imbalances in a consistent way over a long period of time. Our expectation is that high *PPI* will be associated with large increases in list prices, and hence in the general retail price level, as well as with relatively rapid currency growth.

This can be shown to be true for the entire period 1953-88. First, the relationship between the annual percentage increase in list prices (dLP/LP) and *PPI* for the period 1953-85 for which list price data are available is,

$$dLP/LP = 0.7802 + 0.1811PPI \quad R^2 = 0.4387$$

$$(0.3201) \quad (0.0368) \quad \text{s.e.} = 1.7846$$

$$\text{DW} = 1.4060$$

$$n = 33$$

Because changes in the general retail price level are caused by changes in list prices there is a close relationship between the annual percentage changes in retail prices and *PPI* for the period 1953-88,

$$dP/P = 1.1170 + 0.3564PPI \quad R^2 = 0.4430$$

$$(0.6256) \quad (0.0658) \quad \text{s.e.} = 3.5481$$

$$\text{DW} = 1.4151$$

$$n = 36$$

This establishes that for the entire period, which includes the reform period, for which data are available, retail price increases are a clear positive function of *PPI*. When social purchasing power grows more rapidly than real output planners increase list prices to restrain currency growth. Another way of showing this is to note that when *PPI* is positive the ratio of social purchasing power to real output rises and we would expect to see an increase in the price level. A regression which is a direct counterpart to the quantity theory approach but uses the *flow* of purchasing power as an explanation of both the price level and the money supply can be run. Chow did, in fact, consider the wage bill as a potential determinant of the price level by adding it to an equation which included the money ratio. This is not really a fair test of the possible impact of aggregate demand, conceived as a flow, on the price level. A fair test is to run the simple regression of the price level on the ratio of purchasing power (a flow) to real output (also a flow). For the period 1952-88,

$$\ln P = 0.1923 + 0.5572 \ln(SPP/RNI)$$

(0.0117) (0.0327)

R² = 0.8922
s.e. = 0.0509
DW = 0.4931
n = 37

Although there is clearly positive serial correlation the estimated coefficients remain best unbiased estimates. This result shows that a one percent increase in the ratio of social purchasing power to real output is associated with a 0.56 increase in the general retail price level. This coefficient is 55 per cent greater than that of the money ratio in Chow's regression. The regression of first differences of logs produces a coefficient of 0.37, more than twice the size of the coefficient from the quantity theory regression.

The fact that the extent of list price increases that planners have been permitted to make has been insufficient to restrain currency growth fully is shown by the following result for the entire period 1953-88,

$$dCurr/Curr = 10.1233 + 1.3172 PPI$$

(2.1882) (0.2397)

R² = 0.4703
s.e. = 12.4903
DW = 2.1118
n = 36

PPI is correlated on an annual basis with currency growth and open inflation for the entire period 1953-88. There is no causative relationship between currency growth and open inflation, they are both the consequences of *PPIs*. These imbalances are not the consequences of one over-riding factor. Over the long period it is clear that imbalances during the disaster following the failure of the 'Great Leap Forward' and as a result of natural disasters were due to large reductions in real output. These falls in real output also explain the changes in the money ratio used by Chow. In the reform period real output began to grow at record rates but purchasing power began to grow much more rapidly because the nature of the monetary incentive policies adopted, first for agriculture and then for industry.

In the reform period there seem to be two separate periods of, and reasons for, the emergence of significant *PPIs*. The nature of the price incentives offered to the agricultural sector in 1979 established a mechanism through which there could be nothing but significant increases in rural purchasing power. The existing higher bonus prices for over quota sales to the government (*chaogou jiajia*) of grain and edible oil crops were increased and a new bonus payment for cotton was introduced. The existing quota levels were to be kept fixed. This was the first use of a two-tier pricing system. As farmers increased output in response to the higher quota and bonus prices the average price they received rose as this price was a weighted average of the fixed quota price and the bonus price. As long as

the quota amount remained fixed then extra sales at the bonus price increased the proportion of sales receiving the higher price. Higher sales produced higher prices, a phenomenon known as price perversity, which clearly occurred for the major crops over the period 1979-83 (Peebles 1985). As long as the government was prepared to buy all output offered to it the rural sector could not loose as it expanded output, as both quantity and price rose, reversing the implications of the law of demand. One reaction to the higher procurement prices came in late 1979 when retail prices were increased, but, generally, retail prices of important government marketed commodities like grain remained below procurement prices. For example, by 1982 the procurement price of grain was 15 per cent higher than the retail price and that of edible oil was 41 per cent higher than its retail price (Zhao Dexin 1989:633). This price inversion has the effect of both contributing to the government budget deficit and injecting currency into circulation. In 1985 the government abandoned the system of quotas and bonus payments for major crops (it abandoned bonuses nationally for cotton in 1983) and moved to a system of procurement by supposedly voluntary contracts at prices negotiated with farmers. This marked a major change in the operation of the Chinese macroeconomy and returned it to the system in existence before November 1953.

The second major reason for continuing *PPIs* was the nature of industrial reform, in particular the widespread use of bonus payments in industry. As we have seen, these have been blamed for the large increases in the wage bill in late 1984 and in 1985 and as Table 10 shows *PPI* was large for the years 1984-86. *PPI* was high in 1979 and 1980 as a result of the changes in agriculture, was relatively low for the years 1981-83, but became very pronounced in the period 1984-86 and then again in 1988. Chinese economists attribute excess demand to the overexpansion of both consumption and investment, although some tend to stress the expansion of consumer demand (Li and Xia 1986:90-111).⁹ For the purposes of analysing the emergence of excess demand on the consumer goods market it is appropriate to limit the discussion to factors that expanded consumers' monetary social purchasing power. The most important components of this are wages, bonuses and agricultural procurements. Further, less important, changes also contributed to the situation of *PPI*. The introduction of wage supplements when retail prices were increased led to further growth in purchasing power as a result of price increases, which were themselves the result of policy reactions to earlier imbalances. A cycle of imbalance, retail price increases and further increases in purchasing power was thus established. In addition, the policy of increasing interest rates on savings deposits, and then bond sales and forced allocation of bonds, provided

⁹The English version of this paper (Xia and Li 1987) contains very misleading translations on pp.95-6.

financial assets to the household sector for the holding of which they would receive future interest payments. This created another channel through which newly created purchasing power would flow from the state sector to the population. All these changes contributed to the situation where nominal purchasing power continued to grow more rapidly than real output and real retail supplies throughout the 1980s.

