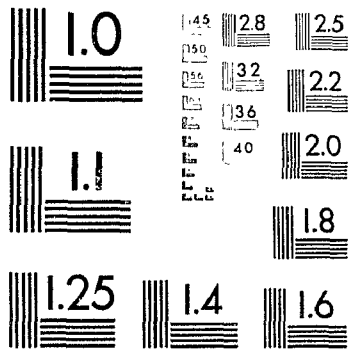




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INFLATIONARY PROCESS IN REFORMED SOCIALISM:

The Case of China

by

Liping Deng

submitted in partial fulfilment of the requirements
for the degree of Doctor of Philosophy

at

Dalhousie University
Halifax, Nova Scotia
June, 1994

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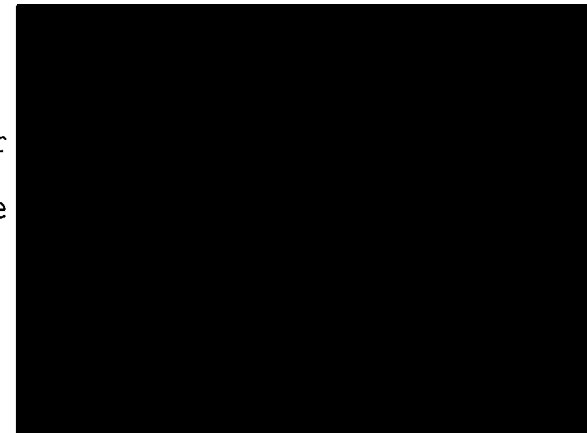
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ABSTRACT

History has recently witnessed the rapid spread of market-oriented economic reforms in the socialist countries, including China. One serious challenge these countries met during reform has been sustained excess demand and accelerated inflation. Why does inflation go hand in hand with this reform? What are the causes of excess demand and inflation?

By adopting an extended shortage approach, that is, a 'budget-softness-and-competing-interest' framework, this study addresses this issue by examining the Chinese experience from 1979 to 1988, with emphasis on the reform in the state sector. This study argues that the causes of excess demand lay primarily in a conflict over the distribution of resources among major agents in the state sector, namely state-owned enterprises, state-owned banks, the localities and the centre. During the interplay of these competing interests, continued soft budget constraints at the levels of enterprises, banks and the localities acted as a key mechanism to support these agents' claim over resources, thus causing strong inflationary pressures. When the centre were forced to use macro policies to accommodate these claims, inflation occurred. Inflation may not be a transitional phenomenon, but likely an inherent by-product of this reform within the framework of socialism.

The study consists of four parts. Part I (chapters 1 and 2) gives an overview of the reform and inflationary process. Part II (chapters 3 to 6) reviews three major approaches to understanding inflation (the monetarist, the disequilibrium, and the shortage approaches) and suggests that an extended shortage approach can be adopted as an analytical framework. Part III (chapters 7 to 9) applies this framework to China by examining the macro inflationary impacts of the reforms in the state-enterprise, the state-bank and the centre-locality relationships. Part IV (chapter 10) presents the conclusions and policy implications.

ABBREVIATIONS

AB	The Agricultural Bank
AD	Aggregate demand
AP	Price index of agricultural producer goods
AS	Aggregate supply
DE-1	Set 1 of dependent variables
DE-2	Set 2 of dependent variables
BC	The Bank of Communication
BoC	The Bank of China
C-B-G model	the Clower-Barro-Grossman model
CERRG	Chinese Enterprise Reform Research Group
CESRRI	Chinese Economic System Reform Research Institute
CETSDSC	Centre of Economic, Technical and Social Development of the State Council
CITIC	the China International Trust and Investment Company
CP	Price index of consumer goods
CPE	Centrally Planned Economy
CSICSC	China Statistical Information and Consultancy Service Centre
DW	the Durbin-Watson Statistic
EDL	Excess demand for loans
EIR	Excess investment rate

EM ₀	Excessive monetary growth in terms of M ₀
EM ₁	Excessive monetary growth in terms of M ₁
FP	Foodstuff price index
GLS	Growth rates of losses of state enterprises
GRP	General retail price index
GRT	Growth rates of retained profits of state enterprises
GTL	Growth rates of pre-tax loan repayment and budgetary refund of state enterprises
I	Fixed asset investment in the state sector
ICB	The Industrial and Commercial Bank
INDE-1	Set 1 of independent variables
INDE-2	Set 2 of independent variables
IP	Gross value of industrial production in the state sector
L	Loans to the state sector
LB	Local subsidies to the money-losing enterprises
LP	Real list (controlled) price index
LS	Losses of state enterprises
M	The quantity of the money
M ₀	Currency in circulation
M ₁	M ₀ plus savings deposits
MP	Free market price index

MPE	Market-ied Planned Economy
NI	National income
OLS	The Ordinary least-squares technique
P	The general price level
PB	The People's Bank
PCB	The People's Construction Bank
PPI	Purchasing Power Imbalances
PR	Profit rates of state enterprises
PRC	The People's Republic of China
Q	The volume of real output
RI	Real lending rates of the SBs
RNI	Growth rate of real national income
RP	Rural price index
RT	Retained profits of state enterprises
SB	The Specialized Bank
SME	Social monetary expenditure
SPP	Social purchasing power
TL	Pre-tax loan repayment and budgetary refund of state enterprises
UP	Urban price index
UPP	Unspent purchasing power
V	Income velocity of circulation
W	Wage bill in the state sector
WLS	The weighted least-squares method
y	Real income

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PART I INTRODUCTION AND BACKGROUND

History has recently witnessed the rapid spread of economic reforms in the socialist countries. *Reform* generally refers to the market-oriented aspects contained in a change from a Centrally Planned Economy (hereafter CPE) to a Market-Led Planned Economy (hereafter MPE).¹ The main features of a CPE included state ownership, a centralized decision-making hierarchy and a plan coordination (Brown and Neuberger, 1989). This mechanism was designed on the assumption that the state could represent the interests of agents, collect the required information and have full control over economic activities. Yet, the CPE did not operate as it was designed to. Economic growth was primarily *extensive* (relying on the increase of factor inputs with factor productivity lagging behind) and not sustainable (IMF, 1990a). Economic inefficiency became a major problem. Imbalances between supply and demand, both overall and within sectors, were widely observed. *Shortages* (unsatisfied demand at the official prices) were common in many markets (Davis and Charemza, 1989). These problems exerted pressure on the CPE to search for a solution. The introduction of markets was finally viewed as such a solution.

In the MPE, state ownership coexists with the private

¹ This definition is different than the concept of "transformation" which refers to a dramatic shift from a socialist system to a "free economy" (Kornai, 1990b). The latter process has taken place in the Eastern European countries and former Soviet Union since 1989, but not yet in China.

sector, decentralization in decision-making occurs, plan coordination is reduced as the market is introduced, self-interests of agents are recognized, and material incentives become the major form of motivation (Brus and Laski, 1989). These changes are aimed at preserving the strengths and conquering the failures. Yet, again, reform has been challenged by many difficulties, including sustained excess demand and accelerated inflation.

Why does inflation go hand in hand with a market-oriented reform? What are the causes of excess demand and inflation? There have been debates on these issues and different explanations have been adopted. Recent experience in the Eastern European MPEs and the former Soviet Union seemed to demonstrate an inability to control inflation in reformed socialism. China still continues its struggle to control inflation while implementing reform at the same time. History demands an answer to the causes of excess demand and inflation and the feasibility of an inflation-free, market-led reform.

This study attempts to explore the causes of excess demand and inflation in reformed socialism by examining the Chinese experience from 1979 to 1988, with emphasis on the reform in the state sector. Several points need to be noted. First, the choice of time interval for this study is to reflect the fact that the accelerated inflation started with the beginning of the Chinese reform in 1979 and reached its peak in 1988. In terms of policy record, the period of 1989

to 1993 was then characterized by inflation control, an issue addressed only at the conclusion. Secondly, the state sector refers to state-owned enterprises (hereafter enterprises), state-run banking system, and in a broader sense, local governments at all levels (hereafter the localities) and central government (hereafter the centre). Thirdly, methodologically speaking, this is a country study based on a theoretical approach, supported by the national data and the case study reports from the field work. Econometric tests are also attempted to support the main arguments. Fourthly, the major field studies were implemented in Southeast and Coastal China (mainly Fujian Province). As the state sector played an important role in these economies, and as reforms have often been experimented with these provinces first, the case studies from these provinces can be used, without loss of generality, to supplement the national data.

This study is divided into four parts. Part I (chapters 1 and 2) gives an overview of the reform and inflationary process. Part II (chapters 3 to 6) reviews three approaches to understanding inflationary process in the MPEs and selects an analytical framework. Part III (chapters 7 to 9) applies this framework to discover the causes of Chinese inflationary process. Part IV (chapter 10) presents conclusions, evaluates the inflation control (from 1989 to 1993) and gives policy suggestions. A description of field study and econometric tests are provided in the appendices A and B respectively.

CHAPTER 1 CHINESE REFORM FROM 1979 TO 1988: AN OVERVIEW

This chapter provides a brief review over the Chinese pre-reform development (section 1.1) and a general discussion on the reform process (section 1.2). With this background, several features of the reform are summarized (section 1.3).

1.1 Chinese Pre-Reform Development: Background for Overview²

The evolution of the Chinese CPE from 1949 to 1978 was similar in many ways to that of other CPEs primarily because the Soviet model had been adopted in many countries. Following nationalization and socialist transformation, state ownership was introduced and soon became dominant. It was a state with pervasive power that regulated the economy by means of centralized plans and regulations enforced by a hierarchy of political and administrative bodies. The role of markets was, therefore, greatly circumscribed.

Five unified principles of administrative control

Under state ownership, economic activities were regulated and governed by the so-called "five unified principles of administrative control". First, the economy was coordinated by a set of detailed mandatory plans (*tongyi jihua*). These plans

² For details of the pre-reform development, see Prybyla (1981), Riskin (1987) and Tsao (1987).

were carried out on a sectoral or regional basis and finally allocated to state enterprises (Prybyla, 1981; Lyons, 1986).

Secondly, the monetary relations within the state sector were governed by the principle of unified control of revenue and expenditure (*tongshou tongzi*). A centralized fiscal system (mono-budget) collected revenues and allocated expenditures through a multi-level arrangement. Revenues were derived mainly through taxes and profit submissions of the state sector, while expenditures included interest-free grants to enterprises, government expenses and social welfare. The focus of fiscal policy was on the administrative allocation of resources, i.e., determining the rate of capital formation and keeping household incomes at a level consistent with the availability of consumer goods (Deng, 1989; Blejer, Burton, Dunaway and Szapary, 1991). Under the centralized fiscal system, there existed a mono-bank, The People's Bank of China (hereafter PB), and a separate monetary circulation (credit flow in the production sphere and cash flow in the household sphere).³ Guided by the credit and cash plans, the PB supervised the activities of the state enterprises, gathered deposits and regulated the money supply. The objective of monetary policy was to support the plan implementation and prevent excess liquidity in the household sector (Byrd, 1983).

³ The transaction among state enterprises was basically carried out in the form of bank account transfers. Cash was primarily used when payments were made to individuals. As a result, almost all money held in the production sphere was in the form of bank deposits (or credit), while currency (or cash) circulated within the household sphere and between the household and production spheres.

Thirdly, most products were bought and sold by the state commercial sector under a unified purchase and sale system (*tonggou tongxiao*), while most resources were supplied by the state under a unified allocation system (*tongyi diaobo*). Thus, almost all transactions were monopolized by the state with the quantity and quality specified in the plans (Perkins, 1988).

Fourthly, almost all prices were administratively determined by the state (*tongyi jiage*). These unified prices rarely reflected relative scarcities and prices in the international market. Prices did not play a key role in resource allocation, but served as an instrument for resource mobilization and plan fulfilment (Tian, 1989; IMF, 1990a; Naughton, 1991). For instance, resources were taken from agriculture and transferred to state-run industry primarily by means of price discrimination against agriculture (low procurement prices and compulsory deliveries). The high prices set for industrial output then allowed the state to draw the bulk of revenues into its budget so as to finance investment. At the same time, prices for consumer necessities were set low, while prices for nonessential goods were held high relative to the wages of state workers. As a result, although a basic level of subsistence was ensured, household consumption was sacrificed in favour of the state investment.

Fifthly, labour was administratively allocated by the state according to the unified labour plan (*tongbao tongpei*).

Workers were paid according to a unified wage scale stipulated by the state. Managers were appointed by the state and bound in a web of bureaucratic control with little autonomy (World Bank, 1985; Riskin, 1987; Harding, 1987).

The Chinese CPE: common features vs. its own characteristics

While the Chinese CPE experienced many similarities with other CPEs, it tried hard to find its own road to socialism. In early 1956, Chinese leaders realized that the CPE model had two defects: the over-centralization of decision-making power and the failure to recognize competing interests among agents such as the state and enterprises (Mao, 1956). The remedy for over-centralization was 'administrative decentralization' (Riskin, 1982). Through this means, lower-level governments in China gained more power from the centre compared with their counterparts in other CPEs (Donnithorne, 1972; Lardy, 1980). Instead of using material incentives to reconcile competing interests, the Chinese solution emphasized mass movement, anti-bureaucracy campaigns and the creation of new socialist attitudes (Gurley, 1976; Teiwes, 1984).

Despite some successes,⁴ the Chinese CPE experienced the same kinds of problems as other CPEs: extensive economic growth, slow technological progress, over-centralized management, distorted factor allocation, an emphasis on

⁴ From 1957 to 1979, China's growth rate (3.5%) was higher than that of low-income countries (1.6%) and close to the average of middle-income and industrialized countries (3.7%). See World Bank (1983). The principle of equality was practised with success when compared with China's past history and other developing countries. See Riskin (1987) and Nolan (1990)

product quantity rather than quality, shortages in many markets, and isolation from foreign competition (Riskin, 1987; World Bank, 1985). These problems were exacerbated by the Chinese failure to recognize the self-interests of agents.

Over time, while enthusiasm withered, continual adjustments were unable to notably improve performance. Difficulties encountered during the 1970s pointed to the infeasibility of the Chinese development strategy, and reform became urgent. In late 1978, Chinese leaders concluded that an extensive use of productive factors was not the best way for development. The economy needed to be restructured to enhance productivity and the efficient use of resources. Market-oriented reform was the means to reach this objective.

1.2 Chinese Reform Process: A General Discussion⁵

Features of the Chinese MPE

The design of the Chinese MPE was based on a set of principles entitled '*socialism with Chinese characteristics*'. One was the theory of '*Planned Market (Commodity) Economy*' which defined the economy as a plan-guided market based chiefly on state ownership. In contrast with the Chinese CPE where the state controlled almost all aspects of the economy through a centralized plan structure, the aim of the Chinese MPE was to

⁵ For detailed accounts of reform, see Harding (1987), Riskin (1987) and Perkins (1988).

let 'the state adjust the market and the market in turn guide enterprises' (Yu, 1984). The other was the theory of '*Primary Stage of Socialism*' which defined priorities in the development of the productive forces. This theory opened the way to flexible strategies as long as they could promote the productive forces (Zhao, 1987). A strategy of 'learning by doing' was also adopted. Based on this cautious and pragmatic approach, various reform methods were adopted.

Reforms in the state sector

While reforms were introduced in other areas,⁶ the major thrust of the reform was directed at the state sector. The reform in the state sector can be divided into two periods. During the period from 1979 to 1984, the reform was primarily implemented on an experimental basis. The second period was from 1984 on when reform was expanded nationwide following the formal adoption of the aforementioned principles. In general, the reform in the state sector was carried out through the process of decentralization, change of macroeconomic control mechanisms, and the creation of market-based coordination. The following will briefly illustrate these aspects of reform.

Decentralization first involved the construction of a new state-enterprise relationship. The necessity of providing enterprises with incentives was recognized. The overall

⁶ For details on the rural reform, the reappearance of the private sector, and the reform in external sector, see Harding (1987), Tsao (1987) and Nolan (1990).

thrust was to grant them greater autonomy in decision-making together with the corresponding means to do so. Market forces were introduced along with a reduction in planning directives from above in order to regulate the economic activities of enterprises. The goal was to improve efficiency by making enterprises financially independent, and having them take responsibility for their own profits and losses.

The reform in the state-enterprise relationship can be broken down into three stages (Harding, 1987; Perkins, 1988). The first stage was from late 1978 to 1982 when efforts were made to simplify the administration over enterprises and to delegate more power to enterprises (*jianzheng fangquan*). Various schemes such as ``enterprise funds system'', ``profit-retention system'', and ``economic responsibility system'' were successively tried. In the second stage (1983 to 1985) efforts were made to form a new state-enterprise relationship by introducing the scheme of ``substituting tax for profit'' (*yili daishui*). Enterprises no longer remitted profits, but paid taxes on both sales revenues and profits. Based on this scheme, additional powers were decentralized. The third stage (from 1986 on) was marked by the nationwide adoption of a ``contract responsibility system'' (*chengbao zerenzhi*). It was hoped that the traditional hierarchical relation between the state and enterprises would be replaced by a contractual one.⁷

⁷ For details, see chapter 7.

Decentralization of decision-making called for the reconstruction of macro control. When the state's direct control over the economy was reduced, efforts were made to develop indirect methods of macro control. A new banking system took shape in two stages (Byrd, 1983; White and Bowles 1988). The first stage (1979 to 1983) aimed to make the banks more like economic units rather than administrative ones. The second stage began in 1984 with the establishment of a 'two-tier' banking system. The PB performed as the central bank and several Specialized Banks (hereafter SBs) were set up.⁸

Decentralization also involved a reshaping of intragovernmental relations, primarily the relations between the centre and the provinces (Tong, 1989; Wong, 1991). It was hoped that the provinces (and all lower-level governments), with more power and means on hand, would perform more efficiently and take more responsibility. This reform was chiefly characterized by the 'revenue-sharing' scheme between the centre and the provinces (the provinces shared the collected revenue with the centre, and the provinces also determined the expenditures at their disposal from the retained revenue). Various versions of this scheme were successively adopted in 1980, 1982, 1985 and 1988.⁹

Finally, in order to create a new coordination mechanism with prices playing an increasing role in resource allocation,

⁸ For details, see chapter 8

⁹ For details, see chapter 9

price reform took place in two stages: price adjustment and price liberalization (Byrd, 1987; Wu and Zhao, 1987). During the first stage (1979 to 1984), the state largely increased the agricultural procurement prices. It also raised prices in the consumer goods market for which demand exceeded supply. The second stage (from 1985 on) was chiefly characterized by the adoption of the ``dual-pricing`` scheme (*shuang gui zhi*). That is, there was a plan track with controlled prices and a market track with free market prices for a particular product. This scheme was first adopted in the rural areas in 1979, but extended to cover a wide range of products in the state sector after 1985. For other products, enterprises either freely determined the prices, or negotiated with the state (primarily the localities) to set the ``floating`` prices. Up to 1988, the share of total retail sales was almost equally subject to controlled, floating and free market prices respectively.

1.3 Some Consequences of Reforms

The above reform brought about many changes in the Chinese economy. Among others, the following three changes were outstanding: a decentralized economic structure, dual macro control and the recognition of self-interests of agents.

First, unlike the pre-reform mechanism, reforms created a decentralized economic structure. There was a significant dispersal of control over resources from the centre into the

hands of enterprises, localities and banks. For example, the disposable income of enterprises was 3 to 5% of total receipts in 1978, yet reached more than 30% in 1988. There was also a sharp increase in *extra-budgetary* revenue (i.e., the revenue of state units not in the fiscal budget), within which the shares of enterprises and their supervising agencies were 70 to 80%. The localities controlled an increased share of resources as well. Following the revenue-sharing scheme, the provinces kept 60 to 70% of the budgetary revenues which came primarily from taxes of the state sector. The banking system became an important coordinator in the decentralized economy. The banks were solely responsible for providing working capital in the form of loans, and supervising the enterprises' activities. The banks also gained a role in providing investment funds.

Secondly, in contrast to the pre-reform macro control characterized by the five unified administrative principles (pp.4-7), the decentralized process led to a *dual control* mechanism, defined as the mixture of the market-based indirect tools and retained plan instruments. Under the reform mechanism, the combination of plans and market signals replaced the unified plans, the scope of unified plan control over inputs and outputs was narrowed, the effectiveness of the unified fiscal control was reduced, the dual-pricing mechanism replaced the unified price control, and the labour and wage reform altered the unified labour allocation system. To a large extent, this dual mechanism placed the fate of macro

stability in a decentralized economy in the hands of various agents, i.e., individuals, enterprises, banks and localities.

Thirdly, in contrast to the pre-reform case where self-interests of agents were not taken into account and were at times even repressed, reforms generated a pattern where self-interests were recognized and material incentives were provided. It was believed that the diverse interests of agents could be harmonized by connecting the agents' material interests with their economic performance.

In summary, the Chinese MPE featured a decentralized economic structure which took account of the interests of agents and was coordinated by a dual macro control. It was hoped that productivity would be enhanced and the standard of living would be raised through this mechanism. While it is interesting to see whether the reform has reached these objectives (Lardy, 1987), this study directs its attention to another point: how the behaviour of agents in the state sector, given the reform changes and the continual dominance of state ownership,¹⁰ has affected the price stability of the Chinese economy. With this purpose in mind, let us turn to the macro performance during reform.

¹⁰ It is noted that while state ownership continued dominating many aspects of the economy, its importance in the industrial sector has been disputed. Its share in gross value of industrial output fell from 77.63% in 1978 to 56.06% in 1989 (State statistical Bureau, 1990a, p 413)

CHAPTER 2 EXCESS DEMAND AND INFLATION DURING REFORM

This chapter starts with the issue of measuring the price level, chiefly a concern over hidden inflation (section 2.1). Against this backdrop, section 2.2 contrasts pre-reform price stability with inflation during reform, and asks why inflation occurred as reform was started. Next, given a concern whether the official inflation rates show an overall picture of inflation, section 2.3 reviews the controversy on repressed inflation, arguing that if excess demand (both unrepressed and repressed) is proved to be sustained and closely associated with inflation, it is more important to ask why and how excess demand was generated in the first place. Section 2.4 then presents the statistical evidence to verify several forms of excess demand during reform, and implements some econometric tests to confirm the close relations between the excess demand and inflation. Finally, section 2.5 restates the issue ahead, that is, the need to explore the causes of various forms of excess demand against the background of the reform process.

2.1 Measurement of Price Level and Rate of Inflation in China

Measuring price level and inflation

Inflation is a continual increase in the general price level. Various price indices can be used to compute the rate of inflation. In China, the *general retail price index* (GRP), which

covers a selective basket of consumer goods nationwide and producer goods marketed in rural areas, is adopted as a major indicator to measure the general price level.¹ The inflation rate is then calculated as the rate of change in the GRP.

Western observers, however, often suspect the reliability of the GRP in measuring market pressure on prices.² This concern is reasonable. As noted in chapter 1, almost all prices were administratively controlled before reform and only partially liberalized during reform. Therefore, cautions should be noted before interpreting the GRP and corresponding inflation rate as a measure of the pressure on prices.

The GRP and the issue of hidden inflation

While there is a major concern related to repressed inflation (see section 2.2), the GRP figures also lead to a concern over *hidden inflation* which is open but unrecorded. First, the GRP is a weighted average of controlled, floating and free market prices. These weights vary yearly to reflect the changes in the extent of price control and are not made public. The unknown weights naturally lead to a concern over the accuracy of the official inflation rate. If the higher prices in free markets (see table 2A-1, appendix 2A.1) are not

¹ The majority of Western studies used the GRP to calculate the inflation rate in China. But, several Chinese studies (Huang, 1988; Dong, 1991) adopted the national income deflator or the index of living cost of staff and workers to measure inflation. With some minor differences, these indices give out a similar picture. For details, see State Statistical Bureau, 1990a, pp.34-35,249.

² These concerns can be found in both the early studies such as Perkins (1966) and the current ones such as World Bank (1990). A brief review in this regard is given in Peebles (1991), chapter 5.

given proper weights, hidden inflation arises. Secondly, the GRP is a weighted average of the prices of consumer goods (which are weighted by eight categories) and agricultural producer goods. Given that the prices of consumer goods rise faster than those of agricultural producer goods but receive a smaller weight, it is obvious that underestimation again occurs (see tables 2A-1 and 2A-2). The same concern is related to the unknown weights assigned to the eight categories within consumer goods, all of which have different rates of inflation. The third issue is associated with the price differences in urban and rural areas (see table 2A-1). A relatively small weight given to a higher price level in urban areas may underestimate the general price level (see table 2A-2). Fourthly, regional price differences are significant, and some regional price levels are higher than the national average (table 2A-3). Since the GRP is a weighted average of a selective basket of goods nationwide, rather than a weighted average of regional GRPs, it may not reflect the regional price differences.

2.2 Pre-reform Price Stability vs. Inflation During Reform

Pre-reform price stability

With these cautions in mind, this section compares the rates of inflation between the pre-reform (1952 to 1978) and reform (1979 to 1988) periods. As shown in table 2-1, China

basically enjoyed a long period of price stability from 1952 to 1978. Rates of inflation of the GRP were kept quite low and stable, and sometimes even turned negative (with an annual average rate at 0.75%). The only inflation occurred in 1961, which was mainly due to such factors as human errors, natural disasters and external shocks (for a review, see Peebles, 1991, pp.23-29). But this inflation was short-lived and exceptional for the period. In general, inflation, as an economic phenomenon in daily life and as an economic term in literature, virtually disappeared for a quarter of a century (Peng, 1976; Schran, 1977; Tsakok, 1979).

**Table 2-1 Inflation rate (P^{\wedge}), 1952-1988,
(growth rate of the GRP from previous year, %)**

Year	P^{\wedge}	Year	P^{\wedge}	Year	P^{\wedge}	Year	P^{\wedge}	Year	P^{\wedge}	Year	P^{\wedge}
1952	0.4	1958	0.2	1964	-3.7	1970	-0.2	1976	0.3	1982	1.9
1953	3.4	1959	0.9	1965	-2.7	1971	-0.8	1977	2.0	1983	1.5
1954	2.3	1960	3.1	1966	-0.3	1972	-0.2	1978	0.7	1984	2.8
1955	1.0	1961	16.2	1967	-0.7	1973	0.6	1979	2.0	1985	8.8
1956	1.0	1962	3.8	1968	0.1	1974	0.5	1980	6.0	1986	6.0
1957	1.5	1963	-5.9	1969	-1.1	1975	0.2	1981	2.4	1987	7.3
										1988	18.5

Source: State Statistical Bureau, *China Statistical Yearbook*, 1990a, p.249.

Inflation during reform

The price record during reform was quite different. From the beginning, inflation coincided with the reform, and became more serious as reform was further implemented. When inflation reached its first peak in 1980, the centre responded with tightened control and adjustment policy primarily by means of administrative regulations. This was followed by three successive years of moderate inflation. Yet inflation

was on the rise once again after 1984 and reached 8.8% in 1985. The centre stepped in once more, but this time met with limited success, as inflation fell only slightly during 1986 and 1987. In 1988, inflation reached a historical high, with a double-digit rate of 18.5%. This serious situation forced the centre to adopt the tightest administrative control since the reforms began. This put the reform process actually on hold for at least three years.

An examination of monthly rates of inflation of the GRP provides a better view of this inflationary process (table 2-2). While the monthly inflation rates were moderate in 1983, they increased since the fall of 1984 and reached double digit figures by the end of 1985. The inflation slackened in mid-1986, but was rekindled that fall and continued to accelerate to 9.0% by the end of 1987. Rates of inflation accelerated at double digit figures from February to December 1988.

Table 2-2 Monthly rates of inflation, 1983.2 - 1988.12, %

Month	P [^]	Month	P [^]	Month	P [^]	Month	P [^]
1983. 2	0.6	1985. 2	5.6	1987. 2	5.2	1988. 5	15.2
5	1.1	5	9.4	5	7.8	6	17.0
8	1.4	8	9.8	8	8.6	7	19.5
11	1.6	11	10.8	11	9.0	8	23.5
1984. 2	1.7	1986. 2	8.0	1988. 1	9.5	9	26.0
5	2.7	5	3.5	2	11.0	10	27.0
8	2.8	8	4.0	3	12.5	11	27.0
11	2.9	11	6.0	4	13.5	12	27.5

Notes and Sources: The rate of price increase over the same period of the previous year. Some are quarterly data only (1983.2 - 1984.11). For the data of 1983.2 - 1987.11, see Komiyu (1989, p 71). For data in 1988, see State Statistical Bureau, *China Statistical Yearbook*, 1989, p 53.

It is noted that the major force behind the accelerated inflation since 1985 was the price increases in urban areas where most of the state sector was located. As seen in table

2-3, inflation in urban areas was higher than in rural areas except for 1979 and 1984.

Table 2-3 Urban-rural inflation rate differences, 1979-1988, %

Year	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
National	2.0	6.0	2.4	1.9	1.5	2.8	8.8	6.0	7.3	18.5
Urban	1.9	8.1	2.7	2.1	1.9	2.5	12.2	7.0	9.1	21.3
Rural	2.0	4.4	2.1	1.7	1.2	3.0	7.0	5.0	6.3	17.1

Source: State Statistical Bureau, *China Statistical Yearbook*, 1990a, pp.251,255,259.

Two facts and two questions

Two related facts stand out in the comparisons. First, there were notable differences in the inflation record between the pre-reform and reform periods. Shortly after the reform was initiated, price stability became past history while inflation became the norm. Secondly, the inflationary process during reform had two waves, which were consistent with the two periods of reform in the state sector. The first wave (1979 to 1984) occurred when the reform in the state sector was implemented on an experimental basis. This inflation was relatively easy for the centre to control, as evidenced by the successive moderate inflation rates between 1981 and 1983. The second wave of inflation (1985 to 1988) took place soon after the reforms were spread throughout the state sector. Inflation rates accelerated throughout this period. Two questions were evident: why did inflation occur as reform was introduced, and why did inflation become serious as the reforms were spread throughout the state sector?

2.3 Open vs. Repressed Inflation: Clarification of the Issue

The issue of repressed inflation

Before elaborating on these questions, it is necessary to clarify another important issue: does the official inflation rate hide strong underlying inflationary pressures? In other words, is there sustained repressed inflation both before and during reform when prices are subject to controls of varying degrees? *Repressed inflation* occurs when price controls prevent prices from rising so that excess demand is repressed (Hansen, 1951, p.3). The *repressed excess demand* takes the form of excess liquid assets or money holdings above their desired level by the population.³ Repressed inflation is then the growth rate of the repressed excess demand. Thus defined, the key is to measure repressed excess demand, that is, to estimate the *undesired* level of money holdings, in order to obtain the overall inflation rates. It is then necessary to distinguish the unrepressed portion (inflation response) from the repressed one for a given degree of excess demand. There is still a great deal of controversy in this regard.

Pre-reform repressed inflation: the controversy

It is relatively easy to understand why, during the pre-reform period, almost all excess demand might take the form of

³ The terms "forced saving" or "monetary overhang" have the same meaning. See Nutt (1986).

undesired money holdings. Consider that money was the only asset, that goods were distributed at the fixed prices, and that free markets were suppressed. In this case, an increase in the money supply resulted in an excess supply of money and excess demand for goods (Blejer et al, 1991). However, the controversy was whether there was sustained excess demand in this period. Before adequate Chinese data were available, many studies cited long waiting lines, rationing and shortages in many consumer goods markets as the evidence of serious excess demand or repressed inflation in this period (Jao, 1967; Swamy, 1969). But this evidence was, by nature, neither necessary nor sufficient to verify the existence of repressed inflation (Nutti, 1986). Later, a number of scholars made use of available data to calculate the extent of excess demand. The studies done by Naughton (1986), Portes and Santorum (1987), and Feltenstein and Farhadian (1987) were three such attempts. Despite some differences due to the methods adopted and the data used, the indicators given in these models seemed to show that excess demand did not dominate the entire period.

Repressed inflation during reform: much controversy

The issue of repressed inflation during reform was more controversial as a result of the partially liberalized prices characterized by the dual-pricing scheme. Theoretically, the introduction of markets and a partial price decontrol could provide at least a *certain* degree of unrepressed inflation if

there was excess demand (Katx and Owen, 1988; Burton, 1990). Therefore, while it has been agreed that there was sustained excess demand during reform (see section 2.4), the controversy was focused on the division of repressed and unrepressed portions for any degree of excess demand. Again, determining the undesired level of money holdings was seen as the means for isolating the repressed and unrepressed portion of inflation. Some scholars believed that the reform-induced changes were strong enough to allow a large portion of excess demand to take the form of a price increase, or at least that there was insufficient evidence to prove that all money holdings were involuntary (Byrd, 1983; Naughton, 1987; Huang, 1988). On the other hand, several scholars argued that the excess demand appeared largely as involuntary money holdings, hence repressed inflation (Travers, 1985; Chen and Hou, 1986; Feltenstein et al, 1987; Feltenstein and Ha, 1991). While these two opposing views provided several interesting insights, neither of them was convincing because most of the evidence cited by both sides could be interpreted differently. This can be seen from the following examples.

There was controversy generated by the fact that individual savings notably increased during reform. Some authors (Byrd, 1983; Naughton, 1987) believed that most of these savings were voluntarily held. This was due to the new saving policies, the attractiveness of interest rates, the decline in rationing, and the need for future consumption when

consumer credits were not available. On the other hand, several scholars (Travers, 1985; Jie and Ne, 1990) argued that a large portion of savings was frustrated purchasing power. This was reflected by the shortages in several consumer goods markets, by increased imports to offset a portion of excess demand, and by a higher price level in free markets. However, neither view could explain the dramatic changes in saving and consumption behaviour. For example, in 1988 shortages of many durable consumer goods coexisted with large amounts of money holdings. This seemed to favour the view of serious repressed inflation. But an opposite combination occurred in 1989: a buildup of unsold stocks of consumer goods coexisted with a large increase in savings and cash in hand. It was hard to believe that all the money holdings were held involuntarily.

Another example was related to several new monetary developments during reform. For instance, it was recognized that the velocity of money declined continuously (Blejer, et al, 1991; Peebles, 1991). While some viewed it as a result of growing monetization (Chang, 1990), others (Feltenstein and Ha, 1991) interpreted it as a sign of increasing involuntary money holdings. Similarly, there was a high propensity to hold money however money was defined (Blejer et al, 1991, p.20; Peebles, 1991, p.13). But this fact could be interpreted as either a reflection of a limited range of alternative financial assets (Peebles, 1991), or implicit evidence for involuntary money holdings (Blejer et al, 1991).

The related money demand function was another case in point. Many writers recognized an increasing demand for money, but were unable to distinguish the voluntary savings from forced ones. Blejer et al (1991) estimated a stable money demand function, suggesting that money demand was sensitive to changes in expected inflation and that money holdings might be voluntary. But they admitted that a high long-run elasticity of demand for money might be used to argue for the repressed inflation.

Such contradictory explanations, therefore, made many estimation methods and their results unconvincing. For example, Chen and Hou (1986) attempted to derive repressed inflation rates from 1979 to 1983 based on the quantity theory of money with an assumption of constant velocity. But in reality the velocity fell. Their estimated repressed rates of inflation then, to a large extent, only reflected the rates of declined velocity. Since the authors could not distinguish the voluntary part from undesired forced savings, readers were left with no definitive answer. Another case in point was the study on the saving function done by Feltenstein, Lebow and van Wijnbergen (1990). Their empirical findings for the period 1979 to 1983 suggested that, first, the nominal interest rates did have an impact in encouraging savings; and secondly, the reform brought individuals' saving behaviour closer to that under a free market economy. This implied that at least not all savings were involuntary. Yet, the authors

admitted that their model could not explain a rapid increase in the cash balance after 1983, thus suggesting a monetary overhang and repressed inflation.

The position of this study

On the whole, it seemed that neither side had provided enough convincing evidence to support its position and the controversy has continued, with several more recent studies presenting no clear-cut answer in this regard (World Bank, 1990; Blejer et al, 1991; Peebles, 1991). The position taken by these studies was: although one could not rule out the possibility of repressed inflation, the reform did provide a dual channel through which excess demand could lead to both open inflation and undesired balances.

This study agrees with this position and attempts to tackle another issue: *if* excess demand is sustained and closely associated with inflation, *why* and *how* is this excess demand generated? Even without distinguishing the components of excess demand (unrepressed or repressed), it is worthwhile to identify the causes of excess demand, hence inflation.

2.4 Excess Demand and Its Linkage to Inflation

Excess demand measured as shortages at the aggregate level

With this objective, this section examines the degree of excess demand during reform and its linkage to inflation.

During reform the Chinese government continuously tried to achieve a balance between aggregate demand (AD) and aggregate supply (AS) (Zhao, 1987; Li, 1989), but this effort obviously failed. Since 1984, it was repeatedly admitted in the annual plan fulfilment reports and other documents, that there was sustained excess demand at the aggregate level. AD seriously surpassed AS, and the economy was overheated (Li, 1989).

Although no official figures of excess demand have been announced, attempts were made by several Chinese authors to measure the extent of excess demand (He, Duan and Yuan, 1987; Dong, 1991). Aside from certain minor differences, the coverage of these estimates was similar. AD was defined as the sum of consumption and accumulation (investment) funds which together include consumption expenditures, investment in fixed assets, government spending and exports. AS was comprised of the net value of output, service and imports. Table 2-4 presents one such estimation given in Dong (1991). As shown, AD was always greater than AS with an average growth rate of AD at 18.9% and that of AS at 15.9%. The seriousness of excess demand was captured in the series of the designated shortage ratio, defined as $[(AD-AS)/AS]$. It was noted that the gap between AD and AS notably widened during the second period of reform.

Table 2-4 Excess Demand, 1979-1988, billion yuan*

Year	AD(1)	AS(2)	GAP=AD-AS(3)	[(AD-AS)/AS](4)	P^(5)
1979	327.7	313.9	13.8	4.4 %	2.0 %
1980	387.5	364.5	23.0	6.3	6.0
1981	428.9	408.6	19.4	4.7	2.4
1982	470.2	467.1	3.1	0.7	1.9
1983	540.9	515.0	25.9	5.0	1.5
1984	709.1	644.5	64.6	10.0	2.8
1985	897.1	763.9	133.2	17.4	8.8
1986	1089.0	902.2	186.8	20.7	6.0
1987	1315.2	1046.0	269.2	25.7	7.3
1988	1632.1	1237.4	394.7	31.9	18.5

Notes and Sources * current price, (1) = Aggregate demand; (2) = Aggregate supply; (3) = Gap between AD and AS; (4) = Shortage ratio, (5) = Inflation rate See Dong (1991, p.20) and State Statistical Bureau, *China Statistical Yearbook*, 1990a, p 249

Excess demand measured as excessive monetary growth

The phenomenon of excess demand could also be seen as excessive monetary growth which was commonly defined as an excess of the growth rate of money supply over that of real national income (Xu and Huang, 1987; Chang, 1990; Dong, 1991). Table 2-5 suggests this by comparing the growth rates of two measures of money supply (M_0 , currency in circulation; and M_1 , M_0 plus savings deposits) with that of real national income.

Table 2-5 Excess monetary growth and inflation, 1979-1988,%

Year	P^(1)	M_0 ^(2)	M_1 ^(3)	RNI(4)	EM_0 ^(5)=(2)-(4)	EM_1 ^(6)=(3)-(4)
1979	2.0	26.3	21.7	7.0	19.3	14.7
1980	6.0	29.3	24.7	6.4	22.9	18.3
1981	2.4	14.5	19.8	4.9	9.6	14.9
1982	1.9	10.8	13.5	8.2	2.6	5.3
1983	1.5	20.7	20.7	10.0	10.7	10.7
1984	2.8	49.5	26.9	13.6	35.9	13.3
1985	8.8	24.7	25.9	13.5	11.2	12.4
1986	6.0	23.3	25.6	7.7	15.6	17.9
1987	7.3	19.4	21.6	10.2	9.2	11.4
1988	18.5	46.7	19.1	11.3	35.4	7.8

Notes and source (1) = Inflation rate; (2) = Growth rate of M_0 ; (3) = Growth rate of M_1 ; (4) = Growth rate of real national income, (5) and (6) = Excessive monetary growth in two money concepts respectively See State Statistical Bureau, *China Statistical Yearbook*, 1990a, pp.35,249,666.

The issue of excessive money growth could be indirectly examined by checking the other side of the balance sheet of

the combined banking system, i.e., by observing the increase in loans during reform. Growth rates for loans outstanding in the aggregate and the three key components are presented in table 2-6. Total lending grew continuously at a faster pace than real national income. Loans to the state sector grew steadily and continued to draw a dominating share of total loans. During the second period of reform (from 1984 on), loans to the state sector were greatly increased. Loans to the urban collective/private and the rural sectors remained small, while growing rapidly. Moreover, as observed by many scholars (Huang, 1988; Dong, 1991), it was more difficult to control the loans to the state sector than the loans to the urban collective/private and the rural sector. The latter could only grow faster if they received lending preferences, but were cut back most severely whenever credit was tightened.

Table 2-6 Credit Expansion and its components, 1979-1988, %

Year	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Loans										
(1)(growth rate)	12.2	18.4	14.5	10.4	12.4	28.8	33.6	28.5	19.0	16.8
(2)(RNI)	7.0	6.4	4.9	8.2	10.0	13.6	13.5	7.7	10.2	11.3
(3) EDL =(1)-(2)	5.2	12.0	9.6	2.2	2.4	15.2	20.1	18.8	8.8	5.5
Loans to the state sector*										
(4)(growth rate)	--	17.0	13.5	10.3	12.0	23.5	37.4	27.7	23.1	12.2
(5)(share)	90.8	89.8	89.0	88.9	88.6	85.0	87.4	86.9	86.3	83.0
Loans to urban collective and private businesses										
(6)(growth rate)	--	36.2	54.8	9.8	19.7	85.3	8.8	32.4	29.3	19.3
(7)(share)	2.8	3.2	4.4	4.4	4.6	6.7	5.4	5.6	6.1	6.2
Loans to rural sector										
(8)(growth rate)	--	30.0	7.9	12.5	12.8	59.2	13.2	36.9	20.2	18.7
(9)(share)	6.4	7.0	6.6	6.7	6.8	8.3	7.2	7.5	7.6	10.8

Notes and source: * = The sum of industrial loans, commercial loans, construction loans and fixed assets loans; (2) = Growth rate of real national income; (3) = Excess demand for loans. State Statistical Bureau, *China Statistical Yearbook*, 1986, p.530; 1990a, p.666

Excess demand measured as income expansion

Given that aggregate demand consisted of consumption and accumulation funds, it was generally argued that excess demand was a result of income (consumption) expansion and investment expansion, so-called *dual expansion* (CSRRST, 1987). The extent of excess demand in terms of income expansion could be seen by focusing attention on the consumer goods market. As noted in table 2-7, there were large amounts of society's unspent purchasing power (cash in hand plus savings deposits, UPP) which was the difference between social purchasing power (SPP) and social monetary expenditure (SME). The SPP was always larger than the SME, hence a positive unspent purchasing power ratio, defined as $[(SPP-SME)/SME]$. Although this unspent purchasing power might include both voluntary and involuntary money holdings, a comparison between the growth rates of the SPP with those of the real supply of consumer goods might measure excess demand pressures on the consumer goods market. This comparison was made by some scholars (Hsu, 1989; Peebles, 1991) with the concept of 'purchasing power imbalance' (PPI), defined as an excess of the growth rates of SPP over those of real national income (a proxy for the available supply of consumer goods). As shown in table 2-7, purchasing power imbalances existed throughout the period. The extent of unspent purchasing power and purchasing power imbalances became more serious during the second period of reform.

Table 2-7 Imbalances on consumer goods market, 1979-1988

Year	SPP(1) Billion yuan, current price	SME(2)	UPP(3)	[(SPP-SME)/SME](4) %	GSPP(5) %	RNI(6) %	PPI(7) %
1979	209.39	197.61	10.45	6.0	18.6	7.0	11.6
1980	253.60	233.07	20.53	8.8	21.1	6.4	14.7
1981	274.67	255.67	19.00	7.4	8.3	4.9	3.4
1982	302.62	282.77	19.85	7.0	10.2	8.2	2.0
1983	344.06	316.89	27.17	8.6	13.7	10.2	3.5
1984	445.69	393.33	52.36	13.3	29.5	13.6	15.9
1985	564.54	509.54	55.00	10.8	26.7	13.5	13.2
1986	634.00	555.50	87.50	15.8	12.3	7.7	4.6
1987	757.30	654.80	102.50	15.7	19.5	10.2	9.3
1988	960.30	834.30	126.00	15.1	26.8	11.3	15.5

Notes and sources: (1) = Society's purchasing power; (2) = Society's monetary expenditure; (3) = Unspent purchasing power; (4) = Unspent purchasing power indicator; (5) = Growth of society's purchasing power; (6) = Growth rates of real national income; (7) = Purchasing power imbalance. See State Statistical Bureau, *China Statistical Yearbook*, 1990a, pp 35,614. Column (7) is in Pebley (1991, p.202) with data adjusted.

