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A THEORETICAL FRAMEWORK FOR THE ANALYSIS OF

INFLATION IN THE PRC

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Abstract

The analysis of price inflation in the People's Republic of China should be based on an understanding that in LDCs (less developed countries) which are typically attentive to the issue of "growth promotion by political force" price inflation can occur for reasons quite different from those which dominate in DCs (developed countries) which are more sensitive to employment and output stability. Inflation in the PRC is of the LDC-type and has become a prominent subject of analysis and concern as the system has become involved in a process of market oriented price reforms since 1978. With the remonetization of the economy, the stage was set for the use of the sovereign political power of money printing to solve growth related issues. The paper argues that the main-line (Keynesian) framework of monetary analysis must be rejected for the study of inflation in the PRC. Instead, it develops a "loanable funds theory" based on a monetary approach which stresses (i) the role of money as a medium of exchange rather than a liquid asset; (ii) monetary expansion as an artificial creation of purchasing power that meets the demand for "finance" and competes with "earned" purchasing power for the command of goods and services in the market; (iii) inflation as a phenomenon which occurs when the money using public exercises its "monetary sovereignty" to attempt to frustrate the attempt by political forces to "force saving" in its direction.

A Theoretical Framework for the Analysis of Inflation in the PRC

After the founding of the socialist People's Republic of China (PRC) in 1949, the price level remained fairly stable for thirty years (1949-78) in an economy with an organization characterized by central command. However, since the launching of the total economic reform in 1978, price inflation has plagued the economy and obstructed present efforts to deepen the market-oriented price reform. Price inflation is an extremely complex social phenomenon, and hence a distinction should be made between the causes of price inflation for DCs (industrially advanced developed countries) and LDCs (contemporary less-developed countries) that have been in the transition process of economic modernization since the Second World War (1950-90). From a typological and historical perspective, price inflation in the PRC has certain features unique to a socialist LDC during a transitional period of both modernization and reorganization (i.e., an unprecedented liberalization of the socialist command system). It is the purpose of this paper to outline a theoretical framework for the analysis of price inflation in this particular context.

Many factors, such as wage-cost pushes, oil crises, and agricultural shortfalls, could be identified as the primary causes of increases in price levels. However, there is a consensus that sustaining a growth rate of money (η_M) in excess of the GNP growth rate (η_Y) is both necessary and sufficient for price inflation that is sustained over time. (In this paper the notation $\eta_x = (dx/dt)/x$ will be used to denote the growth rate of the time series (x)). The inflation experience of the PRC in recent years seems to have taken on this sustained characteristic. Thus we are primarily interested in searching for an appropriate monetary theory of price inflation. (For simplicity, we shall assume that the PRC is a closed economy.)

Our paper will begin with an inquiry into the pressures leading to monetary expansion (η_M) that may originate in the country's economic and political culture. During the postwar years the average price inflation rate (η_P) in the LDCs as a group has been much higher than that of the DCs. The higher average inflation rate in LDCs is due, at least partly, to the absence of the political culture of central bank autonomy. Consequently, monetary expansion is used persistently as a policy instrument to promote growth via the manufacture of profit for industries patronized by the political forces. This emphasis on growth promotion in LDCs is an entirely different policy objective from the promotion of full-employment stability in the DCs. We shall argue that the truly epoch-making aspect of the market-oriented reform in the PRC after 1978 is the monetization of the economic system that paved the road toward price inflation of the LDC-type (Section I).

In the DCs, price-inflation theory was a part of macroeconomics that has been dominated in the postwar years by the mainline thinking of Keynesianism. In section II, we shall give a succinct summary of the Keynesian model to highlight certain doctrinaire positions in the Keynesian tradition. We shall argue that, since these doctrinaire positions are so incompatible with the empirical reality of the LDCs, the Keyensian approach is unlikely to be helpful for the analysis of price inflation in LDCs in general and in the PRC in particular (section II.)

Many economists would regard the savings function concept as the most important contribution that has brought about the Keynesian revolution in macroeconomics. (See [Samuelson 1947] page 5 and [Hansen 1947] page 35.) The Keynesian tradition carried an underlying tone that the difficulty of making full use of the virtually unlimited full-employment capacity to save is the root cause of unemployment in an affluent DC. A national austerity effort

proxied by an increase of the average propensity to save(S) serves no constructive purpose because it will only lower the equilibrium level of real income (Y) via the multiplier process. It is intuitively obvious that a revolution resting on a conviction that a national austerity effort is a curse cannot be helpful for inflation fighting in the poor LDCs that require just such an effort.

The point of departure for a correct monetary theory of price inflation is an appropriate monetary philosophy that may stress M as a medium of exchange (i.e., purchasing power) to command goods and services in the product market, or as a store of value (i.e., an asset to be held for psychological satisfaction by the money-loving public). The doctrinaire position of Keynesianism is that M is an asset an increase in the quantity of which will lower the interest rate [Tobin 1969]. A larger money stock M may lead to price inflation only by working through the interest avenue (e.g., when investment and aggregate demand are raised by a lowered r). However, in the PRC price inflation has already occurred in recent years, in spite of the fact that an interest culture has not yet been fully restored at the present time after being suppressed for the 30 years before 1978. The appropriate monetary philosophy is that M should be regarded as purchasing power. An increase in the quantity of M can lead to price inflation with or without variations in the interest rate.

The growth-sensitive contemporary LDCs (including the PRC) are characterized by a shortage of output and savings capacity. For this type of economy the flow of money printing (dM/dt), as well as the stock of the total quantity of money (M), play indispensible but different roles in price-inflation theory. The flow of the increment of money (dM/dt) corresponds to the artificial printing of unearned purchasing power by the political authority to

meet the demand for investment finance. The actual spending of the new money to command goods and services in the product market will run into stiff resistance and protests from the money-using public. The latter can make their protests effective by spending the stock of monetary purchasing power (M) at their disposal at a faster pace (proxied by a higher velocity of circulation). These ideas, traced to the forced-saving notion of the pre-war Loanable Funds Theory, should be the core of an inflation theory for growth-conscious LDCs, as will be shown in Section III.

The postwar reign of the Keynesian system over competing economic theories is credited to its formal, systematic treatment of macroeconomics, covering both monetary and fiscal policies. In contrast, the Loanable Funds Theory, which existed before the War as a money and interest theory, was never fully integrated with the fiscal system. It is quite obvious that, for contemporary LDCs, price inflation is a result of money creation, not only to help the private entrepreneur to make money in a politicized growth-promoting effort but, more importantly, to allow the government to confiscate goods and services in the market without the consent of the taxpayers. Thus, when monetary and fiscal policies are considered in an integrated fashion, inflation occurred in the LDCs because money was being printed to meet investment finance and deficit finance (section IV).

While this is true for LDCs in general, two remarks should be added to clarify the inflation problem in the PRC at the present. First, in the PRC investment finance is formally a bureaucratic decision because of the heavy weight of the state enterprises. This is because, unlike in capitalistic LDCs where public enterprises are a minor sector of the economy, in the PRC they are still the overwhelmingly dominant sector. Second, the budget deficit is traceable to the huge government expenditures that must be made to ensure

political stability. When a socialistic state like the PRC is being pushed in a market- oriented direction, price inflation is a much more highly political phenomenon than it would be in a capitalist country.

