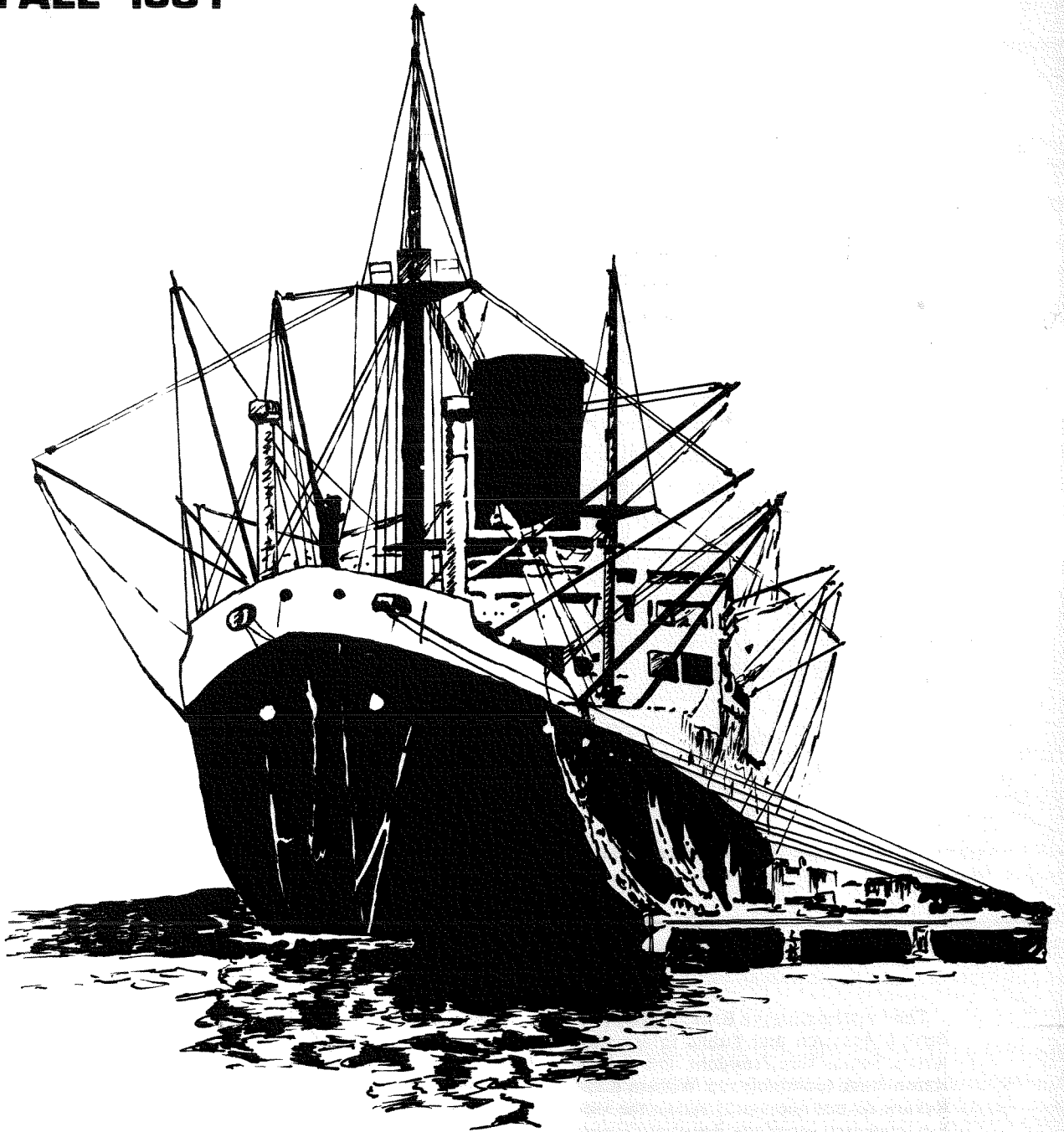


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**INFLATION, GROWTH
AND
EXCHANGE RATES**

Money and Credit in China

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The purpose of this paper is twofold: to introduce the role of money and credit in China to those unfamiliar with the subject, and to propose some fundamental re-thinking in the conduct of Chinese monetary and credit policy.

China today is in a period of transition. Dissatisfied with the economy's past performance, the authorities in recent years have instituted a series of reform measures designed to infuse more material incentives and a greater use of market principles in an otherwise rigidly controlled economy. The essence of the reform lies in giving farmers and enterprises greater autonomy in production and investment decisions in response to market forces.

The future of the reform is now threatened by inflation. To combat inflation, the government has ordered draconian cutbacks in investment projects, thus in effect suspending the recently instituted production and investment autonomy. This creates a policy dilemma: over the years, tight controls have strangled work incentives and caused serious waste and inefficiency; yet, under the present institutional set-up, direct administrative con-

trols appear to be indispensable for combating inflation. In the short run, the government has decided to fight inflation now and ease controls later. But, in the long run, do the authorities have adequate policy instruments for fighting inflation without direct controls? The answer to this question will determine whether future spending decisions will be made by the market according to the spirit of the reform or by the central-planning authorities as under the old regime.

Inflation is in essence a monetary phenomenon. In the long run, China's ability to "modernize" its economy without aggravating inflationary pressures will to a large extent depend on whether China can forge an effective monetary policy that does not rely primarily on direct controls.

Section I presents an overview of money and banking in China. The rest of the paper raises a number of policy issues, specifically (1) the usefulness of the quantity equation of money and the measurement of money in the Chinese context, (in Section II), and (2) the principles of credit policy followed in China (in Section III). The findings and conclusions are summarized in Section IV.

I. Money and Banking in China

To assess the role of money and banking in China it is essential first to understand how the Chinese economy functions, as, not

surprisingly, China under socialism operates along vastly different lines from economies under capitalism. In this section, we describe the structure of the Chinese economy, the use of economic planning (and especially financial planning) to allocate the nation's resources, and then some fundamentals of the banking and monetary system. Our sketch of the real side of the economy will be brief, limited to what is necessary to help explain the functioning of the financial system.¹ And because institutions and policies are changing rapidly,

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we do not try to incorporate all the recent changes into this brief overview. The emphasis here is rather on the fundamentals of China's monetary and banking system, which remain largely intact in spite of recent modifications.

Economic Structure and Planning

The People's Republic of China was founded in 1949, but it took the authorities about seven years to communize what had been a largely private-enterprise economy. Prior to 1949, nearly all the means of production had been privately owned, aside from state-owned infrastructure facilities such as harbors, railroads, schools, hospitals, and public utilities. After 1949, by stages, all the farms, mines, factories, shops, and banks became either state-owned enterprises (i.e., belonging to "all people") or collectives (i.e., owned collectively by members). Except for a presumably small amount of interest income, total household income today consists of either state-paid wages and salaries or collective distributions of funds according to earned work points and retained earnings.² On the farms, where eighty percent of the population reside, the collective form predominates; in industry and commerce, except handicrafts, the state-ownership form is dominant. In either case, everyone works directly or indirectly for the state, and all economic activities are, at least in theory, conducted in accordance with state-designed economic plans and under close state supervision.

China under communism has operated, both in theory and in fact, as a planned economy, based on a series of five-year plans stipulating medium-term national economic goals. The State Planning Commission drafts the five-year plans, and is also responsible for drafting (a) an annual economic plan in terms of physical input and output of goods and services, and (b) a counterpart annual financial plan in terms of money flows. The Commission works with proposed plans of individual government and enterprise units, which are consolidated and approved layer by layer up the government structure. The State Planning Commission, after final consolidation and

reconciliation, submits the final plans to the State Council (Cabinet) for approval. Once approved, the plans become the blueprint of the nation's economic activities during the next year.