An analysis of the composition of the SPP helps to show the source of demand for consumer goods (table 2-8). The rural population made up 80% of the total population, but the rural purchasing power never exceeded one-half of the SPP; while the urban purchasing power enjoyed a large share compared to its share of the population. And during the second period of reform, growth rates of the state sector's purchasing power surpassed those of the SPP except in 1987.

Table 2-8 Social purchasing power, 1979-1988, %

Year	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Total social purchasing power										
(growth)	18.6	21.1	8.3	10.2	13.7	29.5	26.7	12.3	19.5	26.8
(share)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
State-sector's purchasing power (1)										
(growth)	11.9	20.6	6.7	8.1	9.6	22.8	32.9	16.8	18.9	27.7
(share)	46.1	45.9	45.2	44.3	42.8	40.6	42.6	44.3	44.1	44.4
Collective sector's purchasing power (2)										
(growth)	15.9	15.6	15.9	8.3	13.4	28.1	25.2	17.7	15.4	26.8
(share)	8.5	8.2	8.7	8.6	8.6	8.5	8.4	8.8	8.5	8.5
Rural sector's purchasing power (3)										
(growth)	27.0	22.9	8.9	12.9	18.0	36.2	21.6	8.8	24.2	22.8
(share)	42.3	43.7	44.2	45.4	47.1	49.6	47.7	46.2	46.7	46.5

Notes and source: (1) = wages and other incomes; (2) = wages; (3) = peasant income and agricultural loans. See State Statistical Bureau, *China Statistical Yearbook*, 1986, pp 524-532, 1990a, p 614.

Excess demand measured as investment expansion

It was generally observed that after 1982 investment expansion became another macro problem (CSRRST, 1987; Dong, 1991). This phenomenon could be captured by examining the movement of investment in fixed assets. As shown in table 2-9, although investment grew at a moderate pace between 1979 and 1981, it turned excessive after 1982 in that its growth rates were faster than those of real national income. The state sector's investment in fixed assets continued to occupy the largest share although the share decreased over time. In 1985 when the second period of reform took place, growth rate of state sector's investment reached 41.8%, surpassing that of total investment. In the following years, state investment became the major driving force of the investment expansion.

Table 2-9 Investment in fixed assets of society, 1979-1988,

Year	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Total investment										
(1)(billion yuan)	90.0*	93.4	96.10	123.04	143.01	183.29	254.32	301.96	364.09	449.65
(2)(growth rate,%)	5.5	3.8	2.9	28.0	16.2	28.2	38.8	18.7	20.6	23.5
Real national income										
(3)(growth rate,%)	7.0	6.4	4.9	8.2	10.0	13.6	13.5	7.7	9.3	11.3
(4) (2) (3).excess investment rate. EIR										
	-1.5	-2.6	-2.0	19.8	6.2	4.6	25.3	11.0	10.4	12.2
State sector's investment										
(5)(billion yuan)	69.94	74.59	66.75	84.53	95.20	118.52	168.05	197.85	229.80	276.28
(6)(share,%)	77.7	79.9	69.3	68.7	66.6	64.7	66.1	65.5	63.1	61.4
(7)(growth rate,%)	4.6	6.6	-10.5	26.6	12.6	24.5	41.8	17.7	16.1	20.2

Sources: * is in Dong (1991). For others, State Statistical Bureau, 1990a. *China Statistical Yearbook*, pp.35,153; 1990b, p.58.

From excess demand to inflation

The above indicators (increased shortages, excessive money growth, continued credit expansion, increased unspent

purchasing power, persistent purchasing power imbalances, and enduring investment expansion) have suggested the existence of excess demand during reform, particularly during the second period of reform. The next issue is to show the relationship between excess demand and inflation. Scholars have attempted to verify this relationship by adopting a number of methods.

The first was to examine the degree of inflation response for a given excess demand, defined as the ratio of inflation rates to various forms of excess demand respectively. Peebles (1991) showed that excess money growth and purchasing power imbalances were associated with an upward trend in rates of inflation. These ratios are shown in columns (3) and (5) of table 2-10. The extent to which shortages, excess demand for loans and unspent purchasing power were reflected in the inflation rates is calculated in columns (2), (4) and (6) of table 2-10. With a few exceptional years, all indicators tended to move in a similar manner and to trend upwards, suggesting that a similar degree of excess demand tended to produce a greater inflationary response as reform continued.

Table 2-10 Open-inflation responsiveness of excess demand, %

Year	$P^{\wedge}(1)$	$P^{\wedge}/[(AD-AS)/AS](2)$	$P^{\wedge}/EM_0(3)$	$P^{\wedge}/EDL(4)$	$P^{\wedge}/PPI(5)$	$P^{\wedge}/[(CPI/SME)/SME](6)$
1979	2.0	45.5	10.4	38.5	17.2	33.3
1980	6.0	95.2	26.2	50.5	40.8	68.2
1981	2.4	51.1	25.0	25.0	70.6	32.4
1982	1.9	271.4	73.0	86.4	95.0	27.1
1983	1.5	30.0	14.0	62.5	42.9	17.4
1984	2.8	28.0	7.8	18.4	17.6	21.1
1985	8.8	50.6	78.6	43.8	66.7	81.5
1986	6.0	29.0	38.5	31.9	130.4	38.0
1987	7.3	28.4	79.3	83.0	78.5	46.5
1988	18.5	58.0	52.3	330.0	119.4	122.5

Notes and sources: [(AD-AS)/AS] is in table 2-4; EM_0 in table 2-5; EDL in table 2-6; and [(CPI/SME)/SME] and PPI in table 2-7. Columns (3) and (5) are in Peebles (1991, p 202) with data adjusted.

Secondly, scholars used correlation techniques to measure the positive correlations between excess demand and inflation (Chang, 1990; Peebles, 1991). Table 2-11 confirms this finding by showing that several aforementioned excess demand indicators bore a positive correlation with inflation. The shortage ratio had the closest correlation with inflation (0.861), followed by unspent purchasing power ratio (0.613), purchasing power imbalance (0.526) and excessive monetary growth (0.475). Certain positive correlations among various measures of excess demand existed as well.

Table 2-11 Correlation among excess demand and inflation

Inflation(1)	[(AD-AS)/AS](2)	EMO(3)	PPI(4)	[(SPP-SME)/SME](5)	
1	0.861	0.475	0.526	0.613	(1)
	1	0.361	0.394	0.884	(2)
		1	0.797	0.393	(3)
			1	0.306	(4)
				1	(5)

Sources: Definitions of variables and their data are from tables 2-4, 2-5 and 2-7.

Thirdly, scholars tried to determine the extent to which inflation might be explained by excess demand (He et al, 1987; Chow, 1987; Peebles, 1991). To reflect these findings, table 2-12 examines the relation between inflation and several aforementioned indicators. A linear or double-log functional form is adopted and estimation is done through ordinary least-squares (OLS) techniques. Equation (1) regresses inflation on the shortage ratio [(AD-AS)/AS]. The slope coefficient is significant at the 1 percent level. The adjusted R² suggests that 70.8 percent of the variation in inflation is captured by the shortage ratio. The DW statistic signifies no serious

autocorrelation. Equation (2) regresses the logarithm of inflation on that of the unspent purchasing power ratio [(SPP-SME)/SME]. The coefficient for this ratio is significant at the 5 percent level. The adjusted R^2 reveals that this ratio can explain 44.9 percent of the variation in inflation. The DW statistic is fairly acceptable. Equation 3 regresses inflation on the purchasing power imbalance (PPI) in logarithmic form. The coefficient for PPI is significant at the 5 percent level. The adjusted R^2 shows that only 37.5 percent of the variation in inflation can be explained by PPI. The DW statistic has been corrected for autocorrelation. The regression of inflation on excessive money growth is, however, unsuccessful. Equation 4 then regresses inflation on the ratio of M_0 to real national income. The slope coefficient is significant at the 1 percent level. The adjusted R^2 shows that 69 percent of the variation in inflation is explained by this money ratio. The DW statistic is basically acceptable.

Table 2-12 Excess demand and inflation, 1979-1988

		Adjusted R^2	DW
1.	$P^{\wedge} = 0.381 + 0.421 [(AD-AS)/AS]$ (0.268) (4.782)***	0.708	2.106
2.	$\ln P^{\wedge} = -2.319 + 1.612 \ln [(SPP-SME)/SME]$ (-1.766) (2.887)**	0.449	1.763
3.	$\ln P^{\wedge} = 0.495 + 0.618 \ln (PPI)$ (0.799) (2.410)**	0.375	1.514#
4.	$P^{\wedge} = -4.890 + 0.028 \ln (M_0/RNI)$ (-1.967)*(4.587)***	0.690	1.759

Notes and sources: The numbers in parentheses are t-statistics. *** means that the coefficient is significant at the 1 percent level; ** at the 5 percent level; and * at the 10 percent level. # means that the equation has been corrected for first-order autocorrelation via the Cochrane-Orcutt iterative procedure. Data are in tables 2-4, 2-5 and 2-7.

Understanding the causes of excess demand and inflation

In summary, the above descriptions have shown various forms of excess demand during reform and their relationship with inflation. The issue then is whether these various forms of excess demand are the ultimate causes of inflation. The factual descriptions have not yet answered this question. The positive correlations and regressions alone do not mean that these macro variables are the cause of inflation. While it is interesting to have a theory that would explain which macro variables are commonly related to inflation (Chow, 1987; Peebles, 1991), it is more important to identify how these forms of excess demand are generated. Only when the causes of excess demand are identified, can one fully understand the ultimate causes of the entire inflationary process. It is worth pushing the analysis back a stage to see whether excess demand can be further explained by any other factors.

2.5 Explaining the Inflationary Process: The Issues Ahead

Bringing together the reviews of these two chapters, two issues were singled out for attention: the ongoing market-oriented reform and excess demand (hence inflation) arising from this reform, particularly with the reform in the state sector. It should be noted that these two sets of phenomena also existed in other MPEs (appendix 2A.2). It is therefore suggested that the causes of excess demand and inflation that

emerged during reform be examined against the background of the reform process by trying to discover the linkage.

To achieve this objective, it is necessary to have an appropriate analytical framework. Before proceeding to search such a framework, it is important to begin with a review of the existing approaches. Part II will fulfil this task.

Appendix 2A.1 The GRP and the Cautions in Interpreting It

Table 2A-1 Major retail price indices, 1953-1988, 1952 = 100

Year	GRP (1)	LP(2)	MP(3)	CP(4)	AP(5)	FP(6)	UP(7)	RP(8)
1953	103.4	103.2	103.9	102.2	104.6	102.2	104.9	101.9
1954	105.8	105.5	106.3	104.6	107.4	111.0	107.2	104.5
1955	106.9	106.3	106.1	105.8	106.7	112.5	110.0	105.7
1956	106.9	106.3	105.9	106.3	102.6	112.7	108.3	105.3
1957	108.5	108.6	108.9	108.1	102.4	115.7	108.6	107.7
1958	108.8	108.8	117.5	108.7	102.8	116.2	108.8	108.2
1959	109.7	109.5	119.0	109.4	105.3	117.4	109.7	109.1
1960	113.1	112.5	136.6	114.0	105.6	122.2	114.7	112.0
1961	131.5	119.4	491.8	133.7	112.7	149.1	139.9	121.2
1962	136.5	124.3	319.6	137.3	121.7	155.6	146.0	127.3
1963	128.4	122.2	241.2	128.5	118.6	141.0	132.3	124.2
1964	123.7	120.1	167.8	124.4	111.3	134.9	125.1	121.6
1965	120.4	118.4	173.2	122.0	106.0	135.3	123.3	118.1
1966	120.0	117.6	175.3	122.9	102.6	136.6	123.8	116.4
1967	119.1	117.5	178.2	122.0	98.8	137.2	122.3	115.0
1968	119.2	117.6	178.2	122.8	96.0	139.9	123.8	114.1
1969	117.9	116.3	178.1	121.8	96.0	139.5	123.6	113.6
1970	117.6	116.2	178.1	121.6	96.0	139.1	123.3	113.6
1971	116.7	115.0	193.8	123.3	94.0	139.5	125.1	111.0
1972	116.5	114.8	209.6	123.0	92.3	139.9	124.5	110.0
1973	117.2	114.9	220.7	125.1	92.3	140.5	127.9	110.0
1974	117.8	114.9	224.8	125.2	92.5	140.6	127.9	110.1
1975	118.0	114.9	233.8	126.2	92.4	141.3	129.8	110.1
1976	118.3	115.0	243.1	126.6	92.5	140.9	130.3	110.1
1977	120.8	115.1	237.2	130.5	92.6	145.3	137.8	110.2
1978	121.6	115.4	221.6	132.4	92.5	147.4	141.3	110.2
1979	124.0	117.1	211.6	135.2	92.9	155.5	144.0	112.4
1980	131.4	122.3	215.8	144.7	93.8	171.9	155.7	117.4
1981	134.6	123.9	228.3	148.5	95.4	178.3	159.8	119.8
1982	137.2	125.5	235.8	151.4	97.2	183.2	163.2	121.8
1983	139.3	126.5	245.7	153.2	100.2	187.6	166.4	123.3
1984	143.2	134.6	244.7	155.9	109.1	192.5	170.6	127.0
1985	155.8	145.1	286.8	170.5	114.3	220.2	191.4	135.9
1986	165.1	n/a	310.0	181.6	115.6	236.5	204.7	142.7
1987	177.2	n/a	360.6	195.1	123.8	260.4	223.3	151.6
1988	209.9	190.8	469.8	232.1	143.8	320.3	270.9	177.5

Notes and source: (1) = General price index, (2) = Retail list (controlled) price index, (3) = Free market price index; (4) = Price index of consumer goods, (5) = Price index of agricultural producer goods; (6) = Foodstuff price index; (7) = Urban price index, and (8) = Rural price index. See State Statistical Bureau, *China Statistical Yearbook* 1990a, pp.251,258,263,267,268,284,285

Table 2A-2 Weights in calculating the GRP and possible underestimation, 1953-1988

Year	aUP	sUR	bCP	sCR	Year	aUP	sUR	bCP	sCR	Year	aUP	sUR	bCP	sCR
1953	0.50	0.48	0.51	0.95	1965	0.44	0.51	0.90	0.88	1977	0.38	0.48	0.76	0.82
1954	0.48	0.47	0.56	0.93	1966	0.49	0.50	0.86	0.86	1978	0.37	0.48	0.73	0.81
1955	0.28	0.47	-	0.93	1967	0.56	0.49	0.88	0.88	1979	0.37	0.45	0.73	0.82
1956	0.53	0.49	-	0.92	1968	0.53	0.50	0.87	0.88	1980	0.37	0.44	0.74	0.84
1957	0.89	0.50	-	0.93	1969	0.43	0.49	0.85	0.87	1981	0.37	0.44	0.74	0.85
1958	-	0.47	-	0.88	1970	0.41	0.47	0.84	0.85	1982	0.37	0.43	0.74	0.85
1959	-	0.51	-	0.87	1971	0.40	0.47	0.78	0.84	1983	0.37	0.41	0.74	0.85
1960	0.41	0.53	0.89	0.85	1972	0.45	0.48	0.79	0.83	1984	0.37	0.41	0.73	0.86
1961	0.55	0.58	0.89	0.88	1973	0.40	0.48	0.76	0.93	1985	0.36	0.42	0.74	0.88
1962	0.49	0.52	0.95	0.90	1974	0.43	0.48	0.77	0.83	1986	0.36	0.42	0.75	0.88
1963	0.52	0.51	0.99	0.90	1975	0.40	0.48	0.76	0.82	1987	0.36	0.42	0.75	0.88
1964	0.60	0.51	0.95	0.90	1976	0.41	0.48	0.76	0.82	1988	0.35	0.43	0.75	0.88

Notes and sources: (1) aUP = weights (a) given to UP (urban price level), calculated on the assumption that the GRP = aUP + (1-a)RP where RP is rural price level (State Statistical Bureau, 1989b, p.52); (2) sUR = share of urban retail sale (UR) in the value of total retail sale; (3) bCP = weights (b) given to CP (consumer goods price level), on the assumption that the GRP = bCP + (1-b)AP where AP is agricultural producer goods; (4) sCR = share of consumer goods retail sale (CR) in the value of total retail sale. For UP and CP, see State Statistical Bureau, *China Statistical Yearbook*, 1990a, pp.251,258. For UR and CR, the data of 1953-1983, see Plan Department of Ministry of Finance, *Statistics of Chinese Public Finance*, 1986, pp.117-118; and the data of 1979-1988, see State Statistical Bureau, *China Statistical Yearbook*, 1990b, p.77.

Discussion: Theoretically, the weights given to urban price level (aUP) in compiling the GRP should correspond to the share of urban retail sale (sUR). If aUP < sUR, the GRP may underestimate the true overall price level when the urban price level is rising. As shown, while in the 1960s these two numbers matched relatively well, the aUP turned significantly larger than the sUR since the 1970s on. Consider that the urban price level rose much faster than rural one (especially during reform), the GRP thus compiled would lead to underestimation. The similar situation is identified in the case of consumer goods.

Table 2A-3 Regional (provincial) inflation rate difference, 1988

Provinces	P^	Provinces	P^	Provinces	P^	Provinces	P^
National	18.5	Heilongjiang	17.8	Henan	20.2	Tibet	--
Shanghai	21.3	Hubei	19.5	Shaanxi	19.0		
Jiangsu	21.7	Hunan	25.9	Gansu	18.6		
Hebei	18.1	Zhejiang	22.1	Guangdong	30.2	Qinghai	18.3
Shanxi	21.0	Anhui	21.8	Guangxi	21.0	Ningxia	17.5
Inner Mongolia	16.3	Fujian	26.5	Sichuan	20.0	Xinjiang	14.6
Liaoning	19.3	Jiangxi	21.8	Guizhou	20.2	Beijing	21.9
Jilin	19.9	Shandong	18.3	Yunnan	19.6	Tianjin	17.7

Source: State Statistical Bureau, *China Statistical Yearbook*, 1989b, p.82.

Appendix 2A.2: Inflation in Other MPEs

Table 2A-4 Inflation records in five reformed countries

Countries	Periods	Inflation rates (%)	Periods	Inflation rates (%)
Former Yugoslavia	1956-1960	4.3	1980	29.9
	1960-1963	7.8	1985	7.3
	1963-1970	13.0	1986	89.8
	1970-1975	17.5	1987	120.8
Hungary	1961-1967	1.0	1985	7.0
	1973-1978	3.9	1987	8.7
	1978-1984	7.5	1988	16.3
Poland	1952-1972	1.0	1984	16.1
	1972-1975	4.0	1985	15.1
	1981-1983	15.0	1988	60.2
The Former Soviet Union	1970-1979	0.3	1987	4.4
	1980-1984	1.0	1988	5.8
	1985	3.4	1989	7.3
	1986	4.4	1990	10.7
Vietnam	1985-1987	300.0+	1988-1989	50.0-100.0

Sources: For former Yugoslavia, Hungary, and Poland (1980s), see *International Financial Statistics Yearbooks* the IMF, various issues. For Poland (before 1980s), see Portes (1978). For the former Soviet Union, see Hewett (1988), and *Business Week*, October 1, 1990. For Vietnam, see Wood (1989).

Discussions: As can be seen, almost all MPEs suffered inflation during their reform process. When former Yugoslavia began its worker-management type reform in the 1950s, inflation accompanied this process from the very beginning. When additional market measures were introduced in 1965, inflation seemed to become uncontrollable. Hungary was another socialist country that combined central planning with a regulated market. Decentralization began in 1968 and inflation soon followed. Poland, the later participant on the same track, experienced an even worse situation. Its reform was carried out thoroughly in the early 1980s with an immediate inflationary response. The former Soviet Union adopted reform in 1985, and ever since, the inflation rate has been on the rise. Vietnam suffered even more serious inflation when it started reform in the mid 1980s. Inflation ran at an annual rate of more than 300% between 1985 and 1987, and remained around the 50 to 100% to the end of the 1980s.

Along with inflation, these countries also experienced persistent excess demand in various forms. Again, while there was a debate where these economies suffered chronic excess demand and sustained repressed inflation in the pre-reform period (Nutti, 1986; Portes, 1989), most analysts believed that macro imbalances and excess demand became greatly significant when reform started in these economies. A detailed discussion in this regard is provided by Davis and Charemza (1989). Take the former Soviet Union as an example. Excessive money supply was quite common. The growth rate of money supply nearly doubled between 1986 and 1988, while those of real output decreased (Hewett, 1988). The panic buying and bare store shelves in the reformed years were notable examples of increasing shortages, along with the numerous other reports from its past.

PART II EXPLANATION OF INFLATION: LITERATURE REVIEW

This part reviews three approaches in the literature: equilibrium, disequilibrium and shortage approaches. Chapters 3 to 5 examine each of them by summarizing their arguments, surveying the literature and making an assessment of their applicability in China. The analytical framework adopted by this study is then summarized in chapter 6.

To facilitate the review and comparison, a few concepts should be noted in advance. First, an economic *system* is defined as a means of achieving the development of the productive forces through specific forms of production (economic) relations, which are ultimately based on the ownership of the means of production (Neuberger and Duffy, 1976). A capitalist system is based on private ownership while a socialist one is built on public ownership. Each of these systems has essential elements which are derived from its ownership form (private or public) and the underlying principles (capitalist or socialist). These elements are *system-specific* (or *systemic*) ones. Secondly, every system requires certain institutions to achieve its basic goals. An *institution* is defined as sets of formal or informal rules and routines that impose constraints on the actions of, and interactions among, economic agents, be they individuals, groups or organizations (March and Olsen, 1989). One critical feature of the institutional framework is the coordination mechanism,

be it the market or the plan, or a combination of both. For the socialist system, the existing institutional frameworks include the CPE with central planning as the only coordination mechanism, the MPE with a market-plan combination playing a coordinating role, and perhaps various forms of proposed market socialism with the market as the only decisive governing rule. Any of these institutional frameworks are linked to the systemic requirements in one way another, i.e., the features of public ownership. Thirdly, *institutional reform* within a system is defined as the process of a change in rules and procedures that specify the actions of and interactions among agents. Thus defined, the recent change from the CPE to the MPE in the socialist system can be understood as a process of modification of governing rules and procedures in response to the perceived failures of the CPE. Fourthly, *policies* adopted by the authority are not part of a system or an institution, while they may affect the performance of a system or an institution. Policies are the means to serve an end. It is important to see whether certain problems in both the CPEs and the MPEs are caused by systemic (ownership-related issues), institutional (e.g., weaknesses of the coordination mechanism), or *policy-related* (misuse or poor design of policies) factors. This distinction is critical in identifying the causes of excess demand and inflation in the MPEs.

CHAPTER 3 THE EQUILIBRIUM APPROACH

This chapter summarizes the framework of the equilibrium approach (section 3.1) and reviews its application in China (section 3.2). The ability of this approach to explain the inflationary process in the MPEs is evaluated (section 3.3).

3.1 Basic Framework of the Equilibrium Approach

The equilibrium approach to inflation is the application of the neoclassical precepts to the inflation problem in the market capitalist economies. Any inflation theory is said to be an equilibrium type if its analysis is exclusively based on the neoclassical assumptions of perfect market conditions such as atomistic competition, a self-regulating mechanism and the 'flexprice' markets (i.e., price adjusts to clear market quickly and continually). As well as incorporating the traditional quantity theory of money, monetarism in its various forms utilizes equilibrium inflation theory.

The quantity theory of money

The income version of the quantity theory is based on the equation of exchange ($MV = PQ$), that is, the quantity of the money (M) multiplied by income velocity of circulation (V) is equal to the general price level (P) multiplied by the volume of real output (Q). This equation has a dynamic version in

terms of growth rates: the growth rate of the money supply plus the growth rate of its velocity of circulation equals the inflation rate plus the growth rate of real output. The equation of exchange is an identity, i.e., it is always true because velocity of circulation is computed as a residual. It becomes the quantity theory of money as two assumptions are added: a constant V and a fixed Q . Thus constructed, a money supply increase is fully reflected in a price increase but with no impact on real output, a property known as the 'neutrality of money'. Furthermore, if M is exogenously given and does not change because of changes in PQ , a control over M is the best way to control inflation.

Yet, the usefulness of the quantity theory is undercut by a recognition that most of its assumptions are unrealistic. Velocity is not constant, but is a function of other variables such as interest rates. Output is not fixed in the short run, and a monetary expansion can be broken down into an increase in real output and a price increase depending on the economic situation. In the case of widespread unemployment, an increase in the money supply lowers the interest rate, thus stimulating investment, which in turn increases real output through a multiplier process. An increase in the price level is unlikely in this case, at least in the short run. Finally, it has been argued by an increasing number of economists that the money supply is endogenous to the economy, due to both the behaviour of governments and the nature of the banking system.

Monetarism

The influence of the quantity theory diminished after the Keynesian revolution, but has been revived with the rise of monetarism. Monetarists (Friedman, 1968, 1975; Phelps, 1967, 1972) noted that while the velocity was not constant, it was fairly predictable, being a relatively stable function of other variables. This led them to conclude that a careful study of the determinants of M and V was the best way to predict the behaviour of nominal output. Given an understanding of movement in V, they believed that a control over the alleged exogenous money supply was always the best way to control nominal output. Further, while accepting that changes in the money supply might alter both the general price level and real output in the short run, monetarists argued that in the long run, when all self-regulating adjustments took place, the neutrality of money was again valid. Such concepts as inflationary expectations and the natural rate of unemployment¹ were key influences in this outcome. It was believed that most inflation was a demand-pull phenomenon taking place in an economy of atomistic competition where prices adjusted to clear markets continuously and rapidly. In the short run, monetarists advocated the use of restrictive monetary policy to fight inflation. Since inflation would have no real effect in the long run when inflationary

¹ This rate is the sum of inevitable unemployment such as frictional and structural unemployment. It is argued that workers unemployed at this rate are not unemployed due to a lack of sufficient aggregate demand but by choice, i.e., all unemployment is voluntary.

expectations were correct, it was believed that following a monetary rule such as steady growth of the money supply was the best way to conduct monetary policy.²

Yet, as many non-monetarist scholars have argued, the major assumptions of monetarism and other equilibrium theories did not hold true as demonstrated by the experience of the modern capitalist economies. The unreality of this approach was not only related to its assumptions such as exogeneity of money, but more importantly, to its fundamental belief that markets were always in equilibrium. As many institutional changes (e.g., the influences of oligopolies, trade unions and the welfare state) have taken place over time during the development of modern capitalism, these economies are now characterized largely by "fixprice" markets (quantities but not prices adjust to clear the market; price adjustments are responses to changes in "costs"). As this example suggests, the key deficiency of equilibrium analysis is its neglect of institutional developments when analyzing economic issues.

However, for the inflation analysis, the equilibrium analysts maintain that their explanation for the causes of inflation is universally true. For example, the quantity theorists and monetarists commonly believe that, "inflation is always and everywhere a monetary phenomenon", to use the words of Friedman. This assertion has two implications. The

² The Rational Expectations Hypothesis may be viewed as an extreme form of monetarism which argues that the neutrality of money holds true even in the short run. For details, see Frisch (1983).

term ``always'' suggests that the causes of inflation can only be located in the monetary domain, i.e., rooted in changes in the money supply. The term ``everywhere'' implies that the causes of inflation are the same for any economic institution and system. It is the view of a universal applicability of the equilibrium approach that has led some scholars to apply the quantity theory and monetarism to study inflation in the socialist economies, including that in China.

3.2 Application of the Equilibrium Approach in China

The application of the equilibrium approach in China had two related aspects. One was to claim a one-way causality from the exogenous money supply to price and inflation. The other was to advocate the monetarist policy such as a constant monetary growth rule to cure inflation. These analyses of inflation were generally confined to the monetary domain, with no attention given to any factors behind the monetary growth.

Chow (1985, 1987)

Chow seemed to be the first prominent Western economist to apply the equilibrium approach to the Chinese economy. His book in 1985 adopted an equilibrium framework with few modifications to explain the operation of the Chinese economy. His paper in 1987 put emphasis on the money ratio - price relationship based on the quantity theory, and sought to prove

three points. First, with an examination of the relationship between the ratio of money supply (currency in circulation) to real income (M/y) and the GRP for the period 1952 to 1983, Chow argued that price level and its change would be highly correlated with the money ratio M/y and its change as suggested by the quantity theory.³ Based on this correlation, he further claimed that "inflation is found to be a monetary phenomenon" (1987, p.319). Secondly, Chow believed that the relationship between the money ratio and inflation remained stable during reform, and its future change could be predicted based on the quantity theory.⁴ Thirdly, to prove that the price level and inflation could be explained by the money ratio, Chow examined the impact of the total wage bill on the price level from 1952 to 1983, and concluded that wage was not a main factor in affecting the price level.⁵ The conclusion was that "the quantity theory of money provides a useful starting point in constructing a model to explain the index of retail prices in China" (1987, p.332).

Several points should be mentioned regarding Chow's

³ For the explanation of the price level (the GRP), the major result is (p.326)
 $\ln P = 0.9445 + 0.2687 \ln(M/y) \quad R^2 = 0.8217, \quad s = 0.0363, \quad DW = 1.003$
 (0.0567) (0.0229)

For the explanation of the change in the price level, the major result is (p.328)
 $\Delta \ln P = 0.00422 + 0.1430 \Delta \ln(M/y) + 0.2176 \Delta \ln P_{-1} - 0.3771 u_{-1} \quad R^2 = 0.7174, \quad s = 0.0193, \quad DW = 2.068$
 (0.00376) (0.0201) (0.1098) (0.1209)

Where standard errors of the estimates are in brackets. R² is the coefficient of determination, s is the standard error of the regression and DW is the Durbin Watson statistic. u_t is the lagged residuals. M/Y is defined in the text.

⁴ The price level in 1984 was predicted as 161.27, against the actual figure of 160.06 (p.332)

⁵ With W as the sum of wages in state and collective enterprises, the result is (p.331)
 $\ln P = 0.5297 + 0.2010 \ln(M/y) + 0.0430 \ln W \quad R^2 = 0.8786, \quad s = 0.0305, \quad DW = 0.9643$
 (0.1221) (0.0266) (0.0117)

where statistics have the same definitions as footnote 3. Since the coefficient of $\ln W$ is only 0.043 although it is statistically significant, it is concluded that the effect of the wage bill is small.

results. First, as noted earlier, the GRP was the weighted average of the controlled, floating and free market prices, with the first as the most important element both before and during reform. It could be expected that a price level containing a significant controlled price element might not be well explained by the quantity theory with the flexprice markets as a key assumption. This was already obvious in Chow's results: the coefficient on the money ratio (in natural logarithms) was "only 0.2687 and very much below unity", thereby "contradicting the quantity theory" (1987, p.325). As Peebles (1991, p.152) argued, this result came as no surprise because the aim of the price control was precisely to prevent prices from rising in line with any increase in the monetary ratio. Secondly, this weak connection between the money ratio and the price level remained basically the same during reform (equation 4 in table 2-12 for the period 1979 to 1988; equation 1 in Peebles, 1991, p.204 for the period 1978 to 1988). As fixprice markets remained as a key institutional feature during reform, this weak connection was not surprising. Thirdly, Chow made no attempt to examine why the money supply changed in the first place. This can be traced primarily to another assumption of the quantity theory approach, the exogeneity of the money supply. It should be noted that even if a close relationship between money and prices could be established, it did not provide a meaningful explanation for the causality between money and price as long

as the changes in the money supply remained unexplained.

Failure to distinguish three institutional frameworks

The equilibrium approach had an increasing influence on many Chinese scholars as more market elements were brought into the economy following the reform (Liu, 1987; Qian, 1988). This acceptance was, however, rather naive, as these scholars failed to distinguish three institutional frameworks. The first institutional framework was the aforementioned flexprice market assumption upon which the quantity theory of money was based. The second institutional framework was the pre-reform plan control. It was true that in the pre-reform period the equation of exchange ($MV = PQ$) was widely used by the Chinese planners to maintain price stability (Cheng, 1981; Gong, 1986; Li, 1989). However, the above could only be justified under pre-reform institutional conditions: M was the planned quantity of money in circulation; P was the target price level; and Q was planned real output. These targets were guaranteed by a mono-bank, extensive control over the price level and comprehensive input-output plans. Under these institutional arrangements, the equation of exchange had quite a different meaning than normally given to the quantity theory of money. The third institutional framework is a plan market combination brought about by the reform. As seen in chapters 1 and 2, inflation in this institutional framework may not be explained by either the planned version of the equation of

exchange, or the quantity theory with a flexprice market assumption. However, the differences among these three institutional frameworks were not taken into account by those Chinese scholars who adopted the quantity theory and monetarism to study the money ratio - price relationship during reform. The market-oriented reform and the ensuing plan-market combination were mistakenly viewed as implying flexprice market conditions. For example, these scholars ignored the fact that the price level was still at least partially controlled during reform. They also ignored the fact that a decentralized banking system had rendered the monobanking system past history and that the control over the money supply had become more difficult. These scholars still held the monetarists' view that the control over the exogenous money supply was the only and best way to fight inflation. Up to 1988, this line of thought became a mainstream viewpoint in the literature and also heavily influenced the decision-making of the Chinese government.

Friedman visited China when the Chinese inflation was still at its peak in early 1989. During his stay, he strengthened monetarist influences by repeatedly insisting that the Chinese inflation was caused solely by excessive money supply and was, therefore, a pure monetary phenomenon as in any other country. He suggested that the only solution to fight inflation was to control the money supply.

3.3 Comments on the Adoption of the Equilibrium Approach

While a full evaluation of the equilibrium approach is not the main focus of this study (for a critical detailed analysis, see Cornwall, 1983), several issues need to be emphasized regarding its applicability in China.

First, the equilibrium analysis of money and prices is firmly based on a fundamental institutional assumption of perfect flexprice (hence flexwage) markets (which has proven to be an inaccurate description even in the modern market capitalist economies). There is no doubt that this assumption has never been true in the socialist economies where the government's planned control over the price and wage determination makes the fixprice markets the norm. As noted, the price and wage levels in China were subject to different levels of control. This fundamental institutional difference throws doubt on the adoption of the equilibrium approach as a basic framework to study the causes of inflation in China, since it has no place for the fixprice markets and the underlying plan mechanism.⁶

Secondly, the way any economy operates and its possible problems are in many ways influenced by the institutional developments. It should be expected that inflation during

⁶ It is recognized that there are different views regarding what criteria should be employed when selecting between theories. Whether the relevance of assumptions should be a part of this selection has long been debated (see Blaug, 1980). However, an approach with proper and realistic assumptions on the institutional features may be more capable of grasping the causes of any economic problems, such as inflation generated from that institutional background.

reform in China will be related to the institutional changes. However, since the equilibrium approach is based on the assumption that institutions have no effect on equilibrium, it makes no attempt to integrate institutional changes into its model. This approach thus lacks explanatory power to grasp the causes of inflation during an institutional reform.

Thirdly, it may be questionable to apply the equilibrium approach to the socialist economy without paying attention to its underlying systemic assumptions. As understood, one of the basic assumptions of the equilibrium approach is private ownership. If this theory is to be adopted to describe the economic problems in a public ownership economy, certain ownership-related features in the latter case should be considered. However, the existing adoption of the equilibrium approach has not made any attempt in this direction.

Fourthly, any complete monetary-inflation theory should include an explanation of why the money supply increases in the first place. Even Friedman (1987, p.17) admitted that "the deeper question is why excessive monetary growth occurs". Yet, since the logic of the equilibrium approach is that most of changes in the money supply are exogenous to the economy under any circumstance, this approach will not help us much in addressing the key issue of why and how the various forms of excess demand, including the excessive money supply, are generated during reform. A full account on this issue can only be provided if all systemic, institutional and policy-

related issues are integrated into a compact framework.

Finally, given that the equilibrium approach seems unable to identify the causes of excess demand and inflation, it is apparently incapable of providing any cure for this inflation. Monetarists suggest that a two-tier banking system can control inflation by ensuring an optimal level of the money supply. The central bank need only control the money supply while commercial banks facilitate the efficient allocation of financial resources. Inflation is thought to result only when such a monetary rule is violated by the government's policies. Yet the reform process in nearly all MPEs has indicated that this type of control did not work. In Hungary, Poland and Yugoslavia, tight-money-supply policies have been adopted but have proven barely effective (Gedeon, 1986; Dembiniski, 1988). As will be detailed, the Chinese experience also cast doubt on the applicability of the monetarist policies.

The above weaknesses of the equilibrium approach have been recognized by many economists who do not believe in the relevance of flexprice markets, and who seek to understand the causes of the excessive money growth in the socialist economies. They require a different analytical framework which may suit these economies better by integrating their institutions and the reform-induced changes. The application of the disequilibrium approach is such an example.

CHAPTER 4 THE DISEQUILIBRIUM APPROACH

This chapter first reviews the basic framework of the disequilibrium approach (section 4.1) and then highlights the arguments of this approach in terms of inflation analysis (section 4.2). The application of this approach in China is outlined in section 4.3, and the ability of this approach to study the inflation in the MPEs is evaluated in section 4.4.

4.1 Basic Framework of the Disequilibrium Approach

In general, if any inflation theory is called to be the disequilibrium approach it will be based on the assumption of fixprice markets. This approach was first developed in the capitalist economies largely in an effort to correct for the aforementioned weaknesses of the equilibrium approach. One major representative was the Clower-Barro-Grossman (C-B-G) model (Clower, 1965; Barro and Grossman, 1971, 1974). This model analyzed macro imbalances within a framework in which quantity adjustments were the means adopted by agents to adjust excess demand or supply, not prices (including wages).

Fixprice market assumption and the socialist institutions

Over time, the disequilibrium approach has been adopted by an increasing number of scholars to describe the economic performance of the CPEs, due mainly to the recognition that

the fixprice markets prevailed in these economies. Similar to the disequilibrium analyses in the modern capitalist economies which linked institutional developments to the fixprice markets in understanding the macro problems, the application of this approach to the CPEs was an attempt to include the unique institutions of these economies in the models. The key ingredient integrated was the plan mechanism i.e., a centralized decision-making hierarchy and a plan coordination, hence planners' behaviour and policies. Thus constructed, the disequilibrium approach was then used to describe such phenomena as excess demand and repressed inflation in these economies (Davis and Charemza, 1989).

Several basic propositions made up the disequilibrium approach applied to the CPEs. Almost all studies in this group adopted the same institutional assumption of the fixprice markets in the CPEs, the same recognition of the planners' decisive roles in manipulating the economies, and the same belief in using an aggregate method to describe the economic performance. As a major representative, a model developed by Portes (1977, 1981, 1983, 1989) can be used to see how the institutions of the CPEs have been integrated into this approach.

Portes' disequilibrium model

In the Portes' disequilibrium model, the CPE institutions were represented by two sectors (state sector and households)

and two aggregate markets (consumer goods and labour markets), in which excess demand or supply led to quantity adjustment. Similar to other disequilibrium models, the state sector exclusively meant the planners or plan mechanism. It was argued that there was 'little advantage in breaking up the state productive sector into planners and enterprises and modelling the interaction between them' (Portes, 1989, p.34). These two agents formed the 'Centrally Planned Economy Inc.' with the same objectives (Portes, 1981, p.560). The planners controlled the productive sector, demanded labour from the household sector, provided consumer goods, held inventories, and allocated part of the final output to themselves as government expenditure. Money supply was adjusted to meet the demand from households. At the end of the plan period, the planners made adjustments. The next year's plan depended on the planners' evaluation of the immediate past performance and future growth strategy. The planners would adjust excess demand or supply in various markets to keep future macro imbalances to a minimum.

Under the plan mechanism, households supplied labour on the one hand and demanded consumer goods and money on the other. They maximized utility by choosing a combination of current and future consumption and leisure, subject to a budget constraint. However, households adjusted their behaviour whenever faced with quantity constraints. Thus, when the quantity of consumer goods supplied was insufficient,

households could either increase their savings or reduce their labour supply. The adjustment ability of households and their utility maximizing behaviour would then help to keep the imbalances in current markets to a minimum.

With these institutional assumptions, the task was to examine the macro magnitudes in the consumer goods market by aggregation. As with other disequilibrium models, a set of testable aggregate equations were constructed (Portes and Winter, 1980): the aggregate demand function of consumer goods which represented the behaviour of households, the aggregate supply function of consumer goods which mimicked the planners' behaviour (the plan adjustment equation), and the minimum condition equation which required that actual consumption equal the minimum of supply or demand. Portes and his associates then used these equations to estimate the macro imbalances in the consumer goods market for a number of CPEs.

One important implication of the Portes' model was that the planners had the ability to maintain a macro balance given the rational behaviour of households and enterprises. This came chiefly from the belief that markets could be quantity-constrained with excess demand in some or excess supply in others, but macro imbalances would be small since households could adjust their behaviour, and the planners could modify their plans frequently. Under these conditions, if macro imbalances still appeared, they would primarily be the result of improperly-designed or poorly-coordinated policies. For

example, shortages in the consumer goods market might be generated if planners established too low a price level. A low priority given to investment in light industry might lead to an insufficient supply of consumer goods as well, hence the shortages. On the whole, macro imbalances, if any, could be viewed primarily as a policy-related phenomenon.

4.2 The Explanation of Inflation: The Disequilibrium Approach

The explanation of inflation in the CPEs

The disequilibrium approach has been used to describe inflation problems in the CPEs, generating both agreements and controversies. On the one hand, there was a consensus that inflationary pressures were always strong in the CPE, due to either plan tautness or planners' errors. *Plan tautness* was defined as a planned process of output (target) maximization, input minimization and inventory minimization (Brown and Neuberger, 1989). Plan tautness was a key institutional feature of a CPE, aiming at the swiftest possible central mobilization of available resources to facilitate rapid growth. Planners' errors were related to the lack of coordination in policies in pursuit of rapid growth.

Portes (1977, 1983) suggested that three factors in the state sector might generate inflationary pressures: dramatic structural change, a sustained high investment ratio and plan tautness. The first two factors could also be found in other

economies but were often exacerbated by planning errors in the CPEs, while plan tautness was a unique and built-in factor in the CPE. As a result, there was ``excess demand in the state productive sector for intermediate and investment goods'' (Portes, 1989, p.29). It was then implied that these pressures, unless checked, would be transmitted to the consumer goods market, resulting in repressed inflation when prices were controlled, or leading to inflation if the price control was lifted.

On the other hand, it should be noted that there were some controversies regarding the spillover effects from the producer goods markets (or state productive sector) to the consumer goods market. Some scholars (e.g., Howard, 1976, 1979) argued that these inflationary pressures were definitely passed to the consumer goods market and, given price controls, turned into serious repressed inflation. This argument was supported by such evidence as excess monetary holdings and excess household saving in many CPEs (Wimberley, 1981; Birman and Clarke, 1985; Nuti, 1986; Cassel, 1990).

However, other scholars, led by Portes, believed that the institutions in the CPE might largely prevent these spillover effects from taking place. The institutions were a comprehensive plan structure including wage and credit plans, a mono-bank monitoring wage and credit flow directly, two separate monetary circuits, and the separation of the household sector from abroad and from other domestic sectors

(Portes, 1978). Using their empirical results, Portes and his associates concluded that repressed inflation was not endemic in many CPEs, and that cases of both excess demand and supply could be found. Similar empirical tests were also implemented for other CPEs to support this argument (Pickersgill, 1976, 1980; Hartwig, 1983; Van der Lijn, 1990). Not surprisingly, these results brought about more controversy in the disequilibrium camp because they appeared to contradict daily experiences in the CPEs. Their empirical methods and data construction were questioned as well. Yet, given that almost all available evidence seemed to be compatible with either view (similar to the Chinese pre-reform case, see chapter 2), this controversy has continued with no end in sight.¹

The explanation of inflation in the MPES

Faced with increasing inflation during reform, there was a consensus among the disequilibrium scholars regarding the causes of inflationary pressures. It was recognized that there had not been much change in planners' objectives of rapid growth. Plan tautness remained untouched while the plan coverage was reduced. As usual, this plan-tautness-related factor, exacerbated by a poor policy coordination, generated strong inflationary pressures mainly in the form of excess

¹ It was because of this controversy, some scholars (Wanless, 1985; Peebles, 1991) attempted to distinguish between the 'traditional' (whoever believed in sustained excess demand and repressed inflation) and 'new' views (whoever argued that there was no excess demand at the aggregate level) within the disequilibrium camp. Yet, while the difference in conditions of these two views were sometimes striking, there were no significant theoretical differences in their analytical frameworks.

demand in the state productive sector.