GOVN

MONETIZED
EXCHANGES

MICRO
UNITS

ECONOMIC
REFORM

SOCIETY

DIRECT INTERACTION UNDER MARKET

(B)

PARTY

BUREAUCRACY

MICRO
UNITS

FIRMS
FARM
FAMILIES

COLLECTIVES

COMMAND SYSTEM

(A)
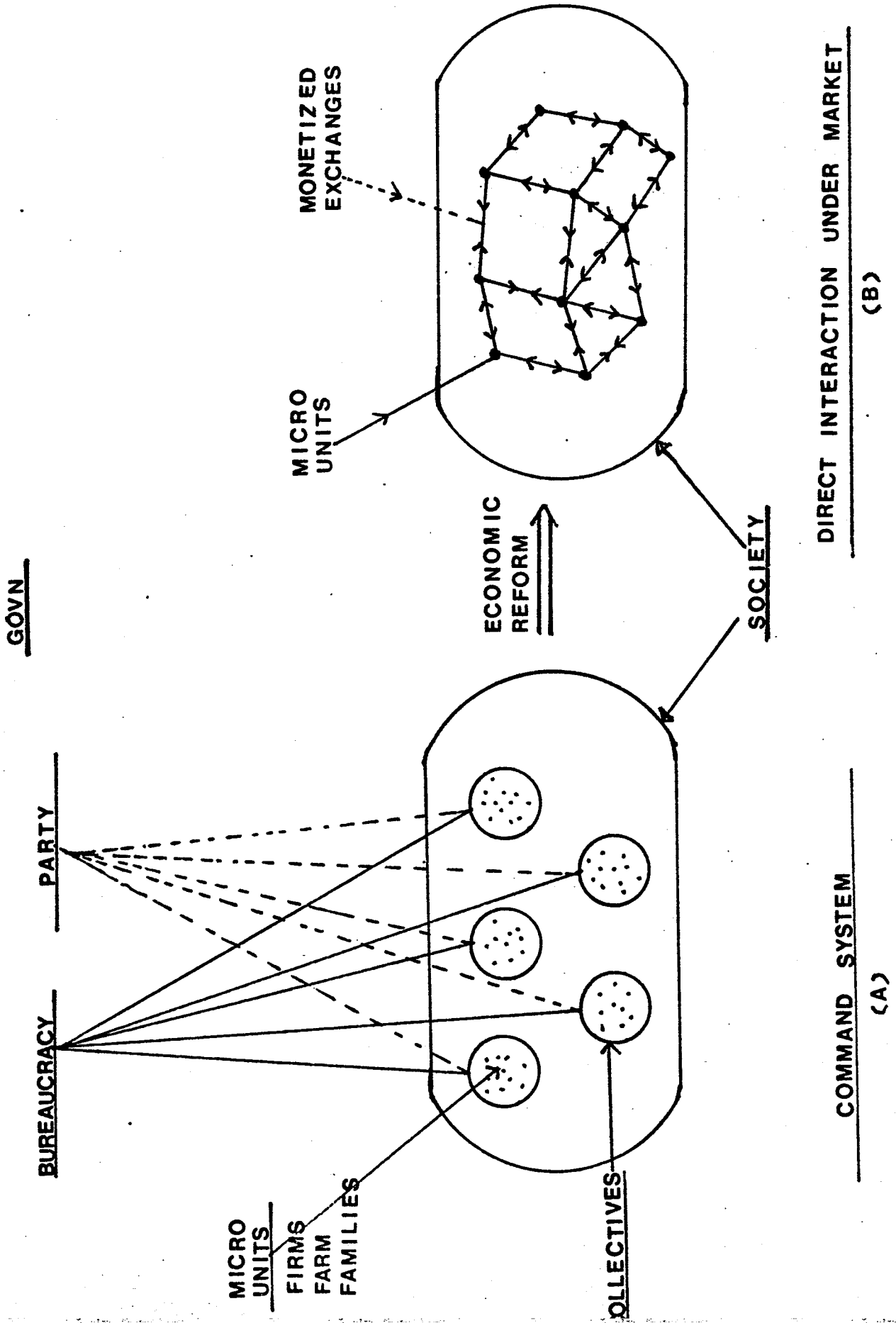
DIAG ONE

Section 1: <u>Overview: Pressure for Monetary Expansion</u>

In a monetized economy, the root causes of price inflation are the social, political, and economic pressures for monetary expansion. The People's Republic of China (PRC) became vulnerable to such pressures when the economy became monetized after the economic reform of 1978, (section 1.1). The LDCs in the capitalistic camp came under heavy pressure to print money when their societies were more sensitive to the need for growth promotion than to the need to maintain full-employment stability. Governments operating without a political culture of central bank autonomy were particularly susceptible to the temptation to print money in order to stimulate growth. (section 1.2). For these nations the inflationary impact of money printing was severe because of its persistency and directional non-neutrality, thus begging the issue of income distributional justice, (section 1.3). As a result, monetary expansion and price inflation were the result of an income transfer strategy carried out expeditiously by political forces (section 1.4).

1.1 <u>Disappearance (in 1949) and Revival (in 1978) of Money as an Economic Institution in the PRC</u>

From an historical perspective, a major evolutionary event in the PRC has been the disappearance (in 1949), and revival (in 1978), of the monetary system as an essential economic institution. The monetization of the Chinese economy after 1978 provides the background for the occurrence of price inflation.

a) <u>Disappearance of the Monetary Institution (1949-78)</u>

From the founding of the PRC in 1949 until 1978, the mode of economic organization was characterized by the centralized formation of an economic development plan and the reliance on collectivism and political command for its execution. (See diagram 1a.) Locally, the microscopic economic units (the family, firms, and farms) were grouped into collectives (rural communes, urban

collectives, and compartmentalized state enterprises) that were controlled by two vertical chains of command: the bureaucracies headed by the State Council and the party functionaries headed by the Party Secretariat. The role of the bureaucracy was to coordinate the production of output by the microscopic units, and the function of the party was to motivate the economic agents through the indoctrination of socialist ideologies.

Although the PRC had a nominal monetary system, the RMB (the People's currency) did not play the organizational roles of unit of account, medium of exchange, or standard of value familiar to capitalist systems. The RMB did not function as a unit of account, because, after all, accounting is only required of <u>strangers</u> and not of comrades! When the masses were supposedly linked by a revolutionary fraternity of comradeship, the meticulous accounting for individual rights and obligations was ideologically abhorred.

The RMB did not function as a medium of exchange, since voluntary exchange of goods between buyers and sellers in the marketplace was replaced by the mandatory production and delivery of orders set by central planning. The RMB was not a standard of value, since the concept of pecuniary value, essential for material incentives and calculations based on self-interest, was considered anti-social. The RMB was not used as an organizational instrument in the capitalistic sense because the PRC did not have a capitalistic culture!

Under the central command system, the individuals in the microscopic units that lie at the lowest echelon of a hierarchy of political power may be zealous as revolutionaries, but are rather lifeless as economic agents. Money played a special role in the Chinese socialist society. As an instrument of organization the RMB was employed only as a <u>monitoring device for the microscopic units to fulfill their social and economic obligations as centrally determined at the top</u>. The RMB played a role decidedly subordinate to

political command and central planning. The apathetic economic agents below did not need to interact or communicate with each other directly, nor did the behavioral norms governing the acquisition of monetary purchasing power (so vital under capitalism) need to be prescribed.

b) <u>Rehabilitation of a Monetized Economy after 1978</u>

The market-oriented reforms after 1978 proceeded at the local as well as global levels. Locally, the collectivist group orientation was abandoned as the microscopic units took on a livelier existence, making independent decisions, interacting, and assuming individual responsibility for their own choices. Globally, the vertical systems of political command were partially dismantled and replaced by direct horizontal interactions guided by market information. (See Diagram 1b.) The liberalization process that started with the rural sector when the family farming system was restored is now slowly spreading into the urban sector.

The remonetization of the Chinese economy after 1978 was the logical consequence as well as a vital step for the success of the market- oriented reforms. For with a diminished sense of comradeship (traced to the separation of party from economics) and with the stress on responsibility, the activation of money as a unit of account is a logical necessity. Economic or financial responsibility for the microscopic units is meaningless without a strong dedication to accounting integrity of the individual budgets linked by money. Since the voluntary selection of trading partners is a basic market choice, a competitive economy cannot avoid the use of money as a medium of exchange. Finally, money surfaced as a standard of value with the rehabilitation of the material incentive. In the PRC after 1978, chasing after monetary purchasing power at least partially replaced the desire to use favoritism and security in the political hierarchy as the primary incentive system.