Price Stability and Inflation

Implicit in the physical and financial plans are the prices of all the products included in the plans. In principle, the authorities set all prices, which cannot be changed thereafter without explicit permission. Since the early 1950s, the authorities have attempted to maintain price stability for individual commodities as well as in the aggregate.³ Indeed, for several decades, government officials claimed that China had been able to maintain prolonged price stability in the midst of a world racked by unstable and rising inflation.⁴ They provided no price indices in support, but most outside scholars generally agreed with this claim.⁵

However, price stability was purchased at considerable cost. Government officials now admit that the rigid price system, by favoring heavy industries at the expense of agriculture, coal mining and consumer goods, has resulted in serious production imbalances — with perennial shortages of food, fuel, raw materials and consumer goods co-existing with excess inventories of a variety of unsold goods.⁶ Waste and inefficiency are rampant. The authorities are well aware of the problem, but they also recognize that changing the price system would mean a redistribution of income among industries and regions, inevitably benefitting some and hurting others. Few prudent bureaucrats would want to open that Pandora's box in a heavily politicized economic system.

In a system where prices do not necessarily reflect relative scarcity, it is not always possible to distinguish between a condition of repressed inflation and one of sectoral maladjustment. Long queues may be indicative of shortages of only certain goods; even a general rise in consumer prices may represent only a correction of a previous disparity between consumer and producer-goods prices. Neither case provides definitive evidence of the existence of infla-

tionary pressures.

Yet, in spite of these conceptual difficulties, China apparently experienced brief periods of open inflation in 1953, 1956, 1960-61 and again in 1979-81⁷ In all these episodes, widespread price increases followed unusually rapid increases in currency circulation brought forth by large unplanned government budget deficits or credit expansions. The resultant inflationary pressure manifested itself in two forms: first, price increases for a wide range of consumer goods, which were sold on a "free market" that periodically operated alongside the official market; and second, official price increases, which helped to mop up excess currency issues through enhanced revenues of the state trading agencies.⁸

Financial Planning

The Chinese authorities have long maintained that inflation can arise only through excess currency issue, which occurs only through excess bank-credit extension for financing business investments and government budget deficits. (Banks do not extend credit to consumers in China.) The authorities attempt to regulate currency issues through deliberate financial planning.⁹

The financial plan, as stated previously, is the counterpart of the physical economic plan. It is composed of the Government Budget, the Credit Plan, and the Cash Plan. The Budget needs no explanation. The Credit Plan sets out the expected sources and uses of banking funds. The Cash Plan specifies the planned change in currency in circulation as a net result of cash transactions between the government sector (including enterprises) and households (including the farm sector). The Ministry of Finance is responsible for the Budget, and the People's Bank of China for the Credit Plan and the Cash Plan. All three plans are simultaneously constrained by a national flow-of-funds identity, so that increases in currency in circulation must equal the increases in banks' net lendings (i.e., net of increases in deposits) to the government and enterprises, minus increases in households' time and savings deposits. Thus, the banking system plays a

key role in regulating currency in circulation, and hence supporting the nation's financial stability.

Banking System

The banking system in China today consists of the People's Bank of China and three special-purpose banks: the Bank of Agriculture, the Construction Bank of China, and the Bank of China. With more than 15,000 branches and offices and 330,000 staff members at the end of 1979, the People's Bank is at once the nation's central bank and the only bank providing a wide range of banking services to the general public.¹⁰ In contrast, the other three banks either perform special functions or serve specific sectors: the Bank of Agriculture serves the agricultural sector; the Construction Bank finances plant-equipment and infrastructure projects for enterprises and government units; and the Bank of China handles foreign-trade financing and foreign-exchange administration. Within the government structure, the President of the People's Bank is a member of the State Council with cabinet rank; the Bank of Agriculture and the Bank of China, though reporting directly to the State Council, come routinely under the People's Bank supervision; while the Construction Bank, although reporting to the State Council, comes under Ministry of Finance supervision.

(a) **Financial supervision.** As stated, each year the banking system is responsible for drafting a Credit Plan and a Cash Plan for submission to the State Planning Commission. In addition, it is responsible for monitoring the nation's financial flows to ensure that all is in accordance to the plans. To facilitate surveillance, all government units and enterprises must set up accounts, called "transfer balances," in one or more of the four banks according to the designated functional divisions, and all payments among the entities must be conducted through these bank accounts. The entities may keep only a minimal amount of cash on hand, sufficient for three days' operation in localities where there is a banking office and up to 14 days where

there is none. Only banks may extend credit, since supplier's credits are prohibited, and they must ensure that credits are extended only as planned and used only for specified purposes. Thus, the banking system serves as the "controller" of the government and enterprise sectors, exercising financial control over all their economic activities.

In fact, however, banks must function within the bureaucracy of which they are a part. Deviations from plans can and do occur, depending on the relative political clout of the banks versus other entities within the power structure. According to Vice Premier Yao Yilin, in 1980 the financial plan called for the banking system to issue 3.0 billion yuan in currency; the actual currency issue that year amounted to 7.6 billion.¹¹ That excess currency issue provides a good barometer of the political pressure operating on the banking system.

(b) **Financial intermediation.** In advanced industrial countries, many types of financial institutions — e.g., banks, savings institutions, pension funds, insurance companies, mutual funds — perform a financial intermediation role by channeling household and business savings into investments. In China, only the banking system carries out that role.¹² By prohibiting government agencies and enterprises to hold more than a bare minimum of cash on hand, the law funnels all their financial surpluses through the banking system. Households may hold their surplus funds in any form, but their only real choice is between currency and bank savings and time deposits.

Banks do not offer checking deposits. Savings and time deposits are available only to households. Individuals may withdraw savings deposits at any time without penalty, but must pay an interest penalty when withdrawing time deposits prior to maturity (ranging from six months up to five years). Banks pay interest on the transfer balances — restricted checking accounts — held by enterprises, but not on those held by government agencies.

China has built up a vast organization for financial intermediation. This organization includes 15,000 branches and offices of the

People's Bank in cities throughout the nation, and more than 20,000 branches and offices of the Agriculture Bank in smaller cities and townships, in addition to 59,000 agricultural-credit cooperatives scattered throughout rural areas.

(c) **Allocation of capital.** China has adopted the Soviet model of finance in distinguishing between a "fiscal channel" and a "credit channel" of fund allocation. This has given rise to the so-called "separation principle," which is based on the idea that all the means of production belong to the people, so that financial surpluses arising from their labor should be used for capital formation without interest and repayment obligation. However, government agencies, enterprises and households sometimes have idle funds on hand, while others have temporary needs for funds. Banks must attract these idle funds and redirect the funds to those that have temporary need for them. The theory asserts that, corresponding to the two sources of funds: fiscal and banking, the uses of these funds must also be separated. Bank credit should be limited to temporary financial needs, such as fluctuations in inventories, agricultural credit between planting and harvest, goods in transit, gaps between receipt and payment, etc. Banks must charge interest on the use of such funds so that they can pay the depositors. In contrast, funds needed for fixed capital formation and working capital (e.g., wages, inventories) should be provided through government budget appropriations and disbursed through banks without interest and repayment obligations.¹³

The authorities claim that this separation principle is not only compatible with a communist philosophy of social organization, but also constitutes prudent banking and a safeguard against inflation. It is prudent banking, because it does not tie up "temporarily idle funds" taken from depositors in "permanent capital needs" of the fund-users. It safeguards against inflation, because credits are extended on the basis of idle funds mobilized by banks, not through issuance of currency. The validity of these arguments will be discussed in the next section.