It was further agreed that, unlike the case of the CPE, several reform-induced institutional changes and policies easily gave rise to inflation. For those who believed in sustained excess demand before reform, attention was first focused on how the price decontrol process led to a one-time price increase. However, a more influential argument was to attribute the prolonged inflation to new sources of excess demand due to the planners' rapid growth strategy, policy mistakes, or lack of experience in macro control. For example, it was argued that an abandonment of the CPE's monetary and price institutions, without simultaneously setting up indirect macro controls of inflation, led to greater inflation (Portes, 1978, 1983; Stupnicki, 1985).

The policy implication of the disequilibrium approach was twofold. First, in order to get rid of the plan-tautness-related inflationary pressures, the process of marketization should be quicker, and planners' ambitious growth objectives should be modified. Secondly, to prevent the existing spillover effect (defined on p.59), a proper policy package was needed. It included a smooth transition in setting new macro controls, and an avoidance of policy-related mistakes such as a poorly-coordinated reform package. As to the reform process, it was necessary to set the prices right, i.e., to carry out price reform first. This suggestion was based on the belief that any macro imbalances in these economies were

primarily a matter of incorrect relative prices in fixprice markets. A change in the product and factor prices, and the appearance of the flexprice markets in the end, would be powerful enough to reestablish macro balances and improve efficiency.

4.3 Application of the Disequilibrium Approach in China

Certain differences aside, the studies of the Chinese inflation done by the disequilibrium scholars had some common features. Most scholars integrated the Chinese institutional arrangements such as fixprice markets and plan mechanisms into their models. Most scholars addressed both the repressed inflation pre-reform and inflation during reform primarily in terms of institutional and policy-related factors. Keeping in mind the controversy over the issue of repressed inflation (see chapter 2), the following reviews the studies of the causes of excess demand and inflation during reform.

Portes and Santorum (1987)

Portes and Santorum directly applied the Portes' model to China by considering the period 1954 to 1983 as a whole. Two major findings were claimed. First, cases of excess demand and supply in the consumer goods market were found, suggesting that excess demand did not dominate the pre-reform period. Secondly, the money supply (in various measures) was found to

be endogenous. With respect to the reform period (1979 to 1983 in their paper), several points were noted. One was the verification that continuous excess demand coexisted with inflation during reform. The other suggested a bi-directional causality relationship between the money supply and the price level, thereby implying that the control over the money stock would be crucial in controlling inflation. Yet, while claiming the endogeneity of money, they provided no explanation for what caused the excessive money supply. The reason for this deficiency may be that insufficient efforts were made to consider the special features of Chinese institutions in their paper.

Hsiao (1982, 1984)

The majority of the disequilibrium scholars, however, did attempt to integrate the Chinese institutions into their explanation of inflation, with emphasis on the characteristics of the plan mechanism and planners' policies. Most of these studies dealt with either a causality from various forms of excess demand to inflation, or the factors behind the excess demand. Two studies done by Hsiao were a case in point. She regarded inflation between 1979 and 1981 as the result of fiscal deficits and the ensuing money supply increases. Based chiefly on a year-to-year analysis of the new features of banking institutions and other aspects of reform, it was argued that in the final analysis, inflation in these years

was due to policy changes. For example, a policy reversal aimed at increasing personal income led to an expansion of government spending, but the budgetary policy at the same time was unable to limit the investment growth to planned amounts. Together, these two factors resulted in budget deficits, and deficit financing (government borrowing from the banks) led to inflation.

Chen and Hou (1986)

Chen and Hou examined the macro performance for the period 1979 to 1983. While attempting to measure the extent of inflation by means of the quantity theory of money, they sought to explain the inflation in this period primarily by institutional considerations. For example, price increases were believed to be the result of the excessive money supply, which was due to deficit financing. Dual expansion (income and investment expansion) was then viewed as the cause of deficits. In the final analysis, both continual plan tautness and policy issues (new development strategy) were cited as the causes of the dual expansion.

Chen (1989)

Chen adopted a five-variable autoregression model to describe the relationship between monetary aggregates and macro performance from 1951 to 1985. While claiming that his model 'makes no attempt to use economic theory to impose any

a priori restrictions upon the interactions of variables'' (1989, p.315), Chen interpreted his empirical results mainly in terms of the CPE model without noting the changes the reform brought about after 1979. For example, he reported that there was a uni-directional causality from the most narrowly defined money supply (currency in circulation) to inflation, thereby suggesting that this money supply was the best target of monetary policy for controlling inflation. He also argued that the change of this money supply was only ''reflecting the behaviour of central authorities'' (1989, p.322), implying that the planners had full control over the money supply as in the pre-reform period. By invoking the actions of the planners to explain the money-price relationship, Chen basically ignored the changes the reform had brought about such as a decentralized banking system.

Feltenstein and Ha (1990)

Feltenstein and Ha presented a monetary model based on the assumption of fixprice markets to address the inflation during reform (1979 to 1988). While the measurement of repressed inflation was their major interest, they also suggested that there were increasing inflationary pressures in the economy in the form of credit expansion and excess monetary growth. They mainly attributed credit expansion to reform methods such as decentralization of the banking system. While no detailed explanation was given to how these policy-

related methods were linked to the excess demand, their standpoint was clearly identified by the subtitle of the paper, that is, excess demand was mainly due to ``the lack of coordination between monetary policy and price controls''.

Perkins (1988)

A more consistent version of the disequilibrium approach in China was the purchasing power approach used first by Perkins (1988). The key concept was purchasing power imbalance, defined as an excess of the growth rates of purchasing power over those of supply of consumer goods. This model was first constructed by Perkins (1964, 1966) to examine the money and price structure in pre-reform China. In these studies, Perkins emphasized the planners' policies and reactions towards any purchasing power imbalances in the consumer goods market. Based on the analysis of Chinese institutions, he argued that there were two distinct consumer goods markets (the urban and rural ones), and that the planners could effectively control the purchasing power and supply of goods in both consumer goods markets. As a result, China attained a basic purchasing power balance in the pre-reform period (the 1950s in his study), hence price stability. Turning to the reform period (1979 to 1986), Perkins (1988) argued that inflation was the result of the breakdown of the control which originally maintained the balance of purchasing power and the supply of goods in both urban and rural consumer

goods markets. Moreover, as excess demand was generated in the producer goods market and then passed to the consumer goods one, inflation resulted when control became difficult.

Peebles (1991, 1992)

In a series of studies, especially his book in 1991 and revised paper in 1992, Peebles offered a new version of the purchasing power model. His research focus was the money and price development for the entire period 1953 to 1988. The key assertion was that any explanations should be based on China's economic institutions and policies. The institutions included the fixprice markets, the feature of a plan mechanism, and the unique money supply process. The policies referred to the planners' objectives to maintain price stability, to obtain an acceptable ratio of currency in circulation to retail annual sales, and to preserve a macro balance by a preferred way of withdrawing currency through retail sales (*shangpin huilong*) rather than through savings deposits (*huobi huilong*). Unlike most of the disequilibrium models which emphasized inflationary pressures in the producer goods market and their spillover effects, Peebles targeted the purchasing power imbalances in the consumer goods market and the planners' reaction towards them. A three-step analysis was implemented.

First, Peebles showed empirically that the changes in the narrow measure of the money supply was an endogenous process. Two methods were used to check how these changes occurred in

the first place. One was the flow-of-funds method which examined the annual difference between the purchasing power (the total money incomes) and realized expenditure, i.e., the change in holdings of monetary assets, which then provided an accounting explanation for why the narrow measure of the money stock (savings deposits and cash in hand) changed. The other was the use of a balance sheet of the national banking system which emphasized the changes in annual loans and savings. These changes then gave an accounting explanation for currency growth (an even narrower money stock measure).² Peebles chose the flow-of-funds method as an analytical framework for the entire period. It was then claimed that changes in the purchasing power (including urban wages and peasant incomes) could largely explain the growth of money holdings (1991, pp.109-113). Several policy implications were also suggested to the effect that the purchasing power should be controlled, and its balance with retail supplies should be maintained.

Secondly, purchasing power imbalances and the planners' reaction toward them were viewed as the causes of inflation. Peebles believed that the plan mechanism had an inherent weakness in attempting to balance monetary accumulation in the household sector and retail price stability, a situation called the 'monetary planners' dilemma' (1992, p.31). When purchasing power grew faster than the supply of consumer

² This accounting method has been adopted by a number of scholars to explain the currency growth using a slightly different grouping of items. See Huang (1988), Cheng (1988) and Tsang (1990).

not provide many insights into this issue. Yet, for the limited reasons he provided, these imbalances were largely attributed to either institutional or policy-related issues. For the pre-reform period, Peebles argued that the problems were mainly from the supply side such as supply shocks and policy mistakes (1992, p.35). But the reasons for the continual purchasing power imbalances during reform were believed to be linked with the demand side, with two periods distinguished (1979 to 1980 and from 1984 on). For the period of 1979 to 1980, imbalances were viewed as "the unintended and unforeseen consequences of incentive policies introduced in agriculture and then in industry" (1992, p.35). The policy-induced increase in agricultural procurement prices and urban wages led to an enormous rise in the purchasing power. But the imbalances after 1984 were located in the urban sector in the form of wage and bonus increases and credit expansion. This was due to policy mistakes such as an improper wage and lending quotas announcement at the end of 1984, and the fact that there were "no effective institutional arrangements for controlling the growth of wages and bonuses based on credit creation" (1992, p.37).

Peebles' approach seemed to be influenced by the Chinese CPE's theory of planned overall balance (*hongguan zonghe pingheng*) (Ma, 1982; Deng, 1989). The attempt to balance "social commodity purchasing power" (*shehui shangpin goumaili*) has been an inherent part of Chinese planning for a long time. It has

been argued that the purchasing power imbalances during reform did contribute to inflation (Liu, Chu, Han and Zheng, 1984; Zhang and Li, 1985; Xia and Li, 1987). But the causes of these imbalances have often been a puzzle to the Chinese. Why didn't the old and once successful policies in keeping purchasing power balance work during reform? The answer was first viewed as the unintended consequences of policy changes, and later as the weaknesses of the existing institution.

4.4 Comments on Application of the Disequilibrium Approach

Strengths of the disequilibrium approach

When compared to the application of the equilibrium approach, the suitability of the disequilibrium approach in explaining the macro performance of the socialist economies, including excess demand and inflation during reform, is definitely superior. This is because the disequilibrium approach recognizes the factor of the fixprice markets in these economies, and attempts to explain excess demand and inflation against this background. Moreover, when the C-B-G model is applied, this approach makes modifications to incorporate the socialist institutions into this model. The key is to link the fixprice markets with the prevailing plan mechanism and the planners' behaviour. Therefore, in addition to having the ability to explain the issue of excess demand and repressed inflation in the pre-reform period, this

approach provides us with a useful analytical framework in understanding inflation during reform. In particular, it helps us to capture both the institutional and policy-related causes of excess demand, which the equilibrium approach is unable to do. The upholders of the equilibrium approach at most establish a causation from the excessive money supply to the price increase, but present no clue to the causes of the monetary growth. Comparatively, the disequilibrium scholars have made a step forward by identifying the factors behind the monetary growth such as plan tautness, thereby establishing a more complete explanation of the inflationary process.

Weaknesses of the disequilibrium approach

However, the application of the disequilibrium approach seems to suffer from several weaknesses. First, the disequilibrium approach was initially created to cope with the macro problems in the modern capitalist economies which were based on private ownership. To apply this approach to the socialist economies, the systemic features of public (state) ownership should be carefully considered and modelled. While the plan mechanism (and the resulting fixprice markets) is indeed one key element of the existing institution under state ownership, it is the ownership structure that forms a more important aspect of this economy as it largely reflects the systemic requirements of existing socialism. Yet, this aspect has not been handled in the disequilibrium model. The basic

weakness of this approach is the belief that both capitalist and socialist systems have similar problems such as shortages and inflation, and thus the concepts of macroeconomics in capitalism can be applied to the problems in socialism. It was argued that ``system-specific features do not matter and, consequently, that the same phenomena generate the same reactions irrespective of the setting in which they occur'' (Winiecki, 1985, p.34). This weakness was obvious in many disequilibrium studies regarding Chinese inflation. As will be discussed in the next chapter, the shortage approach questions this fundamental defect and attempts to integrate the systemic factors into its theoretical framework.

Secondly, the disequilibrium approach regards plan mechanism as the only key feature of the socialist institution without paying attention to the systemic factors; it treats the central planners and other agents (state enterprises, local planners, and banks) as members of the same institution with the same objectives. This modelling implies that the interests of these agents are similar, and a ``principal-agents'' problem does not exist (for a detailed account, see Roemer, 1989; Ellman, 1989). However, the experience of the socialist economies both before and during reform contradicts this oversimplified assertion. These behavioural linkages should be investigated rather than assumed to be unimportant when examining the macro performance of these economies. As will be reviewed in the next chapter, the shortage approach

picks up the state-enterprise relationship as a key systemic feature of a state ownership economy to make its analysis.

Thirdly, the disequilibrium approach generally pays little attention to the impact of institutional changes brought about by the reform on the generation of inflation, especially the impact on the behavioural changes of micro agents. The upholders of this approach have commonly treated the pre-reform and reform periods of the socialist economies as a whole and modelled the planners' behaviour in a similar way. The aforementioned Chen's study (1989) was an example which actually paid no attention to what the reform brought about. Even Peebles' studies (1991, 1992), which integrated reform-induced changes into the analysis, believed that 'reforms do not sufficiently change the nature of the economy to make the same assumptions invalid' (1991, p.44). Experience, however, shows that there have been so many institutional changes during reform that it might be inappropriate to analyze inflation in this period only in terms of the plan mechanism and planners' action. On the contrary, the only factor that remains almost the same is the systemic feature of state ownership, as the Chinese case has shown. Thus, the analysis of inflation should integrate these systemic factors with institutional changes. For example, agents' interest interactions and behavioural responses became more relevant in influencing the macro performance of the reformed economies. However, the disequilibrium approach has

not considered these aspects.

Recall that the basic question is why and how various forms of excess demand are generated during reform. Have they been caused by policy-related, institutional, or systemic factors? As reviewed, the disequilibrium scholars have addressed the institutional and policy-related factors in the Chinese case, but these studies have not yet provided a full explanation. The disequilibrium approach may explain the price increases in the first period of reform in which the policy changes and the emphasis on faster growth generated inflationary pressures, and a lack of coordination in policies made inflation control more difficult than before. But these studies gave few reasons why inflationary pressures continued in the second period of reform. Excess demand continued to reproduce itself even when the planners adopted a moderate growth strategy. It is thus likely that there were other factors, besides institutional and policy-related ones, in generating inflationary pressures. Such explanations will be provided only when the systemic features are included.

CHAPTER 5 THE SHORTAGE APPROACH

This chapter starts with the description of the framework of the shortage approach (section 5.1), and summarizes the major arguments of this approach in terms of inflation analysis (section 5.2). The existing studies using this approach are then reviewed in section 5.3, and finally, the suitability of this approach in explaining the inflationary process of the MPEs is evaluated in section 5.4.

5.1 Basic Framework of the Shortage Approach

Kornai's study and the shortage approach

An increasing number of scholars have integrated the systemic factors, particularly the ownership issue, into their models in understanding the operation of the socialist economies. One case was the shortage approach primarily associated with Kornai (1980, 1986a). While recognizing the importance of the plan mechanism and the planners' actions in these economies, this approach turned its attention to one important systemic feature of a state ownership economy, i.e., the relationship between the state and its enterprises. This approach was first designed to explain the shortage problem of the CPEs. It was argued that the CPE exhibited pervasive, chronic and sizable shortages which were primarily caused and reproduced by the behaviour of state enterprises in these

economies. This approach has already been adopted by many scholars to understand the reform process in the MPEs and related macro problems such as accelerated inflation.

Soft budget constraint and its systemic causes

The concept of a soft budget constraint (budget softness) of a state enterprise in a socialist economy plays a key role in the shortage approach. In an accounting sense, *budget constraint* refers to a set of financial disciplines, according to which an enterprise's financial expenses cannot exceed the amount of its money stock at the beginning of the period and proceeds from sales during the period. Budget constraint is said to be *hard* if strictly enforced and *soft* if it is not. Kornai (1980) claimed that while a capitalist firm usually experienced a hard budget constraint, the corresponding constraint for a socialist enterprise tended to be very soft.

Budget softness should, however, be understood in a deeper sense. First, budget softness was an institutionalized and persistent phenomenon in the CPEs, that is, it was the rule rather than the exception. According to Kornai (1986a, pp.5-6), there were four means to continuously soften the budget constraint of enterprises, either individually or jointly, thereby causing this phenomenon to become the norm in these economies. These means were: (a) soft subsidies granted by the state, which were negotiable and subject to bargaining; (b) soft taxation, where enterprises could

negotiate rates or exemptions, and influence the formulation of tax rules; (c) soft credit, with loans only minimally related to performance, light repayment conditions, and in some cases no penalty for non-repayment; and (d) soft administrative prices, which were set according to some permissive ``cost plus'' principle, that almost automatically adjusted the price to costs.

Secondly, budget softness had profound systemic causes. Kornai (1980) first used the term *paternalism* to explain why the above means were continuously available to enterprises, i.e., the state as a parent wanted to protect enterprises as it would its own children. When enterprises were struck with financial difficulties, the state would assist them by whatever means were necessary. But why was such a high degree of paternalism required? The systemic features of a socialist economy were later cited as the answer (Kornai, 1986a,c), that is, budget softness reflected some underlying principles of this system. For example, socialism required the principles of solidarity and security. The former meant that the weak should not be punished for their weakness, but instead should receive help to become stronger. The latter meant that no single member of society needed to fear failure, including unemployment. These principles then led to a pair of interdependent phenomena, i.e., guaranteed individual jobs and guaranteed survival of enterprises. Budget softness was also related to the ownership arrangement. When all assets were

owned by the state on behalf of society, bankruptcy made little sense. In summary, budget softness was not simply a financial matter, but a socio-economic phenomenon which reflected a systemic relationship among involved agents.

Thirdly, since budget softness was widespread and backed by the systemic requirements, it came as no surprise that the behaviour of a budget-softening enterprise developed a number of important characteristics. Budget softness was therefore not an accounting concept but a behavioural one. It was the analysis of the unique behaviour of state enterprises arising out of conditions of budget softness that enabled Kornai to understand macro problems such as shortages in a socialist economy from a systemic perspective.

Behaviour of enterprises with soft budget and its macro impact

To a certain extent, an enterprise with a soft budget constraint could survive without the ability to cover costs, grow without the ability to raise financial resources internally, operate without the fear of bankruptcy, and make little response, if any, to market price signals. Since an enterprise's survival and growth were not primarily dependent upon its performance in the market, a continued, insatiable demand for current inputs and investment goods was expected. Such demand did not depend on the price of inputs or the enterprise's income. Enterprises were certain that they could find a way to cover the costs through bargaining with the

state for grants, subsidies, tax favours and easy loans.

Moreover, because of the plan mechanism, the enterprises' attempt to use budget softness to increase their demands was strengthened. For instance, the planning process tended to emphasize output fulfilment rather than cost control or profitability. Thus, to facilitate an easy plan fulfilment, enterprises were more than willing to demand surplus inputs and stocks. Furthermore, although survival was guaranteed, enterprises could not be assured that they could use their accumulated funds. These funds might be siphoned off to help other less successful enterprises. Thus, whenever enterprises had excess funds, there was a tendency to spend as quickly as possible. In addition, both the managerial rewards and the enterprises' strength in bargaining were likely to be enhanced by increasing their size. As a result, every enterprise and its superiors wanted to expedite growth. Each claimed that it was socially important, and required that the input and investment demands be satisfied.

To some extent, these demands might be tempered by tactical considerations. For example, enterprises knew the level of input demand the higher bodies might consider reasonable. They also expected that current high demands for inputs would be linked to both current and future higher output targets. But these self-constraints were relatively unimportant in an environment of budget softness, hence the term 'almost insatiable demand' by enterprises.

If many budget-softening enterprises experienced similar behaviour, the macro consequence could be serious. Despite the existing supply of inputs, enterprises always felt it was not enough. The enterprises' demand had little voluntary constraint, and soon rose to the supply limits. These phenomena were named by Kornai as 'quantity drive' in short run production and 'expansion drive' in long-run growth. Given resources, the economy then became 'resource constrained' and shortages prevailed (1986c, pp.4-23).

It should be noted that the shortages were maintained and reinforced by the behaviour of enterprises based on two types of expectations. First was the expectation of budget softness. When enterprises expected a high probability of external assistance and this expectation was built into their behaviour, budget constraints were softer and shortages became more serious (Kornai and Weibull, 1983). Second was the expectation of shortages. Previous experience of shortages affected behaviour even if enterprises did not currently experience shortages. As actual and behavioural shortages came together, a tendency to generate shortages became stronger. Shortages bred shortages in the sense that, first, actual shortages led to more actual shortages; secondly, actual shortages led to a behavioural response by enterprises which generated more actual shortages; and thirdly, given budget softness, the behaviour of enterprises was reproduced.

The behaviour of budget-softening enterprises was also

largely responsible for the shortages in the consumer goods market (Kornai, 1980). Given the limited resources, an almost insatiable demand from budget-softening enterprises tended to siphon off parts of the supply intended for the households. With the state sector dominance and the unequal competitive positions of enterprises and households (soft vs. hard budgets), 'in the competition of buyers, the firm has an advantage over the household' (Kornai, 1986c, p.26). The intensity of shortages in the consumer goods market relied on the strength of the siphoning-off effect of the state sector. When shortages prevailed in both the producer goods and consumer goods markets, they became nationwide and chronic.

Understanding reform: a systemic explanation

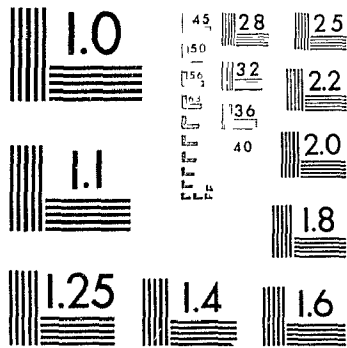
Over the years the essentials of the shortage approach evolved in response to the institutional reform in the MPEs. Attention has been focused on whether a market-oriented reform could solve the shortage problem, and in a deeper sense, whether the reform could harden budget constraints. First, the advocates of the shortage approach differed from the disequilibrium scholars by arguing that shortages in the CPE were not a matter of relative prices, and that price policy change was insufficient to restore macro balance (Kornai, 1986c; Hare, 1989). It was further claimed that the real cause of chronic shortages was budget softness and the related micro behaviour. Therefore, if budget softness remained and

paternalism persisted, enterprises would have very slow or little response to price signals, which in turn would not ease the shortage intensity.

Secondly, the advocates of the shortage approach argued that it was difficult to harden budget constraints within state ownership. Based chiefly on the Hungarian reform experience, Kornai (1986b, 1990a) introduced the concept of dual dependence to illustrate the institutional changes and the remaining systemic factors. *Dual dependence* represented a phenomenon in which an enterprise "depends vertically on the bureaucracy and horizontally on its suppliers and customers" (Kornai, 1986b, p.1694). On the one hand, enterprises began to respond to the market signal to some extent and gained certain powers following decentralization. On the other hand, a significant spectrum of enterprise activities was still determined or heavily influenced by governments from different levels. Although the market began to play some type of a regulatory role, a combination of plan and market did not necessarily imply a harmonious symbiosis of these two. Dual dependence represented a paradoxical mixture whose dominant flavour was still bureaucratic. Under this institutional arrangement, persistent paternalism and continued budget softness still characterized the state-enterprise relationship. Such characterization had significant ramifications on the economy: enterprises could continue to rely on state subsidies which undermined the performance

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reward linkage; there was no real incentive for enterprises to improve efficiency because softer external conditions could be easily obtained through state patronage; and finally, the intensity of shortages, while it might be somewhat relieved, would rarely disappear since its sources were not eliminated.

To find a way out of this embarrassing situation, the advocates of this approach suggested not only comprehensive marketization, but also a systemic reform. Enterprises must be convinced that their prevailing expectations regarding softness and shortages would not be realized. Tough financial discipline must be imposed, and decentralization must be carried out to its fullest extent. In the final analysis, ownership reform must be implemented. It should be noted that, with the dramatic changes in most of the MPEs after 1989, two different views regarding ownership reform emerged within the shortage camp. While some scholars still sought to find other feasible forms of public ownership in keeping the socialist elements (Bardhan and Roemer, 1992; Bowles and White, 1993), many proponents of the shortage approach, including Kornai (1990a,b), turned their attention to the privatization of state ownership.

5.2 The Explanation of Inflation: The Shortage Approach

While the shortage approach did not aim to explain inflation in the socialist economies, a systemic explanation

for inflation based on this line of thought can be derived.

The explanation of inflation in the CPES

With respect to the CPE, it was argued that plan tautness and policy errors were possibly but not necessarily the conditions that generated excess demand (inflationary pressures) (Kornai, 1980; Winiecki, 1985; Kemme, 1989). Budget-softening micro units exhibited quantity drive and expansion which caused almost insatiable demands for both current inputs and investment goods. These demands generated shortages at the macro level. With aggregate supply fixed, these demands placed increasing pressure on the general price level. While the release of this pressure could not eliminate shortages due to budget softness, increasing demands did generate and strengthen inflationary pressures. ``There is a causal relationship in one direction: the shortage strengthens the tendency towards price-drift. But there is no causal relationship in the opposite direction'' (Kornai, 1980, p.498).

Budget-softening enterprises also generated wage-drift. Managers might have a tendency to give the workers higher pay so as to gain popularity with the workers and dissolve tensions inside the enterprises. Given budget softness, managers were assured that these higher labour costs could be covered by the state. Unlike budget-hardened enterprises, budget-softening enterprises did not have an internal wage

discipline. Wage-drift therefore became a built-in inflationary factor in a socialist economy (Kornai, 1980).

Obviously, the explanation of inflation provided by the shortage approach was quite different than that of the disequilibrium approach. There was a long-lasting 'Kornai Portes debate' over the issue of whether there was sizable excess demand in the CPEs (Van Brabant, 1990). Among others, the difference lay in whether excess demand was caused by policy-related factors (planners' actions or mistakes) or the systemic ones (softness-related behaviour).

The explanation of inflation in the MPEs

Regarding the MPE, several important points were put forward (e.g., Kornai, 1986c, 1990b). First, softness generating excess demand would remain the same if budget softness and the resultant behaviour of enterprises were not altered by the reform. For instance, when reform provided enterprises with profit incentives, these incentives, supported by budget softness, would result in increased demand for more inputs, better credits, more tax allowances and bigger profit shares. Enterprises might further profit by increasing prices and passing costs onto the buyers. Wage discipline might also be weakened when enterprises were assigned more autonomy in wage determination. Secondly, excess demand might easily lead to inflation. Given continued budget softness and the resultant inflationary pressures, a

quick release of price and wage controls unaccompanied by systemic reforms would not only lead to a one-time price increase, but also a continuous spiral because the micro-generating mechanism remained. Thirdly, as long as micro agents were equipped with budget softness, it was difficult to expect the newly-established market-based macro instruments to effectively control these pressures because the agents would not respond as required. Finally, administrative interventions might hold this inflation down temporarily, but could not eliminate its systemic causes. What is more, these interventions became an easy excuse for the possible retreat from reform and restored the systemic roots of the problems.

5.3 Application of the Shortage Approach in China

Application of the shortage approach in analyzing the Chinese reform and its inflation has been increasing recently (e.g., Naughton, 1985; Wong, 1986, 1987; Bowles and White, 1989). With few exceptions (e.g., Bowles, 1990), attention was generally focused on the reform as a whole rather than inflation, or focus was directed at one aspect or another of the inflationary process rather than an overall explanation. A summary of the findings would include the following.

First, almost without exception, these scholars were interested in checking whether the reform since 1979 had solved the softness problem in the state sector. Naughton

(1985) dealt with the reform of the enterprise tax system up to 1984. He argued that budget softness had not been, and would not be, altered in the foreseeable future. Bowles and White (1989) examined the enterprise credit constraint by checking the reform in the banking system. They argued that reform up to 1987 had not changed this problem significantly. Wong (1986) examined the relationship between enterprises and local governments. She argued that reform through 1985 failed to alter their behaviour, and the softness problems at these two levels remained. Bowles and White (1992) looked into the reform in the capital market, arguing that this reform could not claim to have been successful in fundamentally changing the behaviour of agents. By examining Chinese enterprise reform, Kornai (1986b), and Kornai and Daniel (1986) insisted that reformed socialism still lacked the ability to significantly harden the budget constraints.

Secondly, most scholars analyzed, directly or indirectly, excess demand generated from continued budget softness. Phenomena such as dual expansion were explored and were shown to be generated by micro behaviour. Wong (1986, 1987) demonstrated how inflationary pressures were generated by budget softness both in the state enterprises and at the local levels. Bowles and White (1989) showed how continued budget softness and the behaviour of state enterprises caused credit expansion through the reformed banking system, thus constituting another dimension of inflationary pressures.

Solinger (1989), and Bowles and White (1992) discussed how budget-softening enterprises could generate inflationary pressures by utilizing newly-introduced financial means such as bonds. Yenai (1990) attributed the inflation of 1988 to the decentralization of investment decisions. Kornai (1990b) stated that runaway wage increases, accompanied by investment hunger, were the causes of inflation after 1986.

Thirdly, some analysts discussed the ability of indirect macro control to curb these inflationary pressures. Attention was focused on the conditions which turned excess demand into inflation. For example, by examining the performance of the reformed banking system, Bowles and White (1989), and Bowles (1990) concluded that the banking system failed to withstand the systemic inflationary pressures due to the remaining state-enterprise-bank relationship. Blejer and Szapary (1990) described how fiscal and monetary policies failed to control the inflation of 1988, attributing this failure to the methods of reform at the micro level and the systemic constraints on the macro control tools. An increasing number of Chinese scholars examined these conditions in one way or another (Chen and Wang, 1987; Zhou and Zhu, 1987; Hua, Zhang and Luo, 1988). Kornai (1990b) argued that only austerity control could temporarily hold down inflationary pressures such as runaway wages.

Finally, almost all scholars attributed inflation and the difficulties in controlling it to the systemic factors. It

was argued that inflation had necessitated administrative interventions (e.g., Wong, 1986) and resulted in a "stop go" vicious circle (e.g., Bowles, 1990). This had either thwarted or postponed the market-oriented reform. To solve this problem, these scholars often suggested radical reform packages and pointed to the tough political constraints such reform might face (Wong, 1986; Bowles and White, 1989).

5.4 Comments on the Shortage Approach

Strengths of the shortage approach

In general, the shortage approach is believed to be more convincing than the previous two approaches primarily for the following reasons. First, unlike both the equilibrium and disequilibrium approaches, which analyze the socialist economies based on the theories from the West (for a criticism of this method, see Stark and Nee, 1989), the shortage approach avoids such a bias by directing attention to the distinctive institutional arrangements and systemic factors in the socialist economies. The shortage approach checks what is actually happening in the socialist countries, while the application of the equilibrium approach finds neither systemic nor institutional base (even ignores the issue of fixprice markets), and the disequilibrium approach makes an incomplete institutional integration when borrowing the model from another system. It is necessary to construct a model based on

the systemic factors and institutional arrangements. The shortage approach moves in this direction.

Secondly, this approach provides a thorough and vibrant description of the socialist institutions by addressing the systemic factors, mainly budget softness, at the micro level and the related agents' behaviour. The equilibrium approach is powerless in this respect since it ignores institutional factors. The disequilibrium model-builders attempt to account for the special institutions of the socialist economies, but fail to understand the underlying systemic factors. An inclusion of systemic factors in the shortage approach enriches our knowledge of the existing socialist institution and its reform.

Thirdly, the shortage approach, from an institutional perspective, further differs from the other two approaches in its accommodation of institutional changes and evolutions. Unlike the disequilibrium approach which pays little attention to institutional changes, the shortage approach studies change as a process of institutional evolution. This perspective can help to link the causes of excess demand and inflation to the reform within which the behaviour of agents may matter.

Weaknesses of the shortage approach

However, the shortage approach has not been without its critics. The relevant criticisms include its lack of formal model-design; a lack of accuracy in its use of budget softness

to describe the basic features of existing socialism and its evolution; its assumption that budget softness is sufficient to cause shortage; and its policy implications (Soos, 1984; Gomulka, 1985; Hare, 1989; Van Brabant, 1990; Szego, 1991). It will be argued here that the shortage approach also has two major limitations with respect to its potential ability to explore the roots of excess demand and inflation during reform. The first is that it ignores the policy related factors in generating macro problems, and overlooks the effectiveness of proper policy measures in restoring macro balances. At the very least, the price policy may help to restore balances in the consumer goods market since consumers have hard budget constraints, and the siphoning-off effect from enterprises has some limits.

The second weakness is the difficulty in precisely measuring budget softness. Only some indirect evidence of the measurement of softness has been provided by the advocates of the shortage approach. In the Hungarian case, the tendency to redistribute profits from the strong to the weak, the low correlation between before- and after-tax, and the lack of relation between investment activity of enterprises and their profitability, were used to measure the degree of budget softness (Kornai, 1986a). However, these findings may be interpreted differently, that is, they may be the evidence of financial intervention that enterprises experience, or they may reflect the price distortion. The evidence is therefore

ambiguous.

Another way to measure budget softness is to examine possible changes in the four aforementioned means whereby the budget constraint is softened, or to examine such evidence as a lack of bankruptcies. Again the interpretation of these observations is mixed. For example, if the tax system appears to be tighter but soft grants are still available, does this mean that the budget becomes harder? These conditions reflect the institutional arrangements in the system and are likely to have different effects. Thus, it is better to analyze these conditions separately. It is an unmanageable task to demonstrate the impacts of the changes of all the conditions at the same time.

Obviously, because of this conceptual difficulty, it is not easy to implement empirical studies to determine quantitatively the relative contribution of budget softness to such macro problems as shortages, excess demand and inflation. Thus, the application of the shortage approach often ends up with a factual description. As far as econometric studies are concerned, the shortage approach is generally weak, compared with both the equilibrium and disequilibrium approaches.

CHAPTER 6 CHOOSING A FRAMEWORK: SUMMARY AND EXTENSIONS

The previous three chapters have examined the explanatory ability of the existing three approaches in understanding the causes of the inflationary process in the MPEs. This chapter concludes that the shortage approach, with some extensions, can be adopted as an analytical framework in this respect. Section 6.1 summarizes the results from this review. Sections 6.2 to 6.4 then specify how three extensions can be made to develop a more suitable analytical framework for this study.

6.1 Criteria and Choice

Criteria

The previous survey evaluated the three approaches. Attention has been focused on the ability of each approach to identify the causes of excess demand and inflation based on four criteria:

- (a) the ability to incorporate the systemic factors, that is, the factors reflecting the essential elements and underlying principles of a system;
 - (b) the ability to characterize the institutional arrangement;
 - (c) the ability to analyze the institutional changes;
- and

(d) the attention paid to the policy-related issues.¹

The shortage approach as an analytical framework: the choice

To recapitulate, the following conclusions have been reached. First, the equilibrium approach failed almost all four criteria. It was incapable of analyzing systemic and institutional factors, and grasping policy-related issues. It also failed to incorporate the socialist institutions, their changes and the problems raised during reform. As a result, this approach could at best only show a relationship between money and price, while telling us nothing about why the money supply and prices changed in the first place. Therefore, this approach cannot be adopted as an analytical framework.

Secondly, the disequilibrium approach emphasized criteria (b) and (d). By integrating the institutional factors (mainly the plan mechanism) and emphasizing the planners' actions, this approach attempted to show why excess demand, including excessive monetary growth, occurred in the first place, and how such excess demand might lead to inflation. Through these means, several institutional and policy-related factors generating excess demand were well explored. However, this approach was weak in integrating the systemic factors and in modelling institutional changes arising from the reform, thereby failing criteria (a) and (c). As a result, the adoption of this approach alone does not provide an adequate

¹ For a fuller definition of systemic, institutional and policy-related factors, see pp.40-41.

understanding of the causes of excess demand and inflation.

Thirdly, although the shortage approach was tested relatively weak in criterion (d), it performed quite well in criteria (a), (b) and (c), and therefore, would be able to explain why excess demand occurred in the first place from a systemic, institutional and dynamic perspective. As stated on pp.90-91, this approach would be adopted as an analytical framework for this study. In particular, the systemic concept of budget constraint softness would play an important role. That is, the reform-induced changes in the budget constraints of three major agents in the state sector (enterprises, banks and localities) would be examined. With a harder budget constraint for these three agents being viewed as a desirable direction of the reform, this approach enabled us to examine whether this objective has been realized, and if it failed, how continued budget softness constituted a key systemic condition for the generation of excess demand and inflation.

Three extensions of the shortage approach

However, if the shortage approach is going to be adopted as the analytical framework, its major weaknesses should be recognized. Three extensions can be made in this respect.

First, according to criterion (d), while it is important to demonstrate how continued budget softness leads to excess demand, it is also critical to identify the role of certain policy-related factors during this process. An emphasis on

the systemic factors does not mean to ignore the role of policy mistakes, but rather distinguish them from the systemic and institutional ones. A survey on the sequencing issue in section 6.2 will help to address this point.

Secondly, it is expected that under any given economic institution and system, the generation of excess demand is commonly related to the behaviour of the agents involved. Agents make competing claims over the limited resources based on their own interests. Yet, the manner by which these competing interests may lead to excess demand is strongly subject to the given economic institution, institutional changes, and system. From this perspective, the fifth criterion can be added in choosing an analytical framework:

- (e) the ability to model competing interests of the agents involved, and to show how an interplay of these competing interests leads to excess demand and inflation.

The shortage approach is not explicitly designed to model competing interests of the agents under the MPEs. Therefore, what needs to be added is a behavioral analysis of competing interests, a line of argument to be called as a conflict theory of inflation. Section 6.3 will address this issue.

The third extension is the need to examine empirically how the softened budget constraints of these three agents are associated with excess demand and inflation. With recognition of the conceptual difficulties in implementing a comprehensive

econometric analysis based on the shortage approach, section 6.4 will highlight some extensions made by this study.

6.2 Policy-Related vs. Systemic Factors: The Sequencing Issue

A multi-factor analysis

As argued, a comprehensive inflation analysis should be able to identify the roles of possible systemic, institutional and policy-related factors in the inflationary process, and further separate them one from each other. Since the shortage approach is capable of analyzing the contribution of systemic and institutional factors in the inflationary process, and distinguishing clearly one from another, it is now necessary to see how the policy-related factors can be incorporated into this analysis. A review on the policy sequencing issue helps to suggest how a clear multi-factor analysis may be developed.

The policy sequencing issue

In light of the inflation that accompanied the reform in most of the MPEs, an increasing number of scholars questioned whether the timing of adopting a certain reform package and the order of carrying out reforms could make a difference in the extent of the inflation accompanying reform. The concepts of speed, comprehensiveness and sequencing of reform were relevant here. The *speed* issue had two aspects. One was the pace with which reform was carried out; the other was the

speed with which agents altered their behaviour in response to the reform-induced changes. The *comprehensive* issue suggested that the credibility of the reform, hence the probability of it succeeding, might be greater if the package was comprehensive. However, if reform was not comprehensively and simultaneously instituted, there was a danger of perverse and unintended results. The *sequencing* issue then implied that the more rapid and comprehensive the reforms were, the less important the sequencing of specific aspects of the reform would be. But if reforms failed the test of speed and comprehensiveness, the sequencing issue was relevant and might cause various macro problems during a long-standing and partial reform.

While many studies attempted to link other macro problems such as budget deficits to improper policy sequencing,² some studies directly targeted the issue of inflation from the perspective of policy sequencing (Wu, 1987; Wolf, 1990; the IMF, 1990a; Naughton, 1991). In the Chinese case, an early influential view regarded inflation primarily as a result of a wrong sequencing: decentralization in fact went ahead of the price reform. It was argued that a better reform sequencing should have started with the price reform before the decision-making power was decentralized since the establishment of market signal was crucial to the success of

² For details, see World Bank (1990); Blejer et al (1991); Naughton (1991); Hussain and Stern (1991); and Wong (1991, 1992).

the reform (e.g., Trdrick, 1987; Wu, 1987; Johnson, 1988).

Yet, why did decentralization lead to inflation immediately following the price reform? This question recently led more and more scholars to ponder the importance of a solid micro foundation in maintaining macro stability. It was then increasingly accepted that the budget-hardening process and further the ownership reform should precede the price reform and decentralization. For instance, Wolf (1990, p.5) argued that, "the critical sequencing issue is whether institutional and attitudinal changes fostering the imposition of financial discipline have effectively preceded, or at least occurred simultaneously with, the liberalization of wages and prices". If the policy could tackle the financial discipline problem of the enterprise and other micro units first, and let the price and wage reform follow, inflation could have been avoided and reform could have continued without inflationary pressures. The IMF (1990a) held a similar view, arguing that ownership of an enterprise's assets should be established before the decision-making power was decentralized.

It is obvious that such a sequencing issue is primarily a policy choice, although whether price or ownership reform should be implemented first was related to the aforementioned differences between the disequilibrium and shortage approaches (p.82). However, if the chosen policy sequencing did lead to excess demand and inflation, the next issue is why this sequencing was adopted and whether it may be reversed. In

particular, it is necessary to see whether the failure (or success) of the budget-hardening process and further ownership reform is subject to systemic constraints. Once again, the disequilibrium and shortage approaches displayed their vital differences in this regard.

Two different views regarding the sequencing issue

According to the disequilibrium approach, the success of the budget-hardening process was just another policy choice which was not subject to systemic constraints. For example, Wolf (1990) argued that, in the final analysis, inflation was only an issue of macroeconomic policy, not one of economic reform per se. Some disequilibrium scholars further believed that budget softness was not a systemic feature, and the process of hardening it could be fulfilled if only the policy choice was right. The study of Komiya (1987) was such an example. While he believed that ``macroeconomic management is an impossibility'' with micro budget softness (1987, p.112), he claimed that there was no systemic difference between socialist enterprises and their counterparts in capitalist countries. Such policy methods as financial inspections and corrective measures should be able to lower the degree of sloppiness. Peebles (1991, 1992) also mentioned the possible role of budget softness in generating income and credit expansion, but viewed budget softness as a part of the plan mechanism rather than a systemic issue (1991, pp.68-69). In

general, these studies suggested that there seemed to be no systemic difficulties in tackling the issue of budget softness in state ownership. What mattered was simply to choose an appropriate policy order. Although a recognition of the role of budget softness represented a step forward, it was oversimplified to view budget softness as a policy-related issue.

On the contrary, an analysis raised from the shortage approach will look at the sequencing issue differently. While the reform sequencing itself is surely a better policy, its failure or success can be argued as largely a systemic one. In other words, this analysis will first attempt to identify the extent to which certain policy-related mistakes, hence some particular reform sequencing, may cause excess demand and inflation. More importantly, it will explore the systemic difficulty of reversing the existing sequencing, particularly the inherent obstacles to the budget-hardening process. This broad view may enrich the explanatory ability of the shortage approach, as it highlights the systemic constraints on the one hand, and suggests room for policy improvement on the other.

Systemic vs. policy-related factors: the standpoint

The study here will take the standpoint held by the shortage approach, with the implementation of a comprehensive multi-factor analysis as the ultimate objective. In analyzing various budget-hardening processes during reform, part III will on the one hand suggest how the existing policy

sequencing did intensify the degree of excess demand, and on the other hand attempt to identify the systemic resistance and political obstacles in reversing the existing policy sequencing and in hardening agents' budget constraints. As will be illustrated, the aspects of reform that were successfully carried out were often the easiest to put in place, while those that were postponed, or tried but failed, were usually faced with serious systemic constraints.

Limited space prevents part III from analyzing all possible systemic, institutional and policy-related factors leading to excess demand with equal emphasis. Thus, part III will not explore the role played by institutional factors such as continued plan tautness (defined on p.58). A discussion over the policy mistakes will also be confined to the sequencing issue. The emphasis will be placed on why the failure of the budget-hardening process can be interpreted as a systemic issue, and how continued budget softness contributed largely to excess demand and inflation.

6.3 Analysis of Agents' Interest Interaction and Its Impacts

A conflict theory of inflation

With the focus on the contribution of budget softness to the inflationary process, the second extension is to examine how a combination of budget softness and the competing interests of agents could lead to excess demand. As noted on

p.97. it will be beneficial to bring together the shortage approach and a conflict theory of inflation.

The conflict theory of inflation has been applied to modern capitalist economies, which links inflation to some systemic features in those societies (Rowthorn, 1980). It is argued that a major distributional conflict in these economies is the one over the distribution of income between labour and capital. The capitalist governments often respond to this conflict, at least in the short run, by accommodating macro policies which allow capital to pass on cost increases and maintain profit rates. The governments thus utilize inflation to support capital without tackling the underlying conflicts of a private ownership economy. In this sense, inflation in these economies is primarily systemic.