The pervasive pecuniary incentive was conducive to meritorious economic performance (hard work, frugality, innovation, risk-bearing) based on the principle of equal opportunity. A monetized society is totally symptomatic of the capitalistic one defended by Keynes:

> For my part, I believe that there is social and psychological justification for significant inequalities of income and wealth but not for such large disparities as exist today. There are valuable human activities which require the motive of money making and the environment of private wealth-ownership for their full fruition. Moreover, dangerous human proclivities can be canalized into comparatively harmless channels by the existence of opportunities for money-making and private wealth, which, if they cannot be satisfied in this way, may find their outlet in cruelty, the reckless pursuit of personal power and authority and other forms of self-aggrandizement. It is better that a man should tyrannize over his bank balance than over his fellow citizens and whilst the former is sometimes denounced as being but a mean to the latter, sometimes at least it is an alternative....It may still be a wise and prudent statesman to allow the game to be played as long as the average man is in fact strongly addicted to the money-making passion. (<u>General Theory of Employment Interest and Money,</u> page 374).

The tyranny of the money-making passion that has brought about the current price inflation in the PRC is certainly not as destructive as the cruelty of the tumultuous Cultural Revolution!

Our conjecture is that, even after the PRC has made considerable progress in the separation of politics from economics, her economic system will still be far more politicized than the highly politicized systems of the capitalist LDCs. However, the rehabilitation of a monetary institution has permanently changed the relationship between government and society in the PRC in at least one major respect: political influence in economic affairs will be switched gradually from direct command to the indirect control of macroeconomic "levers." These levers are, in fact, <u>monetized</u> policy instruments, utilized by the government to influence the monetary profitability of the microscopic units. (See below.)

1.2)　The Determination of the Rapidity of the Growth Rate of Money (η_M)

In a monetized society, sustained price inflation ($\eta_P > 0$) is unavoidable if the money growth rate (η_M) is sustained at an excessively high level. (See introduction.) There are two types of causal factors that determine the rapidity of the money growth rate: first, the extent to which monetary expansion is politicized and second, the problem-sensitivity of a country. The first factor is related to the political culture of central bank autonomy. The second factor, which divides the world into DCs and LDCs, has an historical origin.

a) The Political Culture of Central Bank Autonomy

There is a long Anglo-Saxon tradition of relying on constitutional democracy to curb the arbitrary powers of government. In the economic arena, taxation with consent and Central Bank autonomy are important manifestations of this distrust of government.

When a metallic monetary standard gives way to a fiat standard, monetary expansion becomes costless and convenient since it takes only a printing press to expand its quantity; without a political culture of central bank autonomy, which unfortunately has been lacking in most contemporary LDCs, few ambitious sovereign governments can resist the temptation to monopolize and abuse the power to print money. That the government of the PRC party-state has been ambitious is evident from its desire to achieve the impossible -- i.e. to manufacture instant ethics via class struggle, before 1978. In comparison, the manufacture of purchasing power after 1978 seems like a rather mild abuse of government power!

China, whether the ROC or the PRC, does not have a long cultural tradition of central bank autonomy. In the ROC, the central bank is directly responsible to the Executive Yuan; in the PRC, the People's Bank is an arm of the State

Council. While their weak monetary authorities may conscientiously suggest a money-growth target, it is doubtful that they have the status and stature to defy the government when ordered to print extra money for a higher rate of growth. However, among the LDCs, the Chinese governments (both the ROC and the PRC), belong to a minority that is quite wary of the distributional injustices resulting from the printing of money. The rate of price inflation in China can be high (between 10 and 20 percent) by the standard of the DCs, but it is never allowed to rage out of control because of the bitter memories of ruinous war-time inflation (1940-45).

b) Difference in Problem-Sensitivity in DCs and LDCs

During the postwar years (1950-80), the sensitivity of the affluent DCs to economic instability due to periodic unemployment is traceable directly to the Great Depression of the thirties. The Full-Employment Act of 1946 in the U.S., and similar legislation elsewhere, were political declarations of war against instability. In contrast, the poverty and backwardness resulting from prewar colonialism made the LDCs conscious not only of the economic necessity of growth but also of the necessity for promoting political stability and solidarity.

The stability of a government depends crucially on its establishment of a national identity and its assumption of a prominent role in state affairs. In the newly independent LDCs the visibility of the political power in the economic arena is essential, a national steel mill having the same symbolic significance as a national flag. A planning commission or an active central bank overtly dedicated to growth promotion as in socialistic India or the free-planned economy of Taiwan (whose development has been governed by Sun Yat-Sen's ideology), indicates a willingness to adopt a mixed economy that tolerates pervasive government interference in the market. After 1978, the

avowed goal of the PRC became an ambitious quadrupling of the national income and resulted in the slogans of the "four modernizations." At this point the PRC formally joined the camp of growth-sensitive LDCs and the issue of socialist ideological purity became irrelevant.

Section 1.3: Societal Pressure for Monetary Expansion

The pressure for monetary expansion is much higher in a poverty-stricken LDC preoccupied with growth promotion than in an affluent DC attentive to economic instability. This can be examined in terms of the contrast of persistency versus intermittency, and directional neutrality versus directional specificity of monetary expansion.

a) Persistency versus Intermittency of Monetary Expansion

When social concern is directed at economic instability, the very notion of a compensatory monetary and fiscal policy suggests that as a cardinal principle of aggregate demand management (as in the Keynesian tradition), expansionary ($\eta_M > 0$) and contractionary ($\eta_M < 0$) monetary policies should be used alternately and intermittently to offset the excess and/or deficiency of market-determined total expenditures. One can categorically say that a stabilization policy in a DC is on the wrong track when deficit finance and/or monetary expansion occurs persistently and cumulatively through time. This is what seems to have brought about the unprecedented double-digit peacetime price inflation in the DCs in the 1970s.

When monetary expansion is used as a policy instrument to promote growth rather than to stabilize the economy, the opposite cardinal principle implies persistency rather than intermittency. Money printing can promote growth in LDCs primarily because it is a creation of purchasing power by the government (i.e. a party that monopolizes money printing) which allows the public and/or the private entrepreneur to acquire real resources inexpensively for investment

that augments productive capacity. This mechanism is indeed the heart of the thesis of forced savings, under which the money-using public is coerced into yielding its right to command the use of resources to the investor. (See Section III.) The logic of forced savings suggests its earnest and persistent application through time. The government certainly should not oscillate intermittently in its growth-promotion efforts.

b) <u>Directional Neutrality or Specificity in Monetary Expansion</u>

In its efforts to stabilize the economy, a central bank in a DC that is preoccupied with managing the growth rate of the total quantity of money (η_M) is not really concerned with the allocational direction of the investment funds. In the DCs, with aggregate demand management carried through open market operations, commercial banks and other financial institutions are responsible for the allocation of loanable funds in financial markets. This directional neutrality of monetary expansion in DCs contrasts sharply with the <u>directional specificity</u> of monetary expansion in the LDCs. For growth promotion, the LDC government must be concerned with the priority of the allocation of investment funds to achieve a balanced sectoral expansion through the adoption of some version of so-called industrial policy.

In DCs, with a sophisticated financial sector to screen applications for bank loans, industrial policy is a dirty word. No DC government would pretend that it can replace the market with a list ranking the potential profitability of all future investment projects. Yet, a planning commission or a ministry of economic affairs in an LDC would not hesitate to prepare just such a ranking (covering all industries) as a basis for all discriminatory industrial policies: tariffs, the prohibition of foreign investment, multiple exchange rates, tax-exemption statutes that encourage investment, and the allocation of bank loans at differential terms and interest rates. The directional

specificity of monetary expansion is but a typical example of a whole set of such growth promotion policies in the mixed economies of LDCs. In this regard, we may add that the rationality of ranking by industrial policy leaves much to be desired, because the underlying criteria of ranking are usually undisguised slogans with a nationalistic, emotional appeal: rising sun, locomotives, up-stream, or, simply "strategic" industries.