Table 11 Results of simple regressions on *PPI*, 1978-1988

| | (dP/P)% | (dCURR/CURR)% | Savings deposits plus cash in hand of residents | Budget |
|----------------|---------------------|---------------------|---|----------------------|
| slope | 0.5093 | 1.7823 | 3.6115 | -0.3929 |
| t statistic | 2.3126 ^a | 4.5648 ^b | 2.0894 ^a | -1.4234 ^c |
| R ² | 0.3727 | 0.6984 | 0.3266 | 0.1837 |
| DW | 1.1128 | 1.7050 | 0.5055 | 1.5536 |
| n | 11 | 11 | 11 | 11 |

^aSignificant at the 5 per cent level.

^bSignificant at the 1 per cent level.

^cSignificant at the 10 per cent level (all one-tail tests).

The regression results for the period 1953-88 using crude annual data for a long period of time show that there is a clear response to *PPIs*. Positive *PPI* is associated with increases in the general retail price level on a quantitative basis and with the annual rate of growth of currency in circulation. Both of these consequences are the result of the nature of planners' responses to emerging positive imbalances. Although they can and do make other policy reactions such as increasing imports of consumer goods and increasing interest rates on private savings deposits, they also increase list prices which increases the general retail price level. In addition, positive *PPIs* also cause increases in free market prices. Table 11 shows the results of simple linear regressions of four variables on *PPI* for the period 1978-88.

If we treat them as linear correlations then the relative t-statistics can be taken as indicators of whether there is a significant nonzero relationship between these variables and *PPI*. Our discussion so far has indicated that annual price increases, currency growth and narrow monetary growth should be positive functions of *PPI* and the government's budget should be a negative function. A simple one-tail test for no relationship of the kind expected (i.e. H_0 : slope = 0, H_A : slope > 0 for first three variables and < 0 for the budget) shows that the annual rate of growth of currency is a significant positive function of *PPI*, (1 per cent level) as is the rate of annual retail price increases (5 per cent level). The annual absolute

increases in savings deposits plus cash in hands of residents are also positively associated with *PPI* (5 per cent level) whereas the budget is negatively correlated at a 10 per cent significance level.

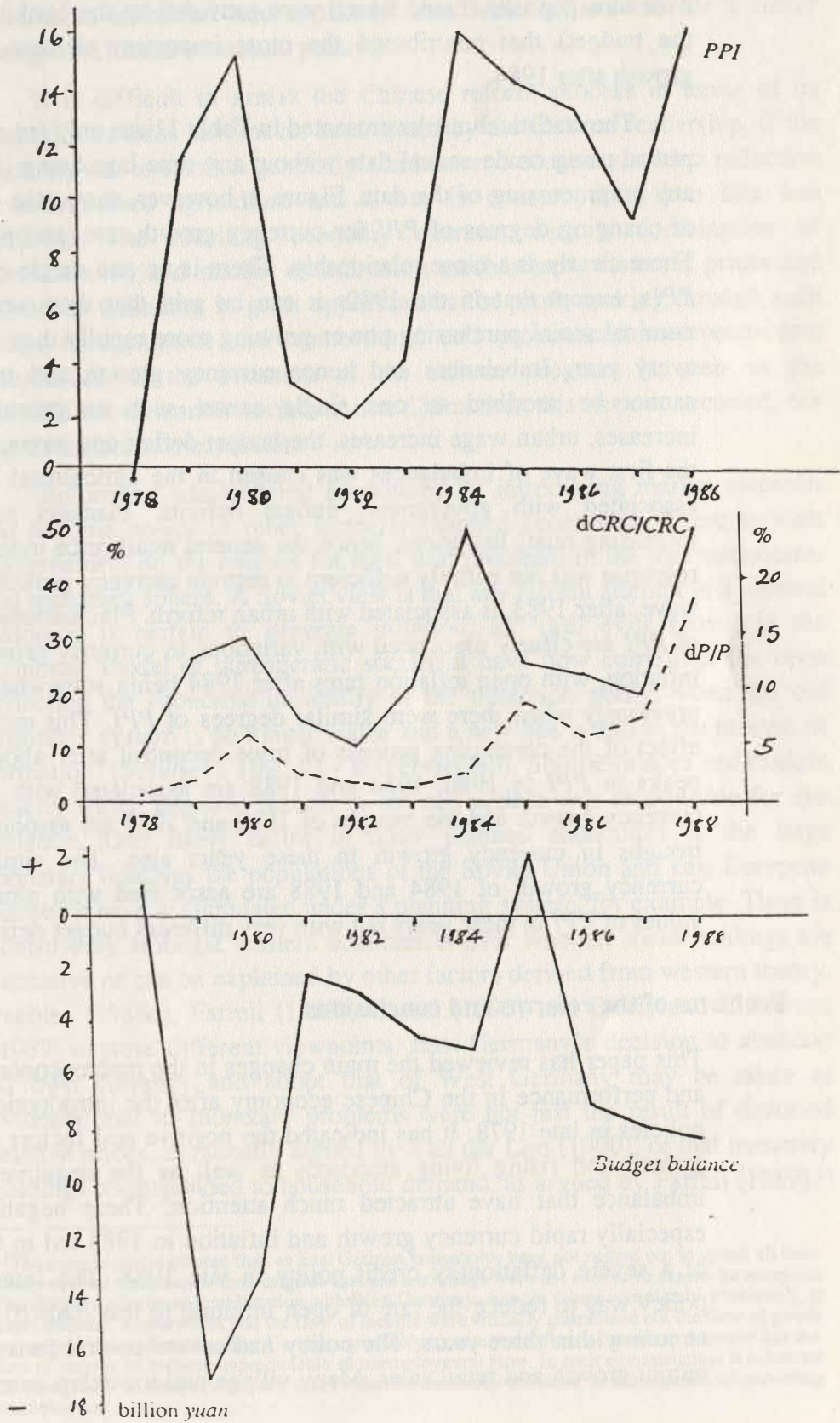
These are very crude statistical summaries of the relationships that can be seen in Figure 2 for the period 1978-88. The evidence in graphical form shows that the series do move together in the way expected. The argument is that causation goes from the top section, *PPI*, to both currency growth and price increases and to the budget deficit. Figure 2 shows quite clearly the association between currency growth rates, open inflation and *PPI*. Early sharp increases in *PPI* associated with agricultural procurement reform over the period 1978-80 are reflected in increases in currency growth rates and open inflation which also peaked in 1980.¹⁰ Thereafter, the reduction in *PPI* until 1982 is associated with a fall in currency growth rates and open inflation. As *PPI* increased over the period 1982-84 both currency growth rates and open inflation increased with the former also peaking in 1984 and the rate of open inflation peaking in 1985. This second wave of *PPI* is associated with urban reform, the introduction of bonuses for workers, and the establishment of the specialized banks without their having any really effective tools of monetary control. As *PPI* increased from 1987 to 1988 so did both currency growth rates and open inflation. An inverse relationship between *PPI* and the budget and between the budget balance and both currency growth and inflation would be expected. Up until 1983 this is clear. The marked increases in *PPI* up until 1980 are associated with a huge budget deficit in 1979, and one only slightly lower in 1980 and increasing rates of currency growth. As *PPI* fell until 1982 budget deficits were less but were increasing over the period 1982-84 as *PPI* began to increase again. As *PPI* fell after 1980 currency growth rates fell and the budget deficit was smaller. The factors that caused large *PPI* in the early 1980s were the agricultural procurement reforms and these would show up as budget deficits as the government had to subsidise grain procurement agencies that were paying higher procurement prices than retail prices.