Applying a conflict theory of inflation to China

In applying a conflict theory of inflation to reformed socialism, it is first of all necessary to identify the agents involved and the nature of the conflict. As previously noted, the relevant institutions are four major agents in the state sector: the centre, the localities, enterprises and the Specialized Banks (the SBs). When these agents display their competing, although non-antagonistic, interests in seeking their claim over the limited resources, conflicts are unavoidable. Furthermore, among these agents, only the centre is fully aware of the hard resource constraint, while other

three micro agents may not directly show their concern over the limited resources if they are still faced by soft budget constraints. Therefore, it is the centre's interest, and the reform objective as well, to harden the budget constraints of the micro agents so that the latter's self-interest pursuit can be constrained by their harder budget constraints. Yet, if the budget-hardening process proves to be extremely difficult, the existing reform will create an environment in which self-interest pursuit can be more greatly facilitated by continued budget softness. It is interesting to see the macro impact of such a combination.³ As will be argued in part III, excess demand can be said to be a result of the conflict over the resources among the different pairs of agents, either budget-softening enterprises, the SBs, or the localities on the one hand, and the resource-aware centre on the other. When the centre responds to excess demand, that is, when the centre attempts to redistribute these agents' competing claims over resources, inflation often results.

Recently, several proponents of the shortage approach have begun to link agents' interest interaction and the resulting conflicts with inflation during the reform period. Wiemer (1990, 1992) analyzed the relationship between price reform and inflation with emphasis on the interplay of agents' interest. In her analysis, the agents were state enterprises

³ It should be emphasized that a combination of agents' budget hardness and their self-interest pursuit does not guarantee macro stability, as the experience in the modern capitalist economies shows.

and non-state, private enterprises. She argued that inflation was a consequence of conflicts over resources between these two agents. When the price reform led to new income redistribution between these two sectors, conflicts over resources were intensified. To reconcile this conflict, the centre adopted two means of supporting the state enterprises. One was fiscal subsidies (1979 to 1983) and the other was an easy credit provision (1984 to 1987). This process created continual inflationary pressures. The centre often faced a dilemma: to utilize scarcity prices so as to guide resource allocation, or to protect job security and real incomes of the state workers.

In a series of studies, Bowles and White (1989, 1992a,b, 1993) developed a similar explanation of inflation by focusing on the interest interaction between three major agents (the centre, the localities and enterprises) on the one hand, and the banking system (the SBs and the PB) on the other. The approach was "that of political economy, in the sense of elucidating the interplay between political and economic interests, actors and issues in the reform process" (Bowles et al, 1992a, p.363). It was argued that inflation was a consequence of a conflict over the distribution of resources between these two groups of agents. Following reform, the centre, the localities and enterprises were able to place pressures on the new banking system. As the banks accommodated their claims for resources, excess demand built

up, which in turn led to inflation.

A ``budget-softness-and-competing-interest`` framework

The argument in part III echoes the above studies but with two major differences. First, the discussion here observes the agents' interest interaction from a different perspective. Unlike Wiemer's study, which stressed the conflict between the state and non-state enterprises, part III directs attention to the conflict among the agents within the state sector. Unlike Bowles and White's study, which emphasized the conflict between the centre, the localities and enterprises on the one side, and the banks on the other, part III examines separately the conflict between the centre, and each of the three micro agents. That is, it examines three interest interactions and conflicts within the state sector: the state-enterprise relationship, the state-bank relationship, and the centre-locality relationship. Secondly, many conflict-type studies linked agents' conflict with inflation, but without connecting their analyses with the shortage approach (Bowles et al, 1993, chapter 5 was a notable exception). Part III tries to bring these two aspects together. Within a ``budget-softness-and-competing-interest`` framework, the concept of budget softness at the level of enterprises, the SBs and localities will be employed to examine the macro inflationary impact of the interest interaction among agents. It will be shown that when the

agents take advantage of soft budget constraints to seek their own interests, this behaviour easily generates various forms of excess demand. The inflationary process will then be argued to come from a conflict over the distribution of resources among the relevant agents.

6.4 Quantifying Budget Softness In Inflation Analysis

The third extension is the need to model budget softness into analysis so as to quantitatively support the systemic explanation of the inflationary process. Generally speaking, the efforts to model budget softness includes two aspects. The first is to use the statistical data and case studies on both a national and regional basis. Most of the application of the shortage approach so far has adopted this method. To a certain degree, part III will continue this effort. Statistical data and field reports will be utilized to examine the budget constraints of various agents, and to understand how budget softness contributed to the inflationary process.

The second aspect is to conduct certain econometric tests based on the shortage approach. Fewer extensions, however, have been made in this regard. This is primarily due to the conceptual difficulties in precisely measuring budget softness and in obtaining the necessary data. With the recognition of these problems, some efforts will be made in appendix B to implement econometric tests. These tests will not directly

measure the degree of budget softness, but will select some variables which contain at least some elements of budget softness, and then will empirically establish the relationship between these variables and the generation of excess demand.

PART III EXPLANATION OF THE INFLATIONARY PROCESS

This part utilizes an extended shortage approach, that is, a ``budget-softness-and-competing-interest`` analytical framework, to discover the causes of excess demand, hence inflation, during reform. Against the background of budget hardening process in the respective areas, chapter 7 aims to locate the causes of income (wage) expansion by focusing on the state-enterprise relationship; chapter 8 attempts to find out the roots of credit expansion by analyzing the state bank relationship; and chapter 9 seeks to identify the major forces behind investment expansion by examining the centre-locality relationship. Three points need to be noted. First, as shown in chapter 2, income, credit and investment expansions were three major aspects of excess demand. An analysis of these expansions helps us to capture the causes of the inflationary process. Secondly, while these three expansions were also related to other interest interactions, it will be argued that income expansion was primarily associated with the behaviour of enterprises, that credit expansion was largely connected with the behaviour of the SBs, and that investment expansion was mainly driven by the actions of the localities. Thirdly, for each chapter, attention will be paid to what extent budget softness at the respective levels was related to the systemic obstacles and competing interests; and the degree to which budget softness assisted these agents to cause excess demand.

CHAPTER 7 STATE-ENTERPRISE RELATIONSHIP UNDER REFORM AND INCOME (WAGE) EXPANSION

This chapter attempts to explore the causes of income (wage) expansion (discussed on pp.30-31) by investigating the state-enterprise relationship under reform. By identifying the competing interests and systemic obstacles involved in this reform process, section 7.1 seeks to analyze the causes of continued budget softness at the enterprise level. Section 7.2 then provides evidence of budget softness. Sections 7.3 and 7.4 argue that, with budget softness persisting at the enterprise level and the conflict between the state and enterprises intensifying, enterprises' behaviour contributed greatly to wage expansion.

7.1 Process of Enterprise Reform: Imperatives and Obstacles

An overview

Enterprise reform has been an essential element of the overall reform. The pre-reform state-enterprise relationship was typified by omnipresent administrative control with state dominance on the one hand and dependent enterprises on the other. No concept better captured the essence of this relationship than Kornai's paternalism and budget softness. The five principles of control (pp.4-7) identified a high degree of paternalism. When the state exercised ownership

rights and controlled activities of enterprises, the latter's budgets turned quite soft. No enterprises actually bore the responsibility for their own profits or losses. Enterprises' dependence on the state was expressed as "eating from the same big pot" (*chi da guo fan*), and workers' job security was referred to as having an "iron rice bowl" (*tie fan wan*). As such, enterprises gained little autonomy and operated under an environment where neither sanctions nor incentives existed for their performance, which in turn resulted in inefficiency.

The basic principles of the enterprise reform thus were to replace administrative control with market-led operational mechanisms, to provide enterprises with more decision-making power, and more importantly, to harden enterprises' budget constraints. These moves attempted to create an institutional framework in which enterprises could make their own decisions in a competitive environment to increase efficiency, while the state could guide the activities of enterprises by regulating the markets through economic policies and macro instruments.

It should be noted, however, that while the reform reflected the common awareness with the pre-reform deficiencies and the need to reduce paternalism and budget softness, there were disagreements over the means of achieving these objectives. From the perspective of the state, there were two policy imperatives underlying the reform: macro control and micro efficiency (*hongguan guanzhu he weiguan guohuo*). The ebb and flow of the reform largely reflected the balance:

between these two imperatives and the priority given to them (Hamrin, 1990; Bowles and White, 1993).

Moreover, there were always disputes on ideological grounds as to whether the direction of the enterprise reform was fundamentally compatible with the systemic requirements of a reformed socialist economy (Bachman, 1986). Different perceptions in this regard among leaders and their economic advisors created a spectrum of political opinion ranging from radical reformers at the one end to hardline conservatives at the other (Bowles and White, 1993). The reformers placed increasing emphasis on the micro efficiency imperative while the conservatives argued for the need of macro stability. These competing views reflected largely systemic obstacles, which then conditioned the direction of the enterprise reform.

As noted (p.9), the enterprise reform can be broken down into three stages, namely simplifying administration and decentralization (1978-1982), the tax-for-profit scheme (1983-1986), and the contract responsibility system (the contract system for short, from 1987 on). A brief review over these stages will suggest that the competing interests and systemic obstacles greatly contributed to the failure of this reform.

Simplifying administration and decentralization: the first stage, 1978 to 1982

The first stage of reform was based on a recognition that the defects of the pre-reform state-enterprise relationship

were over-centralization and lack of incentives. It was then argued that greater autonomy of enterprises was the key to increase micro efficiency. Efforts were made to decentralize decision-making and provide incentives. Three schemes of profit-sharing, namely enterprise funds system (*qiye jijin zhi*) (1978 to 1979), profit-retention system (*liruen fencheng zhi*) (1979 to 1980), and economic responsibility system (*jingji zeren zhi*) (1981 to 1982), were adopted. While there were variations as to the format in each scheme, the essence was to give some autonomy and a portion of profits (either enterprise fund or retained profit) to enterprises.

Obviously, a line of reform characterized by simplifying administration and decentralization was motivated by the micro efficiency consideration. It was in the state's interest to exchange part of its financial means for the invigoration of enterprises. However, the extent of decentralization was at the same time constrained by macro control consideration. This imperative was fuelled by the early inflation in 1979 and 1980. As the state found its interests were hurt (reflected by the fact that a distribution of resources into the hands of micro agents usually exceeded the original allocation), the pace of enterprise reform was slowed down. The introduction of the economic responsibility system in 1981 reflected these concerns. As a part of a readjustment policy, this scheme tried to strengthen central control by notably changing the profit-sharing ratio to favour the state (Wang and Zhu, 1985).

Moreover, the reform at this stage was largely carried out within the existing state ownership. Although there were efforts to provide enterprises with a competitive environment by such moves as replacing budgetary funding with bank credit for investment finance, the issue of budget softness was not directly targeted. This was primarily so because ideological and systemic opposition was strong enough to keep state ownership intact (Bachman, 1986; Deng, 1989). As a result, enterprises at some times gained certain degrees of freedom, but at other times freedom was circumscribed by the state due to both control and ideological constraints.

Tax-for-profit scheme: the second stage, 1983 to 1986

The problems involved in the first stage prodded the leaders and their advisors into considering an alternative means to reform the state-enterprise relationship. A two-step tax-for-profit scheme was then chosen to fulfil this objective. The first step (1983 to 1984) allowed the coexistence of a tax payment and a profit remittance scheme for large/medium enterprises who paid income tax and shared the after-tax profits with the state. In addition to other taxes introduced, the second step (1984 to 1986) was characterized by the imposition of an adjustment tax which was imposed on the after-tax profits.

The adoption of this scheme reflected both compromises and conflicts among different interests. First of all, the

reformers' intention of introducing this scheme was to target budget softness. It was hoped that the state-enterprise relationship could be formalized via a standardized tax system and that negotiability involved in both profit remittance and profit-sharing could be reduced, and finally eliminated. The conservatives used this scheme to strengthen macro control by taking back revenues lost during the early decentralization.

These competing interests were further intensified as the scheme was put into effect. For example, as the state tightened its control, enterprises found that their decision-making powers were recaptured by the state. They thus resisted the implementation of the scheme. Several dozen largest enterprises refused to participate in this scheme but remained in the profit-sharing scheme, while a majority of large/medium enterprises placed pressures on taxation bureaus to negotiate their tax payment (Research Institute of the Ministry of Finance, 1990). Furthermore, the implementation of this scheme led to a continual 12-month enterprise revenue decline in 1986 as micro incentive imperative gave way to macro control. Finally, although this scheme was handled within state ownership, there was still ideological resistance. There was strong resistance against any effort to place the state-enterprise distributional relationship solely on the market basis (Deng, 1989). And when macro concern was the chief concern, this resistance became even stronger. All these factors gradually increased doubts on the desirability

and feasibility of this scheme and called for a new alternative.

Contract system: the third stage, from 1987 on

Starting in the mid-1980's, reformers were increasingly aware of the necessity of ownership reform. It was argued that the key deficiency of the pre-reform mechanism was property rights rather than over-centralization. Therefore, efforts should be made to clarify the vague property boundary between the state and enterprises (Liu, 1986; Li, 1989). This line of thinking suggested new ownership forms such as share-holding enterprises. It was urged that the experiment on stock companies started in 1984 should be extended as a major form of ownership structure nationwide (Prybyla, 1989).

Yet, such a move encountered serious systemic obstacles. Ideological opposition persisted and surfaced. For example, it was suspected that a share-holding system would constitute incipient capitalism and was thus fundamentally inconsistent with the principles of a reformed socialist economy (Bowles and White, 1993). Macro problems were cited as an excuse to slow down or halt the ownership reform momentum. As a result, these proposals were implemented only on an experiment basis.

But as the efficiency problem became more serious by the end of 1986, there was an over-riding need to invigorate enterprises. A contract system then was chosen to replace the tax-for-profit scheme in 1987. Accordingly, enterprises were

contracted to remit both a share of profits and taxes to the state, and had the remaining profits at their disposal. Wage reform was implemented in order to link wages with contract performance. This scheme was based on a idea called ''separation of ownership from management'' (*liangquan fenli*).

Yet, despite its declaration of a different principle, this scheme in many ways looked quite similar to the economic responsibility system of the first stage. The reform actually took a U-turn. The trend to formalize the state-enterprise relationship with the tax-for-profit scheme was revised to incorporate the traditional one-to-one negotiation pattern. This was, again, largely a result of competing interests and systemic obstacles. The state preferred to have this format so that certain shares of revenues were guaranteed; enterprises were willing to adopt this form because they believed that they could negotiate for a desirable share. Both sides attempted to hang onto as many gains as possible at the cost of the genuine reform. As will be shown, with this pattern, the budget constraints of enterprises remained quite soft.

In 1987, however, the third stage of reform was put on hold as the economy gave signs of a new round of overheating. Greater macro control was reinstated. Although the promise of giving enterprises' greater autonomy continued, there was not much substance to it as wage reform was terminated.

Causes of failure in the enterprise reform

As suggested, the failure of enterprise reform may first be attributed to the difficulty in balancing the macro stability and micro efficiency imperatives. The changing priority given to these two imperatives did condition the direction and speed of enterprise reform. Yet, it is obvious that the causes of this failure were largely a result of resistance from the competing interests of participating agents, and also from systemic and ideological obstacles to the reform. Put differently, the failure reflected certain political, economic and institutional interests wedded to the existing or semi-reformed state-enterprise relationship, and represented political and ideological concerns over the nature of a socialist economy. In many cases, this obstacle also intensified the conflict between macro stability and micro efficiency imperatives. With this background, it will be no surprise to see why budget softness of enterprises remained alive. The next section provides more evidence for this fact.

7.2 Persistence of Soft Budget Constraints: More Evidence

Continued budget softness in the first two stages: an overview

As noted in chapter 5 (pp.77-78), four phenomena were often cited to describe a degree of budget softness: a soft credit system, a soft tax system, a soft grant system, and an administrative price system. Using these indicators, it has

been suggested primarily by the adherents of the shortage approach that the first two stages of reform did not lead to hardened budget constraints or to reduced paternalism. In the first stage, the profit-retention ratio was negotiable and bargaining over the base-figures of sharing was incessant (Wong, 1986; Hua et al, 1988). Whenever bargaining was successful for a manager, he could retain a handsome profit and workers a large bonus, regardless of performance. As a result, enterprises were only responsible for the gains but not the losses. On the other hand, the state's intervention in enterprises remained oppressive. For example, as distorted price signals could not place enterprises on an equal footing, authorities frequently resorted to administrative measures.

It has also been argued that the two-step tax-for-profit scheme did not achieve its desired objectives (Naughton, 1985; Kornai and Danial, 1986; Wong, 1988). Bargaining over after-tax distribution of profits persisted in the first step, thus keeping the negotiability of the old system (Bachmen, 1987). The introduction of the adjustment tax in second step largely maintained negotiability. Since this tax was computed on a one-to-one basis, it replaced the baseline profit as a new bargaining focus (Kornai et al, 1986; Hua et al, 1988). Being so designed, the tax system was accordingly soft.

The credit system was not significantly hardened during the first two stages of reform. It was widely reported that credit issuing was not primarily based on the market

principles and that there were increased loan defaults nationwide (the CESRRI, 1987; Bowles and White, 1989). The credit system was soft largely because the banks could not impose financial discipline on enterprises.

The fact that money-losing enterprises could continually obtain increasing state subsidies through their ability to negotiate was another symptom of budget softness (Deng, 1989). Subsidies skyrocketed from 1979 to 1986, amounting to 180 billion yuan (Minister of Finance, 1990).

Observing budget softness under the contract system

Partially due to the difficulties in accessing contracts and government documents, few reports have been generated to identify the impact of the contract system on budget softness (for exceptions, see World Bank, 1989; Koo, 1990). During several field trips, a number of contracts and documents were collected. An analysis of these contracts and their implementation, accompanied by national data, will address the issue of budget softness under the contract system.

Before doing so, it is necessary to spell out in more detail the possible ways of observing budget softness under the contract system. In addition to a continual observation of the aforementioned four indicators of budget softness, two additional indicators will be used. One is to observe whether negotiability was a dominating mode of the contract system. If this is the case, one may argue that budget constraints of

contracted enterprises were not hardened. Moreover, various types of contracts contain different degree of negotiability. An empirical analysis of the distribution of contracts thus helps to identify whether budget constraints of a majority of enterprises turned softer. The other indicator is whether the contracts were strictly enforced. If a large number of contracts signed were not well executed, one may suspect that budget constraints of enterprises remained soft.

Degree of negotiability in contracts

First of all, as all types of contracts were negotiated on a one-to-one basis and reflected the different concerns and interests of the involved parties, intensive bargaining often occurred. The contract system, by nature, maintained a high degree of negotiability and preserved soft elements in enterprises' budget constraints. During contract negotiation, enterprises aimed to pursue their own interests such as an increase in workers' bonuses, while the state (usually the Finance Bureau or other governmental agencies) strived to ensure a stable growth of fiscal revenue and an accretion of national assets.

The negotiation was first centred on the choice of contract types which involved different degrees of government assistance in the form of either open or hidden subsidies. In general, two types of contracts were applied to money-losing enterprises, namely 'fixed subsidies contract' (type 1) or

''minimum-loss contract'' (type 2), and four types of contracts were designed for money-making enterprises, namely ''profit-wage linkage contract'' (type 3), ''progressive profit contract'' (type 4), ''fixed profit contract'' (type 5) and ''base-figure profit contract'' (type 6).¹

Take the contracts for money-making enterprises as an example. Type 3 was a rather stringent one as it included few subsidies, while types 4, 5 and 6 commonly contained various subsidies (see the discussion below). While the government strongly preferred the money-making enterprises to adopt type 3, enterprises usually favoured the other three less stringent types. After bargaining, it was often the government that made the compromise. Table 7-1 shows the contract distribution of money-making enterprises in three provinces (Fujian, Guangdong and Qinghai) and a similar distribution exemplified by one nationwide survey. As indicated, a large number of enterprises operated under the contracts which were less stringent. This pattern was also confirmed by the field study in Xiamen. As noted by the Finance Bureau officials, the choice of contracted form was a focus of bargaining. Only a few enterprises agreed to adopt type 3 in the end.

Once the types of contract were decided, the negotiation was shifted to the determination of various contracted quotas, primarily profit-sharing ratios for money-making enterprises, amount of subsidies for money-losing ones, and contracted wage

¹ For a detailed account of these types of contracts, see State Council (1988).

bills in both cases. Enterprises attempted to obtain an easily-fulfilled contract by bargaining for either a low level of remitted profit and tax, or a favourable profit sharing ratio. As indicated by the officials in the Fujian Finance Bureau in 1989, a more stringent contract (such as type 3) was usually associated with more intensive bargaining. The Finance Bureaux at all levels often made concessions. It was indicated that 80% of contracts signed in 1987 in Fujian ended up with, either a lower contracted sharing-ratio or lower base-figures, than was expected by the provincial government. At the national level, it was estimated that the government lost 4.4% of its revenue to the contracted enterprises in 1988 as a result of bargaining. Of fifty-five contracts analyzed in Fujian, forty-nine involved six to nine months of bargaining. Budget softness was built into each contract even before it was implemented.

Table 7-1 Contract distribution, 1987, %

	Total	Type 3	Type 4	Type 5	Type 6
Fujian	100	18.8	14.2	16.4	38.0
Guangdong	100	12.1	17.3	26.0	30.0
Qinghai	100	0.0	47.5	20.4	19.3
Survey	100	3.4	34.2	26.2	27.3

Source: (1) Fujian Finance Bureau, *Summary of Contract System in Fujian*, 1988; (2) Guangdong Industrial Economic Research Institute, *A Survey on the Contracted enterprises in Guangdong*, 1988; (3) Qinghai Finance Bureau, *A Survey on Qinghai Budgetary Contracted Enterprises*, 1991; and (4) the CEPR, *Contract System in Practice*, 1988.

A soft tax system

The tax system became softer with the contract system in effect. First, the adoption of a 'pre-tax contract system'

(*shuiqian chengbao*) implanted a degree of negotiability into the tax system. Under this scheme, income and/or transaction taxes were included in contracts for negotiation. An enterprise paid tax according to tax law first, but if the amount paid was higher than that specified in the contract, the enterprise could be reimbursed later by the Finance Bureau. The remitted tax specified in the contract thus became a focus of bargaining. Since the determination of taxes was subject to negotiation, the tax system turned soft. In general, enterprises preferred to include taxes in the negotiation, since the likelihood of tax deductions was great.

A typical example was Beijing Capital Steel Company (one of the largest enterprises in China) which took the lead in adopting this scheme. The Ministry of Finance was initially against the inclusion of taxes in the negotiation but later was involved in bargaining with this gigantic enterprise. When this scheme later spread to several dozen of the largest enterprises, there was always intense negotiation between these enterprises and the Ministry of Finance over the contracted tax revenue (Research Institute of Ministry of Finance, 1988). The field study suggested a similar pattern. Jianyang Auto-repair Factory in Fujian (contract No.16) should have paid 440,000 yuan in taxes from 1987 to 1989. Yet, the contract stated that the Finance Bureau should return 330,000 yuan to the factory despite the tax law. The negotiation lasted for six months with the result that the factory finally

increased this refund by 30%.

The amount of this refund might be increased through bargaining during the contract implementation. For instance, Xiamen Cigarette Factory (contract No.37) signed a contract with the Finance Bureau to pay a 600,000 yuan transaction tax, while the Bureau agreed to return 300,000 yuan as a refund for loan repayment in 1988. But when the factory complained that it was unable to repay its loans of 607,000 yuan in 1988, the Bureau granted it an additional 100,000 yuan refund.

Secondly, the contracts (especially types 4 - 6) often included a clause of 'pre-tax loan repayment' (*shuiqian huandai*), i.e., enterprises were permitted to repay principals before paying tax. The determination of this amount was again subject to bargaining, thus further softening the tax system. The interview with Taxation Bureau officials and enterprise managers in Xiamen confirmed that this method was another focus of negotiation. Government officials offered this benefit as long as the enterprises agreed to fulfil other requirements. Enterprises preferred bank loans and pre-tax repayments, but attempted to reduce other requirements established by authorities. The tax system became quite soft with such bargaining.

Thirdly, both conspicuous and hidden subsidies were still practiced in the contract system through the tax system. Tax exemption, tax reduction or disguised subsidies were available to enterprises depending upon the amount of bargaining which

took place. As mentioned by the directors of the Fujian and Xiamen Taxation Bureaux in 1989, about 70% of transaction tax reductions were politically-related and subject to bargaining. There was a 4 million yuan tax revenue loss due to such manipulation in Xiamen between 1987 and 1988.

With a soft tax system, the effective income tax rate was notably lower than the official 55%. Budgetary refunds and pre-tax loan repayments reduced the tax rate to a national level of 44% in 1987. Combined with other factors, the effective rate was only 39.4% in 1987 and 26.8% in 1988 (*Chinese Taxation Daily*, May 16, 1991). As suggested by the officials in the Xiamen Taxation Bureau, the effective income tax rates in this city were only 47%, 44%, 37%, 30% and 23% for the years 1983 to 1987 respectively. While part of the decrease of effective tax rates was a reflection of the tax evasion problem (Deng, 1989), the soft tax system played a more important role, as the government had to soften tax requirement under the enterprises' pressures.

A soft credit system

Similar to the tax system, the credit system was still soft when the contract system was implemented. With the allowance of pre-tax profits and the budgetary refund to repay loans through bargaining, the responsibility of repayment was no longer a major concern of enterprises. The banks also faced little risk in lending, since the fiscal authorities

actually took the responsibility of repaying loans in the form of reduced tax revenue. This phenomenon was labelled 'banks host the banquets for enterprises with the Budget paying the bill' (*yinhang qingke, qiye cifan, caizheng fuqian*). Given this arrangement, borrowing was not related to enterprises' performance but to their bargaining ability. A nationwide report showed that 58% of surveyed contracted enterprises did not rank loan repayment as a major concern, while almost all enterprises had loans as the primary source of financing (the CERRG, 1988). From the questionnaires handed out to ninety managers in Fujian in 1989, only twenty one viewed loan repayment as a key requirement.

The soft credit system could also be indirectly evidenced by the contracts collected. Twenty of thirty-six contracts between the Fujian Finance Bureau and enterprises explicitly specified an obligation to repay loans. Several contracts listed the amount which contractors had to pay each year. Why was the Finance Bureau so concerned with loan repayment even though this was not its major responsibility? As noted by the director of the Fujian Finance Bureau in 1989, enterprises' failure to repay their loans was a widespread phenomenon, therefore, banks had to turn to the Bureau for help.

With the contract system, enterprises could continue to borrow new loans to repay the old ones. Thus, enterprises were quite reluctant to use retained profits to repay loans. For instance, Xiamen Battery Factory (contract No.45) and

Xiamen Paper Factory (contract No.46) continued to borrow money from the banks to repay the old loans despite the requirement to use retained profits for loan repayment.

With a soft credit system, it was not surprising to see an unsound credit relation between the enterprises and banks. As noted by the officials of the Credit Management Department of the central bank, approximately 30% of the working capital loan was not repaid under the contract system. Another report showed that 10 billion yuan of credits could not be repaid from 1987 to 1988 (Chinese Academy of Social Science, 1989).

Continued soft subsidies to money-losing enterprises

Continued subsidies represented the state's efforts to guarantee the survival of a money-losing enterprise. This was still the case under the contract system. Up to the end of 1988, the bankruptcy law was not enforced and a majority of money-losing enterprises continued receiving subsidies. It was noted that the state did attempt to harden the budget constraints of these money-losing enterprises by adopting either a fixed subsidy or a minimum-loss contract. However, if money-losing enterprises were able to increase their subsidies through negotiation when the contract was drawn, or if these contracts were not enforced, a soft subsidy system would result. Although there was not a nationwide report on how soft this subsidy system really was, it was suggested by the officials in the Ministry of Finance interviewed that

money-losing enterprises were often capable of obtaining a favourable subsidy through bargaining and approximately 20% of fixed subsidy or minimum-loss contracts were not enforced.

The field study in Fujian presented a similar pattern. For example, Pucheng Bronze and Copper Mine in Fujian (contract No.5) was a money-losing enterprise for years. Because of its importance to the local economy, it was continuously subsidized. Under the contract system in 1987, a minimum-loss contract was negotiated. The original draft allowed the Mine to lose 300,000 yuan from 1988 to 1991. Yet a heavy negotiation finally increased this amount to 400,000 yuan. And after three-year's operation, the actual subsidies went beyond the contracted quota, amounting to 420,000 yuan. The contract between Fujian Ship-Building Company (contract No.18) and the Fujian Finance Bureau was another example. The company was contracted to lose 600,000 yuan from 1988 to 1990. But in practice, this subsidy ended up with 650,000 yuan.

Corresponding to survival guarantee, profit levelling-out was still common. Net income, which was deemed to be excessive by authorities, was transferred from the money-making enterprises to the money-losing ones. This was named 'the buffalo that pulls most is beaten' (*bianda quainu*). Table 7-2 explains this with the case of Fujian. The retained profits of the money-losing enterprises were twice as much as their realized profits (222.89%), which was in contrast to the relative percentage for the marginally profitable enterprises

(50.04%) and profitable enterprises (24.06%).

Table 7-2 Levelling out in Fujian, 1987, million yuan

Item	Profitable enterprises	Marginally profitable enterprises	Money-losing enterprises
Total realized profits (Gross margin) (1)	6,699.00	379.81	84.11
Contracted remittance (2)	2,254.05	44.20	-107.55
Total retained profits (3)	1,612.06	190.06	187.47
(4) (3)/(1)	24.06%	50.04%	222.89%

Source: Fujian Finance Bureau, *Summary of Contract System in Fujian*, 1988. Classification of enterprises were done by Fujian Finance Bureau.

Adjustment and termination of contracts

Also as suggested by the field study, many contracts of money-making enterprises were not enforced either. Contract unfulfillment in practice was due to either policy changes or mismanagement. But the state compromised in both cases. Enterprises were allowed to adjust contracts by enjoying tax deductions, deferring loan payments or reducing remitted profits. The contracts were also terminated without penalty. In the city of Zhangzhou (Fujian Province), fifteen of nineteen unfulfilled contracts surveyed were caused by the enterprises' inability to meet market changes, but all of the contracts were adjusted in one way or the other (Zhangzhou Finance Bureau, 1991). The case in Qinghai Province provided more evidence. In 1988, about 60% of contracted enterprises could not fulfil the contracts, therefore, most adopted the following means of escaping the contracted responsibility: the enterprises bargained for more tax reductions, demanded

increased subsidies, or postponed the remitted amount for various reasons. In the city of Xining (Qinghai Province), the contracted amount unpaid to the state was 13.89 million yuan, of which only 1.27 million (9.14%) was compensated by enterprises' retained funds (Qinghai Finance Bureau, 1991).

The field study in Xiamen also confirmed this pattern. According to the Xiamen Economic Systemic Reform Committee, most of its one hundred and thirty two budgetary enterprises under the contract system complained that they could not fulfil their contracts due to market changes (mainly input price increases) in 1988. After bargaining, sixty-six enterprises were allowed to renegotiate contracts with more permission given to tax reduction and postponement of loan repayment. From eleven contracted enterprises under survey in Xiamen, whose contracts were renegotiated: three were permitted to increase the self-sale portion; four were allowed to reduce tax liability; and another four received subsidies.

The following contracts could also be cited as examples. Chongqing Chemical Product Factory (contract No.48) signed a contract with the Municipal Industrial Bureau in 1987. Yet, after one year of operation, the factory failed in marketing and product upgrading, which resulted in seven out of eight unfulfilled contracted quotas. With the permission of local Finance and Taxation Bureaux, this factory was allowed to reduce its profit remittance and tax payment and enjoy further tax deductions. Chengdu First Textile Factory (contract

No.54) signed a three-year contract with its supervising bureau in 1987. Yet, poor management resulted in only 28.3% contract fulfilment. The solution was to cancel the contract without penalties. In 1987, Xiamen Wine-Proceeding Factory (contract No.43) had a contract which included an income tax and a transaction tax. When the factory was not in a position to fulfil the tax obligation due to its inability to adjust to market change in 1988, the Xiamen Taxation Bureau exempted the factory from a large portion of tax liabilities.

Persistence of paternalism

As argued by Kornai, the direct cause of budget softness was persistent paternalism. The state continued to provide assistance to, and protection for, an enterprise on the one hand, and intervened in the activities of enterprises on the other. The result was dual dependence. The practices of the contract system supported this view. Enterprises were still subject to the state's intervention, and when they could not fulfil their contracts, they turned to the state for help.

An analysis of the contracts in Fujian suggested that the more assistance enterprises received from the state, the more requirements the state imposed on enterprises. Almost all enterprises with minimum-loss contracts (the ones with a high degree of state assistance) were required to fulfil tasks in addition to contracted quotas. Luoyang Iron Mine (contract No.9) was required to supply its products to Sanming Iron and

Steel in specified quantity and quality. In return, the Mine received a 10 million yuan investment fund from the Finance Bureau. Nanping Aluminium Product Factory (contract No.10) received subsidies from the Finance Bureau. It was therefore compelled to supply one-third of its products to the Material Supply Department at a low price, and another one-third to other bureaux which had investments in the enterprise.

From ninety questionnaires distributed, seventy eight either felt a great intervention from the administrative bodies or regarded the latter's support as a key factor behind their successes. This dependence of success or failure on the state was a clear symptom of dual dependence. Enterprises responded to markets on the one hand but resubjected themselves to state patronage on the other by requesting price adjustments, tax cuts, lower remitted profit and more credits.

The above analysis suggested that budget constraints of enterprises remained soft after three stages of reform. The next step is to see how the failure to harden the enterprises' budget constraints helped to generate income (wage) expansion.

7.3 Budget Softness and Income (Wage) Expansion: The Mechanism

Wage expansion: wage increase vs. labour productivity growth

As noted in table 7-3, the growth of average money wages (including basic wage and various forms of bonuses) was faster than that of labour productivity during reform. Wage cost

expansion thus occurred. It was interesting to see whether this wage-productivity gap was a policy-related consequence. The change in policy during reform did lead to a significant wage increase. But the policy package also emphasized productivity growth. The evolution of reform methods, from profit-sharing schemes to the contracted wage-efficiency linkage, aimed primarily at enhancing efficiency and raising productivity. Thus, the policy package per se did not necessarily lead to wage expansion. It can be argued that wage expansion would easily result as the conflicts between the state and budget-softening enterprises were intensified given a partially-reformed institution.

Table 7-3 Wage increase vs. labour productivity growth

Year	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Average wage growth (%)	9.5	13.9	1.3	3.0	7.8	19.5	17.3	16.6	9.3	19.9
Labour productivity growth (%)	6.4	2.0	-2.0	2.3	7.5	7.7	7.2	5.2	6.8	6.9

Source: State Statistical Bureau, *China Statistical Yearbook*, 1990a, p.137; 1990b, p.45.

Job Security, Budget Softness and Fairness: The Mechanisms

One key systemic reason for the wage-productivity gap was a combination of budget softness and job security given the institutional changes. This pattern constituted a special systemic background for a strong wage demand, i.e., workers and managers in a given enterprise formed an interest-binding group to bargain with the state. When fairness consideration prevailed, this pattern readily led to wage-wage and wage-price spirals. Presumed job security and the ensuing joint-

interests among workers and managers formed the base of the mechanisms, while budget softness offered a key condition for the operation.

The first mechanism was an upward emulation for wage claims, both within and among enterprises. Since full employment was a built-in feature rather than a policy issue, as the decision-making or bargaining power of enterprises was increased, wage claims were strengthened. For the workers who over a long period of time got used to an egalitarian-type income distribution, any attempt to provide rewards based on merit rather than seniority easily led to grievances among them. There was a strong tendency to keep the relative wage structure intact. Since managers were not really responsible for the accretion of the state assets, they sided with workers to wrest funds from the state to ease internal tension. When the interests of workers and managers were combined, the strong wage demand took on a life of its own. The result was a wage-wage spiral, with a weak impact on efficiency improvement.

This wage-wage mechanism also existed among enterprises. Wage increases for one enterprise had a spillover effect on the wage claims of others. Workers and managers in one enterprise always compared their wage rates with those of a reference unit. When the wage-bonus in one enterprise shot up, workers in other enterprises pressed for matching wage hikes. Different worker groups sought to retain historical

relative wage relationships. This spillover effect also came from the non-state sector where income increases were quite significant following reform. Again this claim was supported by job security and a feeling of fairness, enforced by budget softness and the increasing bargaining power of enterprises. It was difficult for managers to resist pressures for wage hikes when job security was in effect. Equipped with budget softness, managers then bargained with the state to cover the costs of wage increases. The bargaining not only reinforced an upward wage emulation, but also led to a leapfrogging wage increase given the lack of synchronization in the bargaining process. Such wage increases were inflationary unless productivity grew at the same rates. But, since a linkage between rewards and contributions was not yet installed, wage claims grew regardless of productivity. As a result, in the long run, wages in both money-making and money-losing enterprises tended to grow at a uniform rate.

The second development was the formation of a wage-price mechanism. Enterprises became more capable of passing wage increases into price increases through several channels. One channel was to pass wage increases upward by bargaining with fiscal authorities. Money-making enterprises bargained for more retained profits to cover wage-bonus use, thus reducing the profit remittance and tax repayment. Money-losing enterprises bargained for more subsidies to maintain the same wage-bonus level. With the decreased revenues and increased

subsidies, the government's budget deteriorated. If deficits were financed by an increased money supply, a pass-through process from wage increases to price increases was realized. The other channel was to make use of a soft credit system. It was common that enterprises met their demand for wage-bonus increases by draining the retained funds designed for working capital. This left a financial gap for the banks. Whenever the banks were forced to supply additional loans, wage increases were passed "back" in the form of credit expansion, which usually led to increasing money supply. The final channel was to pass through wage increases by raising the prices of goods through dual-pricing scheme. Enterprises also exerted pressure on the superiors for price adjustment. When these pass-through abilities were combined with internal wage claims, the wage-price mechanism was established.

The third mechanism at work was a feedback process. One process was from price increases to wage increases based on a fair real wage consideration. With a partial price reform, the state often adjusted the existing distorted price structure, which then influenced the workers' cost of living. The upward bias in price level caused by the wage-price mechanism would also in turn inspire more wage increase claims. When this cost-of-living increase became a justification for part of the new wage demand, the above pass through process was maintained. The success of such wage claims then completed the wage-price mechanism.

The feedback process might take a more general form. Once price increases (from whatever source) got into the system, enterprises would find whatever means to defend their obtained shares or a fair position within resource allocation. For instance, when the state raised the prices of goods in short supply, it was expected that the ensuing input price increases would be internally absorbed by enterprises through efficiency improvement. But in reality very few enterprises were ready to do so. Price increases, as a feedback to enterprises, inspired a new round of pass-through process. When this behaviour spread, a price-price mechanism resulted.

The above observations suggested that a combination of job security and budget softness, given the reformed changes, would lead to wage expansion and inflation. An upward bias in wage and price levels was built into the reformed mechanism. Once started, budget softness ensured that wage or other cost increases led directly to price increases, while fairness considerations resulted in a feedback from price inflation to wage expansion and other cost increases. This explanation of wage expansion and inflation does not rule out the contribution of the policy-related factors. For example, a distorted price and tax system did have its role in the price spiral and enterprises had to defend their interests passively (World Bank, 1989; Blejer et al, 1990). However, as will be shown in the case of wage expansion, it was the above system-related mechanisms that constituted the core of the above

spirals, which was further aggravated by uncoordinated policy actions.

7.4 Budget Softness as a Condition for Wage Inflation

The first two stages: a bird's-eye view

In the first two stages, the macro control over wage growth was two-fold. The basic wage was subject to administrative control and its growth was guided by a wage-plan. The determination of bonuses was, however, passed to enterprises with profit-sharing schemes, but subject to various regulations. For example, a ``40% rule'' stated that enterprises should not direct more than 40% of their retained profits to bonuses. Faced with this control, enterprises demanded higher basic wages on the one hand, while they bargained for additional retained profits and an increased bonus share in their retained profits on the other. Equipped with budget softness, enterprises were often successful on both fronts.

With respect to basic wage determination, enterprise pressure on wages and often an upward emulation by other enterprises forced the state to offer more wage increases than planned. A case in point was a wage spiral between the enterprises and other state-owned, non-profit units. Over time, the wages between these two groups were set at a similar level, and their growth rates maintained a similar pace. Yet,

a change in the policy during reform upset this historical relative wage structure. The priority in wage increases was often given to the enterprises. Job security and the lack of labour mobility then led to employee grievances in the non-profit units, which in turn forced the state to ensure the latter had a similar wage growth. But such wage increases provoked the enterprises to put tremendous pressure on their superiors for new wage increases. Since the state was forced to meet these demands continually, an upward wage-wage inflation among these two groups was formed (table 7-4). For example, when a new basic wage structure was adopted to permit wage increases in the non-profit units in 1985, the resulting change in the relative wage structure led many enterprises to restore the same structure by using their retained funds. At first, the State Council did not recognize the legality of this move. But as more enterprises followed suit, the Council finally had to allow an equivalent wage increase for workers in all enterprises. To ensure that they would not fall behind again, employees in the non-profit units put new pressure on the government budget. This upward emulation forced the state to modify its wage plan twice that year. While the planned wage increase rate in 1985 was 4%, the actual growth reached 8.19%.

Table 7-4 Upward emulation in wage growth, 1981-1985

Year	Enterprises(1)	Non-profit units(2)	Growth rate of (1)	Growth rate of (2)
	(Billion yuan)			(%)
1981	670.1	150.0	-	-
1982	711.9	170.2	21.2	13.5
1983	747.9	186.7	5.1	9.7
1984	917.3	216.1	22.7	15.7
1985	1050.3	278.0	14.5	28.6

Source: State Statistical Bureau, *China Statistical Yearbook*, 1988

Enterprises also showed a strong tendency to distribute more of their retained profits to various forms of bonuses, and the 40% rule was often exceeded (the CESRRI, 1987; Chen and Wang, 1987; Bowles and White, 1989). The officials interviewed in the State Statistical Bureau suggested that the actual ratio allocated to the bonuses was approximately 60% nationwide.² At the national level, the bonus funds grew faster than the production, realized profits, remitted profits and tax payment. A nationwide survey (the CESRRI, 1987) showed that enterprises made use of the available loopholes to surpass the 40% rule and distributed various "off the account" bonuses to workers (defined as the bonuses not recorded through the normal procedure). Enterprises also invested a portion of their retained funds in consumption-related projects (mostly housing) for their employees. It was estimated that 40% of the total enterprise investment was used in such projects in 1985 (Zhong, 1990). Moreover, bonuses

² Consider all budgetary enterprises in Xiamen as an example. In 1986, bonus funds occupied 60.4% of their total retained profits, see Xiamen Economic Commission (1987).

were commonly distributed in an egalitarian way to ease internal tension, which in turn led to an increase in bonus funds (Walder, 1987, 1989).

Budget softness became an important condition in creating these spirals. The soft credit system enabled enterprises to violate the 40% rule. When enterprises directed a large amount of their retained profit to bonus uses, the Banks were forced to fill in the financial gap left for working capital and technical upgrading (Zhou and Zhu, 1987). The soft credit system also supported consumption-related investment. While enterprises invested a large portion of their retained funds in these projects, the capital needed for development was taken over by the Banks (the CESRRI, 1987). The soft tax system facilitated this inflationary process as well. Enterprises were able to pass on the wage increase to the state by reducing the profit and tax remittance. A negotiated tax system was unable to curb the tendency of misusing retained funds. For example, a wage adjustment tax and a bonus tax were instituted in 1984, but neither of them was effective. As noted by the director of the Fujian Taxation Bureau, the implementation of these taxes was often interrupted by enterprises' bargaining for special deductions, and an upward emulation in bonuses continued.

Contract system: wage-efficiency linkage vs. wage expansion

The methods of wage control were changed under the

contract system. Instead of administrative control over the basic wage, a linkage was established between the wage and efficiency indicators, i.e., various contracted quotas. It was expected that the wage would increase in line with productivity. Yet with budget softness, wage growth tended to surpass productivity growth even more, as contracted enterprises could bargain for all aspects of the wage bill.

The first issue was the choice of a wage-efficiency linkage. In general, enterprises' profits, either realized or remitted, were commonly chosen to be linked with wage. However, the performance of a contracted enterprise was affected not only by the enthusiasm of its workers, but also by various external factors such as a distorted price structure. Profit indicators therefore might not necessarily reflect the enterprises' efforts. Some enterprises made handsome profits without much effort, while others tried hard but with unpromising profits. As a result, the wage level in the first group of enterprises was higher than that in the second group, which stimulated a upward wage-wage spiral. With continued budget softness, enterprises often turned their attention to bargain for better external conditions and a favourable base-figure, hence a higher wage level. This was a typical case of the interactive impact of both budget softness and distorted price (hence profit) structure on the wage expansion. Because distorted pricing usually precluded using profitability as a reliable basis for evaluating

managerial and productive efficiency, there was no meaningful penalty and reward that could be applied to the enterprises. Their budget constraints remained soft and the state continued to rely on redistributive methods in dealing with enterprises.