As a direct result of market-oriented reforms in 1978, the government of the PRC has looked earnestly for economic levers to control the monetized economy indirectly. (See section 1.1b.) In the capitalist's lingo, these "levers" are nothing more or less than a package of growth-promotional policies that share two properties in common. First, all of them take for granted that the economy is monetized. Second, the cardinal principle underlying all the levers (e.g. tariff protection and controlled interest rates) is to require and to help entrepreneurs make a monetary profit on a discriminatory and selective basis. Thus, with monetization, the PRC moves unwittingly in a direction in which political force is now invoked to help socialist entrepreneurs make monetary profits, or to avoid the bankruptcy of a whole set of state enterprises because of monetary loss.

Section 1.4: The Political Expedience of Covert Income-Transfer Strategies

The implementation of direction-specific growth-promotion policies amounts to an income transfer from a victimized social class to a politically favored beneficiary class. In the case of monetary expansion the transfer is covert, because the unjust income transfer need not be accounted for openly. The theory of economic instability in DCs sheds no light on the true cause of inflation in LDCs unless it addresses this issue of social conflict that occurs in a society dedicated to growth promotion.

a) Income Transfer Strategies

The direction-specific growth-promotion policies are income-transfer strategies, since the profit of the beneficiaries (the public and/or private entrepreneurs) is augmented only at the expense of a victim class. In this regard it should be emphasized that, while the transfer strategy is common to all growth-promotion policies, the mechanisms are characterized by different degrees of complexity. It is relatively easy to detect the transfer mechanisms at work in the case of protective tariffs on passenger cars, for which the domestic beneficiaries and victims are readily identified as the car manufacturers and buyers, respectively. The transfer mechanisms involving the use of monetary policies and foreign exchange rates are far more difficult to detect. The mushroom exporters of Taiwan may not even be aware of the fact that they are victimized by an overvaluation of exchange rates that augments the profit of the importers.

b) <u>Covert Income Transfer Via Money Printing</u>

When the U.S. government bailed out the troubled Chrysler Corporation with a loan guarantee, it took a special act of Congress to effect the income transfer from the taxpayers to Chrysler. The granting of monetary purchasing power by the Government to private investors must be done overtly in DCs. This contrasts sharply with the LDCs, where the executive branch of government can routinely instruct the central bank to extend loans to particular industries in distress, giving little thought to the idea that such transfers represent covert acts of political favoritism. Printing money minimizes the political costs of income transfers, because it hurts a nameless victim class that is unaware of the cost it is bearing.

When growth is promoted through the persistent printing of purchasing power, the transfer mechanism is dynamically complex with a delicate hidden mechanism once described by Prof. S.C. Tsiang as the "ghostly act of silent

stealing." For when the printed purchasing power is granted to the private entrepreneurs to snatch goods and services from the product market, the repayment burden to the beneficiaries is lightened later when price inflation occurs. The victims (the money-users, savers, and consumers) may not even be aware of the fact that they have been victimized by the income transfer strategy. (Prof. S. C. Tsiang became very unpopular in Taipei when he advised against monetary expansion in his "ghostly" analogy.) In LDCs money printing is popular and the income transfer is politically expedient because, while the beneficiaries (i.e. those who can gain access to bank loans) are vocal in their support, the victims are silent because they are oblivious of the potential burden they have to bear.

Price inflation in the PRC at the present time is traceable directly to the fact that, in the remonetized economy, the government sees the necessity that, to promote rapid growth, it must both require and help the state enterprises in their investment projects to make a monetary profit to show independence. This quasi-profit guarantee is extended to almost all the state enterprises as employers of the workers. The very logic of such political guarantees implies that the artificial profit so generated must come out of the pockets of the money using public whose resistance produces price inflation. While the idea is elementary, it takes a formal theory for the argument to be persuasive. (See Section 3.)

c) The Role of Macroeconomic Theory

When monetary expansion is used as a policy instrument of aggregate demand management for stabilization purpose in DCs, it has the theoretical backing of a well-articulated Keynesian theory which has constituted mainstream thinking in the postwar era. The U.S. double-digit price inflation in the 70s can only be attributed to the use (and possible misuse) of this theory in the

policy deliberations of the Governors of the Federal Reserve System. For, with central bank autonomy, the extent of monetary expansion is ultimately determined by theoretical rationalization. A prestigious macro theory can contribute to price inflation if it sees nothing intrinsically wrong with monetary expansion.

In the contemporary LDC, where monetary expansion is used as a policy instrument to promote growth, one is hard put to identify an alternative version of money theory, comparable in articulate persuasiveness with the Keynesian theory, that is directed at the issue of price inflation in the context of growth promotion. In LDCs, monetary expansion and price inflation have occurred in the postwar years in a theoretical vacuum. This is illustrated dramatically by the inflation experience of the PRC, in which no non-Marxian theory has yet taken firm root. The battle against price inflation in LDCs (including the PRC) at present is handicapped by the absence of an alternative theory!

We will show in the next section that, in spite of its prestige, the Keynesian theory cannot be used as a framework for the analysis of price inflation in the PRC. For it is a theory addressed to the special problem of instability in the affluent DCs and is quite irrelevant to the central issue in a growth-conscious LDC. In fact, certain aspects of price inflation in the PRC are traceable to the unique historical event of Chinese economic reform, and requires special analytical treatment.

Section 2:   The Keynesian Inflation Theory

Having analyzed the inflationary pressure generated by money printing, we must go further and investigate the causal relation between monetary expansion (η_M) and price inflation (η_p), which is the purpose of all monetary inflation theories. A critical examination of the Keynesian "General Theory" that has dominated postwar macroeconomic thinking so completely is a natural point of departure in our search for an appropriate theoretical framework for the analysis of inflation in the PRC. The monetary model of Keynes will be succinctly summarized (Section 2.1) so that we can critically examine the implied cost-push theory (Section 2.2) and the demand-pull theory (Section 2.3) of price inflation. The Keynesian monetary philosophy, however, cannot be a solid foundation for a price-inflation theory for the PRC, because of its emphasis on money as a stock of liquid assets rather than as a medium of exchange (Section 2.4). A genuine monetary theory of price inflation recognizes the societal conflict of resources allocation and/or distributional justice that lies beneath the surface of price inflation brought about by money printing (dM/dt). These ideas can be formulated with the aid of the "demand for finance" concepts contained in the loanable funds theory that will be presented in Section 2.5.

2.1)   The Keynesian Macroeconomic Theory

The academic prestige of the Keynesian theory is due not only to its timely appearance after the Great Depression but also to the fact that it is a well-articulated theory that ushered in an era of methodological formalism in macroeconomics after the War. The theory aims at the determination of a system of related variables including real income (Y), price level (p), aggregate demand ($Y^\Delta = pY$), savings (S), investment (I), interest rate (i), money (M),

I = S

$S = S(Y^A)$

20

$45°$

(c)

(a)

K

(g)

$Y = f(K, L)$

$\bar{K}$

o

(IS-CURVE

$S(Y^A) = I(i)$

(d)

i

(LM CURVE)

$M = M(Y^A, i)$

$\bar{E}$

$I(i)$

i_o

(b)

o   Y

Y^A_o

Y^A

o   L

Y

d_1

S_3

A.D.

S_2

(f)

d_2

S_1

d_3

A.S.