As Table C-1 shows, budget deficits were important contributors to currency growth in 1979. After about 1983 the relationship between the budget deficit and currency growth is less clear. The relatively moderate budget deficit in 1984 and surplus in 1985 were associated with very rapid currency growth in 1984 and 1985 compared with the early 1980s when there were larger deficits and less rapid currency growth. As the budget deficit widened in 1986 and after, it never reached the levels of those of 1979 and 1980 yet currency growth rates were as high as, and in 1988

¹⁰For the period 1954-83 Feltenstein and Farhadian (1987) present econometric results showing that increases in agricultural procurement payments had a greater effect on monetary growth than wage payments.

Figure 2

PPI, monetary growth, open inflation and the budget balance 1978-88



substantially higher than, in 1979 and 1980. This is because the budget played a less important role in monetary expansion, as shown in Appendix C. It was the urban sector, in the form of the excess of loans to enterprises over new deposits (funds which were provided by the banking system not the budget) that contributed the most important element of monetary growth after 1984.

The statistical results presented in Table 11 are only for an eleven year period using crude annual data without any time lags being introduced nor any preprocessing of the data. Figure 2, however, shows the consequences of changing degrees of *PPI* for currency growth rates and open inflation. There clearly is a close relationship. There is no one single cause of these *PPIs*, except that in the 1980s it can be said that they were caused by nominal social purchasing power growing more rapidly than real output in every year. Imbalances and hence currency growth and open inflation cannot be ascribed to one single cause, such as procurement price increases, urban wage increases, the budget deficit and so on. In the 1980s the first wave of imbalances was caused in the agricultural sector and is associated with government budget deficits. Planners responded by increasing retail list prices, hence the general retail price index rose. Their response was not entirely sufficient to restrain currency growth. The second wave, after 1983, is associated with urban reform. Fluctuations in the extent of *PPI* are clearly associated with variations in currency growth and open inflation, with open inflation rates after 1984 being somewhat higher than previously when there were similar degrees of *PPI*. This must reflect the effect of the continuing process of price decontrol after about 1984. The peaks in *PPI* in 1980, 1984 and 1988 are associated with the peaks in currency growth and the troughs of 1982 and 1987 are associated with the troughs in currency growth in these years also. The similar rates of currency growth of 1984 and 1988 are associated with almost identical values of *PPI* in these years but with very different budget deficits.

Problems of the reforms and conclusions

This paper has reviewed the main changes in the macroeconomic structure and performance in the Chinese economy after the introduction of reform policies in late 1978. It has indicated the positive real factors of economic growth and rising living standards as well as the negative features of imbalance that have attracted much attention. These negative features, especially rapid currency growth and inflation in 1988 led to the adoption of a severe deflationary credit policy in late 1988. The intention of the policy was to reduce the rate of open inflation to less than 10 per cent per annum within three years. The policy had severe contractionary effects on output growth and retail sales. Many village and township enterprises were

closed down as part of the policy and this produced a short period during which, for the first time since the reform policy was adopted, industrial output and retail sales fell on a monthly basis. This indicates that the imbalances identified and explained here were responsible for a major change in Chinese economic policy.

It is difficult to assess the Chinese reform process in terms of its intentions as these have never been stated by the Chinese leadership. If the intention was to retain a generally administered economy, with a reduction in collectivized agriculture and a rise in consumption, then this was achieved. The resulting economy operates with a combination of administrative and market coordinating mechanisms, distorted prices and incentives (resulting in great opportunities for profit making through such things as corruption and connections) and pronounced macroeconomic imbalances. If the intention of the reform program is seen as the introduction of market socialism into China then this has not occurred, nor has China become capitalist.

Reforming administered economies by introducing market elements has become policy in other formerly planned economies. There is wide disagreement on the reasons for their past problems in the macroeconomic and monetary sphere. A Soviet view is that any reform attempt in a planned economy is certain to generate inflation, as '(a)ll evils rooted in the economic model of bureaucratic socialism have now come into the open reflecting the economic instability of the transition period when the old economic system is no longer viable and a new one is still in the process of formation' (Solntseva 1990:91 - text corrected). Solntseva does not explain exactly which negative feature in the old system was responsible for the inflation. One likely factor in other planned economies is the large monetary holdings the populations of the Soviet Union and east European countries have accumulated under a planning system, for example. There is controversy amongst western economists over whether these holdings are excessive or can be explained by other factors derived from western theory. Peebles (1986c), Farrell (1989), Cassel (1990) and Davis and Charemza (1989) express different viewpoints. East Germany's decision to abandon its own currency and adopt that of West Germany may be taken as evidence that its monetary problems were not just the result of distorted relative prices, as recently argued by Van der Lijn (1990), or that monetary holdings corresponded to household demand, as argued by Farrell (1989).¹¹

¹¹The more recent argument that, as East German households have not rushed out to spend all their newly acquired west marks, their original east mark holdings were not excessive cannot be accepted. The situation of economic unification with West Germany changes things completely. Previously, in East Germany, employment and the flow of income were virtually guaranteed but the flow of goods was not. Under unification, East Germans are likely to expect the flow of goods to improve but the flow of income to become unpredictable as unemployment rises. In such circumstances it is natural for households to retain these new, more effective monetary balances, in anticipation of becoming unemployed.