Once a profit linkage was chosen, bargaining was focused on the profit/wage ratio. For example, a 1.0:0.7 ratio was often recommended by the state: if the contracted profit and tax remittance increased by 1 yuan, the wage could go up by 0.7 yuan. However, intense bargaining often surpassed this ratio. As noted by the officials of the Xiamen Finance Bureau, it was common for enterprises to obtain a higher ratio as a result of bargaining. For instance, a 1.0:0.75 ratio was drafted by the Bureau with Xiamen Cement Factory (contract No.41) in 1987. But, two rounds of bargaining forced the Bureau to accept a 1.0:0.81 ratio. Moreover, a fragmented bargaining process led to different ratios among enterprises, which aroused the feelings of unfairness. Such feelings in turn led to a new round of negotiations and an upward tendency of this ratio. As indicated by the officials in the Xiamen Finance Bureau, during negotiation, every enterprise compared its profit/wage ratio to that of others. No enterprise was willing to sign the contract ahead of others, since a waiting strategy would place it in a better bargaining position.

Enforcement of contracts and wage expansion

Another serious issue was that, in practice, contracts

were not enforced. It was decreed that if contracted quotas were not fulfilled, the agreed wage increase would not be realized. But equipped with budget softness, enterprises were capable of escaping contract obligations, yet still enjoying a wage increase. For example, three enterprises under survey in Xiamen did not fulfil their contracts, but their poor performance had little impact on the wage increase. After listing several reasons, the enterprises were given the green light for a wage increase.

The wage issue of the enterprises that fulfilled their contracts provides added proof that budget softness generated wage inflation. As stated, if the contracts were fulfilled, enterprises could raise their wage according to the contracted linkage. If wage increases surpassed a certain percentage of the contracted wage bill, the enterprises would pay a progressive wage adjustment tax. However, the soft tax system made this control of wage expansion ineffective. The case of Xiamen Cigarette Factory (contract No.37) illustrates this point well. In 1987, this factory was contracted to remit profits and taxes at 172.6 million yuan, with a basic wage scale at 2.78 million yuan. Beyond this agreed scale, a 1.0:0.71 linkage was instituted for the remitted profits and wages. And for the wage increases over 7% of the contracted wage scale, the factory had to pay a wage tax from its retained funds. At the end of 1987, the factory fulfilled the contract and was entitled to increase its wage bill by 0.68

million yuan. About half a million yuan included in this wage increase was subject to wage tax (0.1 million yuan). The factory then bargained with the Taxation Bureau for a tax exemption. Given the importance of this factory in the local economy (i.e., its profit and tax remittance accounted for 26.1% of local revenue in 1987), the Bureau agreed to exempt the factory from most of its tax liability. A negotiable tax system thus became an important condition for wage expansion. Moreover, this manipulation had a spillover effect. As the Taxation Bureau was faced with similar pressure from other enterprises, the Bureau eventually made many concessions.

Excessive growth of bonuses under the contract system

Under the contract system, there was an excessive growth of bonus funds, which contributed greatly to wage expansion. In 1987, retained funds nationwide reached 92.77 billion yuan. The portion allocated to various forms of bonus uses was 42.91 billion yuan (46.26%), while the development portion was 49.86 billion (53.74%) (Ministry of Finance, 1989).

The results of many surveys were even more striking. A nationwide study (the CETSDSC, 1988) revealed that only 4.1% of the contracted enterprises under survey allocated 60% of their retained profits to long-term development, while 92.1% of them directed 70 to 80% of their retained profits to bonus funds. A survey of fifty-four contracted enterprises in Shanghai (Shanghai Taxation Bureau, 1990) suggested that the

bonus portion controlled by enterprises accounted for 52% of the total realized profits. From eight-five contracts collected from Zhangzhou (Fujian Province), 75% of them did not specify the ratio of bonus funds to retained profits, but increased their bonus portion in one way or another (Zhangzhou Finance Bureau, 1991).

Contracted enterprises also distributed more bonuses in the off-the-account form (defined on p.142). At the national level, this amount was estimated to be approximately 40 billion yuan in 1988 (*Economic Daily*, June 13, 1989). As noted by the field study in Fujian, fifteen to twenty methods were commonly adopted. Some contracted enterprises added bonus expenditures to the hidden costs of production, while others switched the depreciation funds into bonus uses. Xiamen Cannery (contract No.39) transferred part of its development funds to workers' bonuses by moving it into the accounts of its own service and auxiliary companies. To cover this financial gap, the factory bargained with the Finance Bureau for better contracted terms, and with the local Banks for an easier loan-borrowing condition. Sanming Iron and Steel Corporation (contract No.8) diverted part of the set-purposed funds to build housing and other facilities for its employees.

Both the violation of the 40% rule and an increase in the off-the-account bonus were made possible because of budget softness. In the case of Fujian, 37% of the bonus increase was reported to be directly or indirectly supported by the

banks (Fujian Finance Bureau, 1988). According to the Xiamen Economic Commission (1987), a large number of enterprises under its jurisdiction relied on loans to support their wage increases. The case of Xiamen Ship-Building Factory (contract No.47) was striking. Its cumulative loans were five times the sum of its fixed assets and sale revenue. Yet this factory still borrowed from the banks to pay out its workers' bonuses.

The soft credit system continuously supported the consumption-related investment. As indicated by the officials in the Macro Control Department of the State Planning Commission in 1991, it was common for contracted enterprises to direct their development funds into consumption-related projects. According to the Fujian Finance Bureau (1988), approximately 82% of contracted enterprises in 1987 evidenced this practice. In 1988, Xiamen Cigarette Factory (contract No.37) devoted 35% of its retained funds to consumption-related projects with the loans subsidizing its development needs. Xiamen Ship-Building Factory (contract No.47) depended greatly on loans for bonus uses and housing construction.

Continued soft subsidies formed another condition for the wage dynamic. Despite their poor performance, money-losing enterprises usually caught up or even surpassed the wage-bonus level of the money-making enterprises. In Fujian in 1987, the average annual wage was 1,455 yuan per worker for profitable enterprises, 1,198 yuan for marginally profitable ones, and 1,468 yuan for money-losing ones (Fujian Finance Bureau,

1988). In Xiamen, the wage-bonus level was similar between the top six money-making and top five money-losing enterprises (table 7-5).

Table 7-5 Annual wage bill and performance, Xiamen, 1988

Enterprises	Wages	Bonuses (Yuan/per worker)	Benefits	After tax profits (Million Yuan)
Money-making enterprises				
No. 37	2436	1680	1320	8.69
No. 38	2268	1584	1068	0.59
No. 39	2364	1536	1212	4.85
No. 40	2364	1404	1044	5.91
No. 41	2004	1524	1308	1.76
No. 42	2184	1452	1188	1.54
Money-losing enterprises				
No. 43	2304	1680	1320	0.22
No. 44	2244	1572	1068	0.34
No. 45	2184	1512	1188	0.28
No. 46	2292	1524	1308	0.54
No. 47	2064	1440	1068	0.68

Notes and source: Names of the enterprises are in the appendix. Details are available upon request.

Given the above pattern, it was not surprising that the total wage bill for contracted enterprises grew faster than profit and tax remittance as well as labour productivity (State Statistical Bureau, 1989). According to the CERRG (1988), for more than two thousand contracted enterprises under survey, their growth rates of basic wages, bonuses and retained profits were greater than the national average, while their growth rates of profit and tax remittance decreased (table 7-6). Another report in Shanghai was more revealing. For eight contracted enterprises which were allowed to freely determine their wage level, the wage bill grew 80% from 1987 to 1988 (inflation rate in Shanghai was 21.3%); but remitted profits and labour productivity decreased by 50% and 25%

respectively.

Table 7-6 Contracted vs. all enterprises, January to September 1987 (growth rate over the same period of previous year, %)

Items	Enterprises at the national level	2,172 Contracted enterprises
1. Realized profits	8.1	9.8
2. Remitted profits and taxes	6.6	1.2
3. Retained profits	25.3	34.8
4. Basic wage	13.9	15.2
5. Bonuses	44.7	45.9

Source: the CERRG, *Contract System in Practice*, 1988.

An interim conclusion

This chapter has demonstrated that, primarily as a result of the competing interests and systemic obstacles, the process of hardening enterprises' budget constraints did not reach its objective. As a result, enterprises took advantage of their continued soft budget constraints to pursue their own interests in such a way that income (wage) expansion was generated. A combination of job security, budget softness and fairness generated a special mechanism which converted the enterprises' interest-seeking behaviour into strong wage expansion. As long as these conditions remain, income (wage) expansion will likely continue.

Appendix List of contracted enterprises

Group 1 Contracts obtained from the Fujian Finance Bureau

1. Fujian Autoparts Corporation
2. Fujian Mechanic Supply Company
3. Fujian Electronics Equipment Corporation
4. Fujian Computer Corporation
5. Pucheng Bronze and Copper Mine
6. Fujian Manganese Mineral Corporation
7. Xiamen Wolfram Products Factory
8. Sanming Iron and Steel Corporation
9. Luoyang Iron Mine
10. Nanping Aluminum Products Factory
11. Fujian Coal Mining and Preparation Corporation
12. Fujian Agricultural Machinery Company
13. Fujian Auto-Transportation Company
14. Qingzhou Paper Products Factory
15. Fujian Petro-Chemicals Supply Company
16. Jianyang Auto-Repair Factory
17. Fuzhou Auto-Repair Factory
18. Fujian Ship Building Company
19. Mindong Electrical Machinery Corporation
20. Fujian Ocean Products Corporation
21. Fujian Packing and Printing Corporation
22. Provincial Fuzhou Warehouse
23. Fujian Metallurgical Industrial Corporation
24. Fujian Military Products Industry
25. Fujian Electrical Industrial Equipment Corporation
26. Fujian Cement Factory (Yongan)
27. Fujian Rongyan Cigarette Factory
28. Nanping Steel Corporation
29. Fuzhou Pencil Factory
30. Fujian Sanming Chemical Products Factory
31. Fujian Heavy Equipment Factory
32. Fujian Automobile Corporation
33. Fujian Nanping Paper Factory
34. Fujian Jianyan Tractor Factory
35. Fujian Yongan Petro-Chemicals Products Factory
36. Fujian Television Factory

Group 2 Contracts obtained from the Xiamen Taxation Bureau

37. Xiamen Cigarette Factory
38. Xiamen Textile Factory
39. Xiamen Cannery
40. Xiamen Sugar Product Factory
41. Xiamen Cement Factory
42. Xiamen Chemical Product Factory
43. Xiamen Wine-Processing Factory
44. Xiamen Rubber Product Factory
45. Xiamen Battery Factory
46. Xiamen Paper Factory
47. Xiamen Ship-Building Factory

Group 3 Contracts obtained from China Economic System Reform Institute, Beijing

48. Chongqing Chemical Products Factory, (Sichuan Province)
49. Beijing Electric Equipment Factory, (Beijing)
50. Handan Steelparts Factory, (Hebei Province)
51. Beijing Auto-Repair Factory, (Beijing)
52. Beijing Television-Parts Factory, (Beijing)
53. Changsha Battery Factory, (Hunan Province)
54. Chendo First Textile Factory, (Sichuan Province)
55. Feixiang Textile Factory, (Hebei Province)

CHAPTER 8 STATE-BANK RELATIONSHIP UNDER REFORM AND CREDIT EXPANSION

This chapter attempts to discover the causes of credit expansion (discussed on pp.28-29) by focusing on the state-bank relationship under reform. Section 8.1 gives a review on the process of banking reform. Section 8.2 then provides evidence to suggest that the banking reform did not reach its objectives and section 8.3 argues that the competing interests and systemic obstacles contributed greatly to this failure. Section 8.4 addresses the central bank's ineffective control in the face of the Specialized Banks' (SBs) budget softness. Section 8.5 finally demonstrates how the competing interests between the state and the SBs contributed to credit expansion.

8.1 Enterprisation of Banks and A Two-Tier Banking System

An overview

Along with enterprise reform, banking reform was seen as another essential element of overall reform. As noted in chapter 1, the pre-reform banking system was centralized and monopolistic. The People's Bank (PB) and its affiliated units (The Agricultural Bank, AB; The People's Construction Bank, PCB; and The Bank of China, BoC)¹ acted primarily as

¹ The AB handled agricultural loans and was incorporated into the PB in 1965. The PCB acted under the Ministry of Finance since 1972 and handled grants for fixed asset investment. The BoC dealt with foreign exchange. For details, see Credit Management Department of the PB (1990).

administrative units and played a passive role in resource allocation. The deposit-credit management mechanism was centrally planned, with each banking branch acting based on deposit and credit plans. Branches were to fulfil the deposit plan and hand over any surpluses to the higher-level supervisory unit. Branches also received credit funds for lending based on their credit plan and were to hand over any credit funds saved to the higher-level unit. Under this 'unified-deposit-credit' mechanism (*tongcun tongdai*), banking branches had no incentive to attract more deposits or economize on loans.

As decision-making and financial resources became decentralized during reform, there was an increasing need for a wider range of financial services, a rapid increase of savings, an efficient use of credit-based investment finance, and an effective monetary policy. All of the above micro and macro requirements provided the impetus for banking reform.

At the micro level, it was proposed that banks should be transferred from administrative units to commercial entities, a process known as 'enterprisation of banks' (*qiyehua*). In other words, the budget constraint of banks should be tightened. It was further envisaged that banks should be increasingly prominent in monitoring the performance of enterprises by allocating and regulating credit based on market criteria. In this regard, the banks would help to enforce the budget constraint on enterprises. At the macro

level, with tougher budget constraints of both enterprises and banks, it was hoped that monetary instruments could be more effective in maintaining macro stability. By these means, a new state-bank relationship would be established. These objectives were pursued through two successive stages.

The first stage of banking reform

The first stage covered the period 1979 to 1983 with the introduction of several changes. The PB started to act as a monetary authority under the State Council. The affiliated units of the PB also began to operate directly under the State Council. This was accompanied by an effort to provide these banks with greater independence in resource allocation. A pattern of using credit to provide enterprises with working funds and a portion of total enterprise investment was formed.

The deposit-credit mechanism was reformed by adopting a "difference control" method (*chae guangli*). While deposit and credit plans were still handed down from the higher-ups, they were used to derive a year-end difference between deposits (and appropriated funds) and loans. That is, year-end planned deposits were added to any appropriated funds for the branch's use, and year-end planned loans outstanding were subtracted from this sum. The actual difference between deposits (plus appropriations) and loans at the end of year must be greater than or equal to this planned difference (Byrd, 1983). As long as this condition was observed, the banks could expand

loans based on their deposits by an equal amount, a principle known as 'more deposit, more loan' (*duocun duodai*).²

The second stage of banking reform

The second stage came in 1984 when the PB formally became a central bank and its commercial operations were passed to a new Industrial and Commercial Bank (ICB) specializing in urban savings deposits and credits. The PB and four SBs (the ICB, AB, BoC and PCB) formed the main framework of a two-tier banking system.³ The PB was to be responsible for supervising the operations of the SBs and for implementing monetary control.

The bank enterprisation was accelerated with the introduction of 'separate control' over credit (*fenglei guangli*). While credit plans were in effect, the *quotas* within a credit plan (defined as the permissible maximum of loan lending) were no longer accompanied by allocated credit *funds* (defined as the capital needed to accompany the quotas). With initial capital funds assigned by the PB (usually insufficient to meet the planned quotas), the SBs were forced to raise funds from other sources. In addition to deposits, the SBs might borrow from the PB at the basic rate, borrow from each other at the

² For a branch which made more loans than deposits, a similar condition was applied. For details, see Credit Management Department of the PB (1990)

³ Since 1986, the Bank of Communications (BC) and the China International Trust and Investment Company (CITIC) were allowed to compete with the SBs in all areas of activity. An array of near-banks, usually in the form of financial and trust companies, were also established.

interbank rate, or issue bonds with the permission of the PB. The objective was to abolish the ``eating-from-the-same-pot`` pattern. It was hoped that the lending-borrowing relationship between the PB (representing the state) and the SBs, plus a similar relationship between enterprises and the SBs, would set the micro foundation for the effective use of monetary instruments without resorting to administrative means.

Another aspect of bank enterprisation was the formation of a new financial relationship between the SBs and the Ministry of Finance (also representing the state) where the SBs were allowed to retain a portion of their profits. Under the ``tax-for-profit`` scheme, following the payment of taxes and the remittance of a portion of after-tax profits, the SBs could distribute the remaining profits to both capital stock and employees' benefit use. Once the contract responsibility system was adopted nationwide in 1987, the AB became the first and only SB to sign a contract with the Ministry of Finance.

Evaluating the banking reform and its inflationary impact

There have been several studies examining the degree to which the above reform objectives (micro efficiency and macro control) were realized, to locate any obstacles during the process of bank enterprisation, and to identify any possible inflationary impacts of this reform (Zhou and Zhu, 1987; Bowles and White, 1989; Donnithorne, 1989; Tsang, 1990). For example, it was argued that the SBs had difficulties

implementing bank sanctions on enterprises and resisting their demands for credits. The budget softness of enterprises was cited as a major reason for this failure. The localities' intervention with the local banks was believed to be another reason. It was also argued that the PB lacked autonomy and effective monetary tools. A combination of these factors, plus several policy mistakes,⁴ made the new banking unable to control credit expansion.

This chapter echoes these arguments by focusing on the state-SBs dimension of the new banking system and its macro inflationary impact. The following sections will demonstrate how and why the process of bank enterprisation did not reach its objectives; and how behaviour of the budget-softening SBs played an important role in the formation of credit expansion.

8.2 The SBs under Dual Dependence: Continued Budget Softness

The SBs' budget constraint: a conceptual discussion

Several points need to be addressed regarding a budget constraint of a commercial bank in general. First, in any modern economy, because of the special nature of the banking business, banks may not be treated in the same manner as non-financial institutions with respect to budget constraint enforcement. Even in capitalist countries, budget constraints

⁴ For example, it was argued (Byrd, 1983; Tsang, 1990) that the method of "difference control" during 1980-1984 failed to recognize the multiplier effect of attracting deposits. Even though the difference quota was observed, the scale of overall lending based on deposits was out of control

of banks are softer than those of non-financial institutions, for the fear of loss of confidence in the financial system there are various lenders of last resort facilities. Regulations thus may often play a much more prominent role.

Secondly, in the pre-reform socialist economy, a soft budget constraint of a bank generally not only reflected the nature of the banking business, but also implied a special social relationship. That is, the state (through its banking system) had an obligation to guarantee the survival of enterprises. The process of bank enterprisation aimed to tighten budget constraints of the banks and enterprises in that both banks and enterprises were to move increasingly towards a market basis. While the degree of budgetary enforcement of an enterprise and a bank was to be different, a harder budget constraint of a bank was viewed as an objective of the reform.

Thirdly, a harder budget constraint of a bank means that a bank will absorb deposits and implement lending based on market criteria. Thus, a bank will be responsible for its liabilities and assets, with total capital acting as a constraint over the uses of funds. A bank must meet the requirements of profitability, safety and mobility of capital, and take responsibility for its own gains or losses.

Based on these understandings, one may observe the degree of budget hardness or softness of a SB from three aspects. The first one is to see whether a SB has been turned from an

administrative unit into a profit-oriented commercial entity. This observation is associated with the relationship between the SBs and the state in general. If a SB remains largely an administrative unit within the state machine, its budget constraint may contain soft elements. The second observation is to examine the sources and uses of a SB's capital. To a certain degree, a SB's asset-liability structure reflects a proposed commercial relationship between the SBs and the PB (representing the state). If a SB's liabilities cannot act as an effective constraint over its uses of capital, a soft budget constraint may result. The third observation is to examine a proposed financial relationship between the SBs and the Ministry of Finance (also representing the state). If a SB is only responsible for the gains but not the losses, a soft budget constraint may also continue.

The SBs as dual entities

With regards to the first aspect, the reform only turned the SBs into ``dual entities'', that is, a combination of government agencies and semi-commercial banks, with the former dominant (Figure 8-1). Vertically, the banks were administratively operated. The PB maintained a high level of administrative relations with the SBs. The PB was given a higher administrative status than the SBs under the State Council. Since the PB had to rely on the credit plan and quantity rationing as a last resort to control the SBs, and

since the SBs depended on the PB for a large portion of their capital supply (as shown later even in the form of lending), an 'eating-from-the-same-pot' relationship between the SBs and the state was preserved. Moreover, the relationship between the SBs' headquarters and their branches was of an administrative nature. A SB kept its hierarchical structure with credit quotas as its chief means to manage the branches. Another 'eating-from-the-same-pot' pattern was maintained.

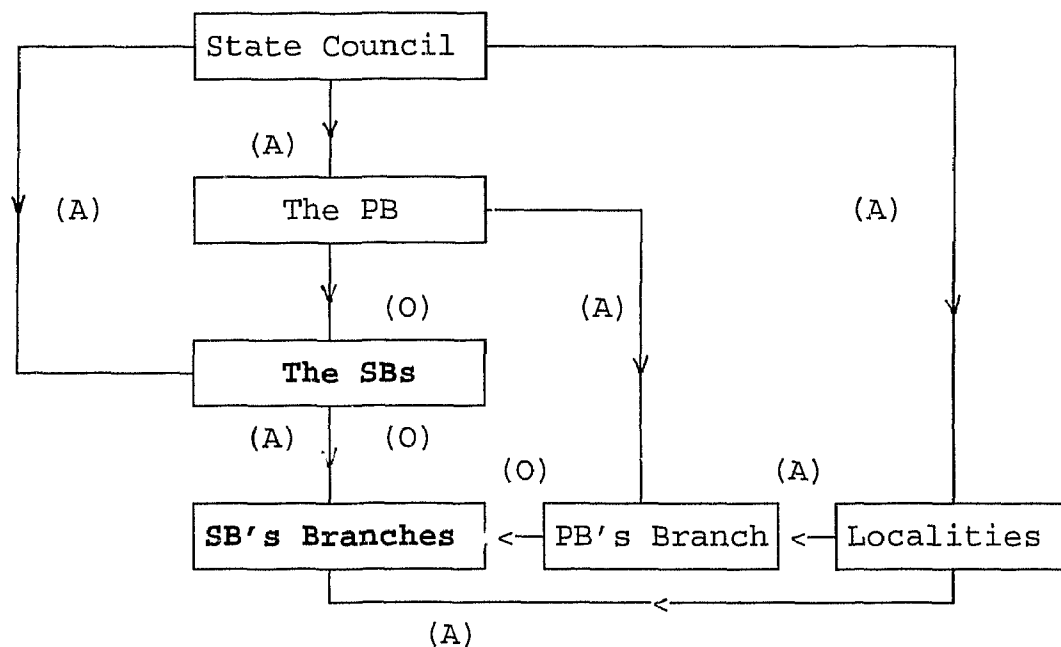


Figure 8-1 Current Status of the SBs

Note: (A) Administrative linkage; (O) Operational linkage

This vertical structure was further constrained by a horizontal administrative network. The SBs' branches were subject to tighter control from the government at all levels. The pre-reform legacy in which local banks acted almost as 'treasuries' of the localities largely remained. For

instance, a SB's provincial branch was first subject to the province, then to its head office, and only finally to the PB's branch. A PB's branch held weak control over its SBs' counterparts because the former had insufficient administrative power (the two were ranked equally) and its control met intervention from the localities. The localities held stronger control over a SB's branch as the former appointed the directors of a local SB's branch.

The fact that the SBs remained as dual entities easily perpetuated budget softness. For example, the SBs were assigned to issue various policy loans. The SBs had to share the funding of these loans, but later received subsidies from the state. This fact made it difficult for the SBs to perform adequate asset-liability management and required the SBs to rely on the state for continuous support and help.⁵

An unsound liability-asset structure

Sources of capital A closer look at the SBs' liabilities and assets provides a more direct observation of their budget constraints. A SB's liabilities contained deposits, borrowed funds (borrowing from the PB and interbanking borrowing) and self-funds (the appropriated funds and retained profits). In 1988, the shares of these three items in the liabilities were

⁵ In a deeper sense, the appearance of the SBs as dual entities reflected a fundamental concern over another aspect of the state-bank relationship along the development process. It is beyond the scope of this study to join a long-lasting controversy as to whether the SBs should perform as commercial and development banks at the same time (for a review of this issue, see Bowles and White, 1993). However, it was obvious that China has not found an effective way to administer policy loans.

approximately 60%, 30% and 10% respectively (Credit Management Department of the PB, 1990). It is noted that deposits did impart some hard elements into the SBs' budget constraints. Deposits use was constrained because deposits were payable on demand, especially the demand from households. However, the budget constraint might remain soft if other sources of capital maintained an 'eating-from-the-same-pot' feature. An examination of the SBs' borrowed funds from the PB (occupying 90% of the borrowed funds) and the SBs' self-funds will help to illustrate this point.

The SBs' borrowed funds from the PB As noted (p.156), under the method of 'separate control', the SBs had to raise funds by borrowing from the PB. This design aimed to provide the PB with greater control through regulating its lending to the SBs. However, the problem lay in the fact that this form of lending was remote from one based on market criteria. As indicated by the officials of the PB, a large portion of its yearly loans were never repaid on time. Repayment periods of short-term loans were also extended more than once, although only one extension was supposedly allowed. The SBs could easily find reasons to extend their due loans through bargaining, and at times did not even repay any portion of them after the extended period. As the officials in the ICB branch in Fujian indicated, it was not difficult for this practice to continue as long as certain reasons were found and justified. In principle, the SBs would face penalties if they

failed to repay loans on time, but this method did little to keep a limit on the overdue problem. After 1985, the value of loan defaults continued to increase each year, ranging from 10 to 15%. A field study in the Xiamen ICB branch confirmed this pattern. As indicated by the director of this branch interviewed, among the borrowing from local PB, the loan defaults ratios varied from 14 to 20% from 1984 to 1988.

The SBs' self-funds As noted (p.157), the creation of the self-funds aimed to establish a new financial relationship between the SBs and the Ministry of Finance. However, these funds in many ways resembled the pre-reform mechanism, thereby inserting another soft element into the SBs' budget constraints. The first portion of the self-funds was the appropriated funds (*chushi jijin*) which were allocated to a SB by the Ministry of Finance as its initial capital. While there was intended to be a once-for-all supply of capital to a SB upon its establishment, the Ministry of Finance often had to provide the SBs with additional funds when needed. Moreover, as this was a transfer of funds within the state banking system, the distribution of these funds was subject to bargaining. Each SB insisted on its importance in the economy and claimed a larger share of the overall funds. As indicated by a senior official in the Fujian ICB branch, this branch was successful in obtaining additional appropriated funds on several occasions through negotiation.

The SB's retained profits (*ziwo jilei*) constituted another

portion of the self-funds. Under the tax-for-profit scheme, the determination of these retained profits was subject to bargaining. As noted by the officials of the Ministry of Finance, one area of bargaining was the annual determination of the adjustment tax rate and the other was the bargaining over the profit sharing ratio.⁶ The Ministry often ended up making more concessions and the sharing process became another channel of providing the SBs with more funds. For instance, bargaining often lowered the adjustment tax rate by one or two percentage points below that originally proposed for all SBs. Negotiations on the profit sharing ratio were also frequently re-opened after the agreements were reached.

Uses of capital A closer look into the SBs' assets may also suggest a soft budget constraint of the SBs. In general, as the SBs were limited by regulations in diversifying their portfolio of assets according to varying degrees of liquidity, risk and rates of return, loans remained a major item of a SB's assets (more than 80%). To a great extent, a soft budget constraint was a reflection of the fact that the SBs were unable to bear responsibility for such a risky portfolio. The repayability of capital was not related to the SBs' survival. As noted in the field study, loan defaults ratio was seldom used to evaluate a SB's performance. In a deeper sense, because enterprises were almost free from the pressure of loan repayment given their budget softness, it was unrealistic to

⁶ This arrangement was similar to the case of enterprises under the tax-for-profit scheme (p 115)

expect the SBs to take full responsibility. A SB was unable to either set the interest rate or determine its customers' access to credit. A causal chain resulted: the enterprises did not repay their loans but continued to survive; and the SBs' survival was guaranteed in spite of a high degree of default risk. Credit constraint remained soft and losses of loan defaults were carried by the PB (and ultimately the state). The PB wrote off some loan defaults every two or three years, while the SBs just waited for this to occur and then passed the losses on to the PB.

Responsibility for profits but not losses

A soft budget constraint of the SBs can be further indicated by examining whether there was a close linkage between the SBs' liability-asset management and their responsibility for profits or losses from their operation. Judging from two schemes adopted (the tax-for-profit scheme and contract system), it was obvious that the SBs were only responsible for the profits but not the losses.

Under the tax-for-profit scheme, a linkage between the SBs' asset-liability management and their responsibility for profits or losses was generally missing. On the one hand, as noted above, whenever there were profits from their operation, the SBs could handily negotiate with the Ministry of Finance for a larger share. On the other hand, however, if there was a loss due to poor management, the SBs were not responsible

for it. The Ministry of Finance had to provide the money-losing SBs with additional capital. For instance, when a number of the SBs' branches in Fujian lost money in late 1987, they still received subsidies from the local Finance Bureaux to add to their financial capital.

In an effort to correct the defects of the tax-for-profit scheme, a contract responsibility system was proposed. As noted (p.157), the Agriculture Bank (the AB) was chosen to sign a contract with the Ministry of Finance by guaranteeing to improve the efficiency of capital use, to fulfil planned targets, and to remit a fixed amount of profits and taxes. The terms of a contract were tied with the AB's retained profits and other bonuses. The AB would compensate the state with its own capital in the case of shortfall. Similar contracts were signed for different levels of branches within the AB. During the field trip, a contract between the AB's Shijiazhuang branch (Hebei Province) and its subordinates was examined. The contract specified several indicators such as an increase in the turnover rate of loans and a reduction in the loan defaults ratio. The subordinates would be rewarded if their contracts were fulfilled, and penalized if not.

Based on the interview with the officials of the PB and the study of the Shijiazhuang and Fujian cases, it seemed that this contractual relationship did little to help create a harder budget constraint. In the first place, there were always heavy negotiations regarding the determination of the

contracts both between the AB and the Ministry of Finance, and between the AB and its subordinates. On many occasions, it was the superiors that made compromises, thus reducing the contracted requirements. Furthermore, the contracts were rarely enforced in practice. As noted by one official in the Fujian AB branch, because some terms of the contract were difficult to attain (such as a reduction in the loan defaults ratio when enterprises had a soft credit constraint), the contractors used these as excuses not to fulfil their contracts. Contracted quotas had to be revised even though they were a result of poor management. In the Fujian case, there were no clauses mentioning penalties for default losses. Moreover, as the Shijiazhuang case suggested, even simple penalties (deduction of bonuses for employees) were not enforced. While only one indicator was fulfilled, no penalties were involved and the contract was rewritten.

8.3 Competing Interests over the Enterprisation of Banks

The above evidence suggested that the process of bank enterprisation only ended up with a dual dependence pattern: the SBs operated in the market on the one hand, yet remained controlled by the state on the other. To further understand this pattern, it is worth examining the competing interests of the agents and various obstacles to hardening the budget constraints of the SBs.

Vulnerability of the SBs to external pressures

Following reform, various agents' competing claims over resources were more centred on the banking system and the SBs became a new focus of attention. In the state sector, these agents included enterprises, their supervisory agencies, and the localities. It was in the interests of these agents to intervene in the proposed autonomy of the SBs so as to facilitate their resource claims. Other things being equal, the softer the budget of the SBs, the easier for these agents to obtain more financial resources. Furthermore, as these agents benefitted from this semi-reformed banking system, they had a stake in preserving the status quo. Because of the systemic legacies inherent in the reform institution, the SBs became vulnerable to these powerful politico-economic forces.

Consider enterprises and their supervisory agencies first. Enterprises expected that the priority of the SBs was to guarantee their survival rather than impose sanctions. It was in the interests of enterprises and their supervisory agencies to maintain an easy flow of credit regardless of poor performance. To ensure such an outcome, these agents not only pressured the SBs into providing them with financial support, but also demanded that the state back up the SBs by filling the capital gap so generated. This pattern was confirmed in the case of Fujian. As noted by the director of the Fujian ICB branch, several provincial supervisory agencies constantly imposed pressures on this SB branch to guarantee their

troubled enterprises with credit supply when needed. These agencies also exerted pressures upon the provincial PB to give more lending quotas.

Local governments at various levels also had their vested interests in keeping the SBs' soft budget constraint alive. As will be detailed in chapter 9, reform in the central-local relationship intensified the competing interests of these two parties, which in turn complicated the banking reform and made the SBs' branches even more vulnerable to external pressures. The reason why the localities preferred a soft budget constraint of the local SBs came directly from the fact that, the softer the budget constraint of local SBs, the easier local projects could be financed. As indicated by the officials in the PB, the localities commonly helped the local SBs to obtain lending quotas and funds on the one hand, and in turn increased their influence over the use of the SBs' capital on the other.

The SBs' interest in preserving budget softness

While there were external pressures operating to maintain a soft budget constraint for the SBs, the SBs themselves (mainly their local branches) were willing to keep this pattern. This was so primarily because banks and enterprises largely remained an integrated part of state ownership. An administratively-linked enterprise-bank financial relationship tied the interests of these two parties together. For

example, an enterprise commonly made its deposits in one designated SB's branch, and received loans from this bank. If this enterprise ran into trouble, its deposits would decrease, which was harmful to this SB branch. It was therefore natural for this branch to help this enterprise out.

Another reason why the local SB branches willingly accepted a soft budget constraint was that their day-to-day operation and even their employees' bonuses were contingent on the support of the localities. It was thus common for the SBs' branches to offer soft credits to local enterprises or local projects in exchange for continual local support.

The fact that the local SB branches acted as the dual entities also gave them many benefits, hence their willingness to maintain a soft budget constraint. According to a nationwide report (*Economic Research*, No.11, 1987), most directors of local SBs under survey showed great interest in keeping the status of dual entities. The local SBs' payment structure can be cited as an example. As an administrative unit, the bonuses of employees in a local SB were to be the same as those in other government agencies. But as a semi-enterprise, a local SB was permitted to proportionally link its employees' bonuses to remitted profits and taxes. This pattern gave the local SBs a chance to manipulate the boundary of these two schemes. As noted by the director of the Fujian Finance Bureau, the local SBs preferred to be treated as enterprises when profits were likely to be generated, while

attempting to remain as administrative units when losses might occur. Heavy bargaining existed in settling this status, with the local SBs often the winners. In the Fujian case, although the performance of the local SBs was not promising, their bonuses were constantly higher than those of both enterprises and other government agencies because the local SBs could change sides.

Obstacles preventing the state from implementing sanctions

The above analysis suggested that the self-interests of the relevant agents contributed to the budget softness of SBs. But this was not the only cause. Certain systemic obstacles prevented the state's efforts from hardening the SBs' budget constraints within state ownership. The process of bank enterprisation challenged several ideological assumptions of reformed socialism by raising the issue of autonomy of state-owned enterprises and banks. There were disagreements how far should the process of enterprisation be taken in the state banking sphere. An influential view was that in a socialist economy, banking should be subject to an even higher degree of regulation, hence more limits for the banks as enterprises (Capital Management Department of the PB, 1990). Moreover, when the reform encroached upon powerful politico-economic interests wedded to the old system, the state was often forced to make compromises to these competing interests even at the cost of the objectives of banking reform.

The facts told the story eloquently: the SBs' continued budget softness was nothing but a reflection of the interplay of competing interests and ideological concerns in the state sector. This phenomenon had its consequences, one of which was the difficulties it placed on the PB's macro control over credit expansion. The next section will address this issue.

8.4 The PB's Control in Face with the SBs' Budget Softness

Inability of the PB's control: policy vs. systemic issues

While there was consensus that the PB faced increasing difficulties in implementing its monetary control, there were different views over the reasons for its inability. Several authors attributed this almost exclusively to the lack of central bank independence (Zhang et al, 1988; Allsopp and Lin, 1991). But other researchers (Bowles and White, 1989) argued that, while the lack of discretionary autonomy of the PB was problematic, the major cause for the failure in carrying out monetary control came from the lack of a sound micro response.

The analysis herein supports the latter's view. On the one hand, it was confirmed in the field studies that the lack of PB's autonomy contributed to the inflationary process. There was not yet a needed coordination and agreed division of responsibility among three main macro regulation bodies: the Planning Commission, the Ministry of Finance and the PB. Since the PB remained as an administrative organ, it had to

precisely follow the centre's policy. There was no single case under which an independent monetary policy was proposed by the PB. It was also obvious that the PB was forced to finance budget deficits in the early 1980s, thereby generating inflationary pressures. These issues were related to either policy choice or to the developing nature of China's economy.'

However, micro budget softness, including that of the SBs, placed more serious constraints on the effectiveness of the PB's control. This was reflected in the PB's difficulties in implementing its monetary control instruments (lending to the SBs, interest rate regulation, reserve requirements, and credit ceilings). The PB's lending, interest rate regulation and credit ceilings can be cited as illustrations.

The PB's lending to the SBs

In light of a deposit-loan gap in the SBs, it was hoped that the PB's lending could perform as the most effective tool for macro monetary control. The principle of lending was claimed as 'reasonable supply, firm repayment and flexible adjustment' (*heli gongyin, anshi guihuang, sishi taojie*). The wording 'reasonable supply' suggested its planned feature: the borrowing was not only subject to interest charges, but more importantly, to the lending plan. This feature was supposed to co-exist with the market criteria of 'firm repayment'.

⁷ For instance, the PB's obedience to the government's policy reflected a concern over the growth-inflation trade-off, a problem faced by many developing countries based on private ownership.

However, as previously mentioned, the latter requirement was not always enforced. As a result, the PB's lending actually became another channel of ``eating-from-the-same-pot``.

In addition to the total lending quotas determined by a lending plan, one crucial point of this lending process was the channels in which these quotas were distributed. The PB has adopted two channels to distribute these quotas by 1988. The first channel was a vertical distribution (*tiaotiao fenpei*) adopted in 1984. The PB assigned the lending amount to each SB's headquarters which in turn worked out its borrowing plan to be reconfirmed by the PB. The PB then asked its branches to issue loans to the local SBs based on these quotas. The second channel adopted in 1987 combined both a vertical and horizontal distribution with the emphasis on the latter (*tiaokui jihe, yitao weizhu*). While a small number of quotas were assigned to the SBs' headquarters (vertically), a large number of lending quotas were controlled by the local PB branch who then distributed the quotas to its SB counterparts (horizontally).

The defects of the first channel were obvious. The SBs frequently bargained with the PB for a favourable borrowing plan. Following this one-time bargaining, the power of credit control was passed from the PB to the SBs since the PB's local branches actually had no right to change this plan. They merely went through the routine procedure of issuing credit. Moreover, the SBs and their branches could push the PB for more quotas after the first round of negotiations.

The second channel attempted to offset the influence of the SBs by retaining more power of control within the PB. The PB's provincial branch had the right to determine the lending to the local SBs (the quotas and the period). Yet, with much of the lending quotas distributed on a regional basis, the conflict between the central and local interests escalated. Backed up by the powerful local governments, the local SBs were still able to obtain larger lending quotas. An official of the Credit Management Department of the PB indicated that the localities and local SBs constantly sent joint delegations to the PB, or adopted indirect channels, to lobby for larger lending quotas. Once a larger quota was assigned to the provincial PB, the influence of the localities was ensured.

In fact, the SBs' unlimited demands for lending quotas and the aforementioned high degree of non-repayability of their borrowing from the PB were the twin indicators of the same phenomenon, that is, the capital supply of the SBs was guaranteed by the state (through the PB). When the PB could not withstand these pressures, its lending to the SBs actually became a cause of credit expansion rather than a control tool. As indicated in practice, these lending quotas could only be enforced by the mandatory means.

Furthermore, while an effective mechanism to check demand for loans did not exist in the period of monetary expansion, there was an asymmetric case, as the PB was unable to reduce its lending when monetary contraction was implemented. This

was so primarily because of the SBs' fragile financial structure (huge deposit-loan gaps and loan-lending as a major fund use). The SBs' heavy dependence on the PB for credit funds made the latter reluctant to tighten its re-lending for fear of negative effects on the real sector (Tsang, 1990; Bowles and White, 1993). While this constraint reflected the financial market's infancy stage, it was chiefly associated with the concern over the survival of enterprises and SBs.

Interest rate regulation

Interest rate regulation referred to a planned control process implemented by the PB over the SBs' loan and deposit rates. In practice, the interest rate adjustment between 1981 and 1984 largely aimed at absorbing scattered capital for accumulation (three upward adjustments), but the interest rate changes between 1985 and 1988 were mainly designed to control an overheated economy (four upward adjustments). But the interest rate regulation from 1985 on largely failed in that there existed a low, and finally negative, real interest rate pattern, and that negative interest rates in turn made interest rate regulation ineffective (see World Bank, 1991).

There was consensus that this interest rate structure stimulated credit expansion since obtaining low-interest loans was equivalent to being subsidized (Blejer et al, 1991). It was also argued that certain policy mistakes (such as the choice of adjustment timing) could be blamed for this negative

interest rate pattern. For example, as the officials of the Interest Rate Management Department of the PB indicated, the ``minor adjustments'' (*zou xiao bu*) strategy adopted in early 1988 failed to anticipate inflationary expectations in the population. Yet, it was several systemic constraints that actually prevented an effective interest rate policy from functioning. In addition to the facts that there was a low interest elasticity from the budget-softening enterprises (Blejer et al, 1991) and that the localities constantly intervened in the PB's interest rate policy (Credit Management Department of the PB, 1990), the SBs' budget softness played an important role in this area.

For example, the existing interest rate structure (a PB-determined lower basic rate and higher prime rate) aimed to provide the SBs with profits, which in turn formed a large portion of their financial capital. Whenever the SBs' profits were reduced or when they incurred losses due to an interest rate change, the state (through the Ministry of Finance) had to guarantee them the necessary additional capital. In other words, interest rate regulation was a precondition for the operations of the SBs rather than a flexible indirect control tool. The PB was thus reluctant to make interest rate adjustments since it was the state that held final responsibility for the capital supply of the SBs.

It was further noted that with the process of bank enterprisation, the SBs did gain certain power in interest

rate determination within a defined floor and ceiling (20% up to September 1988). The aim was to allow the SBs to regulate enterprises' credit demand under the guidance of the PB's interest rate policy. However, with the SBs' budget softness, this practice resulted in losses to the state on the one hand, and made the PB's interest rate policy ineffective on the other. As noted in the field study, many SBs' branches preferred to implement an upward interest rate adjustment once and then fixed this rate for the whole period, regardless of any change in the PB's interest rate policy. Many branches allowed the overdue loans to stay with enterprises as higher interest rates led to more profits. The branches might even lend out new loans to help enterprises repay the outstanding interests. This pattern was made possible simply because enterprises' first concern was the obtainment of loans rather than interest costs, thanks to their soft credit constraint. This was so also because the SBs were only responsible for the gains (profits from interest charges) but not the losses (overdue principals). Such an enterprise-SBs-PB relationship reduced the effectiveness of the PB's interest rate policy.

Problems in implementing the credit plan

Keeping in mind the systemic constraints in manipulating the above indirect monetary control instruments, it was easy to see why the PB still viewed the credit plans as a major tool of control. The plans included indicative and mandatory

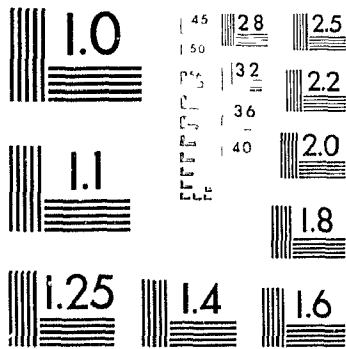
ones. An indicative plan provided guidance to the SBs with respect to the scale, direction and structure of their lending, which the SBs did not have an obligation to follow. This plan was adopted during four separate years after the new banking system was established (1984, 1986, and the first three quarters of both 1987 and 1988). A mandatory plan imposed a credit ceiling which the SBs were not allowed to surpass and was accompanied by administrative orders. The PB used this plan three times (1985, and the fourth quarters of both 1987 and 1988).

Comparing the years when an indicative plan was in effect, it was obvious that the indicative plan failed to control the credit expansion adequately. This was because the SBs did not respond quickly to the PB's indirect monetary instruments. Thus, the planned targets were substantially overshot. As noted in the interview, during these years, the PB had no idea how much credit was already issued by the SBs, and these plans had to be revised several times each year.