Y = f(K, L)

Y_3

Y_2

Y_1

(h)

o

P_1 P_2 P_3

P

o L_1 L_2 L_3

L

(j)

W

w^n_1

w^n_2

w^n_3

(i)

$w^n = f_L(L, \bar{K})$

o L_f L

Y

$Y^A = P_1 Y$

d_1

$Y^A = P_2 Y$

A.D.

d_2

$Y^A = P_3 Y$

(e)

d_3

Y = 1

o P_1 P_2 P_3 Y^A_o P
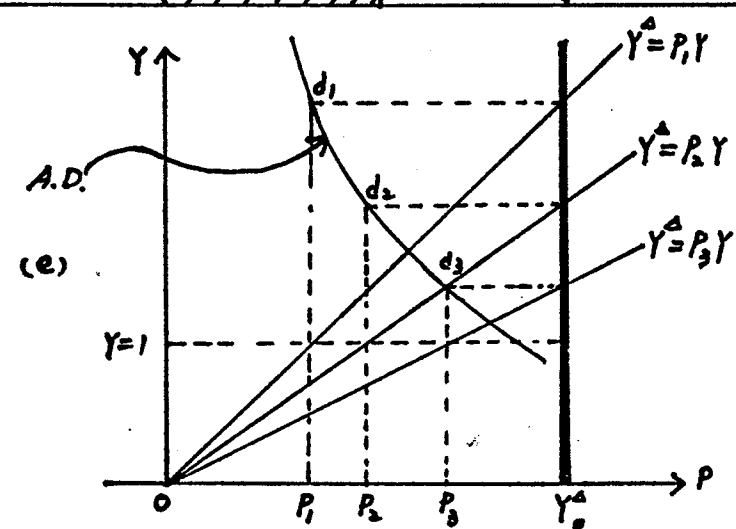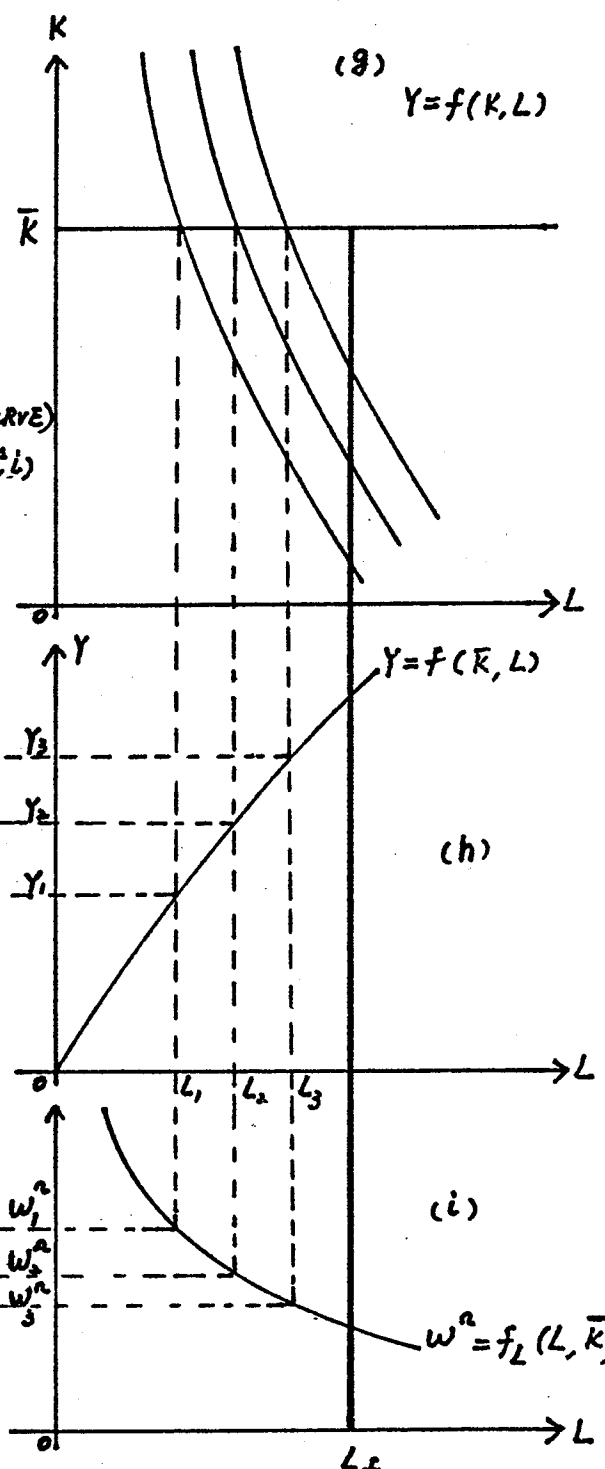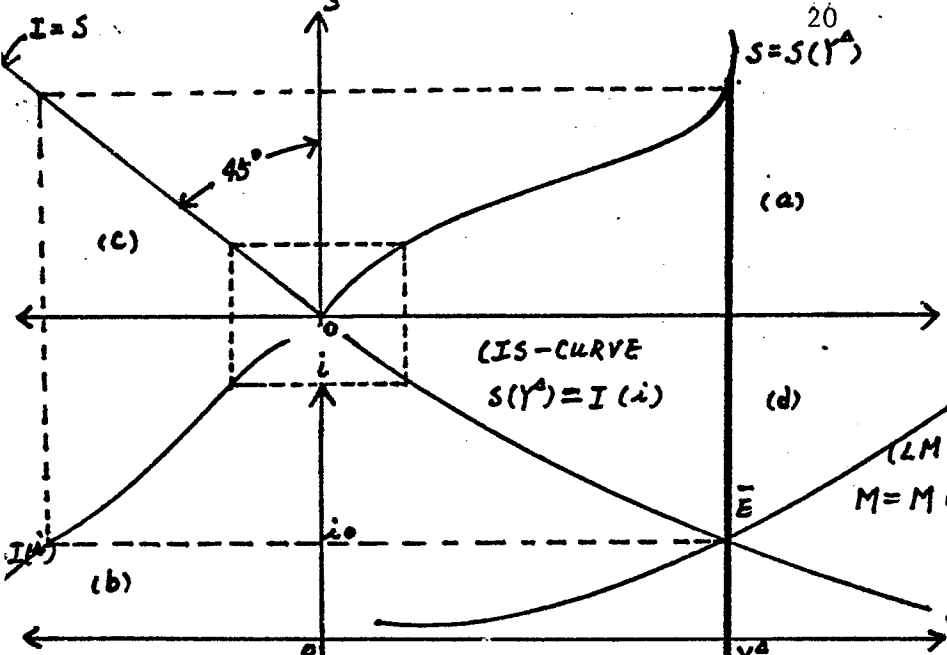
DIAG TWO

money wage (w), real wage (w^r), employment (L), and capital stock (K),

exogenously or endogenously. The spotlight is on the pair of variables (Y,p),

which are determined simultaneously by the interaction of aggregate demand

(A.D.) and aggregate supply (A.S.).

<u>Aggregate Demand Function</u> (A.D.)

Keynes postulated functions for monetary savings (S) and investment (I),

as well as their equality:

2.1a) $S = S(Y^\Delta)$ with $S' > o$

  b) $I = I(i)$ with $I' < o$

  c) $I = S$

The functions for S and I are shown in diagrams 2a and 2b, respectively,

while I = S is represented by a 45-degree line in diagram 2c. A negatively

sloped I S curve is generated as shown in diagram 2d. Along this curve, for

each i the corresponding Y^Δ is that level of aggregate demand such that the

"gap" generated by monetary savings is exactly "plugged" by the value of

investment induced by the interest rate (i). Keynes also postulated a money

demand function

2.2) $M = M(i, Y^\Delta)$ with $\partial M/\partial Y^\Delta > o$, $\partial M/\partial i < o$

as represented by the positively sloped LM-curve in diagram 2d when a quantity

of money M is given. Along this curve, for each Y^Δ (which determines the

"transactions demand for money") the corresponding i is that level of interest

rate at which the entire money stock is demanded by the money-holding public as

traced to their preference for liquidity. The intersection of the IS and LM

curves determines the equilibrium magnitude of aggregate demand Y^Δ at point

$\bar{E}$, indicated by a vertical line linking diagrams (2d) and (2f). Since Y^Δ is

the product of price (p) and real income (Y) i.e.,

2.3) $Y^\Delta = pY$

an aggregate demand curve (A.D.) is represented by rectangular hyperbola

$d_1d_2d_3$ in diagram 2f. Thus when Y^Δ is given a higher price level (e.g., $p_1 <$

$p_2 < p_3$, as indicated on the horizontal axis) it corresponds to a lower level

of real output as measured on the vertical axis. The derivation of the

aggregate demand curve is shown in diagram 2e, where equation 2.3 is

represented by radial lines for alternative values of p_i. The values of

$p_1, p_2 p_3$ are indicated on the horizontal line $Y = 1$, and the value for Y is

indicated on the vertical line $Y^\Delta = Y_0^\Delta$. The aggregate demand curve (A.D.) is

popularly described as follows:

> The aggregate demand curve shows the combination of the price level and the
> level of output at which the goods and assets markets are simultaneously in
> equilibrium. (Dornbusch and Fischer page 353.)