The supporters of the repressed inflation hypothesis, a phenomenon which is said to produce a 'monetary overhang', would not be surprised to see widespread overall administered increases in the retail price level during economic reform in such economies as the government tries to reduce the excessive value of nominal balances to an acceptable real value, without their having to adopt a confiscatory monetary reform.

This author does not think that China's inflation during the 1980s resulted from there being excessive monetary balances on the eve of reform. Generally, they were minimal and within planners' acceptable levels and China was a very undermonetized economy in 1978. The problems have arisen during the reform process itself as there have been no reforms capable of restraining the growth of aggregate nominal consumer demand (Bowles and White 1989) and planners have had to take traditional reactive policies to the resulting imbalances. The banking system is not independent. The industrial and household sectors are subsidized and state firms are generally allowed to borrow whatever they like. Unprofitable firms are not closed down. Economic levers for controlling aggregate demand do not exist. The rate of interest has been used to a minimum extent to discourage enterprise borrowing for investment, and to a greater extent to encourage households to hold savings deposits. When the credit squeeze was imposed it did not use economic levers, although savings deposit interest rates were increased and some deposits were indexed. Quantitative limits on bank lending were used to restrain loans to enterprises and hence their ability to pay wages and bonuses. By 1989 enterprises were forcing bonds onto their workers in place of wages and bonuses and paying only about 70 per cent of wages in cash (Lian 1989, 1990). This is a crude, nonmarket, administrative way to enforce a deflationary credit policy. It shows that Chinese economic reform had not fully adopted market-type economic levers for macroeconomic control.

Appendix A

Chronology of major events, December 1978-89¹²

1978

December: Third Plenum of the Eleventh CPC Central Committee. Socialist modernization replaces class struggle as the Party's slogan.

1979

April: interest rates increased.

June: Party adopts as policy 'readjusting, restructuring, consolidating and improving' the national economy (*tiaozheng, gaige, zhengdun, tigao*) - the 'eight character policy'.

From summer harvest time: agricultural procurement prices for eighteen major products increased 25 per cent on average (decided in March). Bonus price for above-quota sales increased for main crops. Rural and urban free markets re-opened for private trade.

November 1st: State Council decision to increase state retail prices of pork, eggs and six other non-staple foods. Other state-supplied foodstuffs subsidized, a compensatory monthly subsidy of 5 yuan for all workers was given.

1980

Treasury Bonds issued for the first time since 1958, sold to units, not individuals.

April: interest rates increased; guidelines on controlling price increases issued.

December 7th: strict policy freezing prices implemented.

1981 (1981-85 is China's Sixth Five year plan period).

Treasury bonds sold, including sales to individuals.

January: another attempt at price control by means of a State Council directive.

July 3rd: Chinese monetary data published for the first time.

1982

Treasury bonds sold to individuals and units.

Household agricultural responsibility system adopted virtually throughout the country.

New constitution protects earnings of private businesses.

April: interest rates increased, new eight-year time deposit introduced.

1983

Treasury Bonds sold to individuals and units.

Industrial reform sees the substitution of tax payments for profit remittances (*li gai shui*).

¹²Main sources used were: *Beijing Review, Issues and Studies, The China Business Review, The China Quarterly, Lishide Xiongbian*, (Liu and Wu 1986:394-447).

1984

Treasury bonds sold to individuals and units.

January 1st: People's Bank of China becomes the central bank, specialized banks take on certain of its functions.

By the end of the year: price policy becomes one of freeing prices rather than adjusting them (*you 'yi tiao wei zhu' zhuanbian wei 'yi fang wei zhu'*).

October 20th: Third Plenary Session of the Twelfth CPC Central Committee adopts the 'Decision of the Central Committee of the Communist Party of China on Reform of the Economic Structure' – the policy for urban reform.

More enterprises pay taxes instead of remitting profits to the state budget.

'Double-track' (*shuang gui*), i.e. dual (or two-tier) pricing policy in industry spreads widely.

Last quarter of the year : wage and credit explosion.

Record grain harvest.

1985

Treasury Bonds sold to individuals and units.

From beginning of the year the government does not guarantee to buy all agricultural produce offered to it.

February 1st: pork rationing re-introduced in 21 cities

Dual pricing policy allowed to spread and officially recognized.

April: interest rates increased, credit squeeze.

May: price subsidies given to urban residents.

August: interest rates increased again.

Wide-scale imports of consumer goods, trade deficit is nearly twelve times the previous year's level.

1986 (1986-90 is China's Seventh Five year plan period).

Treasury bonds sold to individuals and units.

January: interbank loans at negotiated interest rates legalized.

March 10th: China joins the Asian Development Bank.

July 5th: the *Renminbi* is devalued by 15.8 per cent against a basket of foreign currencies. Foreign currency 'swap centres' start to spread.

July 1st: repayments due on 1981's bond issue begin.

August: 'Stock market' established in Shenyang.

August-September: retail prices of certain industrial goods decontrolled.

September 3rd: first bankruptcy announced (of a collectively-owned enterprises).

October 1st: new labour contract system comes into operation, allowing workers to be dismissed, unemployment insurance introduced.

'Stock market' established in Shanghai.

1987

Treasury Bonds sold to individuals and units.

September: credit squeeze, restrictive budgetary policy, the 'double tightening'.

November: rural credit squeeze.

1988

Treasury Bonds sold to individuals and units.

April-July: price liberalization. May 15th: retail prices of pork, eggs, vegetables and sugar at state shops increased, (c. 30-60 per cent in Peking, 60 per cent in Shanghai). Subsidy of 10 yuan per month per worker given. July: cigarette and spirits prices floated.

August: panic buying, bank runs.

September 1st: interest rates increased, indexation of some savings deposits introduced.

September-October: severe credit squeeze, fixed investment projects cut, price reform postponed.

December 3rd: price controls re-imposed on food and other items in Peking.

Forced allocation of bonds to individuals.

1989

Treasury Bonds sold to individuals and units.

February 1st: interest rates increased.

March: new bank loans granted to state basic industrial enterprises.

May-June: student protest demonstrations. Martial law declared in Peking on 20th May.

June: Beijing Massacre: fighting in other cities.

August: anti-official corruption campaign intensified and publicized - some large companies fined, others closed down.

November: Fifth Plenary session of the Thirteenth CPC Central Committee endorses 1988s credit squeeze plans to reduce the retail inflation rate to below 10 per cent per annum within three years.

Enterprises are only paying 70 per cent of wages due, the rest paid in government bonds, on the basis of a central government decision. Reports of some enterprises paying workers with unsold consumer goods.

December 16th: *Renminbi* devalued 21.2 per cent.