Whenever credit issuing was out of control, a mandatory plan was adopted as a last resort. The total credit scale was announced to the SBs at the beginning of the year. Detailed quotas (direction of each lending) were assigned each quarter and their use was supervised monthly by the PB. A Chinese saying referred to this as a ``cage'' (overall plan) with many ``frames'' (detailed descriptions). This control was further enforced by the administrative bodies at all levels. However,

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this control had several problems. One was that a mandatory plan easily brought a sudden stop to the economy and resulted in efficiency losses and structural imbalances. The other was that in many ways this plan looked similar to the pre-reform one in a unified banking system, thus running in a direction opposite to the reform. The director of the Fujian ICB branch noted that when this control was imposed, the SBs were deprived of many assigned powers and found it difficult to operate based on market principles. Finally, while this administrative intervention might temporarily check the excess demand and control total credit scale, it was unable to eliminate the systemic causes of credit expansion. The behaviour of the SBs remained unchanged. As noted by the officials in the Fujian ICB branch, the local SBs understood that this policy might not hold for long since both political and economic considerations would finally force the authority to lift the control and reemphasize faster economic growth.

8.5 Credit Expansion: Viewing from the State-SBs' Conflict

It was argued that (Zhong, 1990; Bowles and White, 1993) credit expansion, a major force of excess demand, was formed because various agents pressured the new banking system to accommodate their claims for more resources. When the latter responded, credit expansion resulted and excess demand built up. This process could be further described as the operation

of a *multi-level, micro-push* mechanism. First, enterprises and the localities pushed the SBs' branches by demanding more credit; secondly, the SBs' branches in turn pushed their head offices and the PB's local branches; thirdly, the SBs' head offices and/or the PB's local branches pushed the PB; and finally, as the PB was unable to withstand all these demands, credit expansion took on a life of its own. Micro budget softness played a key role here as it became a convenient tool for these agents to make their claims for financial resources.

While there have been a number of studies addressing the role of enterprises and the localities in credit expansion (Cheng, 1988; Wong, 1991, 1992; and Bowles and White, 1993), not enough attention has been paid to the role of the SBs in this expansion. As an extension of the previous discussions, this section discusses this issue by addressing the manner in which the budget-softening SBs pushed the PB to create credit expansion, and by presenting the difficulties the PB faced when it implemented macro monetary control from 1984 to 1988.

A ``water-flour cycle``: the mechanism

As noted (p.156), with the method of ``separate control`` over credit, the lending ability of a SB was expected to be constrained by both credit quotas and funds. The SBs created counter-measures to push the PB on both fronts. With respect to the *fund* constraint, budget softness provided the SBs with an effective way to demand additional capital. With respect

to the *quota* constraint, there was a special case of budget softness. The distribution of credit quotas (both the SBs' borrowing quotas and their lending quotas) was subject to bargaining between the SBs and the PB. If such quotas were not accompanied by an administrative constraint, it could easily be overshot.

As suggested in the field studies, whenever the SBs obtained additional lending quotas, they soon demanded additional funds. Or conversely, they bargained for the funds first and asked for more lending quotas later. This phenomenon was called a 'water-flour cycle': in order to make a big cake, one might apply first for more flour (quotas) and then later demand more water (funds); and if the water turned out to be too much, more flour would be demanded. It was further suggested that the SBs regarded attaining larger quotas as their first choice. The SBs might be more capable of raising funds than getting larger quotas, because with a given quota, a local SB could easily get more funds through bargaining from either its superiors or the local PB.

There were several methods the local SBs could use to obtain larger quotas. First, the quota distribution had to be adjusted by the superiors if the local SBs could justify their claim for larger quotas. Consequently, if a large number of the local SBs behaved in the same manner, the PB would have to enlarge the overall quotas. This was very likely because it was understood that if one bank could not provide a sufficient

reason for additional quota claim, then it would lose in the subsequent round of quota distribution. Secondly, the quota was often viewed by the SBs as a resource in times of serious shortages. The behaviour was to hoard as many quotas as possible. In the case of Fujian, a number of the SBs' branches tried to claim higher quotas from their superiors, but were reluctant to distribute the quotas downwards. When the shortages led to a hoarding behaviour, this behaviour strengthened the intensity of the actual shortages -- a phenomenon described by the shortage approach.

This behaviour formed a credit distribution pattern with inherent inflationary biases. When the credit quotas were distributed, it was not surprising to see heavy bargaining and unlimited demands from the SBs at all levels. Moreover, while in principle the PB should be able to reassign the distributed quotas among the SBs whenever necessary (or a SB's headquarters should do the same within the SB), in practice, such reallocation was nearly impossible. This was a type of flypaper effect: the quota sticks where it hits. In the case of Fujian, if the superiors indicated the possibility of withdrawing the assigned quotas from a local branch, the latter would soon find reasons to justify their quota hoarding, or even rationalize that larger quotas were needed. As a result, the PB was forced to redesign a large ``cage'' (credit plan). At times it might be possible for the PB to enforce quota reallocation with the help of administrative

orders, but this action had side-effects. When local branches discovered this levelling-out practice, they would use up the quotas as soon as possible and continually demand more.

``Hard gaps'' and the resulting credit expansion

The field study further suggested that there were several methods the SBs could utilize to demand both greater credit funds and quotas once the quotas had been decided. The major strategy was to switch the assigned funds or quotas from the designated or urgently-needed areas to other uses first, and leave certain ``hard gaps'' (*yǐng que kǒu*) for the PB to fill. As noted by the officials of the PB, four gaps often existed: agricultural loans, export loans, basic construction loans and working capital loans. Given the importance of these sectors in the economy, the related loans were always provided, even when a tight policy was in effect. The SBs understood this and took the opportunity to push the PB for even more credits. The SBs commonly switched these loans to other uses, and then turned to the PB for more funds to meet these urgent needs.

The SBs also switched in-plan credits from central projects to local ones. A similar practice was to give those less efficient but locally-related projects priority in loan-lending, and leave the credit supply of those efficient enterprises for the PB. The motivation was obvious: as the central projects were the crux of the national economy, the PB had to take care of these hard gaps.

Furthermore, when the SBs were assigned to issue certain policy loans, it was common for the SBs to turn the designated capital to other uses first, if the administrative discipline was not enforced. Alternatively, the SBs would first use up the given quotas by providing other projects with loans and then use these categorical loans as an excuse for demanding higher quotas. The officials of the PB suggested that the SBs always found several excuses to justify these actions.

Clearly, the manipulation of capital use shown above, often led to a mismatch between the credit quotas and funds. For instance, when the local SBs switched the funds designated for the central projects to the local ones, there were an excess of quotas but not enough accompanying funds for the central projects. There were also an excess of funds but not enough quotas for the local projects. As indicated by the officials of the PB, when the credit plan was indicative, it was extremely difficult for the PB to correct this mismatch within a given plan. Rather, the PB on the one hand had to provide more funds to fill up the ``generated'' quota vacancies; but on the other hand issue larger quotas to meet the ``created'' funds. The result was credit expansion.

From 1984 to 1988: the SBs during credit expansion

The case of 1984 A review of the credit development from 1984 to 1988 will help to show how the SBs utilized the above

strategies to push the PB and to lead to credit expansion.⁸ The first case in point was in late 1984 when the new credit management scheme was adopted. It was decreed that the volume of the SBs' outstanding loans at the end of 1984 would serve as a basis to decide the distribution of the credit quotas and funds in 1985. This information soon made the four SBs compete to issue the loans on hand since, the greater the volume of the outstanding loans at that time, the greater the chance they could make loans in the future. This phenomenon was known as 'four SBs courting enterprises with loan offers'. At the same time, the SBs turned to the PB for additional quotas by arguing that their loans had legitimate purposes. The field study conducted in Fujian confirmed this pattern. Fujian ICB branch lent out a large number of short-term loans in the last ten days of 1984, many of them were risky. While the branch may have intended to withdraw these loans as soon as its new larger basis was determined, a large portion of these loans were not repaid in 1985 because the borrowers defaulted. The branch then turned to its headquarters and the local PB for further increase in credit funds, and succeeded in receiving them. It was noted by the officials of the PB that such phenomena were common across the country. Thus, the PB had to increase both the quotas and the corresponding funds beyond plan. The planned credit increase in 1984 was 42.3 billion yuan after two rounds of adjustment,

⁸ One can refer to the detailed data of credit expansion from 1984 to 1988 in table 2-6 on p 29

but the actual figures finally reached 99.8 billion yuan. Clearly, the cause of this expansion lay in the 'eating-from-the-same-pot' capital supply system, as the timing of the new regulation stimulated this move.

The case of 1985 A tight credit control was adopted in early 1985 in order to break this 'water-flour cycle'. This control was primarily based on indirect tools (e.g., the PB's lending, reserve requirements and interest rate). Yet, these adjustments met with many obstacles. The required reserve change was just such a case in point. In 1984, the reserve ratio was set at 20% for enterprises' deposits, 40% for household savings and 25% for agricultural savings. In theory, an upward adjustment of the reserve ratio should help to cool down the overheated economy. Yet, the systemic constraints made this adjustment difficult. As most SBs had larger loans than deposits, these existing ratios further enlarged their deficit gap in capital. The SBs then imposed significant pressure on the PB, asking for either more lending from the PB or a lower reserve ratio. At the end of 1984 the PB had collected the required reserves on the one hand, while resupplying the SBs in the form of increased lending on the other. In 1985 the PB finally agreed to make a downward adjustment by adopting a uniform 10% reserve ratio for all deposits. The officials of the PB admitted that when a tight policy was in effect, the timing of such a downward adjustment was not opportune; but it was the fact that the state had to

guarantee the survival of the SBs that led to this change.

To offset the impact of a lower reserve ratio, the PB tightened up its lending to the SBs and made several upward adjustments in the interest rates. However, the continuing micro pressures for credit issuance were strong in spite of these efforts. Thus, a set of administrative means was hurriedly applied in mid-1985. Credit supplies were under a mandatory ceiling and the SBs were required to withdraw over-issued loans. While under this control the credit expansion was temporarily checked, the actual yearly increase of credit still reached 94.6 billion yuan, surpassing the planned 71.5 billion yuan.

The case of 1986 Such administrative control however, brought a sudden stop and efficiency loss to the economy. The PB was then forced to readopt an easy monetary policy. The credit ceiling was replaced by an indicative plan in May. The PB's branches began to issue off-plan loans. To accompany this indicative plan, indirect tools were reemployed with the hope of guiding both the direction and flow of credit development. For example, the basic rates of the PB's lending were adjusted upwardly in August. However, as all micro behaviour had not changed but had simply been constrained by the previous administrative control, when the environment changed, these behavioural impulses took another jump. Pushed by other agents, the SBs continued to demand both credit quotas and funds from the PB. The increase in basic rates of

PB's lending did little to slow down the SBs' demand for credit, and a new round of overheating resulted. The actual increase of credit for this year (168.5 billion yuan) once again seriously exceeded the planned one (95.0 billion yuan).

The case of 1987 This was a year full of cycles with the monetary policy changing several times. In the first three quarters, the PB continued employing an indicative credit plan and made several restrictive moves with indirect tools. Yet, this combination soon proved to be ineffective. The SBs again played an important role in the overheating economy. As noted by the officials of the PB, the 'water-flour' mechanism continually repeated itself. The pressures from the SBs forced the PB to upwardly adjust the credit plan twice in the first half of the year. Despite this adjustment, both the lending quotas and funds were still overshot. This situation forced the PB to resume the credit ceiling in the fourth quarter. Several indirect tools were also employed such as an upward adjustment of the reserve ratio and another increase of the PB's basic rates. Yet, as admitted by the officials in the PB, it was the credit ceiling rather than these indirect tools that brought the credit expansion to a temporary stop. For this year, actual credit increased by 144.3 billion yuan, surpassing the planned 122.5 billion yuan.

The case of 1988 This year almost repeated the same cycle as in 1987 but the situation became much worse. At the beginning of the year, the PB proposed a tight monetary policy

centred on an indicative credit plan. However this policy was hardly implemented. The credit expansion took on a new life. As indicated by the officials of the PB, during this new wave of expansion, the SBs made good use of their strategy of manipulation of capital use to leave many 'hard gaps' for the PB to fill. The behaviour of the AB was a typical example. In the first eight months, the AB arranged its credits to search for a higher return. Total loans were increased by 11.8 billion yuan, surpassing the annual plan by 3.8 billion. The AB understood there could possibly be a lack of both funds and quotas in the fall, but believed that the PB would find ways to fill these gaps. The result was the AB expected: when shortages of agricultural credit occurred in late 1988, the PB had to finally increase loans to the AB to fulfil the purchase plan.⁹ At the national level, as a result of all 'hard gaps', the PB had to lend an additional 46.2 billion yuan to the SBs in the fourth quarter of 1988. A similar pattern was confirmed in Fujian. The Fujian ICB branch switched a great portion of its in-plan credits to several local projects at the beginning of the year. These moves led to a lack of funds for export-related and other key construction projects. Additional credit funds had to be resupplied by the local PB to fill these gaps.

Faced with this credit expansion and the increasingly

⁹ At times the AB might have to issue IOUs as a result of its inability to meet payments for farmers. But the PB finally always gave the AB more loans to pay these IOUs and bailed the latter out.

serious inflation, the centre finally resorted to the strictest administrative control since reform in late 1988. Rather than the PB, the State Council issued several documents to restore order. The SBs were ordered to freeze the credit quotas and stop the aforementioned manipulation practices. Only under this condition did this expansion gradually come to a halt. But once again, the planned increase of credit (135.0 billion yuan after several adjustments) was overshoot, with actual figures finally reaching 153.3 billion yuan.

An interim conclusion

The analysis in this chapter has demonstrated that the reformed banking system had not yet created a mechanism to withstand the multi-level, micro-push credit expansion. While this expansion was a result of unlimited demands from the enterprises and the localities, the SBs also played a critical role. The competing interests and various obstacles to the banking reform prevented the process of bank enterprisation from being fully realized. The budget-softening SBs helped to generate credit expansion and weaken the PB's ability to control. This credit expansion could only be temporarily restrained by administrative means, while its deeper roots remained largely intact. This conclusion will be further confirmed in chapter 10 when the effects of the post-1988 retrenchment package are examined.

CHAPTER 9 CENTRE-LOCALITY RELATIONSHIP UNDER REFORM AND INVESTMENT EXPANSION

This chapter attempts to locate the causes of investment expansion (discussed on p.32) by investigating the centre-locality relationship under reform. As an analytical background, section 9.1 gives a brief overview on the reform process of the centre-locality relationship and section 9.2 provides conceptual clarification of ``local budget constraint softness`` (or local budget softness for short). Section 9.3 discusses the process of tightening local budget constraints and addresses various obstacles and competing interests during this process. Section 9.4 discusses the relationship between local budget softness and local intervention. Finally, section 9.5 shows how the soft budget constraints of the localities contributed to investment expansion.

9.1 The Centre-Locality Relationship under Reform: An Overview

From administrative decentralization to dual decentralization

As noted in chapter 1 (p.7), while there were certain phases of ``administrative decentralization`` in the Chinese CPE, in most of the pre-reform period, the centre-locality relationship could still be characterized as a centralized

one. The localities¹ generally did not have much decision-making powers and had to constantly surrender their powers to the centre when any round of recentralization took place.

Compared with the pre-reform case, the centre-locality relationship during reform was guided by a *dual decentralization* strategy. That is, while greater decision-making power was transferred from the government to enterprises and the SBs, a considerable degree of decision-making power was also decentralized to the localities. The core of this strategy was to establish a proper relationship between the government and the markets, and to redefine the central and local responsibilities within the government. This strategy was designed to be accompanied by proposed budget hardness at the respected levels. While it was hoped that the budget constraints of enterprises and the SBs would be tightened, it was also expected that the operations of the localities would be moved toward a self-financing basis.

Competing interests between the centre and the localities

It is against this institutional backdrop that the impact of a reformed centre-locality relationship on the inflationary process will be examined. As noted in chapters 7 and 8, during both the enterprise and bank reforms, the localities played an important role in maintaining budget softness at the

¹ In general, the localities included provincial governments and their subordinates. But in this chapter, the localities generally referred to provincial governments unless otherwise stated.

enterprises and the SBs levels, which in turn caused strong inflationary pressures. However, another notable aspect of the inflationary process was directly associated with the localities' conflict with the centre, as there were failures in the reform of the centre-locality relationship.

There have been a number of studies of the inflationary pressures related to this conflict. Some authors (World Bank, 1990; Oksenberg and Tang, 1991) attributed the inflationary pressures to the aggressive behaviour of the localities, as the latter obtained greater decision-making power during reform. The localities were blamed for their overactive role in local investment expansion and were also accused of intervention in the activities of enterprises and the SBs. Exacerbated regional tensions, protectionism and parochialism were also believed to be associated with local behaviour.

Other authors (Wong, 1991) argued that the centre made several policy mistakes, which forced the localities to take defensive actions, thus generating the inflationary pressures. For example, a failure to address the issue of revenue decline during fiscal reform created a set of incentives for the localities to engage in local investment expansion, to divert in-budget resources to extra-budgetary channels, and to exert regional duplication and protectionism, all of which generated additional inflationary pressures.

Certain differences aside, both the aggressive and defensive views have suggested that the interplay of competing

interests between the centre and the localities played a major role in causing inflationary pressures. This chapter takes this point further by emphasizing how these competing interests clashed, and how locality-based excess demands were generated when there was a failure in tightening the budget constraint of the localities. In particular, it will be argued that the generation of investment expansion was largely caused by the soft budget constraints of the localities. But before touching these issues, the next section will first provide a conceptual clarification of local budget softness.

9.2 Local Budget Constraint Softness: Conceptual Clarification

As noted in chapter 5 (pp.77-78) and shown in chapters 7 and 8, a soft budget constraint of an enterprise and a SB had two aspects. First, financially speaking budget softness meant that such a micro unit was not financially self-sufficient and not responsible for its own gains or losses. If it failed to compete in the market, it could still be bailed out. The second, and more important, aspect was the social relationship inherent in this concept. The state as a parent wanted to protect enterprises and the SBs as their children according to certain systemic assumptions of a state ownership economy. To what extent can these two aspects be extended to describe the budget constraint of the localities?

Financial aspect of a soft local budget constraint

With respect to the financial aspect, Kornai argued that the concept of a hard or soft budget constraint may be applied to the localities. A hard local budget constraint refers to the situation wherein "local governments have more or less financial autonomy and they are supposed to be self-sufficient, i.e., to cover expenditures from taxes and other revenues they are able to raise". However, "if a local government gets additional funds from a higher-level governmental budget, then a soft budget constraint situation may evolve. External assistance depends on bargaining. If the local government runs into deficits, it can hope that it will be bailed out by the higher-level authorities" (1986a, p.23). These concepts help describe the localities' budget situation.

First, local budget softness bears similarities to the soft budget constraints of enterprises and the SBs. The key issue is how local governmental spending is financed. If a locality's budget is not maintained on a self-financing basis, if its financial problems are constantly helped out by the superiors, and if bail-out is obtained through bargaining, the budget constraint of this locality is quite soft.

Secondly, the budget deficit is related to, but different from, the concept of budget softness. A locality that runs into deficits may still have a hard budget constraint as long as it has financed its deficits on a self-sufficient basis,

that is, out of its own revenues. Yet, if a locality knows that whatever it has spent will be financed by the superiors through bargaining, and therefore continually runs into deficits, the budget constraint of this locality is soft.

Thirdly, the existing actual reforms in the central-local distribution relationship were intended to tighten the budget constraint of the localities. That is, while the localities would obtain increased financial autonomy, they were required to cover their spending from their own revenue.

Social implications of a soft local budget constraint

Comparing the case of enterprises and the SBs to the localities, local budget softness has different social implications. Within a state ownership economy, the relationship between a paternalistic state and a micro unit (an enterprise or a SB) implies a systemic requirement that the state has to guarantee the latter's survival. The social implications of local budget softness, however, is different than the above case. Within any state machine, a soft local budget constraint just implies that less care in spending is acceptable because the local government cannot go ``bankrupt''. Kornai recognized this difference by arguing that ``including this issue [a guaranteed survival of the localities] would stretch the concept of the soft budget constraint too far ... [The original social relationship] cannot be maintained without artificial reinterpretation for

the case of the domestic governmental budget'' (1986a, p.24).

This difference suggests that one should interpret the concept of local budget softness with caution. It would be useful to distinguish among the policy, institutional and systemic factors in contributing to the phenomenon of local budget softness. In the first place, the financial aspect of local budget softness -- lack of a constraint on government spending -- may reflect a policy choice or institutional arrangement. This phenomenon occurred in many different types of governments. It was evident from observation that a number of local governments in the West also suffered from this syndrome. This may be why Kornai discussed the issue of local budget softness in the context of a mixed economy.

Yet, as a soft local budget constraint is developed in a particular economic system, it will bear systemic features as well. In the Chinese case, a local soft budget constraint before reform constituted one aspect of a centralized state ownership economy. As to the state-enterprise relationship, the localities played an intermediate role, representing the centre in regulating the enterprises on the one hand, and guaranteeing the latter's survival on the other. As to the centre-locality relationship, most of profits and taxes collected by the localities were handed over to the centre. The centre then determined the localities' expenditures and investment, and accordingly reallocated funds for local use. This pattern was known as ''cooking-in-the-same-kitchen''

(*hezao chifan*). As the local interests were not recognized before reform, they just functioned as a subordinate and powerless part of a centralized state ownership economy and did not have to worry about their financing.

The reform in the centre-locality relationship aimed to change a centralized form of state ownership economy to a decentralized one.² The localities continued to perform their intermediate role of regulating local enterprises but now had a stake in this process. A series of revenue-sharing and expenditure-dividing schemes were also introduced under the umbrella of ``cooking-in-separate-kitchens'' (*fengzao chifan*) to tighten local budget constraints. Enterprise revenues were reapportioned between the centre and the localities based on ownership. Expenditure responsibility was also specified. A linkage between local revenues and expenditures was claimed.

As will be detailed in next section, although both the centre and the localities had a common desire to invigorate the state ownership economy, they had competing interests over the distribution of enterprise revenues and other resources during reform. It can be argued that the problem of local budget softness in reformed socialism and the difficulties in tightening it was not only related to the issue of government spending, but also to the issue of government ownership. The fate of a new centre-locality relationship depended upon the

It was noted that the utmost objective of the reform was to search for a market-based version of social ownership which included state ownership as one of its many forms. Yet, it could be argued that the Chinese economy up to 1988 was primarily a decentralized version of a state ownership economy.

feasibility of a reformed state ownership economy in general.

9.3 Tightening Local Budget Constraint: Process and Obstacles

Given that a detailed account of fiscal reform already exists (World Bank, 1990; Oksenberg and Tong, 1991; Wong, 1992), only a brief summary will be given with two objectives in mind. First, evidence will be provided to see whether a harder local budget constraint was installed, and secondly, major obstacles affecting the efforts of tightening local budget constraint will be identified. Emphasis will be given to the politico-economic dynamics of this process and the interplay of interests between the centre and the localities.

Process of tightening local budget constraint

There were four successive schemes for revenue-sharing in the 1980s among all levels of government, with the revenue sharing between the centre and the provinces being most prominent.³ The first scheme was introduced in 1980 with revenues being divided into four parts based on where the revenues were generated. The first two parts were the centre's and provinces' revenues (mainly profits from the enterprises under their respective control). The third part was profits from the jointly-controlled enterprises which were

³The discussion is confined to the arrangements applied to a majority of provinces. For other variants at the different stages, see Systemic Reform Department of the Ministry of Finance (1989).

shared between the centre and the provinces. The fourth part was business tax revenue from all enterprises, designated as ``adjustment income'' to be shared by both sides.

The second scheme took place in 1983, which was marked by a switch from the above ``revenue-sharing with sources'' scheme to an ``overall revenue-sharing'' one. The centre's revenues were intact, but the other three parts of total revenues were pooled together to be shared by the two sides.

The third scheme started in 1985. As taxes became a major source of revenues after the tax-for-profit scheme, the above ``overall revenue-sharing'' scheme was changed to an ``overall tax-revenue-sharing'' one. While central government tax revenues were not shared, all taxes and other revenues that provinces collected were subject to sharing.

The fourth scheme was implemented in 1988 and was known as the fiscal contract system. Provinces contracted to remit part of their revenues to the centre, and keep the rest. The contracted quota was based on the revenues remitted in the previous year, plus a fixed or percentage increase.

While these schemes of revenue-sharing were designed to give the provinces (and all lower-level governments) incentives to collect revenues and keep a share, there was always a commitment to link local expenditures to retained revenues. In other words, a ``making-ends-meet'' principle was insisted upon. Every scheme of revenue-sharing was accompanied by an expenditure-dividing arrangement, which draw

a similar division of fiscal responsibilities between the two sides.⁴ On the whole, a combination of revenue-sharing and expenditure-dividing schemes reflected the continual efforts to provide the localities with a harder budget constraint.

Has a local budget constraint been made harder?

To what extent was a local budget constraint made harder through the above reforms? Generally, fiscal decentralization had a complicated impact on local budget constraints. First, with local share of revenues designated and local expenditure responsibilities specified by the centre, a linkage between local revenues and expenditures was gradually established. In particular, local government budgets became dependent on the financial ability of local enterprises, thus creating a locality-enterprise coalition. In this regard, one may argue that some hard elements were implemented into the local budget constraint (Wong, 1992; Oi, 1992).

However, an increasing local revenue-expenditure linkage and a closer locality-enterprise coalition did not necessarily mean that the localities were equipped with a harder budget constraint. A local budget constraint may remain soft if a locality could obtain additional funds from the centre through bargaining, and if a locality could not really make ends meet. The following evidence will help to address this issue.

⁴ Among the twelve major expenditures, three were central responsibility and two were local responsibility, with seven other items being shared by both sides. For the evolution of these shares, see State Statistical Bureau (1990a, pp.236-237).

Obtaining external assistance: bargaining for revenue-sharing

The first indication of a soft local budget constraint was that the localities were able to obtain financial assistance through bargaining from the centre.⁵ This was not only associated with the localities' ability to bargain for a favourable share when an agreement was first drafted,⁶ but more importantly, with the localities' ability to pressure the centre into reopening negotiations after the agreements were formalized. The evolution of revenue-sharing scheme, to a large extent, reflected the localities' bargaining ability in this regard. The bargaining focus between the two sides was on the control over the revenue-generating enterprises.

As noted (pp.201-202), the first scheme of revenue-sharing took place in 1980 and was expected to last for five years, but this scheme was suddenly terminated in 1983. Several authors argued that this was because the centre attempted to regain a larger share, and so broke its promises (Oksenberg and Tong, 1991; Oi, 1992). This was, however, only a part of the story. Several provinces (led by Hebei and Laoning) imposed pressures on the centre to reopen negotiations when their interests were being hurt.

The first complaint was related to the division of the

⁵ It was noted that this bargaining was only one facet of the local budget softness. The ability of localities to levy ad hoc taxes was also important, an issue to be addressed in next section.

⁶ To be more precise, the existence of negotiation whenever any form of revenue-sharing was first formulated did not necessarily imply a soft local budget constraint. As the centre and the localities had different interests in mind, both sides attempted to bargain for a favourable share. Yet, a local budget constraint could still be hard if both sides observed the agreement whenever it was formalized.

central and local revenues. The revenues going to the provinces grew more slowly than the revenues to the centre. There was growing resentment that the centre took ``leavened dough`` (fast-growing revenues) while the localities were left with ``unleavened dough`` (slow-growing revenues). The second complaint was related to the division of revenues from the jointly-controlled enterprises. As this division was set to favour the centre (8:2), the localities demanded an increase in their ownership rights on enterprises. The third complaint was that the localities wanted to increase their share of the business tax, the fastest-grown revenue source. Faced with these pressures, the centre was forced to first allow the provinces to enjoy additional shares in many ways, and later to terminate this arrangement altogether, replacing it with the ``overall revenue-sharing`` scheme in 1983.

A sudden switch to the fiscal contract system in 1988 was also largely a result of local pressures. In 1987, when the ``overall tax-revenue-sharing`` scheme had been implemented for the third consecutive year, several provinces demanded the termination of this five-year scheme. They complained that those provinces chosen for the experiment with the fiscal contract system had benefitted a great deal from it. At first the Ministry of Finance would not agree with this proposal, but following a year of local pressures, it finally conceded and negotiated contracts with provinces on a one-to-one basis.

Did the Localities Really Make Ends Meet?

The second test for the proposed local budget hardness was whether the localities made ends meet. The field studies showed that this was not always the case. It was stipulated in government documents that under certain conditions, the centre could still provide the provinces with refunds or subsidies (State Council, 1980, 1985). As noted by the officials of the Ministry of Finance, the interpretation of these conditions was rather flexible as a result of strong local pressures, and an increasing number of provinces found justification to receive more central financial supports.

The case of Hebei Province can serve as an illustration. From 1980 to 1987, this province participated in the four schemes of revenue-sharing. According to the arrangement, Hebei transmitted 15.4 billion yuan in revenue to the centre, which was 30.1% of its total revenue. But during most of these years the province's expenditures grew faster than its revenues, and the province had to ask the centre for help. Since it was difficult to refute the reasons for many of the increased expenditures, the centre refunded the province with an additional 13.1 billion yuan (equivalent to 85.1% of the transmitted revenue) beyond the original revenue-sharing agreement (Hebei Finance Bureau, 1991).

The fiscal contract system was not enforced well either. The budget constraint of Fujian Province was a case in point. Fujian signed a fixed subsidy contract with the centre from

1982 to 1988. While the province kept all of its revenue, the centre granted an additional 0.33 billion yuan in subsidies each year. But the province continued complaining that this subsidy was too small. Such pressure, together with the ensuing bargaining, often forced the centre to provide above-contract subsidies. Take the year of 1988 as an example. The revenue was set at 37.35 billion yuan plus a fixed subsidy of 0.33 billion yuan. This revenue was planned to meet 37.68 billion yuan of expenditures. But actual expenditures reached 42.33 billion yuan, while revenues were only 34.86 billion yuan. To cover this deficit, the centre provided the province with 6.29 billion yuan in subsidies (5.96 billion yuan more than the contracted figure) (Fujian Finance Bureau, 1989).

Local budget softness was also evident at the city level of government. The contract between Fujian (province) and Xiamen (city) was an example. The revenues contracted to be given from the city to the province were fixed at 0.1 billion yuan each year from 1983 to 1985, 0.2 billion yuan from 1986 to 1987, and 0.3 billion yuan from 1988 on. However the contracts were rarely met or enforced. As noted in line 4 of table 9-1, the contracts were only fulfilled in the first two years. In the next four years, the contracts were unfulfilled and the city continued to receive increasing budgetary refund (line 3).

**Table 9-1 Revenue-sharing between Xiamen and Fujian,
Billion yuan, 1983-1988**

Year	1983	1984	1985	1986	1987	1988
1 Contracted revenue	0 10	0 10	0 10	0 20	0 20	0 30
2 Actual revenue transmitted	0 13	0 15	0 11	0 12	0 11	0 15
3 Budgetary refund	0 01	0 02	0 03	0 03	0 04	0 06
4 Net contract fulfilment	0 12	0 13	0 08	0 09	0 07	0 09

Source: Data obtained from Xiamen Finance Bureau in 1991

Why still eating from the same pot?

The above evidence suggested that the reform in the central-local distribution relationship had not yet replaced the 'eating-from-the-same-pot' pattern, although both sides seemed to 'cook in separate kitchens'. Then why was the goal of tightening local budget constraint rarely realized?

First of all, certain policy choices or institutional arrangements did have a role to play. For example, it was noted that the problem of revenue adequacy was especially acute for the localities (Systemic Reform Department of the Ministry of Finance, 1989). The traditional division of expenditure responsibility remained basically the same. A large number of expenditure cuts were for items that turned out to be centre's responsibilities, while a majority of the fast-growing expenditures were shouldered by the localities (Wong, 1991). Moreover, local budgets were often further burdened as the centre frequently broke its promise by passing on extra expenditure responsibilities to the localities without granting the requisite funds. The centre also took over local revenues, despite the official agreements not to,

by imposing direct levies. Several well-known new levies included the frequent forced purchase of Treasury Bills, the imposition of the Energy and Transport Fund, and various taxes on the extra-budgetary funds. Another option of the centre was to force the localities to lend it money which was generally not returnable. These factors caused difficulties for the localities in making ends meet. The centre finally had to guarantee the financial survival of the localities.

However, in a deeper sense, a continued local soft budget constraint was chiefly a result of a complicated interplay of the central and local interests in a reformed state ownership economy. These two sides had both common and competing interests, which in turn maintained local budget softness. The common ground lay in a joint effort to vitalize the state ownership economy through some institutional rearrangements. For example, the localities were burdened with a large portion of subsidies to money-losing enterprises, forcing the centre to bail out the localities when it was necessary. This was similar to the case of the state-bank-enterprise relationship discussed in chapter 8. Since the banks were required to guarantee the survival of state enterprises, the banks were in turn backed up by the state.

More importantly, the centre and the localities displayed competing interests over limited resources, primarily over the control of the state productive sector and a division of responsibility for different types of expenditures. This

conflict became more intense when there was a declining overall revenue and fast-growing expenditures during reform (World Bank, 1990; Wang, 1991, 1992; Naughton, 1992). Both sides were revenue-starved and each side attempted to keep more revenues while taking less fiscal responsibility. Such a conflict made it difficult and unrealistic to expect the localities to operate on a self-financing basis. It is crucial to note that a key feature of this new centre-locality distributional relationship was to still divide revenues among levels of government on the basis of enterprise ownership. This was a systemic left-over from the pre-reform mechanism. Given that enterprises were still a main pillar of the revenue-generating mechanism, the centre and the localities continued to claim their property rights on, and control over, these enterprises. As the designation of enterprise revenues was based on disputed claims to ownership rights, there were frequent bargaining and changes over the shares of revenues. Meanwhile, as the division of expenditure responsibilities was not entrenched in the constitution, bargaining on this front was inevitable. A soft local budget constraint thus occurred.

Moreover, conflicting ideas and ideological disagreements between the reformers and the conservatives also contributed to a soft local budget constraint. There were battles between those who preferred to give the localities a higher degree of autonomy and those who wished to maintain central control. At times, the reformers had the upper hand, thus giving more

benefits to the localities or yielding to local pressures in exchange for local support of the reform. Yet, at other times the conservatives gained control, resulting in expropriation of the localities' retained resources. Since this political cycle was a rule rather than an exception, it became difficult to equip the localities with a harder budget constraint.

9.4 Local Intervention and Another Soft Budget Constraint

Consequences of local intervention: an overview

As will be addressed in the next section, the failure to harden local budget constraint had macro inflationary effects. Before touching on this issue, it is necessary to place the consequences of this failure in a broad perspective. With the centre's effort to link the localities' revenues with their expenditures, it was natural for the localities to respond to this fiscal incentive by enlarging the local revenue base. This policy objective therefore provided the localities with stimulus and an excuse to intervene in the economy.

In general, it can be argued that this 'ncreasing local intervention further softened the existing local soft budget constraint. This statement was based on the fact that, in addition to a control over the *budgetary* revenues from local enterprises, the localities further controlled a large portion of the *extra-budgetary* funds (defined on p.7) so as to equip

themselves with another soft budget constraint.⁷ As seen in table 9-2, from 1979 to 1988, extra-budgetary revenue became such an important financial source that it was regarded as a 'second budget'. While in the official statistics the localities' share was only 2% in 1988, in reality two-thirds of these funds were directly or indirectly subject to local control (Systemic Reform Department of the Ministry of Finance, 1989). As will be detailed, the revenue-starved localities siphoned off extra-budgetary funds of enterprises and non-profit units in many ways. With this ability to reach outside the budgetary process, the localities obtained more extra-budgetary revenue to finance spending despite their minuscule fraction in the official extra-budgetary account. While aforementioned local budget softness was identified by the localities' *upward* dependence on the centre, this new local soft budget constraint was characterized by the local ability to tap resources *downward* from micro units.

⁷ A similar argument may also be applied to the situation wherein the localities increased their intervention towards the local SBs. As noted in chapter 8, the localities often successfully pushed the local SBs to issue more loans to support the local economy. When the localities had their real say in the money supply process, they were actually equipped with another soft budget constraint.

Table 9-2 Budgetary vs. extrabudgetary revenues, 1979-1988

Year	Budgetary revenue (billion yuan)	Extrabudgetary revenue (billion yuan)				
		Total	As of budgetary	Localities	Non profit units	Enterprises and supervising bodies
1979	106.7	45.3	42.4	3.9	6.9	34.4
1980	104.2	55.7	53.5	4.1	7.4	44.2
1981	101.6	60.1	59.1	4.1	8.5	47.5
1982	108.4	80.3	74.1	4.5	10.1	65.6
1983	121.1	96.8	79.9	4.9	11.4	80.4
1984	146.7	118.8	81.0	5.5	14.3	99.1
1985	183.7	153.0	83.3	4.4	23.2	125.3
1986	218.5	173.7	79.5	4.3	29.4	140.0
1987	226.2	202.9	89.7	4.5	35.8	162.6
1988	248.9	227.0	91.2	4.5	41.5	181.0

Sources: Ministry of Finance, *China Statistical Yearbook of Public Finance*, 1990, pp. 103-105

Local intervention toward enterprises: further evidence^a

As a precondition for the local control over the extra-budgetary funds, the localities successfully increased their control over enterprises. There have been a number of studies investigating the methods the localities employed during the first two stages of enterprise reform (Wong, 1987; Hua et al., 1988; the CERRG, 1988). There were, however, fewer studies targetting this issue for the third stage of enterprise reform (the contact responsibility system from 1987 on). The following will give some more evidence for this period based on the field studies.

First, determining who should manage a contracted enterprise empowered the localities with a new method of control. For example, it was decreed that the choice of contracted managers should be made through a competitive

^a Since the relationship between state and non-profit units remained largely an administrative type, the localities could exert control over these units through the traditional means. Moreover, the survey herein is confined to local intervention toward state enterprises. For local control over collective, township and village enterprises, see Byrd and Lin (1990) and Oi (1992).

bidding process. This regulation was intended to sever the traditional linkage between the localities and enterprises. But in reality the decision-making power remained largely with the localities. A nationwide report (the CERRG, 1988) showed that for all surveyed enterprises, there was a low frequency of entry (3%) from outside candidates, while the majority were selected by local agencies. The field study in Fujian showed a similar pattern. Of ninety questionnaires collected from the managers, the majority (88%) reported that they were appointed by the local governments. The difficulties encountered by the outside candidates suggested the continuous local influence in the contractual process.

Secondly, the localities treated enterprises differently based on the latter's contribution to the local revenue base. Local enterprises thus received a higher level of local assistance. As noted in Fujian, the localities provided local enterprises with easy access to loans and markets, favourable tax treatment, and high likelihood of contract fulfilment. As indicated by the directors of both the Fujian and Xiamen Taxation Bureaux in 1989, these bureaux constantly followed the orders of the provincial or municipal governments to give local enterprises tax relief. Another case in point was local manipulation over the 'pre-tax loan repayment'. As there was no nationwide regulation in this area, the localities gave most of this favourable treatment to local enterprises (also see Oi, 1992). In the case of Xiamen, 80% of such preference

was granted to six key local enterprises which contributed the most to the local revenue base. The case of Fujian was similar. Most of this benefit was provided to sixty-five key provincial enterprises which were the cornerstones of the provincial revenue system.

Thirdly, local subsidies became another effective control instrument. The localities had a stake in propping up local money-losing enterprises as long as the latter could still contribute to local development. It was then natural for the localities to give priority of subsidies to those enterprises which were considered locally important. In this sense, local subsidies not only revealed the systemic requirement of guaranteeing the survival of enterprises, but in addition revealed vested local interest. In the case of Fujian, local subsidies were 0.458 billion yuan in 1987, more than 90% of them went to locally-owned or locally-related enterprises. As noted by the director of the Fujian Finance Bureau, the provision of these subsidies was based on provincial interest, and the recipients were required to meet many local standards.

By manipulating the available means of control, the localities gained substantial leverage over enterprises. From the ninety questionnaires collected during the field study and a municipal report (Xiamen Taxation Bureau, 1990), a majority of local enterprise managers believed that 'local manipulation of tax reduction', 'a locally-regulated access to loans', and 'local permission of using pre-tax profits to

repay loans'' were vital to an enterprises' survival.

Local control over extra-budgetary funds

As the localities maintained and increased their influence over enterprises and non-profit units, they were able to control a large portion of the extra-budgetary funds. This control was important because the localities constantly attempted to hide their revenue-generating ability and divert in-budget revenues to extra-budgetary channels. As one official of the Fujian Finance Bureau put, there was an 'optimal' revenue-generating point for the province. Such a revenue diversion was to keep financial resources within their jurisdiction.

During the early reform period, when a nationwide regulation did not yet exist on the extra-budgetary funds, one common method of local control was to encourage enterprises and units to open various extra-budgetary accounts. As more revenues remained within the region, the localities were able to exert miscellaneous exactions (ad hoc taxes) or mandatorily collected charges on enterprises and units with ease.

In an attempt to regulate the extra-budgetary funds, the Ministry of Finance issued the first regulation in 1983, but the localities soon created counter-measures. A popular method was one in which the localities first gave favourable treatments to enterprises so that more financial resources remained locally controlled. The localities later tapped

these resources through various ``voluntary`` contributions and other levies. This strategy was known as ``hiding wealth with the people and tapping it back when needed`` (*cangfu yumin, shishi quyong*).

Another control method was to directly resort to local regulations. In many cases, these regulations did not follow the central requirements, but provide the localities with an easy and disguised form of control (Systemic Reform Department of the Ministry of Finance, 1989). During the field trip, a provincial regulation over the extra-budgetary funds in Fujian was examined. The analysis of this document revealed that some clauses were not consistent with the central regulations. It was stipulated in this document that the localities could mobilize part of these funds for local ``collective`` use.

As the centre gradually recognized the negative effects of local control over the extra-budgetary funds, the State Council issued a tough regulation in 1986, which authorized the Ministry of Finance and its local bureaux to take sole responsibility of the management of the extra-budgetary funds. The counter-measures from the localities were then to influence the decision process of local finance bureaux. By doing so, the localities maintained their control over a great deal of the extra-budgetary funds.

One local government document examined during the field trip in Xiamen aptly illustrated the locality's siphoning-off process (table 9-3). In 1986, the realized profits of major

budgetary enterprises were 128.57 million yuan. After paying loans and taxes, the enterprises retained 22.44 million yuan. As one official noted, during this process, the city gave these enterprises special treatments (tax deductions and postponements of loan repayment) to keep resources locally. But the enterprises were later required to purchase Treasury Bills and to finance local projects (7 million yuan, line 9). While enterprises might not benefit from many of these projects, they were forced to accept this arrangement.

Table 9-3 Income redistribution in enterprises, Xiamen, 1986

Items	Amount (Million yuan)	Percentage (Total)	Percentage (Retained)
1 Total realized profits	128 57	100 0	
2 Income taxes paid	(39 00)	30 3	
3 Adjustment tax paid	(15 00)	11 7	
4 Loan repayment	(46 00)	35 8	
5 Energy and Trans Fund	(6 13)	4 8	
6 Retained profits	22 44	17 5	100 0
7 Bonus funds	(13 56)		60 4
8 Production fund	8 88		39 6
9 Various "contributions"	(7 00)		31.2
10 Retained fund at disposal	1 88		1 5

Source: Xiamen Economic Commission, *Problems of Contract System and Suggestions*, 1987

Can all agents have a soft budget constraint at the same time?

The above evidence showed that, among other consequences, local intervention actually enabled the localities to benefit from another soft budget constraint. Comparing this argument with an early statement that the localities helped enterprises and the SBs to maintain budget softness at these two levels then leads to a question: can all these agents (enterprises, the SBs and the localities) have the soft budget constraints

at the same time? For example, it was argued in chapter 7 that enterprises were in a strong position with respect to the localities and able to successfully negotiate favourable treatments, thereby enjoying a soft budget constraint. The above evidence suggested that the localities could impose various levies on enterprises, thereby implying the former had a strong bargaining position. Could both of these be true?

The crucial issue was the *extent* wherein the competing agents accommodated their claims for resources. Take the case of the localities and enterprises as an example. If these two agents only fought for given resources within their region, it was difficult for both agents to maintain an equally strong bargaining position at the same time. One agent's gains would be the other's losses for such a zero-sum game. However, one should not lose sight of the fact that the interplay of the conflicting interests among these agents was implemented within a national context. All micro agents softened their budget constraints by taking an increasing share away from the centre. These micro agents enjoyed a positive-sum game at the expense of the centre. Put differently, the actions of the localities contributed to the retention of enterprises' soft budget constraint by sacrificing the central interest. It was suggested that when the localities gave tax breaks to enterprises, they often relinquished the central tax revenues first (Research Institute of the Ministry of Finance, 1990). If the localities had to yield some of their shares first to

meet the demand from enterprises, they would in turn ask and often successfully obtain compensations from the centre. This was confirmed in the case of Fujian, the largest portion of tax relief was taken from the tax revenue belonging to the centre. When this was the case, it became possible for both enterprises and the localities to enjoy a soft budget constraint respectively. A similar pattern also held true when both the localities and local SBs benefited from soft budget constraints respectively at the cost of the central interest. The result was credit expansion.