According to officials interviewed in 1980, the two channels of financing differ in importance according to the type of economic activity involved. On the whole, about 70 percent of industry's capital needs are met through fiscal appropriations, while 30 percent are provided through bank credit — and conversely for commercial financing. Agricultural financing is nearly all through bank credit, except for relief and capital construction (e.g. roads, irrigation facilities). For the nation as a whole, fiscal funds financed 73 percent of total capital formation, banking funds only 13 percent, and other sources (mainly capital-depreciation allowances) another 14 percent.

A related, but somewhat different, principle states that bank credit should be limited to short-term financing of production and distribution of goods and services. Whereas the separation principle emphasizes the distinction between permanent and transitory needs of capital, this bank-credit principle draws the line between credit extension that enhances *current* production and that which does not. The distinction is important because, according to this principle, credit extensions that enhance current production and distribution are necessarily non-inflationary, since any consequent increase in currency circulation would be matched by an equivalent expansion of output. Moreover, upon the final sale of goods and repayment of credit, a return flow of currency is generated from consumers through enterprises back to the banks. In contrast, bank credits to finance government deficits, consumer expenditures, stock speculation, etc., do not add to the flow of goods and services and hence are inherently inflationary. This is, of course, the "real bills doctrine" familiar to students of monetary economics of an older generation in market economies. We will consider its validity in a Chinese context in the next section.

(d) **Interest rate policy.** As stated, banks in China pay interest on deposits and charge interest on bank loans. According to People's Bank data, interest rates were relatively low, in view of the six percent annual inflation rate in 1980: 2.88 percent a year on savings de-

posits, 5.40 percent on one-year time deposits, 1.80 percent on enterprise deposits (transfer balances), 5.04 percent on industrial and commercial loans, and 4.32 percent on agricultural loans.¹⁴

The authorities until recently have not used interest rates as a conscious tool of credit policy. Since 1953 they have raised commercial and industrial loan rates only in 1959 and 1971. They changed the savings-deposit rate in 1959 and again in 1979 and 1980, raising the rate in the latter two cases in an apparent attempt to fight inflation by attracting a larger volume of savings.

Role of Money

Monetary policy in China, as in the United States, is concerned primarily with control over the growth of the quantity of money. Yet paradoxically, what constitutes money is still an unsettled question in both countries. In China's case, some insight into that question may be obtained by considering the payment system in China — specifically, the difference between the "transfer balance circuit" and the "currency circuit." The former corresponds broadly to the production sector, and the latter to households and farm communes.

Government agencies and enterprises constitute one economic decision-making unit, with all production and distribution activities guided by the nation's economic and financial plans. Within that sphere, all entities must keep "transfer balances" at designated banks and make payments to one another only through credits and debits to those balances. These transfer balances, unlike our familiar demand deposits, are not checkable in the normal sense; that is, depositors cannot draw upon them for making payments to third parties. Rather, each transfer is subject to explicit approval by the bank holding the balance, to ensure that the payment has received prior authorization by the proper authorities (an industrial bureau or a ministry), and that all papers relating to the transaction are in order. In a sense, these payment flows are not unlike intra-company transfers within a giant corporation: in both cases, transfers are subject to the case-by-case scrutiny by accounting personnel.

In contrast to check payments in a market economy, which represent an unconditional transfer of funds, transfer balances in China are good only for payments to government entities and enterprise within the production sector. Cash is required for payments to other entities, such as households and farm communes. In such cases, the payor would have to apply to the relevant bank for approval in order to convert transfer balances into currency.

The "currency circuit," on the other hand, consists of payment flows between households and farm communes on the one hand and government agencies and enterprises on the other. In addition, farm produce and handicraft products can be sold on the "free market" to consumers for cash. ("Free market" prices are in fact subject to some official supervision and control, though to a much lesser degree than official market prices.) Unlike transfer balances, currency is freely transferable and can be used to purchase anything on the market — subject only to the availability of goods or services, and occasionally to ration restrictions for certain "essential goods" (e.g., rice, flour, cooking oil, cloth).

There is little for money to buy except consumer goods, and these have been in perennial shortage. Since all means of production belong to the people, there are no common stocks or land to buy. Until 1981, because of continual government-budget surpluses, there were no bonds or any other kinds of securities to purchase.¹⁵ Houses and gold can be privately owned, but can be sold only to the state; foreign currencies cannot be held privately. In short, money in China has far fewer uses than it does in market economies. For households, the only meaningful alternatives to holding currency are bank savings and time deposits and limited amounts of consumer goods.

Monetary Policy

There are no bank reserve requirements, no security markets, and no discount windows in China, so that all the traditional central-bank policy instruments have no relevance in the Chinese setting. Instead, monetary growth is

regulated by explicit financial planning, i.e., through the Budget, the Credit Plan, and the Cash Plan. However, the Cash Plan shows the growth in currency circulation as the difference between household wage incomes and consumption minus increases in household time and saving deposits (see Appendix).¹⁶ Banks presumably could regulate deposits by adjusting deposit interest rates, but they cannot regulate any of the other items in the Cash Plan. Despite the considerable amount of manpower devoted to the monitoring of currency flows — volume and composition by industry, by region, by season, etc. — banks can do little to affect currency flows directly.

But, of course, there is the Credit Plan. Since currency growth is also equal to banks' net lending (i.e., loans minus deposit increases), in principle the currency-growth rate could be determined by targeting a credit-growth rate and a deposit-growth rate. In fact, however, banks cannot always control their own loan volume. In 1980, for instance, the currency issue exceeded its target by 4.6 billion yuan, largely because of a 4.1-billion yuan central government budget overrun,¹⁷ which the People's Bank was obligated to fund. Clearly, monetary policy is not independent of fiscal policy, in that the People's Bank must accommodate any budget surplus or deficit that should arise.

However, even a perfectly accommodative policy does not necessarily imply that the monetary authorities lack control over the nation's money supply. In theory, they could contract credits to enterprises sufficiently to offset any amount of fiscal-deficit accommodation. But the actual practice in 1980 was quite different. The banking system's credit to enterprises in all sectors, including agriculture, increased by 37.5 billion yuan, or 18 percent. Although we have no information on whether, and the extent to which, the increase exceeded the planned amount, official data suggest that these loans contributed at least as much to the excess currency issue in 1980 as the banking system's financing of government budget deficit.¹⁸ Clearly, credit policy was not con-

ducted with a view towards offsetting the impact of fiscal accommodation on the currency issue that year.

Little direct evidence is available of the political pressures on the banking system to expand credit to local governments and enterprises. Some inkling can be found,

however, in a major policy directive issued by the State Council in February 1981: "No one is allowed to force banks to make loans, refrain banks and credit cooperatives from recalling matured loans, declare forgiveness of debts, or make unauthorized use of credit cooperatives' funds."¹⁹

II. Current Issues: The Quantity Equation and Money Management

China's modernization program seeks to correct the errors of an excessively rigid Soviet-type planned economy by providing greater material incentives to workers and more autonomy to enterprises (including farm communes), and by substituting at least some market forces for administrative decrees in the economic decision-making process. Money will inevitably play an expanding role in the economy, but whether money will be a bane or a boon will depend crucially on how it is managed. As the economic structure shifts away from the Soviet model, the premises underlying the nation's Soviet-style monetary system²⁰ should also require re-examination.