Appendix B

The simple economics of the two-tier pricing system

This Appendix shows in simple graphical form the working of the two-track marketing system and the resulting two-tier pricing system. It shows the demand conditions facing an individual firm and how an increase in demand will lead it to increased output under certain conditions. These conditions are not universally applied in China.

In Figure B-1 the left-hand diagram shows industry conditions and Q_g is the fixed government determined quota and P_g is the price the government sets for this amount. DD_1 is the free market demand for this commodity from non-government sources and so DD_2 , their horizontal summation, is the total demand. SS is the industry supply curve which will be the horizontal summation of all the firms' marginal cost curves. P_{m1} is the resulting market price and Q_0 the total quantity produced. Of this quantity Q_g is delivered to the government at price P_g . The government is free to dispose of this by planned allocation at fixed prices to other enterprises, to export it or to add to its stocks. The quantity $AB (= Q_g Q_0)$ is sold on the market at price P_{m1} . The individual firm, shown in the right-hand diagram, faces two distinct marginal revenue curves, one at the price P_g and the other at the market price P_{m1} . This latter price is the per unit price of extra output for the firm, that is marginal revenue, if it can sell all of any increase in output on the market. Any increase in sales above q_g at price P_{m1} will increase average revenue along $AR(P_{m1})$. An increase in demand shifts the total demand curve to the right, to DD_3 for example, increasing price to P_{m2} , increasing the marginal revenue facing each firm (to $MR(P_{m2})$) and thus leading to an increase in output. The firm's average revenue will rise along the curve $AR(P_{m2})$ as it increases its sales even at the constant market price as a greater proportion is being sold along the market track at the higher price. The scheme, therefore, reproduces the demand curve facing an individual agricultural producer under the bonus price scheme (Peebles 1985).

This version of the two track scheme produces elasticity in the firm's response to market demand as the marginal price rises with demand. If firms are allowed to retain part of the extra profit involved then this provides the incentive to respond to the higher price.

An increase in the government's quota on all firms will shift the total demand curve to the right. Firms respond by increasing output but output increases by less than the increase in the increased quota. Price rises thus induce free market buyers to reduce demand. The government thus obtains its extra quota partly through extra production and partly through reduced free market demand, the relative proportions being determined by the elasticity of the supply curve, of course. Costs rise as output rises and the consequent market price rise squeezes out the private consumer.

Figure B-1(b) shows how an increased quota levied on one small firm in the industry is the same as a lump-sum tax. Assume there is no change in the market price the single firm faces. The government increases its quota from q_1 to q_2 . The market price remains the same so the single firm's optimum output remains at q_0 . Average revenue per unit output falls to q_0B as a result of the higher quota because a higher proportion of the fixed output is being delivered at the quota price P_q which is lower than the market price P_m . The firm's revenue falls as it now delivers the extra quota amount q_1q_2 to the government at the quota price P_g instead of its being able to sell it at the higher market price P_m .

The above depiction of the two-track price system could be called the 'optimistic interpretation'. It is based on the assumption that the quota is a fixed amount. It also assumes managers are willing and able to pursue total profit and are not concerned with other maximands, such as total revenue or average wage. The firm becomes responsive to market demand and sets output where marginal cost equals marginal revenue and has an incentive to reduce costs. There is no guarantee that all applications of the two-track price system have the institutional form described above. A survey of 429 enterprises for the first half of 1985 showed that most of them followed a 'proportional two-tier price system' (*bili shuangguizhi*) under which the proportions of marketable and planned sales for each year were set on the basis of the proportions achieved in the base year (Diao 1986:52, 1987a:41). This completely changes the analysis of the response of an enterprise to an increase in market price. This is shown in Figure B-3. When market price rises the marginal revenue to the firm is not the higher market price P_{m2} . The firm must allocate a fixed proportion of any increased output to the state at price P_g and only then can sell the rest at price P_{m2} . The marginal revenue is thus a weighted average of P_g and P_{m2} ($MR = aP_g + (1-a)P_{m2}$, where a is the fixed proportion of output that must be delivered to the government). Thus marginal revenue may be less than P_{m2} which is equal to the current marginal cost of output. Although there has been an increase in demand and market price there will be no increase in output. For example, as Figure B-1(c) shows, if the market price rises by a third to 4 yuan per unit and the firm must deliver 40 per cent of its extra output to the government at 1 yuan then the new marginal revenue is only 2.8 yuan, less than the previous market price and the current marginal revenue and marginal cost, even though market price is four times the quota price and 60 per cent of extra output is sold on the market. The profit maximizing firm has an incentive to reduce output as $MC > MR$, even at the higher market price P_{m2} . An implication of this is that in industries where the two-track pricing policy takes the fixed proportions from firms they will be less likely to increase output even at higher market prices than firms in industries operating under a fixed quota system. This could be tested. This author has never seen clear information on which industries in China practice which system. In fact, Wu and Zhao (1987:312) say that there are no accurate data even on the relative shares of planned and marketed output in total output. We do know that for some firms operating some form of the two-track system output did fall when there was self marketing (Reynolds 1987:6,

1987a:38) (whose data in Table 2.3 are wrong).¹³ This is interpreted as due to the self marketing proportion being below a certain threshold. No investigation is made of the proposition that it might be due to using a fixed proportion two-track system.

¹³Diao (1987a:36) contains incorrect data in Table 2.3. The data of what must be the same enterprises in the translation of the summary report on p.6 of Reynolds (1987) contain different mistakes. See China Economic System Reform Research Institute Comprehensive Survey Group (1986:17,49) for the two correct original versions of these statistics.

from the combined state sector minus household purchases of retail supplies from the state. If the narrowest measure of the money supply, currency, is taken then its increase equals total money receipts by households minus their purchase of retail supplies minus the increase in household saving deposits. These last two terms are referred to in Chinese monetary theory as 'commodity *huilong*' and 'credit *huilong*' respectively. *Huilong* means 'returning to the banks' (literally 'to the basket'). These return flows from the household sector to the government and its banking system have a negative impact on monetary growth. The monetary flows from the state sector to the household sector and back again are monitored by the banking system's 'cash plan'.

Now, the above explanation of the change in the narrow money supply must always be true. Its relevance is that we now have complete *ex post* time series data of the household sector's total monetary receipts and expenditures, the difference between which in any year must equal the household sector's increased monetary holdings (*Statistical Yearbook of China 1987:480-2, 1988, 608-11; Zhongguo Tongji Nianjian 1989:596-9*). These data allow us to explain, in an accounting sense, the annual changes in residents' holdings of cash in hand plus their savings deposits.