Furthermore, it was important to observe what happened at the centre. While the centre was aware of a tight resource constraint at the national level and attempted to curb micro pressures, it was often unable to do so due to its commitment to these agents (the guaranteed survival of enterprises, the SBs and the localities). Rather, the centre was forced to accommodate micro pressures with easy macro policies. When a collection of micro budget softness finally collided with a tight national resource constraint, inflation broke out.

9.5 Behaviour of the Localities in Investment Expansion

The localities in the inflationary process: The mechanism

The above analysis suggested that the *causes* of local inflationary pressures should be examined against the central-local competition over the distributional claims for

resources. The next issue then is to observe the *mechanism* whereby this conflict led to an overheated economy. This section will locate this mechanism by analyzing the impact of local budget softness on the inflationary process.

In general, the central-local competing interests were in conflict within a reformed institutional framework (such as the ``cooking-in-separate-kitchens'' pattern). When local interests were recognized, it was expected that the localities would attempt to enlarge their assigned revenue bases and to promote local growth, which would in turn easily lead to local investment expansion, duplication and protectionism. The inflationary pressures so generated were, to a certain degree, related to this institutional arrangement and policy choice.

However, it was intended that this reform be accompanied by a harder local budget constraint. If the local revenue-expenditure linkage was observed, such local behaviour could be adjusted through financial incentives so that the centre might be able to maintain macro stability. Yet, as the process of local budget hardness proved to be difficult, a continued local soft budget constraint (viewing from both the budgetary and extra-budgetary perspectives) would easily facilitate the localities' ability to launch investment expansion and implement other locally-oriented actions.

Examining from this angle, one can locate several channels by which the localities made use of local budget softness to cause inflationary pressures. The first channel

was associated with local budget softness from the budgetary perspective. The centre's constant bail-out increased the localities' tendency of overspending and investment hunger. As Kornai argued, "the chances [of being bailed out] are rather good that even careless spending does not lead to a financial catastrophe" (1986a, p.23). The second channel was related to the fact that the localities could tap financial resources downward from enterprises so as to equip themselves with another soft budget constraint from the extra-budgetary perspective. Similarly, the third channel was formed when the localities imposed pressures on the local SBs to obtain more financial resources. Such local intervention facilitated the localities to maximize investment and promote development locally. All these factors then contributed to an overheated economy. This mechanism is shown in figure 9-1.

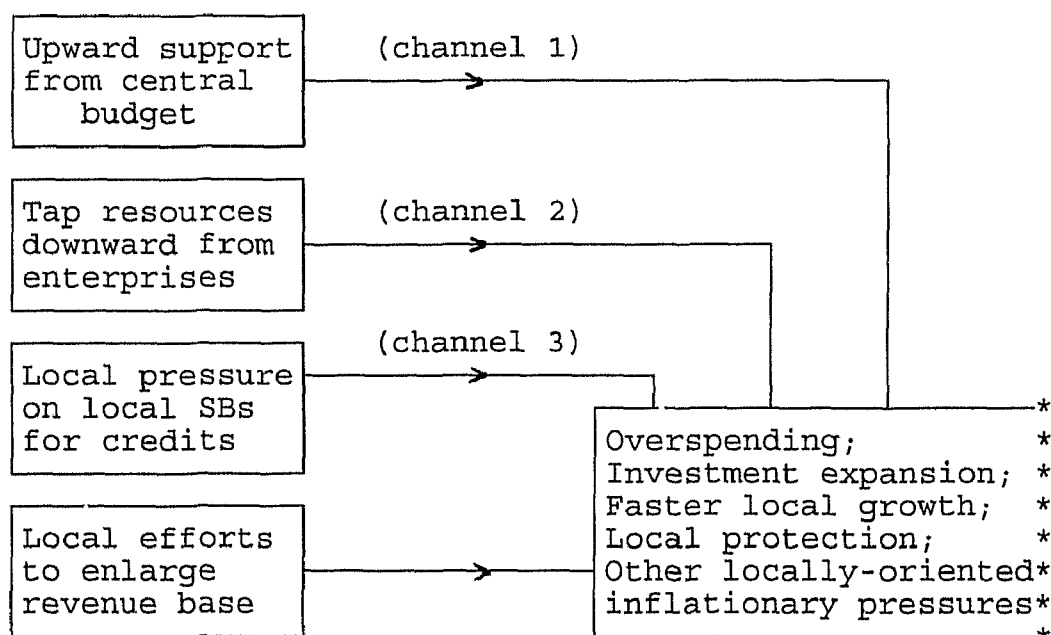


Figure 9-1 The localities and inflationary pressures

Given that local investment expansion was a major means for the localities to promote local growth and expand their tax base, thereby causing inflationary pressures, it will illustrate how the above mechanism worked.

A decentralized investment pattern and local investment drive

As noted in chapter 2 (p.32), investment expansion was a major force of excess demand. To see the localities' role in this expansion, one had to first identify its local share and growth in the state investment (capital construction plus technical upgrading⁹). However, there were not yet any clear-cut statistics on this issue. This was not only related to certain technical difficulties, but also to the theoretical complications in determining local involvement in a multilevel investment pattern. As shown in table 9-4, investment was financed from three domestic sources: state appropriation (budgetary), loans (both budgetary and extra-budgetary) and self-funds (extra-budgetary). The local share in state budgetary appropriation was easily identified. As indicated by the officials of the Ministry of Finance, after reform the local share in budgetary funds increased from 20-25% in the early 1980s to 40-45% in the late 1980s (not shown in table 9-4), while the budgetary funds as a whole in total investment

⁹ Capital construction refers to new investment while technical upgrading refers to replacement or repair funds. For details, see State Statistical Bureau (1990a)

decreased (line 1, table 9-4). Local involvement in both loans and self-funds, two of the increased portions, was difficult to identify. Yet, as implied by the previous analyses, it can be expected that the local shares in these two items were increased as the localities expanded their controlling ability in the related areas.

Table 9-4 Source of finance: shares and growth, 1983-1988

Year	1983		1984		1985		1986		1987		1988	
	Share %	Growth %	Share %	Growth %	Share %	Growth %	Share %	Growth %	Share %	Growth %	Share %	Growth %
1 Budgetary funds	35.7	--	35.5	23.9	24.3	-3.2	22.3	8.1	20.7	7.9	14.6	-15.4
2 Bank loans	18.4	--	21.8	47.3	30.4	97.4	32.3	25.1	36.4	31.0	33.1	9.4
3 Self funds	45.9	--	42.7	15.8	45.3	50.8	45.4	18.0	42.9	10.0	52.3	46.5
4 Total	100.0	--	100.0	24.5	100.0	41.8	100.0	17.7	100.0	16.5	100.0	20.2

Source: State Statistical Bureau, *China Statistical Yearbook*, 1990a, p.141

A closer look at two components of the state investment may help to further trace the local contribution to investment drive. Table 9-5 gives central-local shares and their respective growths in capital construction on a monthly basis. Central investment refers to the centre-controlled budgetary projects and extra-budgetary investment conducted by central ministries, while local investment includes both local budgetary and extra-budgetary projects. It was noted that when tight macro control was in place (July, August and October of each year), the growth of central investment quickly turned to negative, while the local contribution either continued to grow, or decreased marginally (July of 1988 was an exception). This suggests that local investment was difficult to be controlled by a restrictive policy.

**Table 9-5 Shares and Growth in capital construction:
the centre vs. the localities, March 1986 - Dec. 1988**

Months	Central		Local		Months	Central		Local		Months	Central		Local	
	Share %	Growth %	Share %	Growth %		Share %	Growth %	Share %	Growth %		Share %	Growth %	Share %	Growth %
1986					1987					1988				
April	53 0	--	47 0	--	March	54 3	--	45 7	--	March	57 3		42 7	
May	55 5	37 2	44 5	24 0	April	57 4	25 4	42 6	10 6	April	57 1	17 3	42 9	18 3
June	56 7	31 0	43 3	31 0	May	57 0	25 9	43 0	27 7	May	59 1	35 3	40 9	24 4
July	51 7	-22 6	48 3	- 5 4	June	62 0	37 7	38 0	12 2	June	54 8	14 9	45 2	36 8
Aug	50 2	- 3 7	49 8	3 2	July	54 8	-27 0	45 2	- 2 0	July	58 1	9 8	41 9	21 1
Sept	54 7	35 4	45 3	13 6	Aug	53 2	- 5 2	46 8	1 2	Aug	52 1	-14 4	47 9	9 6
Oct	51 1	-13 0	48 9	1 5	Sept	56 1	28 5	43 9	14 7	Sept	58 1	39 5	41 9	9 4
Nov	53 9	18 9	46 1	6 8	Oct	56 0	- 4 9	44 0	- 4 5	Oct	52 5	11 2	47 5	11 1
Dec	53 5	182 0	46 5	188 0	Nov	55 8	12 4	44 2	18 1	Nov	56 2	23 7	43 8	6 5
					Dec	56 9	221 0	43 1	206 0	Dec	47 5	138 0	52 5	236 0

Source: Calculated from the CSICSC *China Statistics Monthly*, various issues, 1987-1988-1989

A closer look at the technical upgrading investment helps to further evaluate the local contribution to investment drive (table 9-6). Budgetary investment included both the central and local shares. While the exact share was not known, it was suggested that the scope of local projects was much widened over time, amounting 30-35% of all budgetary investment by 1988 (Deng, 1989; Wang, 1990). Among the extra-budgetary portions, in addition to an increased localities' share, it was suggested that the localities exerted their control over the sharply increased enterprises' share. Again, although there was not an exact figure for this control, it was indicated in the field studies that the localities commonly funded the local projects by the tapping of enterprises' technical upgrading funds. For example, as noted by the CESRRI (1987, p.132), for twenty-three cities under survey, the localities siphoned off a large portion of enterprises' technical upgrading funds, and used 70% of that to build local

infrastructure and public facilities. This pattern was also confirmed by the interviews with the managers in Xiamen.

Table 9-6 Share of technical upgrading investment, 1980-1988

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988
Budgetary portion	42.1	42.1	42.9	40.9	47.0	49.5	48.7	51.7	45.9
Extra-budgetary portion	57.9	57.9	57.1	59.1	53.0	50.5	51.3	48.3	54.2
Central ministries	n a	12.3	14.0	14.5	10.3	6.6	6.7	4.8	4.2
Localities	n a	6.3	7.4	8.7	7.7	8.7	11.9	7.4	12.5
Enterprises	n a	39.3	35.7	35.9	35.0	35.2	32.7	36.1	37.5

Source: State Statistical Bureau, *China Investment Yearbook*, 1991.

To sum up, a direct and indirect local involvement in investment expansion was noticeable and increasing, which was evidenced by the localities' increasing ability to raise their shares in state budgetary appropriation, bank loans, and micro units' self-funds.

Local budget softness and local investment expansion

As suggested by the field studies, it can be argued that local soft budget constraint facilitated the local investment drive. First of all, local budget softness (viewed from the budgetary aspect) contributed to local investment expansion. This was so because local budget softness syndrome produced a strong tendency of overspending. As long as the centre provided the localities with financial support despite the claimed local expenditure-revenue linkage, and as long as local revenues were frequently siphoned off by the centre, the localities intended to spend and invest more than their planned fiscal capacity.

It was noted (line 1, table 9-4) that the share of apportioned state investment funding decreased during reform. However, as this funding maintained its transfer feature, it remained very much sought after. The allocation of state investment funding was a outcome of a complex negotiation process. A typical example was the continuous bargaining over the distribution of capital construction funds. The allowed allocations were constantly surpassed largely due to local pressures. As reported in a survey of one hundred and thirty-seven major cities, the localities were capable of obtaining an increasing amount of construction grants through bargaining. Municipal investment thus continued to be a major force in local investment drive (Systemic Reform Department of the Ministry of Finance, 1989).

There was further evidence to suggest that the soft budget constraint facilitated the local investment expansion. One example was that the localities did not have sufficient inducement to save after the budget was negotiated. Instead, they commonly directed any budgetary surpluses into investment immediately or before the end of the planning period. One reason was to avoid weakening their future bargaining position in determining the local retained share. This practice was also due to the fear that there were frequent siphoning-off actions by the centre. In the case of Fujian, there was always a surge of fast spending at the end of the year by each level of government.

As also evidenced in the field studies, many local in-budget projects under construction often required additional capital supply after the budget was set. From 1984 to 1986, among two hundred and thirty-five larger projects nationwide, 87.7% needed additional funding amounting to 21.3% of the initial investment. Among these funded projects, 65% were local constructions (*World Economic Herald*, February. 27, 1989). The officials of the Construction Bank in Xiamen noted that this was an effective way to enlarge the size of investment, since bargaining for additional funding from the superiors turned out to be much easier once the projects were under way. Moreover, when local budget softness prevailed, there was no strong motivation to minimize investment costs. Most cost overruns would seldom lead to the termination of a project, but were adjusted by additional financial sources. In-budget investment scale was therefore further enlarged.

Direct bargaining was also an effective way to enlarge planned in-budget investment scale. During the mid-1980s, whenever the localities were required to decrease the planned scale of their capital construction, they used all available means to offset the plan. The case of Fujian at the end of 1988 illustrated this point well. When the centre tightened capital construction expenditures, the province bargained several times with the centre, and succeeded in increasing its capital construction investment plan by 0.05 billion yuan (Fujian Finance Bureau, 1989). As indicated by the officials

in the Fujian Finance Bureau, this phenomenon was common in many provinces. As a result, despite a tight policy in 1989, total investment surpassed the plan by 25.4%.

Local intervention and local investment expansion

As the decentralized funding performed an increasing function in the investment source, the localities' ability to intervene in, and control over, the local SBs and enterprises constituted a more important channel in generating investment expansion. As local control over the SBs was detailed in chapter 8, just one example is added here to suggest how local intervention toward the SBs assisted any investment drive.

In an effort to adjust the local self-financed capital construction investment, the State Council decreed that all self-funds should be deposited in the Construction Bank (the PCB) for half a year (one year after 1987) if they were to be invested, and that the use of these funds should be supervised by this bank (Systemic Reform Department of the Ministry of Finance, 1989). Yet, this objective was rarely fulfilled due to serious intervention from the localities. The localities permitted or even assisted enterprises and other units to avoid the supervision of the PCB. According to the officials of the Ministry of Finance, only 70% of locally-based, self-financed investment was deposited as required during reform. This ratio was 94.0% in 1981, down to 47.5% in 1985, and further to 35% in 1987. It was also difficult for local PCBs

to independently supervise the use of these funds. As noted by the officials in Fujian PCB, this bank was commonly subject to more local pressures than other provincial SBs, as the funding for local projects played a more critical role in local future development.

Similarly, the localities could effectively tap extra-budgetary funds from enterprises and other micro units they controlled to finance local investment. Several techniques were noted during the field studies. One effective way was to exert local influence over finance and other functional bureaux. As noted by both the directors of the Finance Bureaux of Fujian and Xiamen in 1989, their bureaux were not in a position to independently regulate the use of enterprises and units' extra-budgetary funds. In many ways, these bureaux only became the ``cashiers'' of this local ``second budget''.

Another commonly-used method was to manipulate tax regulations. By giving enterprises and units a specific tax relief, the localities actually weakened the effectiveness of the centre's tax lever in regulating the use of these funds. The fate of a construction tax was a case in point. This tax was designed in 1983 to control self-financed investment. Yet, as a result of local intervention, the tax was rarely implemented. Even though the tax coverage was clearly stated, the local taxation bureaux, with support from local governments, often regarded various investment activities as ``consumption'', thereby giving enterprise investment a green

light. The interview with the officials in the Xiamen Taxation Bureau confirmed this case. Attempting to overcome this problem, the State Taxation Bureau proposed an 'investment direction tax'. But this proposal met with strong local resistance and was never activated.

Moreover, not only did the localities mobilize a large amount of extra-budgetary funds, but they also mobilized it on an 'eating-from-the-same-pot' basis. While it was stated that local-use of enterprises' funds should not be interest-free, in practice the localities collected a large portion of extra-budgetary funds for local projects without compensation. This levelling-out practice stimulated enterprises to use up their extra-budgetary funds. In addition, as the localities' ability to tap into enterprises' funds for investment was enhanced, enterprises were hard pressed by a shortage of funds. In turn they asked for more subsidies or pressured banks to grant loans, leading to more inflationary pressures.

Local investment expansion and its inflationary impact

Accompanied by local investment expansion was an issue of investment inefficiency due to such problems as low utilization rate and small scale projects (the CETSDSC, 1988; World Bank, 1990). These problems came as no surprise as the budget-softening localities launched a headlong rush into investment competition without paying attention to both micro efficiency and macro consequences.

A combination of investment drive and low efficiency from the demand and supply sides led to inflationary pressures. A rapid growth of local investment also resulted in structure imbalance of investment, as many infrastructural and bottleneck sectors were left behind. The centre had to take over these gaps. As decentralization left the centre with insufficient capital, this central investment responsibility often led to budget deficits, which caused added inflationary pressures.

A socio-political aspect of locality-based excess demand

The above analysis of the local investment drive illustrated a local-budget-softness-backed inflationary mechanism. When the investment drive was accompanied by other local actions such as regional tension, protectionism and parochialism, more inflationary pressures were generated. The localities' claims for resources became a leading force of overall excess demand. One related issue then was, why the centre could tolerate the locally-based inflationary pressures to accumulate without moving firmly to limit local demand at least administratively.

The answer lay largely in a complicated socio-political implication of the reformed centre-locality relationship. One consequence of the decentralization process was a 'weaker centre vs. stronger localities' pattern. This referred not only to the decreased centre's share in resources, but more

importantly, to the fact that the centre significantly lost its control politically. A so-called ``dukedom economy'' (*zhuhou jinji*) became a key feature of the reformed institution. A unique political environment emerged where the threat to the government did not, at least not yet, come from the opposing parties, but from the powerful local strongholds within the state machine.

An increasing ability of the localities to compete vertically with the centre, and to compete horizontally among themselves, for more resources was a reflection of this political pattern. The localities sought their interests without paying attention to the possible macro impacts. Equipped with continued local budget softness in various aspects, the localities generated inflationary pressures. Moreover, the localities generally did not take a cooperate attitude with the centre regarding macro control, unless their own interests were hurt.

The centre was aware of the fact that there was a strong tendency for the localities to move away from the central control. For the sake of socio-political stability and national unity, to a certain extent the centre might have to put up with the local demands, and was therefore unwilling to move decisively to limit local claims for resources. As a result, inflationary pressures were continually accumulated and the economy was constantly overheated. Viewing from this perspective, one may regard the inflationary pressures such

generated as a political *cost* of this decentralization process.

Ironically, there was also a political *limit* on this decentralization process; when inflationary pressures had accumulated to a point where serious inflation finally threatened the creditability of the *entire* state machine. It was recalled that the current government took power in 1949 with a promise to cure the old regime's hyper-inflation once and for all. Therefore, when both the central and the local interests were threatened, as evidenced in a serious socio-political chaos in the mid-1989, two sides would have a common ground to fight inflation together. The centre would move decisively to limit the localities and other agents' demands. The localities were convinced that they must make common cause with the centre. It was at this point that a retrenchment package could be put in use and might function as evidenced in the late 1980s, an issue to be addressed in chapter 10.

An interim conclusion

This chapter has attempted to identify the major forces of investment expansion by examining reform in the centre-locality relationship. It has been argued that due largely to the competing interests between the centre and the localities over distribution of enterprise revenues and other resources, the reform objective of hardening local budget constraints was not reached. Local budget constraints were soft from both budgetary and extra-budgetary perspectives. This

institutional mechanism easily facilitated the localities to launch investment expansion and other locally-oriented actions, thereby generating inflationary pressures.

PART IV CONCLUSIONS

CHAPTER 10 CONCLUSIONS AND POLICY IMPLICATIONS

The concluding chapter first summarizes the findings from this study (section 10.1). Then, the latest-round of inflation controls from 1989 to 1991, and a new wave of economic overheating from 1992 on, are evaluated to further support these findings (section 10.2). Next is an outline of specific policy implications (section 10.3), followed finally with a discussion of the limitations of this study and suggestions for future studies (section 10.4).

10.1 Nature of The Chinese Inflationary Process: Conclusions

This study has presented a systemic explanation of the Chinese inflationary process from 1979 to 1988 by utilizing an extended shortage approach, that is, a ``budget-softness-and-competing-interest`` analytical framework. Three major conclusions can be summarized.

Competing interests, budget softness and excess demand

The first finding is that the causes of excess demand (inflationary pressures) and, therefore inflation, lay primarily in a conflict over the distribution of resources among the major agents in the state sector (enterprises, the

SBs, the localities and the centre) during the reform process. When these agents openly competed for claims over the limited resources, conflicts were unavoidable. While a conflict over the distribution of resources is a common phenomenon everywhere, in the case of reformed socialism such as China, the *mechanism* which may convert the existing conflict into excess demand and inflation is primarily characterized by the systemic factors.

One major contribution of this study has been to identify this mechanism by analyzing three major interest interactions and conflicts within the state sector (the state-enterprise relationship, the state-bank relationship, and the centre-locality relationship) and their macro inflationary impacts. As noted in chapter 1 (p.13), the most outstanding features of the Chinese reform were the recognition of the diverse interests of enterprises, the SBs and the localities, and the greater decentralization of decision-making power into the hands of these agents. In a deeper sense, this institutional reform could be understood as a process of a change in governing rules and procedures that specify actions of and interactions among these self-interest agents (p.41). Put differently, the reform aimed to create a new mechanism to redistribute the competing claims over resources among agents. To a great extent, this new mechanism was designed to include harder budget constraints on the respective agents as a part of a crucial micro foundation. Budget hardness at the

respective levels would act as the 'new rules and procedures' to constrain these agents' pursuit of interests in a market-guided environment. Based on this micro foundation, macro policies and indirect control tools would then be implemented to maintain macro stability and to reconcile the competing interests.

However, it has been shown that due largely to the systemic obstacles and competing interests, the above reform objectives of tightening the budget constraints of enterprises, the SBs and the localities were seldom realized. As demonstrated in chapter 7 (pp.111-119), the state continued to provide assistance to, and protection for, an enterprise, mainly because of the principles of solidarity and security (defined on p.78). The result was continued budget softness at the enterprise level. In chapter 8 (pp.168-173), it was suggested that because the process of bank enterprise reorganisation challenged several ideological assumptions of reformed socialism by raising the issue of autonomy of state enterprises and banks, the result was strong resistance to the hardening of budget constraints of the SBs. Self-interests of the relevant agents also contributed to the budget softness of the SBs. As shown in chapter 9 (pp.208-211), budget softness at the locality level was primarily a result of both common and competing interests of the centre and the localities over the control of the state productive sector and a division of expenditure responsibilities.

As a result of these systemic obstacles and competing interests, it was not surprising to find that, as demonstrated in chapters 7 to 9 respectively, the budget constraints of enterprises, the SBs and the localities remained soft. After failing to create a new institutional framework to reconcile the competing interests of the agents, continued budget softness at the respective levels served as the most convenient instrument to support these agents' claim over resources. In other words, the reform created an environment in which self-interested pursuits were supported by budget softness. The result was strong inflationary pressures and a lack of macroeconomic control from the centre.

The generation of income (wage), credit and investment expansions has been used to illustrate the means by which this mechanism was driven. As shown in chapter 7 (pp.134-150), a combination of budget softness and job security constituted a special systemic background for a strong wage demand. When fairness consideration prevailed, this pattern readily led to income (wage) expansion. As outlined in chapter 8 (pp.181-192), the budget-softening SBs played a key role in a multi-level credit expansion (defined on p.182) and weakened the PB's ability to control. Also as shown in chapter 9 (pp.220-232), several channels have been readily available to the budget-softening localities in creating investment expansion.

It has been further demonstrated that the centre was often forced to accommodate the accumulated micro pressures

with macro expansionary policies. While the centre's policy changes on its own initiative and/or policy errors played their role in the inflationary process, many policy decisions were not simply technical choices but political ones involving ways of redistributing claims over resources among agents (Bowles et al, 1993). When the centre responded to excess demand in the above manner, inflation resulted. Moreover, when the centre had to preserve budget softness at the respective micro levels, as evidenced by the obstacles that stood in the way of hardening micro agents' budget constraints, these inflationary pressures would continually reproduce themselves.

An asymmetric feature of the inflationary process

The second finding is that this inflationary process had an asymmetric feature, again due primarily to continued budget softness. As suggested in chapters 7 to 9, during a policy cycle where expansionary and restrictive policies alternated, the accelerated accumulation of excess demand in the expansionary period was stronger and faster than the deceleration in the restrictive period. In the expansionary period, macro control over wage, investment, credit and money supply was loosened. Micro agents took this opportunity to accelerate claims over resources. This response was quick and automatic, leading to an overheated economy. This then forced the centre to adopt a restrictive policy which first relied on

indirect tools (rather than direct wage and price controls). But the effectiveness of these controls was limited as budget softness caused a slow micro response to the control variables.

Administrative control and the causes of excess demand

The third observation is that administrative means might temporarily curb excess demand and prevent inflation from accelerating when indirect macro control largely failed, but such control could not eliminate the systemic causes of excess demand and inflation. As noted in chapters 7 to 9, income (wage), credit and investment expansions could be checked by administrative means, but sharply rebounded when such controls were relaxed. As a result, the economy constantly suffered from a series of ``stop - go`` cycles. Furthermore, this control cast doubt on the durability of reform. While the centre claimed that the temporary use of administrative control was not a return to the ``old road``, each time the duration of control lasted longer than planned.

Inflationary process as an inherent by-product of the reform

In summary, when competing interests among agents over the distribution of resources emerged during reform, but a proper mechanism to redistribute these claims was not found, continuous excess demand resulted. In particular, when the budget-hardening process proved to be extremely difficult in

reformed socialism, continued budget softness would act as a key mechanism to convert conflict into excess demand. The inflationary process may therefore not be a transitional phenomenon, but likely an inherent by-product of this reform.

10.2 Tight Control (1989-1991) and Re-Overheating (1992-1993)

It has been several years since the Chinese government announced its economic retrenchment at the end of 1988. On March 20, 1992, it was declared that the objectives of this three-year inflation control had been achieved (State Council, 1992). The economy then entered a new period of reform and faster growth in 1992 and 1993. This section evaluates this inflation control program and the current macro situation. This analysis will help justify the above three conclusions.

Control of inflation vs. enduring excess demand: 1988 to 1991

The major tool to curb the 1988 inflation was a set of administrative means. Investment and income expansion were checked by a series of freezes. The issuing of credit and money supply was placed under the mandatory plan. Price control was resumed to a great extent and price reform was terminated. As a secondary tool, interest rates and reserve requirements were adjusted upward (State Council, 1989, 1990, 1991). Table 10-1 compares the control objectives with actual achievements.

Table 10-1 Inflation control: planned vs. actual, 1989-1992

Year		1988	1989	1990	1991	1992
(1) Inflation rate (P [^]) (%)	Planned	--	10.0	7.0	6.0	6.0
	Actual	18.5	17.8	2.1	2.9	6.4
(2) Growth of GNP (%)	Planned	--	7.5	5.0	4.5	6.0
	Actual	11.2	3.6	4.4	7.0	12.0
(3) Total investment (billion yuan)	Planned	--	330.0	440.0	500.0	
	Actual	449.7	413.8	445.1	527.9	720.0
(4) Total wage bill (billion yuan)	Planned	--	250.0	270.0	302.4	
	Actual	231.6	261.9	295.2	339.5	--
(5) Increment of credits (billion yuan)	Planned	--	160.0	190.0	210.0	270.0*
	Actual	153.3	185.8	273.1	280.0	380.0
(6) Increment of M1 (billion yuan)	Planned	--	40.0	31.0	35.0	60.0
	Actual	67.9	21.0	30.0	40.0	85.0
(7) Budget deficits (billion yuan)	Planned	--	7.36	8.89	1.34	2.07
	Actual	8.1	9.54	15.04	21.10	23.0

Source: For 1988 to 1991, the actual figures are summarized from various government documents and the planned figures are from interviews. The data for 1992 are from the current issues of various Chinese newspaper. * This amount was adjusted to 350 billion yuan in the second half of 1992.

This control experienced both successes and failures. On the one hand, inflation was controlled (line 1). February 1989 marked the beginning of period of reduced inflation rates that lasted until 1992. On the other hand, inflation died out at the cost of an economic slowdown (line 2). National markets were sluggish, as enterprises suffered from increased inventories and decreased revenues, and budget deficits continued to be a major problem (line 7). Faced with these difficulties, the centre had to loosen some of its control after 1989. New credits were issued to stimulate the markets and control over investment was slightly released. Yet, while the economy evidenced some recovery, inflationary pressures soon resumed. Credit extensions surpassed the planned ceiling in 1990 and 1991 (line 5). With a looser control, the money supply bounced back and surpassed the planned target in 1991 (line 6). On the micro side, the situation continued to deteriorate. The problem of slow inventory turnover remained.

Up to 1991, one-third of enterprises incurred losses and another one-third faced financial problems. Investment and wage expansion took on new life (lines 3 and 4). As admitted (State Council, 1992), there was a strong tendency for investment, credit and money supply to be out of control again. Although inflation rates remained under control primarily due to continued price control, the accumulation of excess demand was already obvious.

It can be argued that these inflationary pressures came from almost the same causes, since little reform effort was made during this period. Reforms were only limited in politically-insensitive areas such as housing and medicare. Budget constraints of micro agents thus remained soft. For example, in order to maintain political stability, the Finance and Taxation Bureaux were required to provide grants or tax deductions to money-losing enterprises. The SBs were also ordered to issue ``stability loans'' to cover the wage expenses of these enterprises.

As a result, micro agents could take advantage of continued budget softness to help them claim more resources. Whenever there was a sign of relaxed control, unlimited demand resumed. For example, a relaxation of the wage freeze in 1990 led to a sharp rebound in wage expansion. The credit expansion in 1991 was another case in point. The credit plan was initially set at 190 billion yuan, but was adjusted twice to 210 billion yuan because of micro pressures. Despite these

adjustments, continued micro pressures further pushed credit increment to 280 billion yuan (line 5).

A re-overheating economy: 1992 to 1993

The economic situation in 1992 was again a mix of success and concerns. Compared to the economic chaos in the Eastern European countries and the former Soviet Union, China enjoyed economic achievements with a faster growth of GNP (line 2, table 10). However, along with this achievement came a new round of overheating, mainly investment and credit expansions. As shown (lines 3 and 5), both investment and credit surpassed the respective planned figures, with growth rates being much faster than that of GNP. These worries were accompanied by continued inefficiency of state enterprises: two-thirds of them became money-losers. The localities continued to play a key role in these two expansions. The SBs accommodated this new overheating on the one hand, and generated a monetary disorder on the other. All these phenomena suggested that budget constraints of these micro agents remained soft. As price reform took some steps forward and price control was relaxed, the inflation rate accelerated by comparison to 1990 and 1991 and surpassed the planned level (line 1).

Faced with this new threat to macro stability, from the end of 1992 to the mid-1993, tight macro control was again put into effect. While indirect instruments of control played an increasing role this time, the administrative means remained

crucial, primarily the mandatory credit and investment limits. The situation in 1993 was therefore very much the same as in 1992. While the GNP enjoyed a remarkable 13% real growth rate, inflation rates reached 13%, well above the planned level (9%), and there was continually a serious efficiency problem at the micro level (*People's Daily*, March 2, 1994).

Conclusions restated

The above review over inflation controls in the past several years tends to justify the early conclusions. That is, as budget softness remained, excess demand emerging from the competing interests of agents over resources continually reproduced itself. As a partial price reform from 1992 on helped to release some accumulated excess demand (as evidenced by accelerated inflation rates since then), new excess demand continued to surge which constantly forced the centre to use tougher administrative control over investment, wage, credit and money supply. It is very likely that this pattern will repeat itself as long as there is not a breakthrough in the ongoing reform process.

10.3 Policy Implications: Control of Inflation and Beyond

Necessity of developing a new mechanism

The analyses of the inflationary process from 1979 to 1988 and the problems of control from 1989 to 1993 suggest the

necessity of a more fundamental solution. It was conventional wisdom that the administrative control was a necessary but regrettable step. It was *necessary* because it seemed to be the only way of controlling inflation under the institutional framework since reform. As budget softness prevailed, it would be naive to rely fully on indirect tools, and to relinquish the administrative control completely. Yet, this control was *regrettable* because it interrupted the further reform of the existing mechanism.

It is then essential for China to develop a new mechanism which can greatly mitigate, if not fully eliminate, these inflationary pressures and prevent accelerated inflation from recovering. This mechanism should be able to redistribute the competing claims over resources, and to harden micro agents' budget constraints. Obviously, this policy implication is not only related to inflation control, but also to the direction of future reform, particularly the issue of ownership reform.

As noted in chapter 5 (p.84), recognizing that some variants of market socialism have been tried unsuccessfully to date,¹ two lines of arguments appeared regarding ownership reform within the framework of the shortage approach: moving toward some form of capitalism (Kornai, 1990a,b; Yenai, 1990; World Bank, 1990; Wiemer, 1992), or searching for other forms of market socialism (Bardhan et al, 1992; Bowles et al, 1993).

¹ A detailed account of these versions can be found in Brus et al (1989) and Bowles et al (1993).

From the theoretical and practical perspectives, which view would be more desirable and feasible for current China?

``Moving-toward-capitalism''?

The adherents of ``moving-toward-capitalism'' often promoted a direct transformation to capitalism, with private ownership and fully-fledged competitive markets as the final point. Budget constraints of state enterprises can only be hardened through privatization. Full financial liberalization would be carried out with private-owned banks playing a key role, and capital markets would be created on the basis of private ownership. Decision-making power of the localities would be restricted. And finally, State control would be greatly minimized so that the markets could play a full role.

Whether market-capitalism or market-socialism is more *desirable* from political, economic and intellectual aspects has been a long-standing controversial issue, dating back at least to the famous ``socialist calculation debate'' of the 1920s to 1930s (for a review, see Brus et al, 1989). While this topic is too broad to be covered, it is the belief of some, including the author of this study, that full-scale private ownership is not necessary for a successful performance of the economy. It has yet to be proved from either history or theory that a decent economic performance can only work with private ownership. On the contrary, macroeconomic performance in recent China (e.g., growth and employment) has surpassed

many of the economies in the West. Socialism as an economic system may also be more equitable than capitalism.

The *feasibility* of 'moving-toward-capitalism' in present day China is also doubtful. On October 12, 1992, a '*socialist market economy*' was adopted to replace the '*planned market (commodity) economy*' as the goal of reform. Two socialist elements were claimed: continued dominance of public ownership and equitable income distribution. There was no sign that privatization would be an alternative for this reform, at least in the near future. Thus, it is more realistic to consider the feasibility of any new proposals within the framework of market socialism.

'Remaining-within-socialism': which mechanism?

For the supporters of 'remaining-within-socialism', the problem with the past variants of market socialism was because 'whatever has been tried was at best piecemeal'. Therefore, 'market socialism in some integrated pattern' should work (Bardhan et al, 1992, p.102). The new attempts ranged from the proposals for joint-stock enterprises (Nutti, 1988; Wood, 1991) to the recent 'bank-centric insider monitoring' mechanism (Roemer, 1989; Bardhan, 1991; Bardhan et al, 1992; Bowles et al, 1993). The core was to implement further ownership reform to harden micro budget constraints in a socialist framework.

For example, it was argued that (Bardhan et al, 1992) budget softness had two elements: a political and an agency problem. The political problem refers to the determination of the degree of budget hardness from an economic and ethical viewpoint within the socialist framework. A socialist system may more willingly tolerate a higher degree of budget softness than a capitalist system, as the former values security and solidarity more than mobility and change.

Recognizing the political dimension of the issue, this approach then attempted to solve budget softness as an agency problem. It was argued that the 'principal (state)-agent (manager)' problem resulted from ineffective monitoring and a lack of information. The key step was to establish joint-stock enterprises, the shares of which would be held chiefly by public agents (other public enterprises and institutions). Banks would then be required to fulfil the major monitoring and disciplinary role, hence the term 'bank-centric insider monitoring'. Thus designed, enterprises would be accountable to other public agents, including banks who exerted pressures on the enterprises to operate efficiently. The next issue was who would monitor the banks. It was argued that the banks could be owned by other public agents (Bowles et al, 1993) or by the state (Bardhan et al, 1992). It was further proposed that some disciplinary devices could be adopted to ensure a harder budget constraint of the banks, such as a labour market for bankers based on their reputation (Bardhan et al, 1992).

How feasible would this new mechanism be? Is it possible to separate the political dimension of budget softness from its principal-agent one? There is no easy answer. For example, a condition for state-owned or joint-stock banks to fulfil their monitoring role is the state's commitment to discipline enterprises (Bowles et al, 1993). Furthermore, if the banks depend greatly on the state for finances, 'the political aspect of the soft budget constraint again looms large, exposing the soft underbelly of socialist economies' (Bardhan et al, 1992, p.111). However, it is necessary to view budget softness as a matter of degree. While it is difficult, and maybe not even desirable, to seek a state of full budget hardness, the above proposals may help to harden the budget constraints of micro agents. Thus, the inflationary pressures associated with budget softness may be alleviated.

Choosing a new future

Currently, China is launching its latest round of reforms, with three programs being notable. First, joint-stock companies will become a major form of an enterprise mechanism. Secondly, development banks will be created and the SBs will be turned into commercial banks. Thirdly, the central-local fiscal contract system will be replaced by a new scheme where both sides have their separate revenue bases. While the feasibility of this package waits to be seen as

these reforms will be put into effect gradually, it is certain that there will be systemic and political obstacles, particularly related to joint-stock companies and state-owned commercial banks. The competing interests between the centre and the localities will remain intense. In a nutshell, while the new package implies new hope, China will still face many challenges in its effort to search for a new mechanism. Yet, all this must be the subject of another study. What this study has attempted to do is to discover and explain the causes of excess demand and inflation during reform.

10.4 Limitations of the Current Study and Future Directions

It would have been less than candid to conclude this study without pointing out its limitations.

Methodologically, there are two major limitations. First, this study still bears the stamp of the traditional type of research in the field of the Chinese reform: the data used tend to be fragmented and the sources of information are incomplete. While this study has attempted to collect primary data and present them in a coherent manner, the inadequacy of not using large-scale data sets remains. Secondly, while some attempt has been made to implement econometric tests, this study is primarily qualitative. Moreover, the econometric tests conducted to date are not comprehensive. In particular, they would be greatly improved if the causality from budget

softness to inflation is empirically tested.

In addition to the above methodological limitations, theoretical limitations remain with the shortage approach. The difficulties in modelling budget softness are an obstacle to empirical study. Moreover, the shortage approach has proved to be successful only in grasping interest interaction in the state sector. As reform continues and the size of non-state sectors increase, it will be more appropriate to analyze the inflationary process from both inside and outside the state sector.

APPENDIX A: THE FIELD WORK IN CHINA

The author did field work in China three times: from May to August 1987; from May to July 1989, and in December 1991.

The field work in 1987 concentrated on Fujian Province. The work was supported by the Fujian Finance and Taxation Bureaux and the Fujian SB branches. Interviews were arranged and government documents were collected. In May 1989, the author participated in a conference in China entitled ``Macro Policy and Macro Control in China'' and interviewed the directors of the Fujian SB branches, the Fujian and Xiamen Finance and Taxation Bureaux, who also took part in the conference. These agencies later provided the author with some enterprise contracts and other documents. Managers of enterprises in Fujian were also interviewed. The field trip in December 1991 was conducted in Beijing, Fujian and Xiamen. In Beijing, the author interviewed several officials in the Credit Management Department and Interest Rate Management Department of the PB, the State Taxation Bureau, and the Research Institute of the Ministry of Finance. In Fuzhou, the author interviewed the directors of the Fujian Finance and Taxation Bureaux, the PB branch, and the SB branches. Similar interviews were also carried out in Xiamen.

The author accepts the final responsibility for the interpretation of all results. And, as required by the officials interviewed, their names are not to be released.

APPENDIX B ECONOMETRIC TESTS OF THE INFLATIONARY PROCESS

B.1 Introduction

This study has suggested that much of the inflationary pressures were caused by the behaviour of budget-softening enterprises, the SBs and the localities. Much will be gained if this explanation can be supported by econometric tests. The results given in this appendix represent such an attempt.

Three points should be noted. First, the econometric tests conducted are not comprehensive, given the difficulties in precisely modelling the systemic factors and obtaining the necessary data. Secondly, as noted (p.36), since the major concern of this study has been how and why various forms of excess demand were generated, the dependent variables are the measures of excess demand rather than inflation rates. Efforts are made to empirically identify the causes of certain aspects of excess demand, primarily income (wage), investment and credit expansions based on both time-series (1979 to 1988) and cross-section (1988) data. Thirdly, attempts are made to choose independent variables which reveal certain elements of budget softness for the related agents, mainly enterprises.

B.2 The Variables, Hypotheses and Methods

Two sets of dependent variables (hereafter DE-1 and DE 2)

are used to describe income (wage), investment and credit expansions. The set of DE-1 includes three excess demand indicators to measure three expansions at the *national* level by using *growth rate* variables: purchasing power imbalance (PPI, p.29) for income expansion; excess investment rate (EIR, p.32) for investment expansion; and excess demand for loans (EDL, p.29) for credit expansion.

The set of DE-2 attempts to capture income (wage), investment and credit expansions in the *state sector* by using *level* variables. In theory, the proper measurements for these expansions should be an excess of the growth rates of wage, investment and credit over the growth rates of real national income (NI) or gross real value of industrial production in the state sector (IP). But there are data constraints. For the time-series data, the level of some variables (e.g., loans to the state sector) in 1978 is not available. For the cross-section data of 1988, the levels of all variables in 1987 are not obtainable. It is therefore difficult to run a regression in terms of the growth rates. As a substitute, the levels of three dependent variables are chosen as proxies for the dependent variables: total wage bill in the state sector (W) for wage expansion; total fixed assets investment in the state sector (I)¹ for investment expansion; and loans to the state sector (L) for credit expansion. As these variables contain

¹ More precisely, it was the fixed assets investment in the state industrial sector that was chosen, which occupied the largest portion of the investment in the state sector.

both normal and excessive elements, steps are taken to distinguish them. As a rough method, the levels of NI or IP are included to measure normal elements; It is hypothesized that NI or IP bears a positive relationship to the levels of W, I and L. The next step is to determine quantitatively the relative impact of NI or IP (hereafter INDE-1) and that of other independent variables (reflecting the systemic factor, hereafter INDE-2) on the levels of W, I and L respectively. If the contributions of INDE-2 can be captured, the levels of W, I and L will contain an excessive portion, that is, the wage, investment and credit expansions.

Six INDE-2 independent variables are chosen to reflect certain elements of budget softness of agents (primarily state enterprises) directly or indirectly. The first variable is the retained profits of enterprises (RT). As argued in chapter 7 (p.120), while a sharp increase in retained profits was partially an intended result of decentralization, budget constraint softness enabled enterprises to bargain for and successfully obtain more. Also as noted in chapter 9 (p.216), the localities were willing to permit local enterprises to retain more profits as long as resources remained in their regions. Thus, a certain portion of retained profits became a consequence of budget softness. With more retained profits in hand, the enterprises were able to launch wage expansion. They then turned to the SBs for loans to finance investment and support income growth. This move led to investment and

credit expansions. It is hypothesized that the growth rates of retained profits (GRT) are positively related to the respective expansion rates (DE-1); and that a higher level of RP leads to the higher levels of W, I and L (DE-2).

The second variable is the pre-tax loan repayment and budgetary refund of enterprises (TL). As argued in chapter 7 (p.126), a sharp increase of the pre-tax loan repayment and budgetary refund reflected greatly a softer tax and credit system, hence soft budget constraints of enterprises. As also noted in chapter 9 (p.214), the localities manipulated the pre-tax loan repayment and budgetary refund to support local enterprises, further contributing to a softer tax and credit system. The soft tax and credit system in turn led to wage, investment and credit expansions. It is hypothesized that the growth rates of pre-tax loan repayment (GTL) are positively related to the respective expansion rates (DE-1), and that a higher level of TL leads to the higher levels of W, I and L (DE-2). Since only annual data were available, these hypotheses are tested for the time-series study.

The third variable is the losses of state enterprises (LS). As argued in chapter 7 (p.121), a steady increase in the losses of the enterprises with no bankruptcy threat showed the state's continual guarantee to bail out the money-losing enterprises. This ensured the growth of wage, investment and loan regardless of performance. The hypotheses are that, the growth rates of losses of enterprises (GLS) bear a positive or

no relationship to these expansion rates (DE-1); and that a higher level of LS also bears a positive or no relationship to the higher levels of W, I and L (DE-2).