Such a characterization is truly symbolic of the doctrinaire position of the

"Keynesian" school, in that the equilibrium level of real output (Y) is assumed

to depend on the extent to which money is "loved" as an asset by the populace.

Aggregate Supply Function (A.S.)

The foundation of aggregate supply is a production function from which the

total output (Y) and the marginal productivity of labor ($=MPP_L$) can be derived

when the capital stock ($\bar{K}$) is given:

2.4)   a) $Y = f(K,L)$

       b) $Y = f(\bar{K},L)$

       c) $w^r = f_L(\bar{K},L)$

These equations are represented by the production contour map, the total output

curve, and the MPP_L curve in diagrams 2g, 2h, and 2i, respectively. Notice

that the equality of real wage with MPP_L in 2.4c implies that labor is treated

as a commodity that can be hired or fired at the discretion of management to

maximize profit. The money wage rate, w, is the product of the real wage (w^r)

and the price level (p):

2.5) $w = w^r p$

Keynes envisions a unionized labor-management relation so that the workers, though powerless in determining the real wage (w^r), can try to bargain for a higher money wage (w). Equation 2.5 is a rectangular hyperbola in diagram 2j when the money wage (shown as the area of the shaded rectangle) is given. Through the dotted rectangles linking diagrams 2f, j, i, and h, a positively sloped aggregate supply curve (A.S.), s_1, s_2, s_3, can be derived in diagram 2f. Along the A.S. curve, for each p_i, the corresponding y Y_i is that level of output which management is willing to produce by hiring the appropriate amount of labor, at the given money wage rate (w), in order to maximize profit. Thus:

> The aggregate supply curve describes the combination of outputs and price level such that the firms are willing, given price level, to supply the given quantity of output. (Dornbusch and Fischer, page 353.)

In comparison with the aggregate demand curve (A.D.), the aggregate supply curve (A.S.) is <u>not</u> a serious doctrinaire issue that differentiates Keynesianism from other approaches to macroeconomics. For the A.S. curve rests solely on the microscopic behavior foundation of individual firms that are assumed to be profit maximizing in a competitive labor market that gives management the freedom to increase (hire) or decrease (fire) the labor force like a commodity.

Equilibrium

The intersection of the A.D. and A.S. curves (at s_2 or d_2 in diagram 2f) determines Y and p simultaneously. Thus we see that the Keynesian system (i.e., Y^Δ, Y, p, S, I, L, w^r, and i) is formally determined when the triplet M, K, and w (the money stock, capital stock, and money wage rate) are given exogeneously. Thus the increase of p can be wage-cost pushed (w) or monetary-demand pulled (M) as a short-run phenomenon when K is fixed. The fact that the equilibrium (Y, p) is determined simultaneously, implies that in the
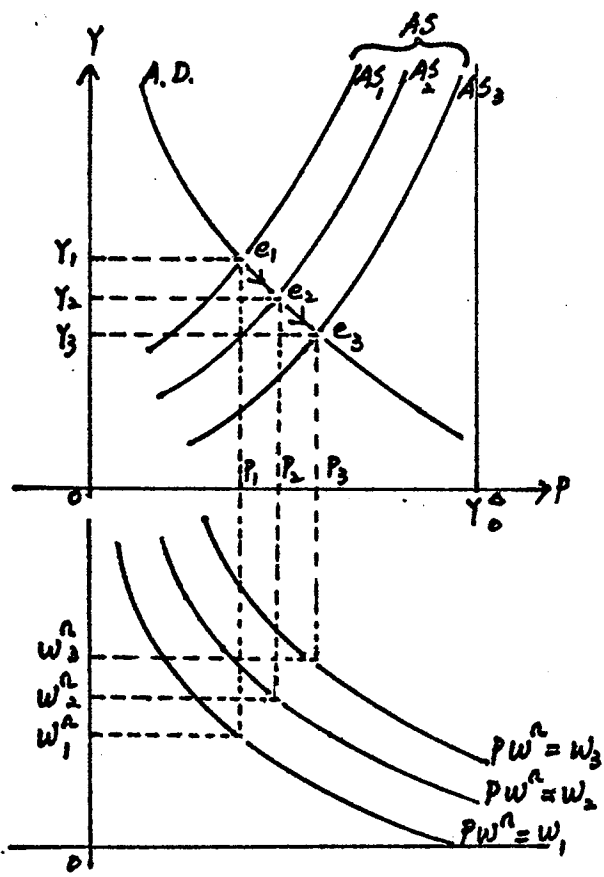
Keynesian approach the theory of price inflation is meant to be complementary to the theory of the determination of output (Y) and employment (L). It is a theory designed for a society that is sensitive to employment instability, rather than one that is sensitive to the necessity of capital accumulation traced to a shortage of output and savings capacity. While unemployment is a crucial policy issue in the affluent D.C., no contemporary LDC (including the PRC) can provide a quick solution to its open and/or disguised unemployment problems in the short-run.

Price inflation of the cost-pushed type (when the A.S. curve varies while the A.D. curve is constant) and the demand-pulled type (when the A.D. curve varies while the A.S. curve is fixed) will now be briefly examined.
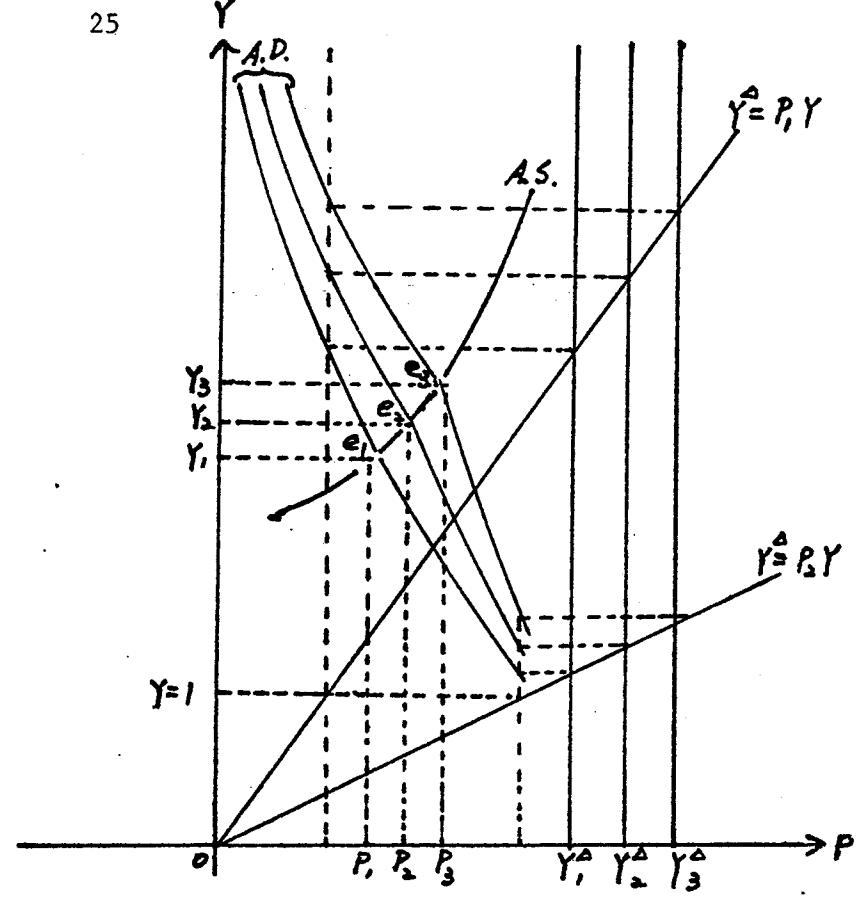
2.2 Wage-Cost Pushed Price Inflation

When unions insist on a higher money wage, the area of the shaded rectangle (in diagram 2.5) expands. The upward shift of the curve representing equation 2.5 is shown in the lower deck of diagram 3a. The A.S. curve shifts downward. (See diagram 3a, upper deck.) With a fixed A.D. curve, the equilibrium points e_1, e_2, and e_3 will change in such a way as to show that labor unions will have to sacrifice employment ($Y_1 > Y_2 > Y_3$) in order to obtain a higher real wage (or MMP_L, $w_1^r < w_2^r < w_3^r <$) to go along with the higher money wage ($w_1 < w_2 < w_3$) that pushes the price level higher ($p_1 < p_2 < p_3$).