From equation 4,

$$\begin{aligned} \text{CURR} + S_H &= (B_E - D_E) + (B_G - D_G) \text{ or} \\ \text{CURR} &= (B_E - D_E) + (B_G - D_G) - S_H \quad (6) \end{aligned}$$

The increase in the narrow money supply equals the difference between enterprise bank borrowing in any period and its new deposits plus the difference between the government's bank borrowing and its new deposits. The right-hand side is thus the sum of enterprises' borrowing requirement and the government borrowing requirement. As one Chinese economist puts it, loans minus cash equals deposits, Li (1986/7:6) which implies loans minus deposits equals cash, here referring to changes in these variables.

Both equations 5 and 6 must always be true. Equation 5 looks at changes in the narrow money supply from the point of view of the actual issue of cash from the state sector and its subsequent return. Equation 6 looks at the borrowing requirements of enterprises and government, which must be met by the creation of new currency. The message of equation 5 for controlling the money supply is that W_G and W_E must be controlled in the light of a likely values of C_H . As has been often pointed out (Hsiao 1971, Yeh 1985), these variables are not under the control of the People's Bank of China and it must react to the monetary consequences of changes in these variables due to decisions taken by other branches of the government.

Equation 6 can be used to account for changes in the narrow money supply using the balance sheet of the combined banking system. This shows total deposits (referred as 'sources of funds' - *zijin lai yuan*) and loans (referred as 'uses of

funds' – *zijin yunyong*) outstanding at the end of each year (*Fenjinde Sishinian 1949-1989*:429-32). Currency in circulation plus savings deposits are items on the liabilities side of the balance sheet, that is as 'deposits or sources of funds'. It must be true arithmetically that the annual increase in loans (use of funds) minus the increases in deposits net of the increment of currency and saving deposits must equal the increase in the narrow measures of the money supply. This is basically what equation 6 is saying. Various groupings of loans and deposits according to sector can be made. Table C-1 accounts for changes in currency in circulation for the period 1980-88 on the basis of equation 6. There are obviously more items in the banking system's balance sheet than are covered in equation 6.

Table C-1 Annual increase in currency in circulation 1980-88 (billion yuan)

| | 1 CURR | 2 (L - D) | 3 G | 4 R | 5 IMO | 6 F | 7 O | 8 B |
|------|--------------------|--------------|--------|--------|----------|--------|--------|--------|
| 1979 | 5.57 | -5.37 | 12.89 | 0.63 | 0 | 4.92 | -2.34 | - |
| 1980 | 7.85 | 6.84 | 6.42 | -2.90 | 0.42 | 2.58 | 0.35 | - |
| 1981 | 5.01 | 0.88 | -3.29 | 9.78 | -1.26 | 2.58 | -1.48 | - |
| 1982 | 4.28 | -4.05 | 1.84 | 12.81 | -0.11 | 5.30 | 0.91 | - |
| 1983 | 9.07 | 1.48 | 0.52 | 4.84 | 1.80 | 4.62 | -5.05 | - |
| 1984 | 26.23 | 36.72 | 7.49 | -0.25 | 0.36 | 5.54 | 12.55 | - |
| 1985 | 19.57 | 59.72 | -12.44 | -17.05 | 0.67 | 8.03 | 2.48 | 0.82 |
| 1986 | 23.06 | 53.85 | 15.19 | -5.50 | -3.19 | 9.54 | 25.89 | 1.86 |
| 1987 | 23.61 | 27.49 | 14.94 | 9.40 | 1.87 | 12.22 | 14.69 | 3.18 |
| 1988 | 67.95 ^a | 57.41 | 9.76 | 2.63 | 3.29 | 12.29 | -3.25 | 1.70 |

Note: The annual increases in CURR equal 1 + 2 + 3 + 4 - 5 - 6 - 7 where:

1. (L - D) represents new loans minus new deposits;
2. G is government borrowing net of any change in government deposits;
3. R is the increase in gold and foreign currency reserves;
4. IMO is the increase in China's net holdings at international monetary organizations;
5. F is the banking systems own funds;
6. O is the category 'Other'; and
7. B is the sale of the banks' own bonds to the public.

^a Columns 1 to 7 only account for an increase of 62.35 billion yuan. This is because the items given in this source for the use of funds in 1988 on p. 431 only add to 1,148.53 billion whereas the total given is 1,154.14. This accounts for the 5.6 billion yuan difference between the identified change in CURR and the actual increase given there.

Sources: Calculated from data in *Fenjinde Sishinian 1949-1989*, (Forty Years of Struggle and Progress: 1949-1989) China Statistics Publishing House, Beijing, 1989:429-31.

Item 1 obviously exerts an expansionary effect on currency. New loans not offset by new deposits must show up as extra currency in circulation. Government borrowing plus the change in government deposits will have an expansionary effect if the government borrows and runs down its deposits. If the banking system increases its gold and foreign currency reserves this must have happened as they obtained them from the population in return for currency. Hence an increase in such reserves will tend to expand domestic currency and vice versa. The same argument applies to item 4. Item 5, the banks own funds, exerts a negative impact on currency in circulation if it is positive. This indicates the banks are making an

operating surplus which must have been obtained from the population, hence restraining currency growth. Item 6, is the unidentified item 'other'. As it is listed as a source of funds item in the banks accounts, increase will have a restraining effect on currency growth. Item 7, the banks' sale of their own bonds, obviously restrains currency growth as they are purchased by the population for currency. Such sales were only permitted after 1984 when the specialized banks were established.