Few observers expect a complete restructuring of the nation's monetary and banking system. A more realistic approach might be to consider what adjustments in monetary and credit policy could be made within the present economic-planning framework, to strengthen ways of achieving macroeconomic stabilization and of improving the efficiency of capital allocation. This calls for a discussion of the usefulness of the quantity equation as a guide to monetary policy and the measurement of money (discussed in this section), and of China's credit-allocation policy (discussed in the following section).

China's monetary authorities have followed the Soviet model for a quarter-century in explicitly planning for monetary growth — foreshadowing the policy of money targeting adopted by the major industrial countries just within the past decade. What criteria do the monetary authorities follow in setting money-growth targets? The answer given in the

Chinese economic literature²¹ and in official discussions is invariably: the quantity equation.

Quantity Equation

The quantity equation, $MV = PQ$, is a familiar concept in the economic literature of both socialist and market economies. It associates the price level (P) with the quantity of money in circulation (M), the velocity of money circulation (V), and the quantity of goods being traded (Q). In Western economic literature, the equation has been used in two different ways for analyzing the effects of money-supply changes on the national output and the price level.

One approach, generally identified as the "transactions approach" and attributed to Irving Fisher,²² analyzes the large number of factors that influence P through the three "proximate causes": M , V , and Q . Popular thinking generally has regarded V and even Q as constants, so that P would change proportionately with M , but the leading proponents of the theory — such as Irving Fisher and Edwin W. Kemmerer²³ — explicitly rejected this simplistic interpretation. They maintained that the quantity equation states a condition for market equilibrium, and that proportionality between money and price changes holds only in the long-run equilibrium. The central task of monetary theory, in their view, consists of analyzing the effects of a change in M on all three factors (V , Q , and P) during what Fisher called the "transition period."²⁴ In the short run, which is what counts most in monetary analysis, the effects are anything but deterministic and mechanical.

Another approach, commonly identified as the “asset approach” or the “Cambridge approach,”²⁵ also views the quantity equation as a market-equilibrium condition — not for the goods market, as in the Fisherian approach, but for the money market. In other words, it views PQ/V as the market demand for money and M as the supply of money, and studies the adjustments in the public’s spending behavior and asset portfolios following a change in the underlying conditions. Thus, the approach calls for an explicit specification of the process of money creation, of the factors determining money demand, and of the process of adjustment towards money-market equilibrium following, say, an increase in the money supply.²⁶ Again, in this approach, neither V nor Q is considered as fixed in analyzing the process of adjustment towards market equilibrium.

In the Chinese economic literature,²⁷ the quantity equation also serves as a starting point of monetary analysis. But Chinese economists, unlike Western economists, do not ask how P and Q would be affected by a change in M . Instead, they consider P as given by the targeted price level and Q as given by the planned volume of national output, and then ask about the amount of money circulation, M , that would be consistent with stated price and output objectives, given the velocity of circulation, V . This line of thinking evidently underlies the annual Cash Plan in the national-planning process. Each year, bank officials at local levels must compile a “Resident Currency Receipts and Expenditures Balance Table,” estimating the wage incomes, consumption expenditures, savings and time deposits, cash on hand, etc., of different types of residents, and this procedure helps determine the velocity of circulation and the “required” amount of currency for the residents of each city and province. The People’s Bank of China aggregates these local financial data — together with data for targeted output, wage rates, and employment — and adjusts them for “financial balance” to determine the planned amount of growth in currency circulation.²⁸

In a formal sense, the Chinese approach

seems to resemble the Western monetary approach, since both take off from the same quantity equation of money. However, a common starting point means little, since the quantity equation itself is no more than an identity, and as an identity, it can be consistent with widely divergent analytical approaches. Again, both the Fisherian and the Cambridge approaches use the quantity equation only as a market-equilibrium condition; the analysis in each case focuses on the market adjustment after a change in the underlying conditions. Moreover, in the adjustment process, neither V nor Q is considered as fixed. In contrast, in Chinese monetary analysis, adjustments toward market equilibrium are precluded by officially fixed prices and interest rates. With P , Q , and V determined, the analysis never really departs from the quantity equation as an identity. The Chinese approach, unlike its Western counterparts, thus sheds no light on market behavior, and its analytical results cannot be subject to empirical testing.

Nevertheless, Chinese monetary analysis uses the quantity equation only for determining the optimal quantity of money for achieving given price and output objectives. Hence, the only relevant question is how useful the equation is for accomplishing that limited purpose.

To answer that question, let us consider a hypothetical case — which is, incidentally, not far removed from recent reality. Suppose that prices and output are both fixed according to plan, so that one side of the quantity equation, PQ , is a constant. Now, the authorities raise wage rates for a significant portion of the work force and at the same time embark on an ambitious investment program, financing both through bank-credit extensions. As a result, households hold more currency but can buy no more consumer goods; similarly, enterprises have larger transfer balances but can obtain no more producer goods. Obviously, inflation pressure has increased. But since prices are officially fixed, inflation is repressed, and there are disequilibria in both the money and goods markets.

Under such circumstances, does the quan-

tity equation provide a reliable reflection of the repressed inflation pressure? On the surface, the answer might appear obvious. Since, by assumption, PQ remains fixed, any increase in M at given V must mean inflation pressure, whether repressed or open.²⁹ But the answer is not quite so simple: It depends very much on how money is measured.

Measurement of Money

The official measurement of money includes only currency in circulation, for two reasons. First, the authorities are concerned only with the stability of consumer prices, which have to do with people's livelihood, and not with producer prices, which are merely accounting devices for effecting transfers within the state sector. Hence, they do not worry about increases in transfer balances held by enterprises, especially since enterprises must obtain official approval for the use of these balances. Second, aside from questions of availability of supplies, consumer inflation pressure can arise only from increased currency holdings, because currency is the only means of payment for the purchase of consumer goods. As stated, enterprises cannot use their transfer balances for purchasing consumer goods, and households cannot have checking accounts in banks. Hence, the monetary authorities believe that they need only to control the growth of currency circulation in order to check inflation pressures.

This approach may be examined in terms of the illustrative case presented above. Consider first the consumer sector. As a result of the postulated credit expansion, households now hold more currency, but can buy no more consumer goods, than before. Under the circumstances, households can either hold the extra currency in the form of interest-earning bank deposits, or hold part in deposits and part in idle cash for consumer-goods purchases. In the former case, all the extra cash flows back into the banking system as increased time and savings deposits, with no net increase in currency circulation and no change in velocity; in the latter case, since PQ is a constant, V must decline in proportion to the increase in M . In

both cases, the authorities could mistakenly conclude that a credit expansion has had no impact on currency circulation, or that it has produced an enhanced desire to hold currency (i.e., a decline in velocity) exactly offsetting any increase in currency circulation. Thus, the quantity equation, combined with a narrow definition of money, provides little indication of the repressed-inflation pressure in the system.

The failure of this approach can be partly attributed to an inadequate measure of money and partly to a misinterpretation of the velocity of circulation. The narrow definition of money makes a clear distinction between a) cash held for transaction purposes and b) other types of financial assets held in consideration of some returns. The amount of cash the public is willing to hold depends in part on its alternative cost in terms of the interest return foregone by holding cash, and in part on the volume of transactions the holding of cash is intended to facilitate.³⁰ This assumes that the public is free to choose among consumer goods, cash and other types of financial assets in holding its wealth — which means that the definition makes sense in a market economy. But in a planned economy such as China's, with officially fixed prices and rampant shortages of consumer goods, this narrow definition of money could be seriously misleading. In our illustrative case, a substantial portion of the public's increased holdings of cash and time and saving deposits might be involuntary, because of a mismatch between enhanced money income and limited consumer-goods output. Increased money balances might represent consumer frustration rather than increased confidence in the value of the currency. Since bank deposits can be liquidated at any time with no, or only minor, interest penalties, depositors may regard their funds as a temporary reservoir of purchasing power to be used at any time goods become available. Under these circumstances, the more meaningful definition would include both currency and (at least) savings deposits.