Once price inflation has started for whatever other reasons (see section 2.3 below), the laboring class will apply political pressure to escalate the increase in money wage to protect their real-wage income. Money wage for the urban labor force in the PRC has indeed been increased politically to compensate for the increase of food costs in recent years. However, it is doubtful whether in the Party State of the PRC, price inflation of the wage-cost pushed type is relevant. For the

(a)

Y, A.D., AS, AS_1, AS_2, AS_3, Y_1, Y_2, Y_3, e_1, e_2, e_3, O, P_1, P_2, P_3, Y_0^Δ, P

w_3^n, w_2^n, w_1^n, $Pw^n = W_3$, $Pw^n = W_2$, $Pw^n = W_1$, O

(b)

Y, A.D., $Y^\Delta = P_1 Y$, A.S., Y_3, Y_2, Y_1, e_3, e_2, e_1, $Y^\Delta = P_2 Y$, $Y = 1$, O, P_1, P_2, P_3, Y_1^Δ, Y_2^Δ, Y_3^Δ, P

(c)

i, $I - S$, L.M, $L.M_1$, $L.M_2$, A, B, O, Y_1^Δ, Y_2^Δ, Y^Δ

A.D, AD_1, AD_2, AS, keynesian case, e_2, e_1, O, P_1, P_2, P

(d)

S, $S = S(Y^\Delta)$, $45°$, O, Y^Δ, I

$I = I(i)$, L.M., i_1, i_2, e_1, e_2, IS_1, IS_2, IS, O, Y_1^Δ, Y_2^Δ
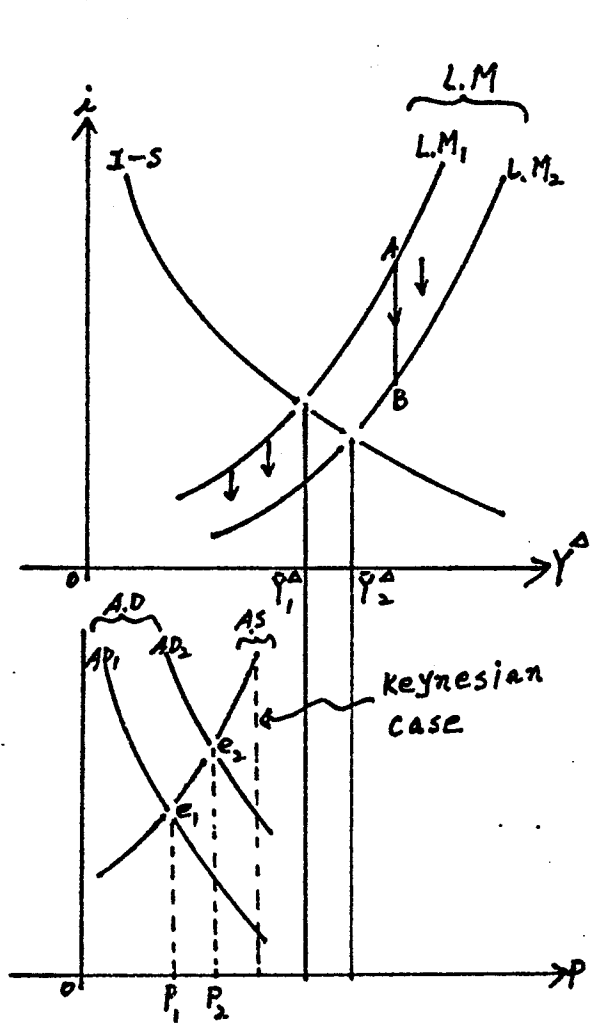
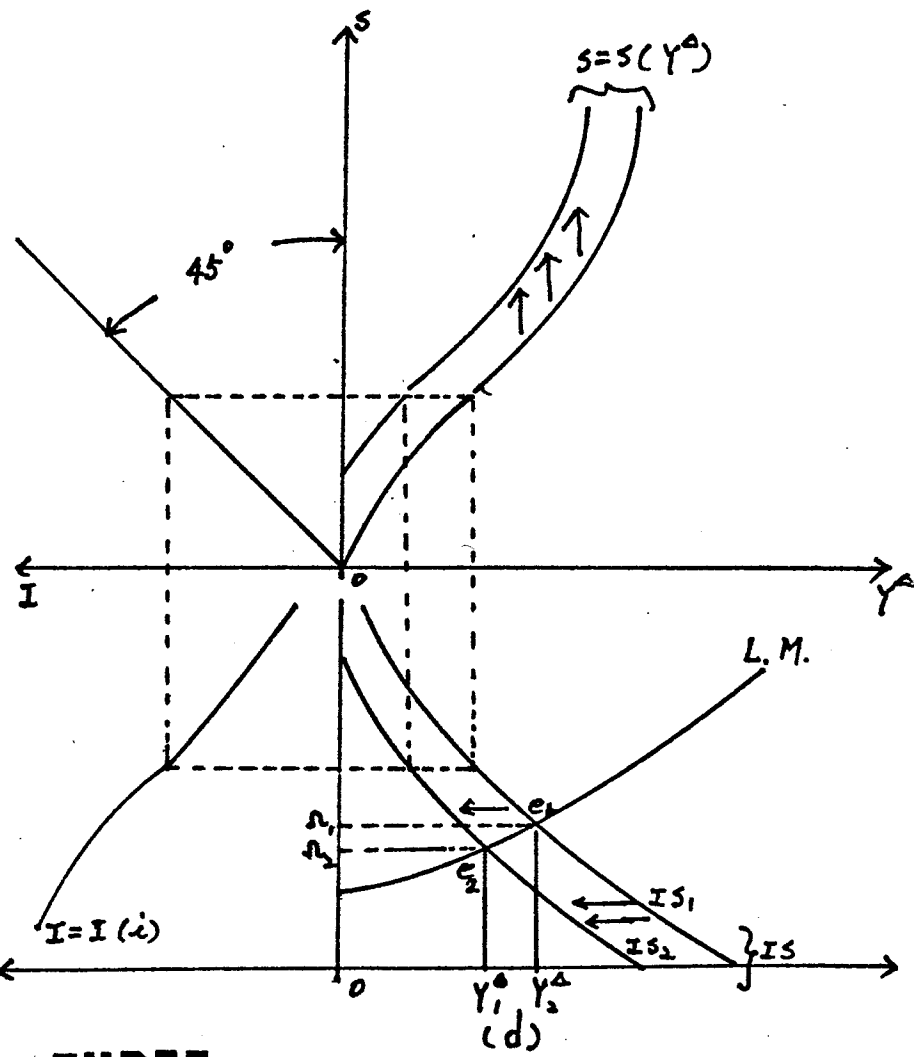**DIAG THREE**

cost-pushed thesis to hold, the labor market must be competitive while the labor force must be hired and fired freely, like a commodity. Since workers of the state enterprises are guaranteed the job security of an "Iron Rice Bowl" politically, and since the "profit maximizing behavior" of the state enterprises is still an unachieved experimental objective, the PRC does not have the microscopic behavior foundation of the aggregate supply curve at the present time. We may thus disregard "wage-cost pushing" as an independent and primary cause of price inflation in the PRC where the government-societal relation is still dominated by the government and the party.