References

- Ash, R. F., 1988. 'The evolution of agricultural policy', *The China Quarterly*:116:529-55.
- Asian Development Bank, 1990. *Asian Development Outlook 1990*, Manila.
- Bowles, P and White, G., 1989. 'Contradictions in China's financial reforms: the relationship between banks and enterprises', *Cambridge Journal of Economics*, 13(4):481-95.
- Bu Xinhua, 1989. 'Tantan woguo fasheng tonghuo pengzhangde yuanyin' (A discussion of the reasons for inflation in our country), *Caijing Yanjiu* (Financial Research), No. 8.
- Byrd, W., 1987. 'The impact of the two-tier plan/market system in Chinese industry', *Journal of Comparative Economics*, 11(3):295-308.
- Cassel, D., 1990. 'Phenomenon and effects of inflation in centrally planned socialist economies', *Comparative Economic Studies*, XXXII(1):1-41.
- Chen, E. K. Y., 1979. *Hyper-growth in Asian Economies: a Comparative Study of Hong Kong, Japan, Korea, Singapore and Taiwan*, Macmillan, London.
- Chen Chien-Hsun, 1989. 'Monetary aggregates and macroeconomic performance in mainland China', *Journal of Comparative Economics*, 13(2):314-24.
- Chen Nai-ruenn and Chi-ming Hou, 1986. 'China's inflation, 1979-1983: measurement and analysis', *Economic Development and Cultural Change*, 34(4):811-35.
- Chen Te-sheng, 1990. 'The interaction between economic and political reform in mainland China, 1978-89', *Issues and Studies*, 26(2):13-34.
- Cheng, Hang-Sheng, 1981. 'Money and credit in China', *Federal Reserve Bank of San Francisco Economic Review*, Fall:19-36.
- China Economic System Reform Research Institute, 1987. *Gaige: Women Mianlinde Wenti yu Silu* (Reform: the Issues and Thinking Facing Us), Economic Management Publishing House, Beijing.
- China Economic System Reform Research Institute Comprehensive Survey Group, 1986. *Gaige: Women Mianlinde Tiaozhan yu Xuanze* (Reform: the Challenges and Choices Facing Us) Beijing, China Economics Publishing House.
- Chow, G. C., 1985. *The Chinese Economy*, Harper and Row, New York.
- 1987. 'Money and price level determination in the People's Republic of China', *Journal of Comparative Economics*, 11(3):319-33.
- Davis, C. and Charemza, W., (eds), 1989. *Models of Disequilibrium and Shortage in Centrally Planned Economies*, Chapman and Hall, London.
- Diao Xinshen, 1986. 'Jiage: Shuangguizhide zuoyong he jinyibu gaigede fangxiang' (Prices: the function of the two-track system and the further direction of reform), in Comprehensive Survey Group for Research on China's Economic System Reform: ch.1.
- 1987a. 'The role of the two-tier price system', in B.L. Reynolds (ed.), *Reform in China: Challenges and Choices*, M.E. Sharpe, Armonk, N.Y., 1987: ch.2.
- 1987b 'Zuzhi shichang: Jinyibu gaigede zhongxin huanjie (Da chengshi shucui chanxiao tizhi gaige fenxi)' (Organize the market: the central link

- in further reform (An analysis of the reform of the production and marketing system of vegetables in large cities)), in China Economic System Reform Research Institute, Gaige: Women Mianlinde Wenti yu Silu (Reform: the issues and thingking facing us), Economic Management Publishing House, Beijing:66-77.
- Farrell, J. P., 1989 'Financial "crisis" in the CPEs or "Vsyo normalno?"', *Comparative Economic Studies*, XXX1(4):1-9.
- Felstenstein, A and Farhadian, Z., 1987. 'Fiscal policy, monetary targets, and the price level in a centrally planned economy: an application to the case of China', *Journal of Money, Credit, and Banking*, 19(2):137-56.
- Fenjinde Sishi Nian 1949-1989* (Forty Years of Struggle and Progress 1949-1989), 1989. China Statistics Publishing House, Beijing.
- Gardner, H. Stephen, 1988. *Comparative Economic Systems*, Dryden Press, New York.
- Hishida, M., 1984. 'China's customs clearance statistics and General Administration of Customs', *China Newsletter*, No. 48:16-8.
- Hsiao, K. H. Y. Huang, 1971. *Money and Monetary Policy in Communist China*, Columbia University Press, New York and London.
- 1982. 'Money and banking in the People's Republic of China: Recent developments', *The China Quarterly*, 91:462-75.
- 1984. *Money and Banking in the Chinese Mainland*, Chung-hua Institution for Economic Research, Taipei.
- Hsu, J. C., 1989. *China's Foreign Trade Reforms: Impact on Growth and Stability*, Cambridge University Press, Cambridge.
- Huang Xu, 1988a. 'Woguo huobi gongqiu yu jiage shuiping jueiding' (The demand and supply of money and the determination of the price level in China), *Jingji Yanjiu*, (Economic Research), February, pp. 35-45.
- 1988b. 'Huobi gongqiu fenxi' (An Analysis of the supply and demand for money), in Zhang Fengbo (1988) (principal editor), *Zhongguo Hongguan Jingji Jiegou yu Zhengce* (China's Macroeconomy: Structure and Policy), China Finance and Economics Publishing House, Beijing, 1988: ch. 6.
- Jao, Y. C. and Leung C. K. (eds), 1986. *China's Special Economic Zones: Policies, Problems and Prospects*, Oxford University Press, Hong Kong.
- Jiang Jiajun, You Xianxun and Zhou Zhenhan (1989) *Zhonghua Renmin Gongheguo Jingjishi* (An Economic History of the People's Republic of China), Shanxi People's Publishing House, Xi'an.
- Komiya, R., 1989. 'Macroeconomic development of China: "Overheating" in 1984-1987 and problems for reform', *Journal of the Japanese and International Economies*, 3:64-121.
- Kueh, Y. Y. 1990. 'Growth imperatives, economic recentralization, and China's open-door policy', *Australian Journal of Chinese Affairs*, 24:93-119.
- Lardy, N. R., 1983. *Agriculture in China's Modern Economic Development*, Cambridge University Press, Cambridge.
- Lian Huawen, 1989. 'Zhongguo jingji da huapo' (The great crash of China's economy), *Jiushi Niandai* (The Nineties), 11:18-9.
- 1990. 'Da huapoxiade Zhongguo jingji' (China's economy during the great crash), *Jiushi Niandai* (The Nineties), 1:49-50.