However, this broader definition of money still would not encompass a condition of

repressed inflation. Because prices and output presumably are both fixed according to plan, the increase in money supply (by the broader definition) would be offset by a proportionate decline in the velocity of circulation. Here also, the concept of velocity implies a public demand for money, which is meaningful in a market but not in a planned economy. In a market economy, a decline in velocity means a rise in the public's demand for money holdings, say, on account of lower interest rates. It implies a re-ordering of asset-holders' portfolio choices among goods, cash and other financial assets. In a planned economy, with its widespread shortages, a decline in velocity (in the absence of interest-rate changes), often means simply an increase in consumer frustration.

This velocity phenomenon, combined with a broadened definition of money, suggests a potentially useful way of measuring repressed inflation in an economy such as China's. In our illustrative case, since there is no change in prices, output, and interest rates, the entire decline in velocity accompanying the money-supply increase may be considered involuntary, resulting from insufficient supplies of goods at prevailing prices. Then, the decline in velocity multiplied by the increase in money supply should measure the **increase** in repressed inflation pressure.³¹

This measure could be operationally useful in policy-making. The authorities could select

a base year with few symptoms of repressed inflation (e.g., ration coupons, queues in front of stores, bare store shelves). Subsequent declines in velocity multiplied by current year money supply (i.e., currency plus savings deposits) might indicate the amount of repressed inflation occurring since the base year. Given a policy of monetary restraint for reducing inflation, the authorities might attempt to achieve a below-target rate of monetary growth until velocity rises to its base year level — proper adjustments being made to take account of possible changes in velocity attributable to factors such as interest-rate changes and financial innovations.

Finally, enterprises' transfer balances might properly be included in an even broader measure of the money supply.³² The reasons cited above for their exclusion may have some validity under a rigidly enforced planning regime,³³ but not in a regime where policy-makers introduce more price adjustments into both the producer and consumer sectors and give more financial autonomy to enterprises. In any case, a rise in transfer balances held by enterprises might be as much a symptom of repressed inflation as increases in savings deposits involuntarily held by households. Moreover, as enterprises gain more autonomy in the use of their bank accounts, the "money-ness" of these balances will rise, increasing the need to include them in the measurement of the nation's money supply.

III. Current Issues: Credit Policy

As described earlier, China's bank-credit policy theoretically is guided by two basic principles: the "real bills doctrine" and the "separation principle." In practice the doctrines have not always been followed, and this conflict has given rise to considerable dispute in Chinese economic literature on banking policy.³⁴ We shall consider these two doctrines in turn in the context of the Chinese economy.

Real-Bills Doctrine

Chinese economists like to stress that the

real-bills doctrine is a special feature of socialist finance, in contrast to the bank financing of non-productive, speculative activities common in capitalist economies.³⁵ In their view, adherence to the doctrine accounts for the Communist success in stabilizing prices, while departures from it are a basic cause of inflation.

Conceptually, however, the real-bills doctrine is inconsistent with the quantity theory of money. The latter holds that the quantity of money is a key determinant of eco-

conomic activities, especially the price level; hence, the monetary authorities must actively control the growth of the money supply in order to maintain price stability. But according to the real-bills doctrine, so long as bank credits finance only current production and distribution of goods and services, there can never be an over-issue or under-issue of money. Therefore, an active monetary policy that sets and adjusts the rate of money-supply growth according to the quantity equation (or any other approach) would be superfluous and probably also destabilizing, as the money-growth rate, however determined, would only by chance be identical to the rate required by the real needs of commerce.

The doctrine has had a long history in Western economic thought, dating back at least to Adam Smith in 1776.³⁶ It suffices to say that as early as 1802 Henry Thornton³⁷ pointed out that the doctrine is neither necessary nor sufficient for insuring non-inflationary bank finance. It is not necessary because, so long as a credit expansion is offset by savings somewhere in the economy (e.g., fiscal surplus), there is no inflation. It is not sufficient because a credit expansion, even though secured by increased commodity output, gives rise to an expansion in money income — which in turn stimulates demand for more commodities, thus justifying further bank credits to finance production. Thus, a cumulative process could be generated, leading to precisely the type of boom-and-bust conditions the real-bills doctrine is meant to avoid.

However, can this cumulative process occur in a Communist system? Some say not. One Western monetary economist wrote:

“We must not be too hasty to judge the Communist credit policy on the basis of modern Western monetary theory. In this case, important differences in institutions must be taken into account. . . The real bills doctrine does not work in a capitalist economy mainly for two reasons. First, . . . the increase in credit may bid up prices and bid away resources from elsewhere. Second, . . . the investment multiplier, or the velocity of circulation of money, . . . could

easily be larger than the gross productivity of the working capital that actually get created. Both these reasons, however, probably do not apply to a Socialist command economy provided it is properly managed. There, as the grant of credit is presumably based upon the planned availability of materials and labor for the investment in working capital at controlled prices, the first reason obviously does not apply. Furthermore, the velocity of circulation of bank balances of enterprises in a Communist country is strictly under control, so that an increase in credit would not necessarily cause aggregate demand to outstrip supply.”³⁹

This analysis, however, pertains only to the producer sector. In contrast, the cumulative process following a credit expansion also raises household money income, which then creates additional demand for goods and services. Even though material and labor prices can be held fixed in a planned economy, each round of credit expansion would still give rise to a further rise in household money income and hence to increased demand pressure on resources. In the process, enterprises' transfer balances will grow; controlling their use simply means repressing inflation. Restrictive measures, like price and wage controls in market economies, only suppress the symptoms of inflation, and do not abate its latent pressures.

Thus, the real-bills doctrine does not appear to be an effective anti-inflationary bank-credit policy, even in a planned-economy context. By adhering to it, the authorities may ignore the need for controlling the money-growth rate or the national savings-investment balance — the essence of macroeconomic policy. Moreover, the doctrine unnecessarily restricts banking operations, and is in practice both preached and breached. Banks in market economies have long abandoned that principle and engaged in all types of financing, ranging from consumer, equipment, real estate, to government financing — without necessarily giving rise to inflation. Banks in China have also gone beyond commercial-bill financing into

medium-term project financing. Banking theory in this case thus lags behind and sometimes serves as a drag on banking practice.

“Separation Principle”

The “separation principle” is another cardinal rule of socialistic banking which China adopted from the Soviet model in the 1950s. As explained earlier, China makes a crucial distinction between “fiscal funds” and “banking funds.” Banks distribute fiscal funds to enterprises, with no interest and repayment obligations, for financing fixed-capital investments and regular (“quota”) working-capital needs. In contrast, they lend banking funds to enterprises for meeting transitory, revolving working-capital needs, with definite interest and repayment obligations.