The fourth variable is the subsidies to the money-losing enterprises from local budgets (LB). As shown in chapter 9 (p.215), the localities had a stake in supporting local money-losing enterprises. Local subsidies not only reflected the systemic feature of guaranteeing the survival of enterprises, but also involved local interests. An continued increase in local subsidies implied local budget softness as well, as the localities could be compensated from the centre for their spending in local subsidies through bargaining. It is then hypothesized that a higher level of LB leads to higher levels of W, I and L (DE-2). With the data available, this hypothesis is only tested on the cross-section study.

While the fifth and sixth variables are conventional, they are chosen to indirectly reflect the contribution of budget softness to excess demand. The fifth variable is the profit rates of enterprises (PR). In general, a continued decline in profit rates and an increase in wage pressure lead to losses and ultimately bankruptcy, which is unacceptable. Yet, in an economy where subsidies to money-losing enterprises become the norm and bankruptcy is almost nonexistent, it is possible for a continued wage increase and endurable profit decline to coexist. Similarly, there is normally a positive relationship between PR and I, as well as L. An increase in

profit rates is associated with an increase of investment, and an increase in demand for loans if projects are financed by the banks. But if budget softness prevails, this relation may be reversed. It is hypothesized that PR is negatively related to W, I and L (DE-2) because of budget softness. Similar relationships are expected between PR and the respective expansion rates (DE-1).

The sixth variable is the real lending rates of the SBs (RI). In theory, there should be an inverse relationship between RI and I, as well as L. But, if budget softness prevails for enterprises and the SBs, this relationship may be reversed. It is hypothesized that an increase in RI may be positively related to an increase in I and L. Also, if wage expansion is supported by credit expansion, a positive relationship between RI and W, through an increase in L, will result. A similar relationship is assumed between RI and the expansion rates in DE-1. Since only annual lending rates were available, the hypothesis is tested in the time-series study.

To summarize, two sets of regressions are run. For the excess demand at the national level (in terms of growth rates), the equation to be estimated is:

$$DE-1 = f (INDE-2)$$

i.e.,

$$\{PPI, EIR, EDL\} = f \{GRT, GTL, GLS, PR, RI\}$$

For the excess demand in the state sector (in terms of levels), the equation to be estimated is:

$$DE-2 = f (INDE-1; INDE-2)$$

i.e.,

$$\{W, I, L\} = f \{NI, IP; RT, TL, LS, LB, PR, RI\}.$$

All data are presented in the end of this appendix. Either a linear or double-log functional form is adopted. Estimations are run by the ordinary least-squares (OLS) technique. The weighted least-squares (WLS) method is also employed for the cross-section study whenever it is necessary. The software used is the ECSLIB program from University of California, San Diego. For most regressions, when more than one independent variables enter the equation, they are first introduced separately. Hypothesis testing for the statistical significance of individual coefficients is implemented. The null hypotheses are that the coefficients for independent variables are not significantly different from zero. The null hypotheses will be rejected if they are significantly different from zero.

B.3 Explaining Excess Demand at the National Level

Regressions of income, investment and credit expansions (DE-1) on the INDE-2 variables are first run. The results for investment expansion are reported in table B-1. When the variable GTL enters the regression alone (equation 1₁), its coefficient has the expected sign and is significant at the 11 percent level. Put differently, the probability of a type I

error (rejecting a true null hypothesis) is 0.1042. But a low value of the adjusted R^2 suggests that this variable only explains 20.8 percent of the change in investment expansion. A low DW statistic also signifies serious autocorrelation in the residuals. A combination of these statistics then implies that other variables should be included. Equation 1_b shows such an extension. When the variables GTL and PR appear in the same equation, all statistics are improved. The coefficients for both variables have the expected signs and are significant at the 5 and 10 percent levels respectively. The adjusted R^2 increases, indicating that 45.3 percent of the variation in excessive expansion can be captured by these two variables. The degree of autocorrelation is reduced.²

Equations 2_a and 2_b also suggest that the degree of excess investment may be explained by another combination of INDE-2 independent variables. When the variable GLS enters the regression alone, its coefficient has the expected sign and is significant at the 10 percent level. The DW statistic is generally acceptable. But the low adjusted R^2 value suggests that some variables may have been omitted. Equation 2_b then includes PR, thus marginally raising the adjusted R^2 value to 0.297. The DW statistic indicates that there is no serious autocorrelation involved. The coefficients for these two variables again have the expected signs as hypothesized. The

² The DW statistic further increases to 1.989 when the equation is corrected for autocorrelation via the Cochrane Orcutt iterative procedure. All other statistics remain similar except that the level of significance for the coefficient for PR is somewhat reduced.

coefficient for GLS is significant at the 11 percent level, but that for PR is nonsignificant even at the 25 percent level. Consider a rule of thumb that a *t*-value of 1 is a cutoff in deciding whether a variable should be dropped, the variable of PR with a *t*-value as 1.186 is then kept.

Table B-1 Investment Expansion (EIR), 1979-1988

	Adjusted R	DW
1 _a . $EIR_t = -0.359 + 0.221 GLS_t$ (-0.066) (1.833)	0.308	0.923
1 _b . $EIR_t = 45.227 + 0.254 GLS_t - 2.133 PR_t$ (2.080)*(2.513)** (-2.143)*	0.453	1.510
2 _a . $EIR_t = 4.326$ (1.348)	+ 0.216 GLS _t (2.047)*	0.362
2 _b . $EIR_t = 34.377$ (1.346)	- 1.346 PR _t (-1.186)	+ 0.192 GLS _t (1.833)

Note: The numbers in parentheses are *t*-statistics. *** significant at the 1 percent level, ** at the 5 percent level; and * at the 10 percent level. Data are in the end of this appendix.

The results for income and credit expansion are, however, unsuccessful. The coefficients for the independent variables have the expected signs, but the adjusted R^2 's are too low and there is autocorrelation in the residuals. Some reasons may be considered. For income expansion, this problem is related to the fact that purchasing power imbalance may contain an excess of the purchasing power from the non-state sector, especially during the first stage of the reform (see table 2-8). As the regression takes the 10-year reform as a whole, the contribution from budget softness in the state sector to purchasing power imbalance may not be properly recognized.⁴

⁴ A regression of lnPPI on lnGW shows that wage growth in the state sector (GW) is positively related to the PPI, but only 55.7 percent of the variation in lnPPI can be captured by the model.

Credit expansion also contains loans for the non-state sector. These loans fluctuate more notably than those for the state sector. The contribution of budget softness may then hardly be distinguished. Admittedly this problem is also evident in the equations in table B-1, albeit less serious.

B.4 Simple Correlations

As a preliminary step to the determination of the DE-2 variables (levels of W, I and L), simple correlations between these dependent variables and several independent ones (TL, RT, LS, PR, NI and IP) are computed using the time-series data. The results are shown in part I of table B-2. The correlations between these respective pairs of variables are high and with the expected signs. These correlations may not explain fully the level of wage bill, investment and loans (as indicated by the high correlations between NI and IP, and W, I and L), but they tend to support the approach adopted here.

It is interesting to calculate the simple correlations between these variables during the two periods of reform (1979 to 1983, and 1984 to 1988). As seen in parts II and III of table B-2, almost all correlations (four INDE-2 variables vs. W, I, and L) in the second period are higher than those in the first one, except in one case (underlined). This may suggest that the budget constraints of enterprises turned softer during the second period of reform, and became an important

factor behind the more serious wage, investment and credit expansions. It is also noted that the simple correlations between L and NI (and IP) during the second period of reform are lower than those during the first one (also underlined). This may suggest that a higher loan level after 1984 is less associated with the conventional economic variables, but more with the softer budget constraints of enterprises.

Table B-2 Simple correlations from time-series data

	Part I 1979-1988			Part II 1979-1983			Part III 1984-1988		
	W	I	L	W	I	L	W	I	L
TL	0.996	0.994	0.988	0.885	0.946	0.948	0.999	0.991	0.973
RT	0.974	0.982	0.967	0.964	0.941	0.988	0.981	0.970	0.942
LS	0.970	0.975	0.979	0.863	0.862	0.905	0.952	0.968	0.983
PR	-0.991	-0.993	-0.995	-0.945	-0.938	0.980	0.982	0.991	0.995
NI	0.988	0.992	0.986	0.966	0.961	0.995	0.995	0.988	0.969
IP	0.996	0.988	0.986	0.945	0.942	0.981	0.993	0.984	0.967

Note: These correlations are significant at the 99 percent level. Data are in the end of this appendix.

The simple correlations between the cross-section data were computed for 30 provinces in 1988 (table B-3). As shown, RT, LS and LB present reasonably high correlations with both W and I respectively. The correlations between PR and W and I shows the expected signs, but relatively weak.

Table B-3 Simple correlations from cross-section data, 1988

	RT	PR	LS	LB	IP
W	0.803	-0.346	0.846	0.692	0.943
I	0.801	-0.203	0.809	0.743	0.867

Note: These correlations are significant at the 99 percent level. Data are in the end of this appendix.

B.5 Wage Bill, Investment and Credit Determination: 1979-1988**Determination of Total Wage Bill**

Table B-4 gives the regression results regarding the determination of the level of the total wage bill (W). W is first regressed on each of four INDE-2 independent variables separately. As seen in equations 1_a to 1_d, all slope coefficients have the expected signs, and are extremely significant even at the level below 1 percent. All adjusted R²'s are substantially high, implying that each of these variables alone can explain more than 90 percent of the variation in W respectively. The DW statistics in the first three equations are acceptable. Yet equation 1_a suffers from serious autocorrelation (DW = 0.606), suggesting that the value of the adjusted R² may be overestimated. The low DW also implies that other variables should be included.

Equation 2_a presents the results when LS is added into equation 1_d along with RT. Both coefficients have the expected signs and are significant at the 5 percent level. The adjusted R² now increases, showing that a combination of LS and RT can explain 96.8 percent of the variation in W. It is also noted that the degree of autocorrelation is reduced.

Equation 2_b reports the results when TL is further included along with RT and LS. The adjusted R² continuously increases, and the autocorrelation is further eliminated. Three coefficients have expected signs. The coefficient for

TL is significant at the 5 percent level. Unfortunately, the coefficients for RT and LS now become insignificant. It is noted that the probability of a type I error is 0.7652 for LS and 0.9538 for RT. This result is unacceptable and therefore, equation 2_a remains as the basic chosen model. Recall that all statistics in equation 2_a are good except for a low DW statistic (1.172). This autocorrelation can be corrected through the Cochrane-Orcutt iterative procedure. The results are shown in equation 2_c. While all other statistics remain good, a DW statistic as 1.862 suggests that the degree of autocorrelation has been significantly eliminated.

Equation 2_d shows another combination of independent variables (PR and RT). The signs for the coefficients for these two variables are expected. The adjusted R² is high (0.983) and the DW statistic is generally acceptable (1.583). The coefficient for PR is significant at the 1 percent level. The coefficient for RT is, however, somewhat problematic. The probability of a type I error for RP is 0.1716. But since the *t*-value for RP is larger than 1, this variable is kept.

Similar results are also obtained when a double-log functional form was adopted. Equations 3_a to 3_d indicate that, when any one of the four INDE-2 independent variables enters a regression separately, their coefficients have the expected signs and are significant at the 1 percent level. The adjusted R²'s are all quite high, thus suggesting the strong explanatory power of these variables. Yet the DW statistics

are generally low (except that in equation 3_a), indicating that more variables should be included in the regression.

Table B-4 Wage bill determination

					Adjusted R ²	DW	
1 _a	W _t	24 281 +2 720 LS _t (3 306)** (11 296)***			0.934	2 043	
1 _t	W _t	49 232 (23 446)***	+4 468 TL _t (29 811)***		0.990	1 619	
1	W _t	487 609 (26 004)***		-17 723 PR _t (-20 900)***	0.980	2 145	
1 ₁	W _t =	26 985 (4 012)***		+2 052 RT _t (12 041)***	0.941	0 606	
2 _a	W _t	23 355 +1 329 LS _t (4 538)*** (2 736)**		+1 113 RT _t (3 057)**	0.968	1 172	
2 ₁	W _t =	47 463 +0 147 LS _t (6 013)*** (0 313)	+4 190 TL _t (3 357)**	+0 024 RT _t (0 060)	0.987	1 631	
2	W _t =	9 466 +0 807 LS _t (0 634) (2 094)*		+1 788 RT _t (5 114)***	0.907	1 862#	
2 _a	W _t =	372 931 (4 826)***		13 349 PR _t (4 483)***	+0 534 RT _t (1 523)	0.983	1 583
3 _a	lnW _t	2 249 +0 714 lnLS _t (9 857)*** (10 021)***			0.917	1 989	
3 ₁	lnW _t	3 768 (41 306)***	+0 374 lnTL _t (9 029)***		0.899	0 678	
3 ₁	lnW _t =	15 501 (19 422)***		- 3 563 lnPR _t (-13 785)***	0.955	1 067	
3 _a	lnW _t =	2 581 (10 898)***		+0 572 lnRT _t (8 271)***	0.882	0 470	
3 ₁	lnW _t =	2 304 +0 452 lnLS _t (10 906)*** (2 569)**		+0 230 lnPR _t (1 607)	0.931	1 326	

Note: The numbers in parentheses are t-statistics *** significant at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level # means that the equation has been corrected for autocorrelation via the Cochrane-Orcutt iterative procedure Data are in the end of this Appendix

Equation 3_e reports one extension from equation 3_a with lnLS added along with lnRT. As seen, both coefficients have the expected signs. The adjusted R² increases from 0.882 to 0.931, thereby signifying a better fit. The DW statistic also increases from 0.470 to 1.326, suggesting that the degree of autocorrelation is reduced. The coefficient for lnLS is

significant at the 5 percent level, but that for $\ln RT$ is only significant at the 15 percent level.

To summarize, the above regression results suggest that, to certain degrees, the level of total wage bill in the state sector can be reasonably explained by some systemic variables. Equations 2_a and 2_c turns out to be the basic chosen model. It is also noted that since these systemic variables are all interrelated, some statistics are not quite satisfactory.

Determination of Fixed Asset Investment

Table B-5 demonstrates the results for the determination of investment (I). As equations 1_a to 1_d show, when I is first regressed by each of four INDE-2 variables separately, all slope coefficients have the expected signs, and are extremely significant even at the level below 1 percent. The adjusted R²'s are all quite high, thereby suggesting that each of these variables alone can explain much of the variation in I respectively. The DW statistics in equations 1_a and 1_c are acceptable, while those in equations 1_b and 1_d indicate different degrees of autocorrelation (1.670 and 1.218). This fact implies that the adjusted R² may be overestimated and that other variables should be included.

As an extension to equation 1_b, PR enters the regression with TL. As shown in equation 2_a, both coefficients have the expected signs and are significant at the 5 and 10 levels respectively. The adjusted R² marginally increases to 0.990.

The degree of autocorrelation is greatly reduced as evidenced by a DW statistic of 1.866. All statistics indicate that the explanatory power of this equation is strong. A combination of TL and PR can explain 99 percent of the variation in I.

As an extension to equation 1_a, the variables of LS and TL are added with RT. The results are shown in equation 2_b. All coefficients have the expected signs. The adjusted R² increases and the DW statistic is more acceptable. Yet the level of significance for the coefficients turns out to be problematic. The probability of a type I error is 0.1056 for TL, 0.1432 for RT, and 0.1812 for LS. As a result, the variable of LS should be dropped since it has the highest probability of a type I error. The results are shown in equation 2_c. As noted, both coefficients still have the expected signs. The adjusted R² remains quite high (0.987), thereby suggesting that a combination of TL and RT can explain 98.7 percent of the variation in I. The degree of autocorrelation is further eliminated as verified by a DW statistic of 2.070. It is noted that the coefficient for TL is significant at the 1 percent level. Yet the probability of a type I error for RT increases to 0.2557. But since the *t*-value is greater than 1, the variable is kept.

Similar results are also obtained when a double-log functional form is adopted. As seen in equations 3_a to 3_d, when each of the four INDE-2 variables enters a regression separately, all slope coefficients have the expected signs,

and are significant at the 1 percent level. All adjusted R^2 's are high. The DW statistics in equations 3_a, 3_b, and 3_d are acceptable, but that in equation 3_c points up the autocorrelation and an overestimated adjusted R^2 . Therefore, other variables should be included in equation 3_e.

As presented in equation 3_e, the inclusion of $\ln RT$ along with $\ln PR$ improves the results. The coefficients for $\ln RT$ and $\ln PR$ have the expected signs and are significant at the 1 and 11 percent level respectively. The adjusted R^2 increases from 0.822 in equation 3_c to 0.962. The degree of autocorrelation is also eliminated as evidenced by the DW statistic of 2.706.

Equation 3_f shows another combination of independent variables ($\ln RT$ and $\ln LS$). The coefficients for these two variables have the expected signs. The adjusted R^2 increases when compared with those in equations 3_a and 3_d. The DW statistic is acceptable. The coefficient for $\ln RT$ remains significant at the 1 percent level. However, the coefficient for $\ln LS$ is only significant at the 18 percent level.

On the whole, the level of fixed asset investment in the state sector can be reasonably explained by the systemic variables, although some results are not as strong as would be liked given the interrelation among these variables. Among all regressions, equation 2_a is the most suitable model.

Table B-5 Investment determination

					Adjusted R ²	DW
1 _a	I _t	14.828 +3.379 LS _t (1.783) (12.385)***			0.944	2.141
1 _b	I _t	16.566 (5.425)***	+5.512 TL _t (25.293)***		0.986	1.670
1 _c	I _t	559.053 (26.742)***		-21.940 PR _t (-23.207)***	0.984	2.108
1 _d	I _t	11.887 (1.727)			+2.557 RT _t (14.616)***	0.959 1.218
2 _a	I _t	260.217 (2.069)*	+3.063 TL _t (2.397)**	-9.867 PR _t (-1.938)*	0.990	1.866
2 _b	I _t	-0.594 +0.801 LS _t (-0.067) (1.512)	+2.685 TL _t (1.904)		+0.760 RT _t (1.684)	0.989 2.602
2 _c	I _t	9.555 (1.495)	+4.287 TL _t (4.235)***		+0.588 RT _t (1.238)	0.987 2.070
3 _a	lnI _t	0.046 +1.312 lnLS _t (-0.090) (8.275)***			0.882	2.008
3 _b	lnI _t	2.668 (35.825)***	+0.726 lnTL _t (21.470)***		0.981	2.229
3 _c	lnI _t	23.342 (7.897)***		-6.236 lnPR _t (-6.513)***	0.822	0.634
3 _d	lnI _t	0.385 (1.333)			+1.105 lnRT _t (13.092)***	0.950 2.278
3 _e	lnI _t	6.601 (1.981)		-1.738 lnPR _t (1.877)	+0.851 lnRT _t (5.510)***	0.962 2.706
3 _f	lnI _t	0.147 +0.387 lnLS _t (0.470) (1.487)			+0.812 lnRT _t (3.821)***	0.956 2.978

Note: The numbers in parentheses are t-statistics. *** significant at the 1 percent level; ** at the 5 percent level; and * at the 10 percent level. Data are in the Appendix.

Determination of Credit Level

Table B-6 presents the results for the determination of credit (L). As equations 1_a to 1_d show, when L is regressed on four INDE-2 variables separately, all slope coefficients have the expected signs and are significant at the 1 percent levels. The adjusted R²'s for the first three equations are high, suggesting that each of these variables can respectively explain more than 90 percent of the variation in L. The DW

statistics in these equations are acceptable. Yet equation 1_a has a low DW statistic, indicating serious autocorrelation and an overestimated adjusted R². Other variables should then be included to improve the results.

As an extension to equation 1_a, LS and RT enter the regression at the same time as shown in equation 2_a. The coefficients for these two variables show the expected signs and are significant at the 5 and 1 percent level respectively. The adjusted R² increases from 0.927 in equation 1_a to 0.972, implying that a combination of RT and LS can explain 97.2 percent of the change in L. The DW statistic of 1.632 also indicates that autocorrelation is partially corrected.

Equation 2_b reports the results with another combination of independent variables, TL and LS. The coefficients for the two variables present the expected signs. The adjusted R² is quite high (0.977) and the DW statistic is reasonable (1.845). While the coefficient for TL is significant at the 5 percent level, that for LS is only significant at the 15 percent level. Given that the *t*-value is 1.601, this variable is retained. Overall, equation 2_a remains the most satisfactory.

Finally, when a double-log functional form is used, these independent variables once more prove their robustness. As equations 3_a to 3_d indicate, when each of these variables enters a regression separately, they have the expected signs and are significant at the 1 percent level. All adjusted R²'s are high. But except for equation 3_d, the three other

regressions suffer from various degrees of autocorrelation.

Table B-6 Credit determination

				Adjusted R ²	DW
1 _a	$1_t = 12.418 + 17.123 LS_t$ (0.322) (13.520)***			0.953	2.093
1 _b	$1_t = -149.775 + 27.654 TL_t$ (6.900)*** (17.850)***			0.972	1.719
1 _c	$1_t = -289.091 - 110.962 PR_t$ (31.858)*** (-27.039)***			0.988	2.311
1 _d	$1_t = 10.929 + 12.715 RT_t$ (0.235) (10.754)***			0.927	0.962
2 _a	$1_t = -16.870 + 10.430 LS_t$ (-0.565) (3.700)***		$+ 5.363 RT_t$ (2.532)**	0.972	1.632
2 _b	$1_t = -89.113 + 5.992 LS_t + 18.336 TL_t$ (2.084)* (1.601) (3.061)**			0.977	1.845
3a	$\ln L_t = 2.775 + 1.008 \ln LS_t$ (9.113)*** (10.600)***			0.925	2.094
3b	$\ln L_t = -4.912 + 0.532 \ln TL_t$ (43.556)*** (10.383)***			0.922	0.668
3c	$\ln L_t = 21.255 - 4.957 \ln PR_t$ (15.407)*** (-11.093)***			0.931	0.824
3d	$\ln L_t = 3.235 + 0.811 \ln RT_t$ (10.386)*** (8.908)***			0.897	0.645
3 _e	$\ln L_t = 2.857 + 0.615 \ln LS_t + 0.345 \ln RT_t$ (10.655)*** (2.756)** (1.896)*			0.944	1.560

Note: The numbers in parentheses are t-statistics. *** significant at the 1 percent level; ** at the 5 percent level; and * at the 10 percent level. Data are in the end of this appendix.

Equation 3_e presents one effort to improve the results. When $\ln LS$ and $\ln RT$ enter the same regression, both coefficients have the expected signs and are significant at the 5 and 10 levels respectively. The adjusted R² is high (0.944). The degree of autocorrelation is reduced as shown by the DW of 1.560, compared with those in equations 3_b to 3_d.

On the whole, the results suggests the ability of the systemic variables in explaining the determination of the credit level (with equation 2a as the basic chosen model), although some statistics are not quite satisfactory.

Comparison of Relative Impact of Independent Variables

Table B-7 summarizes the results of the relative impact of the INDE-1 and INDE-2 independent variables on W, I and L respectively. As an illustration, the variables of LS and NI enter the equations at the same time. As equations 1_a to 1_c show, the coefficients for these two variables have the expected signs in three cases. The coefficients for NI are significant at the 1 percent level, and those for LS are significant at the 5 to 10 percent levels. All three adjusted R²'s are very high, suggesting that this combination of variables can explain more than 98 percent of the variation in W, I and L respectively. The DW statistics are acceptable.

It should be noted that the values of the coefficients for NI and LS represent their marginal effects on W, I and L respectively. Since these two variables measure different effects, the estimated coefficients are not comparable in numerical terms. To compare the numerical value of one regression coefficient with that of another, the standardized regression technique should be used to obtain the beta coefficients. Equations 2_a to 2_c present these results.

It is not surprising to see that NI has the greater impact on the standardized W, I and L. This can be explained by the conventional theory. But there are two interesting findings. First, the systemic factors (e.g., LS) have their impact on the wage, investment and loan determination, thus implying the existence of respective excessive portions.

Secondly, the impact of LS is stronger on the level of loan, followed by those of investment and wage. This suggests that loan expansion is largely supported by the state's subsidies.

As another illustration to compare the relative impact of independent variables, the variables of RI and NI appear in the same regression. As indicated in equations 3_a to 3_c, the results for investment determination turn out to be the best. The coefficients for these two variables have the expected signs and are significant at the 1 percent level. The adjusted R² is quite high and the DW statistic is good. The results for loan determination are also expected. Both coefficients have the expected signs and are significant at 10 and 1 percent levels respectively. The adjusted R² is also high, indicating a better fit. The problem is a low DW statistic, implying that other variables should be added. As to wage determination, both coefficients have the expected signs. The adjusted R² and DW statistic are also satisfactory. Unfortunately, while the coefficient for NI remains highly significant, that for RI is nonsignificant.

A comparison of the impact of RI and NI has an interesting implication. While I and L have a normal positive relation with national income as expected, they also bear an unusual positive relation with the real lending rate. This fact can largely be explained by the budget softness at the micro level. This finding is contrary to a popular view held by many disequilibrium scholars. According to this view, a

low or even negative interest rate (a poorly-coordinated policy mistake) has been a main reason for the investment and loan expansion. In other words, an inverse relation between real lending rate and investment (and loan) held true. The above results, however, suggest that budget softness plays an important role in credit and investment expansions.

Table B-7 Relative impact of regressors on W, I and L

		Adjusted R ²	DW
1 _a	$W_t = 7.144 + 0.440 LS_t + 0.128 NI_t$ (3.154)** (2.167)* (11.713)***	0.996	2.135
1 _b	$I_t = 32.846 + 0.981 LS_t + 0.134 NI_t$ (-6.641)*** (2.215)* (5.641)***	0.989	1.549
1 _c	$L_t = 94.057 + 6.257 LS_t + 0.609 NI_t$ (-3.715)*** (2.761)** (4.993)***	0.988	1.860
2 _a	$W_t = 0.157 LS_t + 0.847 NI_t$ (2.317)** (12.522)***	0.997	2.135
2 _b	$I_t = 0.283 LS_t + 0.721 NI_t$ (2.368)** (6.030)***	0.990	1.549
2 _c	$L_t = 0.358 LS_t + 0.647 NI_t$ (2.951)** (5.338)***	0.990	1.860
3 _a	$W_t = 2.739 + 0.154 NI_t + 0.247 RI_t$ (0.621) (23.899)*** (0.638)	0.994	1.972
3 _b	$I_t = -55.641 + 0.211 NI_t + 1.969 RI_t$ (-10.588)*** (27.480)*** (4.261)***	0.995	2.148
3 _c	$L_t = -201.585 + 1.044 NI_t + 8.339 RI_t$ (-4.597)*** (16.319)*** (2.171)*	0.985	1.170
4 _a	$W_t = 1.019 NI_t + 0.027 RI_t$ (25.549)*** (0.682)	0.995	1.972
4 _b	$I_t = 1.134 NI_t + 0.176 RI_t$ (29.377)*** (4.556)***	0.995	2.148
4 _c	$L_t = 1.109 NI_t + 0.148 RI_t$ (17.446)*** (2.321)**	0.987	1.170

Note: The numbers in parentheses are t statistic. *** significant at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level. Data are in the end of this appendix.

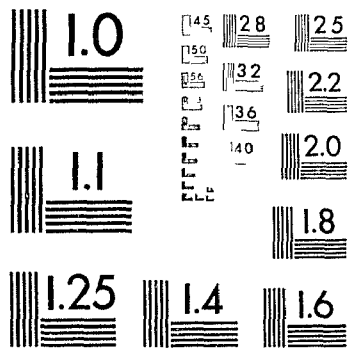
Finally, the beta coefficients are presented in equations 4_a to 4_c to identify the relative impact of RI and NI on the dependent variables. It comes as no surprise that NI has a much greater impact on the standardized W, I and L. But, the

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impact of RI is obvious, indicating that the interest rate may not perform as an effective signal to adjust the borrowing and investment behaviour of the budget-softening agents. It is noted that the impact of RI is strong on investment and loan determination, but relatively weak on wage determination.

B.6 Cross-Province Wage and Investment Determination: 1988⁴

Determination of Total Wage Bill

Cross-province regressions of wage levels on several INDE-2 variables are first run for 30 provinces. Table B 8 summarizes these results. As shown in equations 1_a to 1_i, when each of INDE-2 variables enters a regression on its own, all slope coefficients have the expected signs and are significant at the 1 percent level. Equation 1_a has a reasonable adjusted R² value as far as the cross-section data is concerned. This implies that LS is capable of explaining up to 71.6 percent of the variation in wage across the provinces. The adjusted R²'s for equations 1_b and 1_c are relatively low, suggesting that other variables might be included into these equations.⁵

Equation 2_a presents the results when LS is added into equation 1_b along with RT. As shown, the coefficients for LS and RP have the expected signs, and are significant at the 1

⁴ Since the cross section (province) data for loan were not available, only the determination of wage and investment of the state industrial sector at the provincial level was examined.

⁵ When PR enters the regression alone, its coefficient (0.323) has the correct sign and is significant at the 10 percent level. However, the adjusted R² is too low (0.088).

percent level. The adjusted R^2 increases to 0.841 from 0.632 in equation 1_b, suggesting a better fit. Equation 2_b reports the results of a further extension with PR included along with LS and RT. All three coefficients have the expected signs and remain significant at the 1 percent level as before. The adjusted R^2 further increases to 0.864, compared with 0.841. All statistics suggest that this equation fits well.

It is noted that heteroscedasticity may be encountered when cross-section data are used. If this is true, the OLS estimates are inefficient as the homoscedasticity assumption is violated. It is then possible to find an alternative unbiased linear estimate that has a lower variance than the OLS estimate. The White's test is often used to test for heteroscedasticity.⁶

For equation 2_b, a White's test generates TR^2 as 20.67 which exceeds the upper 5 percent points of the chi-square distribution with 9 d.f., thus rejecting the null hypothesis of homoscedasticity. The WLS estimates are then presented in equation 2_c. Again, all coefficients have the expected signs. The coefficients for LS and RT remain quite robust, both being significant at the 1 percent level. Yet the coefficient for PR is now only significant at the 21 percent level. But this

⁶ The basic method is to estimate the model in question with the OLS technique first, and to compute and square the residual from this estimation. This squared residual is then regressed on a constant, the independent variables, their squares and the interaction terms. The statistic TR^2 is computed from this auxiliary regression, where T is the size of the sample and R^2 is the unadjusted R -squared. If TR^2 is greater than a chi-square distribution at, say, the upper 5 percent point with degrees of freedom (d.f.) which equal the number of regression coefficients in the auxiliary regression, the null hypothesis of homoscedasticity is rejected, and the WLS technique should be employed.

variable is kept since the related t -value is greater than 1. The adjusted R^2 is acceptable. Generally, the results from equation 2_c are not much different than those in equation 2_b. It can be then concluded that wage determination across provinces is positively related to enterprises' loss amounts and retained profits, but negatively related to their profit performance. This pattern may be largely explained by continued budget softness at the enterprise level.

As an extension to equation 1_c, the variables RT and LB appear in the same regression. As seen in equation 3_a, both coefficients are in the expected signs. The coefficient for RT remains significant at the 1 percent level, and that for LB is now significant at the 12 percent level. The adjusted R^2 increases to 0.651, compared with 0.460 in equation 1_c. Next, equation 3_b presents the results when PR is further added along with RT and LB. All coefficients again show the expected signs with two of them (RT and PR) significant at the 1 percent level and one (LB) at the 10 percent level. The adjusted R^2 is further raised to 0.765, suggesting that 76.5 percent of the variation of wage across provinces can be captured by a combination of these three variables. A White's test applied to equation 3_b gives the TR^2 statistic as 16.59 which is smaller than a chi-square distribution at the 5 percent level with 9 d.f. (16.92). As a result, the OLS estimates are still reliable. Equation 3_b becomes another successful model. One finding is that the wage difference

across the provinces can be partially explained by the different level of local subsidies, other things being equal.

Table B-8 Wage bill determination in 30 provinces, 1988

				Adjusted R ²	
1,	W	0.750 + 10.215 LS, (1.403) (1.215)***		0.716	
1,	W _t	1.182 (2.070)**	+ 2.231 R _{t-1} , (7.128)***	0.632	
1	W _t	1.163 (1.520)	+ 6.001 LB _t , (5.072)***	0.460	
2,	W _t	0.156 + 6.831 LS _t + 1.254 RT _t , (0.364) (5.787)*** (4.613)***		0.841	
2 _t	W _t	3.456 + 5.738 LS _t + 1.401 RT _t , 0.191 PR (2.788)*** (5.102)*** (5.640)*** (2.798)***		0.864	
'	W _t	1.092 + 6.931 LS _t + 1.641 RT _t , 0.084 PR (1.103) (5.826)*** (5.520)*** (1.281)		0.767	
3,	W _t	0.779 (1.168)	+ 1.744 RT _t , (4.041)***	+ 2.147 LB _t , (1.594)	0.651
3 _t	W _t	5.900 (4.019)***	+ 1.707 RT _t , 0.315 PR, (4.819)*** (3.758)***	+ 2.248 LB _t , (2.034)*	0.765
4,	W _t	0.108 + 4.454 LS _t , (0.504) (6.779)***		+ 0.055 IP _t , 0.956 (12.596)***	
4 _t	W _t	0.037 + 4.404 LS _t , (0.253) (6.247)***		+ 0.059 IP _t , 0.917 (9.678)***	
4	W _t	+ 0.369 LS _t , (6.904)***		+ 0.686 IP _t , 0.957 (12.827)***	

Note: The numbers in parentheses are t statistics. *** significant at the 1 percent level, ** at the 5 percent level and * at the 10 percent level. Data are in the end of this appendix.

Finally, equations 4_a to 4_c examine the relative impact of LS and IP on wage determination. When LS and IP appear in the same regression (equation 4_a), both coefficients have the expected signs and are significant at the 1 percent level. The adjusted R² value is 0.956. A White's test implemented on equation 4_a gives TR² as 23.67 which surpasses the chi-square distribution at the 5 percent level with 5 d.f.. The WLS method should then be adopted. Equation 4_b presents these results. Because no significant differences are found between

the coefficients of equations 4_a and 4_b, the OLS estimates may also be accepted. This allows us to compute the beta coefficients as shown in equation 4_c. While the impact of IP is greater on the standardized W, that of LS is also evident.

Determination of Fixed Asset Investment

Table B-9 gives the results for investment determination. When LS, RT and LB enter a regression on its own (equations 1_a to 1_c), all slope coefficients have the expected signs and are significant at the 1 percent level. The adjusted R²'s show that these variables explain 64.3, 62.8 and 53.6 percent of the variation in I across the provinces respectively.⁷

As one extension to equation 1_b, equation 2_a presents the results when I is regressed on LS, PR and RT together. As shown, the adjusted R² increases from 0.628 in equation 1_b to 0.780. The coefficients for these three variables have the expected signs with those for LS and RT being significant at the 1 percent level (that for PR is nonsignificant). As a result, PR is dropped. As seen in equation 2_b, the coefficients for LS and RT have the expected signs and remain significant at the 1 percent level. The adjusted R² further increases to 0.785. A White's test for equation 2_b gives the TR² statistics as 6.12, which does not exceed a chi-square distribution at the 5 percent level (11.07) with 5 d.f..

⁷ When PR enters the regression on its own, its coefficient (-0.230) has the correct sign but is nonsignificant. And the adjusted R² is too small (0.007)

Equation 2_b then implies that 78.5 percent of the variation in investment level across provinces can be explained by both loss amount and retained profits of enterprises.

As an extension to equation 1_c, RT and LB appear together in equation 3_a. Both coefficients have the expected signs and are significant at the 1 and 5 percent levels respectively. The adjusted R^2 increases to 0.681 compared with 0.536 in equation 1_c. Equation 3_b then reports a further extension with PR attached. The coefficients for RT and LB remain significant at the 1 and 5 percent levels respectively while that for PR is significant at the 10 percent level. The adjusted R^2 further increases to 0.712. A White's test applied to equation 3_b gives the TR^2 statistics as 9.39, which does not exceed a chi-square distribution at the 5 percent level with 9 d.f.. Therefore, the OLS estimates are still acceptable. The coefficients of equation 3_b suggest that the investment level across the provinces is positively associated with both enterprises' retained profits and local subsidies, but negatively related to enterprises' profit performance.

Finally, equations 4_a to 4_c examine the relative impact of LS and IP on investment determination. When IP and LS are in a regression jointly, both coefficients have the expected signs and are significant at the 1 percent level respectively. A White's test applied for equation 4_a gives the TR^2 as 19.17 which surpasses the chi-square distribution (11.07) at the 5 percent level with 5 d.f.. Equation 4_b then reports the WLS

estimates. Since there are no significant differences between equations 4_a and 4_b, the beta coefficients using the OLS technique are still meaningful. As shown in equation 4_c, while IP has a bigger impact on the standardized I, LS has quite a strong impact as well.

Table B-9 Investment determination in 30 provinces, 1988

	Adjusted R
1 _a . $I_t = 1.328 + 11.894 LS_t$ (1.850)* (7.296)***	0.643
1 _b . $I_t = 1.671 + 2.709 RT_t$ (2.392)** (7.073)***	0.628
1 _c . $I_t = 1.348 + 7.847 IB_t$ (1.561) (5.877)***	0.536
2 _a . $I_t = 1.722 + 7.078 LS_t + 1.693 RT_t - 0.068 PR_t$ (0.897) (4.064)*** (4.400)*** (0.642)	0.780
2 _b . $I_t = 0.550 + 7.466 LS_t + 1.641 RT_t$ (0.940) (4.623)*** (4.412)***	0.785
3 _a . $I_t = 0.885 + 1.862 RT_t + 3.731 IB_t$ (1.218) (3.709)*** (2.380)**	0.681
3 _b . $I_t = 4.551 + 1.836 RT_t - 0.224 PR_t + 3.803 IB_t$ (2.301)** (3.847)*** (-1.977)* (2.553)**	0.712
4 _a . $I_t = 0.656 + 5.876 LS_t + 0.058 IP_t$ (1.256) (3.658)*** (5.383)***	0.821
4 _b . $I_t = 0.590 + 4.732 LS_t + 0.068 IP_t$ (1.752)* (3.049)*** (4.849)***	0.748
4 _c . $I_t = 0.400 LS_t + 0.588 IP_t$ (3.725)*** (5.482)***	0.828

Note. The numbers in parentheses are t-statistics. *** significant at the 1 percent level; ** at the 5 percent level; and * at the 10 percent level. Data are in the end of this appendix.

B.7 A Brief Evaluation

It is admitted that the results presented in this appendix are not as satisfactory as was expected. As noted, the chief difficulties come from a variety of sources. First,

there is significant difficulty in modelling the systemic factors. The variables used may be no more than proxies of these factors. Secondly, there is difficulty in obtaining the necessary data. Using the time-series study as an example, only annual data can be obtained, rather than the quarterly or monthly data. Thirdly, the sample size ($T = 10$) is too small. While the implementation of the cross-section study helps overcome this problem, the limitations of the results are recognized.

However, the empirical results do tend to support the approach adopted by identifying the contribution of budget-softening enterprises and localities on wage, investment and credit expansion to varying degrees. An interplay of the competing interests between these micro agents and the centre do play their role in generating much inflationary pressures.

Data Set for the Econometric Tests

Table B-10 Time-series data, 1979-1988

Year	W	I	L	NI	IP	RT	TL	LS	PR	RI
1979	52 95	19 24	185 24	335 0	367 36	8 65	1 54	11 68	2 5	2 9
1980	62 79	20 64	216 80	368 8	391 56	14 40	1 81	14 08	4 1	1 7
1981	66 04	38 04	246 11	394 1	403 71	16 81	2 74	12 61	23 9	2 5
1982	70 89	46 74	271 42	425 8	432 60	21 61	5 36	19 69	23 5	5 0
1983	74 81	54 66	304 96	473 6	473 94	29 08	7 44	23 99	22 8	5 3
1984	87 58	65 35	375 63	565 2	526 27	35 57	8 69	19 99	22 8	3 9
1985	106 48	91 37	516 26	702 0	630 21	46 18	12 92	25 89	21 8	1 5
1986	128 85	115 98	659 45	785 9	697 11	48 93	17 08	41 71	19 9	1 6
1987	145 93	140 72	811 68	931 3	825 01	53 83	21 21	48 17	18 9	0 3
1988	180 71	170 91	910 76	1173 8	1035 13	70 06	29 69	52 06	17 8	10 7

Notes and sources

- W (WAGE) = wage bill of the state sector, billion yuan, State Statistical Bureau *China Statistical Yearbook*, 1990a, p 131
- I (INVEST) = fixed assets investment of state industrial sector, billion yuan, State Statistical Bureau, *China Industrial Statistical Yearbook*, 1990c, p 27.
- L (LOAN) = loans to the state sector, billion yuan, State Statistical Bureau *China Statistical Yearbook* 1990a, p 666.
- NI = national income, billion yuan, State Statistical Bureau, *China Statistical Yearbook* 1990a, p 34.
- IP = gross real value of industrial products of the state sector, billion yuan, State Statistical Bureau, *China Industrial Statistical Yearbook*, 1990c, p 35.
- RT = retained profits of state enterprises, billion yuan, Ministry of Finance *China Statistical Yearbook of Public Finance*, 1990, p 145.
- TL = pre-tax loan repayment plus budgetary refund of state enterprises, billion yuan, Ministry of Finance, *China Statistical Yearbook of Public Finance* 1990, p 145.
- LS = losses of state enterprises, billion yuan, Ministry of Finance, *China Statistical Yearbook of Public Finance*, 1990 p 146.
- PR = ratio of profit/tax to gross value of products, State Statistical Bureau, *China Industrial Statistical Yearbook*, 1990c, p 67.
- RI = real average lending rate of the SBs, %, Hussain and Stern (1991, p 157)

Table B-11 Cross-section data, 30 provinces, 1988

(1) W	wage bill of state industrial sector, billion yuan																			
	2.99	2.77	6.08	4.21	2.42	10.04	4.28	6.60	6.17	13.20	7.33	4.58	2.70	3.50	8.71	6.07	6.45	5.01	6.53	
	2.14	0.26	8.71	1.60	1.80	0.02	3.26	1.89	0.41	0.49	1.14									
(2) I	fixed assets investment of state industrial sector, billion yuan																			
	4.392	3.903	7.945	5.682	2.965	14.37	4.876	10.15	12.00	10.14	4.024	4.576	3.392	2.909	14.03	7.779				
	6.559	4.562	9.724	3.163	0.558	10.15	2.305	2.492	0.088	4.077	3.154	1.744	0.874	3.987						
(3) IP	gross real value of products of state industrial sector, billion yuan																			
	49.57	43.11	57.74	31.56	17.54	108.03	39.84	62.63	118.07	160.58	85.08	41.50	29.60	29.19	107.13	55.29				
	69.48	48.91	96.39	23.17	2.46	78.64	14.32	21.63	0.10	27.89	18.68	3.98	4.04	12.27						
(4) RI	retained profits of state industrial sector, billion yuan																			
	2.739	1.194	2.125	0.677	0.534	3.422	1.561	1.195	4.513	3.298	2.208	0.986	0.826	0.682	2.108	1.508				
	2.745	1.289	2.260	0.608	0.080	2.844	0.565	0.943	0.005	0.827	0.562	0.178	0.150	0.356						
(5) PR	ratio of profit/tax to gross value of products, state industrial sector, %																			
	21.89	16.03	15.40	14.66	15.25	17.14	15.97	15.37	19.28	11.26	13.80	15.44	15.59	13.06	14.16	15.52				
	16.88	16.46	13.36	17.51	13.49	15.11	23.03	29.22	14.91	14.77	17.83	18.29	16.38	14.76						
(6) LS	losses of state industrial sector, billion yuan																			
	0.187	0.187	0.774	0.333	0.241	1.085	0.510	0.505	0.228	0.682	0.333	0.269	0.118	0.382	0.666	0.584				
	0.333	0.476	0.490	0.250	0.059	0.877	0.182	0.159	0.006	0.349	0.165	0.049	0.075	0.102						
(7) LB	local subsidies to money-losing enterprises, billion yuan, 1987																			
	1.247	0.510	0.535	0.336	0.462	1.482	0.700	1.300	0.588	0.940	0.473	0.466	0.458	0.231	0.721	0.348				
	0.685	0.393	1.036	0.345	0.125	0.886	0.254	0.497	0.097	0.235	0.164	0.147	0.072	0.342						

Sources: From (1) to (6), State Statistical Bureau, *China Industrial Statistical Yearbook*, 1990c, pp.308-361. For (7), Ministry of Finance, *China Statistical Yearbook of Public Finance*, 1990, p.54.

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