- Li Chengrui, 1986/7. 'An important question in macroeconomic management', *Chinese Economic Studies*, XX(2):3-12.
- Li Jun and Xia Xiaoxun, 1986. 'Xiaofei pengzhang: gaige yu fazhan mianlinde yanjun tiaozhan' (Consumption expansion: a serious challenge to reform and development), in China Economic System Reform Research Institute Comprehensive Survey Group, *Gaige: Women Mianlinde Tiaozhan yu Xuanze* (Reform: The Challenges and Choices Facing Us), China Economics Publishing House, Beijing, 1986:90-111.
- Li Ping, 1990. 'China's Inflation - its causes and plans for control', *Beijing Review*, No. 8 (19th-25th February):24-8.
- Lishide Xiongbian: Zhongguo Jingji 1949-1988 Nian Sumiao: A Sketch of Chinese Economy*, 1989, China Economic Publishing House, Beijing.
- Liu Hongru, 1980. *Shehuizhuyi Huobi yu Yinhang Wenti* (Socialist Money and Banking), China Finance and Economics Publishing House, Beijing.
- Liu Suinian and Wu Qungan, 1986. *China's Socialist Economy: an Outline History (1949-1984)*, Beijing Review, Beijing.
- Lyons, T. P. and Wang Yan, 1988. *Planning and Finance in China's Economic Reforms*, Cornell University East Asia Papers, No. 46.
- Ma Hong (principal editor), 1982. *Xiandai Zhongguo Jingji Shidian* (The Contemporary Chinese Economy: a Compendium), China Social Sciences Publishing House, Beijing.
- Macroeconomic Research Office, Economic Structural Reform Research Institute of China, 1988. 'An analysis of the economic situation in 1986', *China Economic Studies*, XXI (3):3-23.
- Naughton, B. J., 1987. 'Macroeconomic policy and response in the Chinese economy: the impact of the reform process', *Journal of Comparative Economics*, 11(3):334-53; also in B.L. Reynolds (ed.), *Chinese Economic Reform: How Far, How Fast?*, Academic Press, San Diego, Ca., 1988:44-63.
- 1989. 'Inflation and economic reform in China', *Current History*, September:269-70,289-91.
- Peebles, G. , 1983. 'Inflation, money and banking in China: in support of the purchasing power approach', *ACES Bulletin*, XXV(2):81-103.
- 1984. 'Inflation in the People's Republic of China, 1950-82', *The Three Banks Review*, 142:37-57.
- 1985. 'Soviet-style bonuses and their effect on prices in China: a search for perversity and its consequences', *Hong Kong Economic Papers*, 16:40-53.
- 1986a. 'Aggregate retail price changes in socialist countries: identification, theory and evidence for China and the Soviet Union', *Soviet Studies*, XXXVIII(4):477-507.
- 1986b. 'Review of Perry and Wong (1985)', *Journal of Economic Literature*, XXIV(4):1838-9.
- 1986c. 'On the importance of establishing the inverse relationship between open inflation and household liquidity growth under socialism: a critique of Jan Winiecki's savings deposit data', *Comparative Economic Studies*, XXVIII(4):85-91.
- 1989. 'Aggregate retail price changes in China: a reply to Wang Tong-eng', *Soviet Studies*, XL1(1):149-53.

- Perkins, D. H., 1988. 'Reforming China's economic system', *Journal of Economic Literature*, XXVI:601-45.
- Perry, E. J. and Wong, C., (eds), 1985. *The Political Economy of Reform in Post-Mao China*, The Council on East Asian Studies/Harvard University, Cambridge, Mass. and London.
- Reynolds, B. L. (ed.), 1987. *Reform in China: Challenges and Choices*, M. E. Sharpe, Armonk, N.Y.
- (ed.), 1988. *Chinese Economic Reform: How Far, How Fast?*, Academic Press, San Diego, Ca.
- Shan Weijin, 1989 'Reforms of China's foreign trade system: experiences and prospects' *China Economic Review*, 1(1):33-55.
- Shi Lei, 1982. 'Jiandingde zhixing wending huobi fangzhen' (Resolutely implement a policy of currency stability), *Zhongguo Jinrong* (Chinese Finance), 2:2-4.
- Smith, A. H., 1983. *The Planned Economies of Eastern Europe*, Croom Helm, London.
- Solntseva, M., 1990. 'Can inflation be beaten?' , *Far Eastern Affairs*, 2:81-92.
- Statistical Yearbook of China 1986*, Hong Kong Economic Information and Agency.
- Statistical Yearbook of China 1987*, Hong Kong Economic Information and Agency.
- Tam On-kit, 1986. 'Reform of China's banking system', *World Economy*, 9(4):427-440.
- 1987. 'Development of China's financial system', *The Australian Journal of Chinese Affairs*, 17:95-113.
- Travers, S. Lee, 1984. 'Post-1978 Rural economic policy and peasant income in China', *The China Quarterly*, 98:241-59.
- Van der Lijn, N.J., 1990. 'Repressed inflation on the consumption goods market: Disequilibrium estimates for the German Democratic Republic, 1957-1985', *Journal of Comparative Economics*, 14(1):120-9.
- Wang Tong-eng, 1988. 'Aggregate price changes in China: a comment', *Soviet Studies*, XL(1):142-5.
- World Bank, 1989, *World Development Report 1989*, Oxford University Press for the World Bank, New York.
- Wu Jinglian and Zhao Renwei, 1987. 'The dual pricing system in China's industry', *Journal of Comparative Economics*, 11(3) 309-18, also in B.L. Reynolds (ed.), *Chinese Economic Reform: How Far, How Fast*, Academic Press, San Diego, 1988:19-28.
- Xia Xiaoxun and Li Jun, 1987. 'Consumption expansion: a grave challenge to reform and development', in B.L. Reynolds (ed.), *Reform in China: Challenges and Choices*, M.E. Sharpe, Armonk, N.Y., 1987: ch.6.
- Xue Muqiao, 1982. *Current Economic Problems in China*, Col., Westview Press, Boulder.
- Yeh Chang-mei, 1985. 'Mainland China's financial reforms: money and banking', *Issues and Studies*, 21(6):80-99.
- Zhang Fengbo (principal editor), 1988. *Zhongguo Hongguan Jingji Jiegou yu Zhengce* (China's Macroeconomy: Structure and Policy), China Finance and Economics Publishing House, Beijing.

- Zhao Dexin (principal editor), 1989. *Zhonghua Renmin Gongheguo Jingjishi 1967-1984* (An Economic History of the People's Republic of China 1967-1984), Henan People's Publishing House, Zhengzhou.
- Zhao Shuying, 1990. 'Economic readjustment: Springboard for future growth', *China Today*, XXXIX(5):24-7.
- Zhongguo Jingji Nianjian 1982: Almanac of the Chinese Economy* and *ibid.* 1983, 1984, 1985, 1986, 1987, 1988, Economic Management Publishing House, Beijing.
- Zhongguo Maoyi Wujia Tongji Ziliao 1952-1983* (Statistical Materials on Trade and Prices in China 1952-1983), China Statistics Publishing House, Beijing.
- Zhongguo Tongji Nianjian 1989*, China Statistics Publishing House, Beijing.
- Zhongguo Wujia Nianjian 1989* (China Prices Yearbook 1989), China Prices Publishing House, Beijing.

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Vol.2, Nos. 1 and 2, March and September 1988.
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