Banks are responsible for watching over the two channels and guarding against the mixing of funds in a manner that would sabotage the separation principle. However, in practice, since funds are notoriously fungible, the two channels are constantly merging. The banks’ task is further complicated by the fact that fiscal funds are free, and therefore difficult to obtain. Often, enterprises’ capital-investment projects are approved in the state economic plan, but without sufficient appropriations. Thus, to complete certain projects, enterprises must obtain bank loans under the subterfuge of “above quota” working-capital needs, and surreptitiously employ the proceeds for fixed-capital investments, wage and tax payments, and other purposes for which banking funds are ineligible. Banks are aware of their responsibility to stop such practices, even though they know that the enterprises are basically sound and actually need the funds to carry on business. Banks are thus caught in the unenviable position of either ignoring the problem or constantly and fruitlessly complaining about the condition.

As stated, the Chinese advocate the use of this principle for two reasons: banking prudence and non-inflationary credit extension. The banking-prudence argument for the separation principle can be dismissed quickly. According to this argument, banks must meet

deposit withdrawals, and prudence thus requires that bank assets be limited to short-term and self-liquidating loans and investments. The falsity of the argument has long been demonstrated by banking experience all over the world. To meet unexpected withdrawals, only a small fraction of a bank’s total assets needs to be held in liquid form. The larger the bank’s ready access to borrowing facilities, the smaller needs to be the fraction. For a banking system such as China’s, with only four banks in the entire nation, all under government control, deposit withdrawals should be the least of problems.

The anti-inflation argument for the separation principle has more substance. According to this argument, through national financial planning the state allocates funds for investment, wage payments, etc., in a manner designed for achieving macroeconomic balance. If enterprises are allowed to tap bank credit for unplanned investment and other types of spending, this extra-plan spending will lead to a breakdown of the macrobalance and thus to inflation.³⁹

The argument assumes, however, that aggregate balance between savings and investment had already been attained in national economic planning; then, additional credit expansion for financing investment would certainly be inflationary. But that is tautology. It is an argument against excessive credit expansion, when any credit expansion beyond that set out in the Plan could be considered “excessive.” It is not an argument for the separation principle itself.

What is important for stabilization policy is not so much the distinction between sources of funds as the total volume of investment relative to national savings. The separation principle, by providing free funds for more than 70 percent of enterprise investment funds through the fiscal channel, enlarges capital demand and encourages waste and inefficiency in its use. Thus, the intended investment is larger, and the resultant increase in output smaller, when credit is allocated under the separation principle than it would otherwise be.

Within the existing socialist framework of

the economy, there are various alternative ways of allocating capital. One would be a variation of the present practice: collect all enterprise savings into the state treasury, deposit the funds at banks, and let banks lend out the funds to enterprises. Another would be for the enterprises to decide how much of their retained earnings to plough back into their own projects and how much to channel through the banks for investment elsewhere. In the former case, a sufficiently high loan rate would have to be charged to insure efficient use of capital; in the latter case, a sufficiently high deposit interest rate would have to be set to attract funds away from self-financed investments and household consumption to investments with higher returns. Either approach would mean the abandoning of the separation principle and increased reliance on interest rates for attracting savings and for capital allocation.

Already, some movement away from the separation principle towards greater reliance on the market mechanism is discernible. In August 1979, the State Council ordered the

Construction Bank to experiment with medium- to long-term loans of five to fifteen years to enterprises on approved capital-construction projects. The interest rate, however, was set at only three percent a year, considerably below the five-percent rate charged by the People's Bank on short-term loans to all industrial and commercial borrowers.⁴⁰ In addition, the People's Bank itself has started to make short- to medium-term loans to textiles and other light industries for renovating, upgrading, or enlarging existing facilities.⁴¹

There was no follow-up, however, to these tentative steps away from the strict Soviet model of credit allocation. Indeed, as inflationary pressures mounted during 1980, the authorities fell back on the old, familiar banking principles to control inflation. In the February 1981 State Council decision on national credit policy, Article 2 declares:

"Restatement of the principle of separation of fiscal capital and bank-credit capital; strict prohibition of any shifting of bank-credit funds for use on fiscal-type expenditures."⁴²

IV. Summary and Conclusions

First, the Chinese economy today — including its monetary and banking system — is a socialist planned economy largely patterned after the Soviet model. The "monobank" network supplemented by a few special-purpose banks, the Credit Plan and the Cash Plan, the "transfer balance" and the currency circuits of money circulation — all are Soviet inventions of the early 1930s.

Second, money has a significantly lesser role in this command economy than in a market economy, especially since it provides little purchasing power when goods are unavailable. By the same token, monetary policy has a much more restricted role in national macroeconomic policy than it does elsewhere. China's monetary policy has been circumscribed by: (a) the nearly complete reliance on administrative controls for regulating monetary growth, and (b) the monetary

authorities' lack of independence from both central- and local-government authorities with respect to credit allocation. Because of these two factors, policy has necessarily been accommodative. The money-growth rate thus has largely reflected fiscal policy, with monetary stability resulting from a budget balance (or surplus) and inflation resulting from a deficit. Monetary policy in this context has been incapable of making much difference to stabilization efforts.

Third, effective monetary policy means effective control over money-supply growth. Monetary analysis in China has relied on the quantity equation of money for determining the targeted non-inflationary rate of monetary growth. However, a mechanical reliance on the equation — one assuming a given velocity of circulation — appears inappropriate for a situation of rigid prices and pronounced market dis-

equilibria. An alternative approach — still relying on the quantity equation, but using changes in velocity as a measure of the extent of repressed inflation — could provide a workable policy guide for China.

Fourth, we may question the rationale for the official use of the narrow definition of money supply, limited to currency circulation only. In China's institutional environment, the narrow definition could result in a serious underestimate of latent inflationary pressures in the economy. Alternative measures to remedy that underestimate might include household savings and time deposits, as well as "transfer balances" of enterprises and government agencies (excluding the state treasury).

Fifth, in the area of credit policy, official thinking continues to be guided by the "real

bills doctrine" and the so-called "separation principle," although banking practice has begun to move away from these guidelines. The theoretical support for these banking principles, however, is found wanting even in the Chinese context, so that the tension between official thinking and banking practice is both unnecessary and distractive from real issues of economic stabilization and banking prudence.

These principles, moreover, require continued reliance on administrative controls for enforcing compliance. Their replacement by a flexible interest-rate policy would not only be more in tune with the spirit of Modernization, but also would help support the development of an effective monetary policy, operating through market forces rather than quantitative controls.

Appendix: A National-Accounts Model of China's Financial Plan

This appendix presents a schematic framework of the structure of China's Financial Plan in terms of sectoral accounts and inter-sectoral financial flows. As explained in the text, the Financial Plan consists of (a) the Government Budget, (b) the Credit Plan, and (c) the Cash Plan. The three parts are interrelated such that, given any two, the third is determined. From the point of view of monetary policy, the Cash Plan is of primary importance, as it determines the money-growth rate. It is constructed on the basis of data on household income and

expenditure, and it must also be consistent with planned financial flows of the Government and Banking sectors. That is why China's financial planners place so much emphasis on reconciliation of the various parts of the plan. And that is why monetary policy, as presently constituted, is largely determined by decisions made outside the central bank's jurisdiction.

The national economy may be divided into four sectors, and the sectoral financial transactions during the plan period may be summarized as follows:

Sector	Sources of Fund	Uses of Fund
Government	$T + B_G$	$= C_G + W_G + I_G + D_G$ (1)
Enterprises	$C_H + C_G + I_G + B_E$	$= W_E + T + D_E$ (2)
Banking	$D_G + D_E + S_H + CU$	$= B_G + B_E$ (3)
Households	$W_G + W_E$	$= C_H + S_H + CU$ (4)

where T designates taxes and profits paid into the state treasury;
 B, borrowings from banks;
 C, output of, or expenditure on, consumer goods and services;

W, wages and salaries, bonuses, payments in kind, and government subsidies to workers (e.g., housing, health care);

- I, investments in plant, equipment, inventories, and land improvement;
- D, increase in transaction balances in banks;
- S, increase in bank savings and time deposits;
- CU, increase in currency circulation.

All items are stated in nominal values, and the subscripts G, E, H designate the Government, Enterprise, and Households sectors respectively.

Equation (1) shows the Government Budget. B_G and D_G are financing items, reflecting the government's position vis-a-vis the banking system. A positive B_G indicates net government borrowing, and a negative B_G net government repayment of bank debt. A positive D_G indicates a net increase in government deposit balances at banks, and a negative D_G a net decrease in such balances. I_G is enterprise capital formation financed by the government, which also appears as a source of funds for the Enterprises sector in equation (2).

Equation (2) shows the sources and uses of funds of the Enterprises sector vis-a-vis the other sectors on a consolidated basis. Both sides of the equation are equal to the sectoral net output. The left-hand side of the equation shows that the net output consists of sales to the Households sector (C_H) and to the Government sector (C_G), "fixed-capital investment plus quota inventory accumulation" financed by the government (I_G), and "above-quota inventory accumulation" financed by bank credit (B_E).

Equations (3) and (4) are straightforward source-and-use-of-fund equations for the Banking and Households sectors, respectively.

The model abstracts from the real world in order to show the essence of China's financial planning. Omitted are foreign-trade flows, changes in foreign assets, retained earnings, and capital-depreciation allowances. These

could be added at will, without changing the essence of the analysis.

The model contains all three components of the Financial Plan. The Government Budget, as stated, is equation (1). The Credit Plan is shown in equation (3). The Cash Plan can be derived from equation (4) by showing an increase in currency circulation (CU) as the difference between Households' incomes ($W_G + W_E$) on the one hand and Households' consumption plus increase in Households' time and savings deposits ($C_H + S_H$) on the other hand. In reality, of course, agricultural communes are included in the Households sector insofar as the Cash Plan is concerned.

From equations (1) and (3), it can be shown that

$$(CU + S_H) = (B_E - D_E) + (B_G - D_G). \quad (5)$$

In other words, an increase in the sum of currency circulation and household time and savings deposits must arise from banks' net lendings to enterprises and the government. Since banks' net lending to the government is the mirror-image of the deficit (or surplus) of the Government Budget, since banks' lending to enterprises embodies the net outcome of the Credit Plan, and since the growth in currency and household time and savings deposits reflects the outcome of the Cash Plan, equation (5) summarizes the interrelationship among all three components of the Financial Plan.

Moreover, equation (5) provides flexibility in the choice of measurement of money. As discussed in the text, the official measurement includes only currency circulation. One can show the sources of its increase by moving S_H to the right-hand side of equation (5). Alternatively, if one wishes to include household time and savings deposits, S_H should remain on the left-hand side of equation (5). An even broader definition of money would include the "transfer balances", in which case D_E would be moved to the left-hand side of equation (5).

FOOTNOTES

1. The interested reader is referred to Jan S. Prybyla, **The Chinese Economy**, Columbia, South Carolina: University of South Carolina Press, 1978; Audrey Donnithorne, **China's Economic System**, New York: Praeger, 1967.
2. Typically, a worker employed by a collective earns less than one employed by the state. In 1980, for instance, the average income of collective workers amounted to 803 yuan, and that of state workers only 624 yuan — a yuan being equivalent to about 68 U.S. cents in 1980. See The State Statistical Bureau, "Communique on Fulfillment of China's 1980 National Economic Plan," **Beijing Review**, No. 19, May 11, 1981, p. 20.
3. Why the authorities wish to achieve stability in both aggregate price level and individual prices is not clear. One possible explanation is that rigid prices are needed so as not to complicate the already immensely complex task of planning the input and output of an entire national economy. One top economic advisor to the planning authority wrote recently: "There are hundreds of thousands, or even more than a million, prices to deal with. For each product, the calculation of production cost would be a very complicated task. The producer and the buyer would each proceed from different angles and engage in interminable arguments. Hence, no price authority, however brilliant and competent, could possibly solve this complex problem through subjective planning." See Xue Mu-quiao, "On Price Adjustments and Reform of the Price Administration System" in his **Certain Problems in Our National Economy Today** (in Chinese), Beijing: People's Publishing Co., 1980, p. 177.
4. See, for instance, Wang Ping, "No Inflation in China: Long-term Stability of Renminbi," **Peking Review**, No. 11, May 23, 1975; and Yang Pei-hsin, "Why China Has No Inflation," **China Reconstructs** (Peking), April, 1975, pp. 4-9.
5. For a painstakingly thorough study on the subject, see Tong-eng Wang, **Economic Policies and Price Stability in China**, Center for Chinese Studies, China Research Monograph No. 16, University of California, Berkeley, 1980. See also Dwight H. Perkins, **Market Control and Planning in Communist China**, Cambridge: Harvard University Press, 1966, pp. 155-159; Audrey Donnithorne, "The Control of Inflation in China," **Current Scene**, April-May, 1978, pp. 1-12.
6. See, for instance, Xue Mu-quiao, *op. cit.*, pp. 164-179.
7. For an analysis of the 1953 and 1956 inflations, see Katherine Huang Hsiao, **Money and Monetary Policy in Communist China**, New York: Columbia University Press, 1971, pp. 234-253. For an account of the 1960-61 episode, see Xue Mu-quiao, *op. cit.*, p. 170. For that of the 1979-80 episode, see Vice Premier Yao Yi-lin's report to the Standing Committee of the National People's Congress reported in **Beijing Review**, March 16, 1981, p. 15.
8. Describing the 1960-61 inflation, a key economic advisor said: "However, beginning in 1959, agricultural output declined, currency circulation increased 1.4 times from 1957 to 1961, free-market prices rose sharply, and the prices of those commodities which were hard for the state to control also climbed. In order to insure people's livelihood, the state resolutely held stable the prices of 18 categories of major consumer goods, but had to raise the prices of a number of high-priced commodities in order to contract currency circulation." See Xue Mu-quiao, *op. cit.*, p. 170. Nearly all the references to price increases involve consumer goods. However, there is evidence that the prices of some producer goods also rose in the 1979-80 inflation. See **Renmin Ribao** (Beijing Daily), June 23, 1981, p. 1, in reference to steel price increases.
9. For an authoritative study of China's financial system and monetary policy, see Katherine H. Hsiao, *op. cit.* Although the data refer to years prior to 1961, the description and analysis remain largely valid today.
10. Information in this and the following paragraphs on China's banking system is based on interviews with officials in mid-1980 and on **Financial Overview of the People's Republic of China** (in Chinese), Planning Bureau, The People's Bank of China, June 1980. (This is also available in English in a special translation by Foreign Broadcast Information Service, Washington, D.C.) See also Katherine H. Hsiao, *op. cit.*, and Liu Hong-zu, **Issues of Money and Banking Under Socialism** (in Chinese) Beijing: China Financial and Economic Publishing Co., 1980; Dick Wilson, "How Banks Work in China," **The Banker**, January 1980, pp. 19-27; Audrey Donnithorne, *op. cit.*, pp. 402-433.
11. See "Report on the Readjustment of the 1981 National Economic Plan and State Revenue and Expenditure," **Beijing Review**, March 16, 1981, p. 15.
12. There is also the People's Insurance Corporation of China. However, organizationally it appears to be a mere appendage of the People's Bank.
13. A clear and full exposition of this theory is presented in Liu Hong-zu, *op. cit.*, pp. 201-211.
14. All interest rates were annual rates compounded from monthly rates. See People's Bank of China, Planning Bureau, *op. cit.*, pp. 23-24.
15. In March 1981, the Government announced plans for the sale of up to five billion yuan in treasury bonds — the first bond issue in China since the 1950s — following government budget deficits of 17 billion yuan in 1979 and 12 billion yuan in 1980. The bonds were denominated from 10 yuan to one million yuan, carrying an annual interest rate of 4 percent and repayment in installments over the 1987-90 period. Since the terms of the bonds were not particularly favorable in view of the high inflation rate, the government made subscriptions mandatory for selected state enterprises, local governments, army units, and wealthy communes. See report in **The New York Times**, March 8, 1981.

16. For a fuller list, see Sho-Chieh Tsiang, "Money and Banking in Communist China," in **An Economic Profile of Mainland China**, studies prepared for the Joint Economic Committee, U.S. Congress, Washington: Government Printing Office, 1967, Vol. I, p. 336; and Katherine Hsiao, *op. cit.*, p. 170.
17. See Vice Premier Yao Yi-lin's report, **Beijing Review**, March 16, 1981, p. 15.
18. Information in this paragraph is based on Chinese monetary statistics released for the first time and published in **People's Daily** (in Chinese), July 4, 1981, p. 2. The data indicate that the currency issue increased by 7.8 billion yuan, or 29.3 percent, in 1980, which, coupled with the data cited in the preceding footnote, implies an increase 142 percent larger than the planned amount. The data also indicate that in 1980 the banking system increased its credit to the Government by 8.0 billion yuan, while the Government's deposits in the banks rose by 1.3 billion yuan. Thus, the currency issue attributable to budget deficit amounted to 6.7 billion yuan. During the same year, the banking system's loans to enterprises rose by 37.5 billion yuan, which was offset by 30.5 billion yuan increase in deposits held by all non-Government sectors, thus contributing 7.0 billion yuan to the currency expansion that year. The two sources together accounted for more than the 7.8 billion yuan increase in the currency issue in 1980 — the difference being attributable to a 2.9 billion yuan decrease in foreign-exchange reserves, a 2.7 billion yuan increase in the banking system's capital and surplus, and 0.1 billion yuan to unspecified others.
19. See "State Council's Decision on Strengthening Credit Administration and Strictly Controlling Currency Issue," **China Finance** (in Chinese), April 1981, p. 2.
20. For authoritative studies of the Soviet monetary system, see George Garvy, **Money, Banking, and Credit in Eastern Europe**, Federal Reserve Bank of New York, 1966; and his **Money, Financial Flows, and Credit in the Soviet Union**, Cambridge, Mass.: Ballinger, 1977.
21. See, for instance, Liu Hong-zu, *op. cit.*, pp. 159-162. Also, Xian Yu-tai, "On the Inter-relation Between Capital Flows and Money Circulation" in Lin Qi-keng, ed., **Issues of Currency Circulation Under the Socialist System** (in Chinese), Beijing: China Financial and Economic Publishing Co., 1964, pp. 97-99, and other authors in the same volume; Yu Zueh-xian, pp. 104-109; Zhou Quin, pp. 122-132; Zhao Zhe-ming, pp. 142-53; Lin Qi-keng, pp. 154-169.
22. See Irving Fisher, **The Purchasing Power of Money**, New York: Macmillan, 1911.
23. See Edwin W. Kemmerer, **Money and Credit Instruments in their Relation to General Prices**, New York: Holt, Rinehart and Winston, 1907.
24. See Irving Fisher, *op. cit.*, Chapters 5 and 6. Kemmerer stressed that the velocity of circulation varies with business conditions. See Edwin W. Kemmerer, *op. cit.*, p. 20. See also Joseph A. Schumpeter, **History of Economic Analysis**, New York: Oxford University Press, 1954, pp. 1095-1106.
25. Following the writings of Professor Alfred Marshall, Cambridge University. See Alfred Marshall, **Money, Credit and Commerce**, London: Macmillan, 1923.
26. See Milton Friedman, "The Quantity Theory of Money: A Restatement," in M. Friedman, ed., **Studies in the Quantity Theory of Money** (Chicago: University of Chicago Press, 1956). For a more recent survey, see David E. W. Laidler, **The Demand for Money**, (New York: Dun-Donnelley, 2nd edition, 1977).
27. See references cited in note 21 above.
28. See a handbook prepared by the People's Bank for its staff, **Certain Problems in Research Work on Currency Circulation** (in Chinese), Publications Bureau, People's Bank of China, Beijing: Finance Publishing Co., 1957, esp. pp. 14-18 and 35-76; and **Currency and Credit** (in Chinese), Textbook Editorial Commission, People's Bank of China, Beijing: China Financial and Economic Publishing Co., 1964, esp. pp. 115-26.
29. See Katherine H. Hsiao, *op. cit.*, pp. 234-251, for an empirical study of the extent of open and repressed inflation in China during the 1952-57 period.
30. See William J. Baumol, "The Transactions Demand for Cash: An Inventory Theoretical Approach," **Quarterly Journal of Economics**, November 1952, pp. 545-56.
31. I am indebted to this issue's editorial committee for suggesting this point.
32. The suggestion was also made by a number of Chinese economists in the early 1960s and more recently in 1980. See Huang Da, "Bank Credit and Currency Circulation," in Lin Qi-keng, ed., *op. cit.*, pp. 40-55, and other articles in the same volume; also Liu Hong-zu, *op. cit.*, pp. 162-67.
33. See Lin Qi-keng, "On the Role of Monetary-Circulation Principles Under Socialism," **Economic Research** (in Chinese), February 1963, reprinted in Lin Qi-keng, *op. cit.*, pp. 56-71.
34. See, for instance, articles in **China Finance** (in Chinese), April 1981, pp. 28-29.
35. Thus, a prominent Chinese economist wrote: "In capitalist economy, banks frequently require commodity pledge as a security for insuring repayment of a loan. However, in the course of capitalist economic growth, banks have engaged in security transactions (such as common stocks, bonds, etc.) in large volumes by extension of loans on such securities or investing in these securities for speculation. Thus, capitalist bank credit has become more and more separated from commodity flows. In our socialist countries, things are different. Bank credit... applies primarily to the production and distribution of commodities, and loans must be secured by commodities. We require the complete matching of credit flow and commodity." See Liu Hong-zu, *op. cit.*, p. 215.

36. See Lloyd W. Mints, **A History of Banking Theory**, Chicago: University of Chicago Press, 1945, pp. 25-27. For the development of the doctrine since Adam Smith, see Lloyd W. Mints, *op. cit.*; and Jacob Viner, **Studies in the Theory of International Trade**, New York: Harper, 1937, pp. 148-54 and 234-43.

37. See Joseph A. Schumpeter, *op. cit.*, pp. 721-4.

38. See Sho-Chieh Tsiang, *op. cit.*, pp. 334-335.

39. For a lucid statement of this argument, see Wang Lan and Liu Hong-zu, **Issues of Socialist Bank Credit**, (in Chinese) Beijing: China Financial and Economic Publishing Co., 1964, pp. 49-52.

40. See Liu Hong-zu, *op. cit.*, p. 247.

41. See People's Bank of China, Planning Bureau, *op. cit.*, (in Chinese), p. 13.

42. See **China Finance** (in Chinese), April 1981, p. 2.