2.3) Demand-Pulled Price Inflation

Demand-pulled price inflation tends to occur whenever the equilibrium magnitude of aggregate demand (Y_0^{Δ} in diagram 2d) increases. Associated with the increase in aggregate demand ($Y_1^{\Delta} < Y_2^{\Delta} < Y_3^{\Delta}$ in diagram 3b), the A.D. curve shifts upward, with the A.S. curve stationary, the equilibrium point $e_i = (Y_i, p_i)$ changing in such a way that the level of real output ($Y_1 < Y_2 < Y_3$) as well as the price level (p_1, p_2, p_3), increases monotonically. (See diagram 3b.) The cause of the increase in Y_0^{Δ} may be traced to variations in the IS curve or the LM curve, which represent the two types of "demand-pulled" price inflation.

Variations of the LM curve

Keynesian theory provides the basic policy guideline that, other things being equal, an increase in the quantity of money will lead to a downward shift of the LM curve (e.g., from LM_1 to LM_2 in the upper deck of diagram 3c) and that this, given a fixed IS curve, will raise the level of aggregate demand (e.g., from $\bar{Y}_1^{\Delta}$ to $\bar{Y}_2^{\Delta}$). Thus, an expansion of the money supply will cure unemployment while contributing to price inflation. However, to characterize the Keynesian theory of price inflation as "monetary" is misleading.

Notice that, in a case in which the A.S. curve is vertical (as shown by the dotted curve in the lower deck of diagram 3c), an increase in M would have no impact on p whatsoever. Keynes, himself, would have denied that "monetary expansion induced price inflation" before the full employment level is reached. Indeed, in Dornbusch and Fischer (page 353), the "Keynesian case" is popularly described as "the case when the aggregate supply curve is <u>vertical</u>, indicating that firms will supply, at the existing price level, whatever amount of goods is demanded." So the increase in the price level is traced strictly to the mechanics of the law of diminishing returns to labor, which give curvature to the MPP_L and A.S. curves. But this is not a monetary theory of sustained price increase at all. For there is obviously a large enough money stock (M) which can bring about full employment at high but stable price levels!

The doctrinaire monetary position of Keynesianism implies that the causal relationship between monetary expansion and price inflation is a very involved and indirect one. A larger money stock (M) must disturb the equilibrium of the assets market first. The interest rate drops in order to induce the public to hold the larger money stock as a liquid asset. This will, in turn, encourage investment, and, through the multiplier process, generate a larger aggregate monetary demand $(\bar{Y}_2^{\triangle})$ that absorbs part of the increased supply of money as transaction demand. A genuine monetary theory of price inflation would have no use for this roundabout argument. For monetary expansion can lead directly to price inflation only if dM/dt is viewed as an expansion of purchasing power rather than a creation of liquid assets. (See section 2.4 below.)

<u>Variations of the I S Curve</u>

When the savings function S(Y)shift upward (i.e., there is an autonomous increase in saving) the IS curve will move to the left. (See diagram 3d.) With the same L M curve, the equilibrium values of aggregate demand

$(Y_2^\Delta < Y_1^\Delta)$ and the interest rate $(r_2 < r_1)$ will decline. Thus an austerity effort is a mixed blessing since it will lead to lower real income (Y) while achieving a lower price level (p). This conclusion is very much at odds with our intuition about the poor LDCs in which a national austerity effort is an unmixed blessing, since it can contribute to inflation control as well as to an increase in output capacity through a more rapid pace of capital accumulation.

2.4) The Monetary Philosophy of the General Theory

The title of the Keynesian classic suggests that the "General Theory" is traceable to a revolution in the philosophy of money and interest. The policy implication, centered in the management of aggregate demand, stresses the feasibility of the creation and annihilation of monetary purchasing power. The new monetary philosophy treats M as a store of wealth rather than a medium of exchange, and stresses the importance of the total money stock (M) rather than the flow of its incremental value (dM/dt). The doctrinaire position of this monetary philosophy is not a solid foundation on which a monetary theory of price inflation can be erected for the LDCs.

a) Money as a Store of Value or Medium of Exchange

Keynes inherited the Cambridge (Marshall and Hicks) tradition of overly emphasizing money as a store of value rather than as a medium of exchange. The notion of a medium of exchange clearly stresses the social significance of money, i.e. money as an instrument that facilitates exchange between two parties much as language serves as a medium to communicate ideas. In contrast, the notion of a store of value stresses the personal significance of money, much as language is a store of ideas for meditation when one is completely alone. The revival of the monetary culture in the PRC after 1978 suggests that

the social (i.e., organizational) significance of M is at least as important as its personal (i.e., psychological) significance, because the monetary culture really paved the way for social-organizational reform oriented toward direct communication and interaction. (See diagram 1b.)

b) <u>Demand for Money as an Asset</u>

When the asset approach is developed to its logical extreme, money becomes one of many alternative forms of assets that enter into the psychological utility function of a person (engaging in optimal portfolio management) who seeks to maximize his utility. (See introduction.) However, the legal tender property of money (i.e., society's consent to the compulsory power of money to cancel debt) implies that the lion's share of the money held by individuals really came into their possession involuntarily, since one has no choice but to accept his monthly pay check.[1] Professor Hicks, who initiated the assets approach in 1935 (see Hicks, 1935), deplored the over- voluntarization of the demand for money in the utility maximization approach when he declared in 1967 that the Cambridge School, from Marshall down to Keynes, has

> tried to match the whole stock requirement for money in voluntary terms. This, I now feel, was confusing; it had sent many of us (myself included) chasing what I now feel to be "will-of'-wisps." (Hicks 1967, p 16.)

If it is questionable to "match the whole stock requirement for money in voluntary terms" in an industrially advanced country, it is certainly more so for the socialist PRC. For in the capitalistic DCs, there at least exists a whole range of different types of monetized assets available for portfolio choice. In contrast, in the PRC portfolio management is trivial because money is the only major type of monetized asset available to the money-using public. Hicks believed that the lion's share of money:

> is the money that is needed to circulate a certain volume of goods, at a particular level of price. The old Fisher equation MV = pY gives a better picture of it than the over voluntarized 'Cambridge equation', M = k pY'. In relation to this part of money stock, 'velocity of circulation' is perfectly appropriate. (Hicks 1967 pp. 15-16, underlined Cambridge equation supplied.)

[1] See Tsiang (1982) for ideas covered in this subsection.

Hicks took the trouble to remind us that money as a medium of exchange (i.e., to circulate a certain volume of goods at a certain velocity V) is far more important than money as a store of value (i.e., to be demanded at a certain k). Furthermore, V is not just the inverse of k; it is superior to k! Instead of "demand for money", the LM curve should be interpreted as the "old Fisher equation" in which the velocity (V) is interest elastic.[2] This switch, from a monetary philosophy which regards money as a desirable property to be held, to one that regards M as purchasing power to be spent is an essential first step in moving toward a monetary theory of price inflation.

c) The Total Money Stock (M) and Money Printing dM/dt

When M is interpreted as a medium of exchange to accommodate trade (rather than as a stock of wealth to bring personal satisfaction), the increment of money through time dM/dt (i.e., money printing as it will be referred to from now on) becomes logically and consistently an artificial creation of unearned monetary purchasing power to command goods and services in the market in competition with the circulation of the existing money stock (M) representing attempts to buy goods and services by the purchasing power that the income recipients honestly earn. Instead of the round-about way of the Keynesian approach (as we have described above in diagram 3c), the printing of purchasing power, dM/dt, can bring about price inflation quite directly.

In a monetary theory of price inflation, the causal relationship between dM/dt and dp/dt is not brought about mechanically (e.g., by the curvature of the MPP_L curve in diagram 3c). A genuine monetary theory tries to probe beneath the surface of the correlation between dM/dt and dp/dt to uncover the social conflicts inherent in the money-printing process. The purchasing power

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[2] For example, in the upper deck of diagram 3c, with a drop of the interest rate from A to B, the value of V decreases because a larger M_2 is needed to circulate the same volume of $Y^\Delta = pY$.
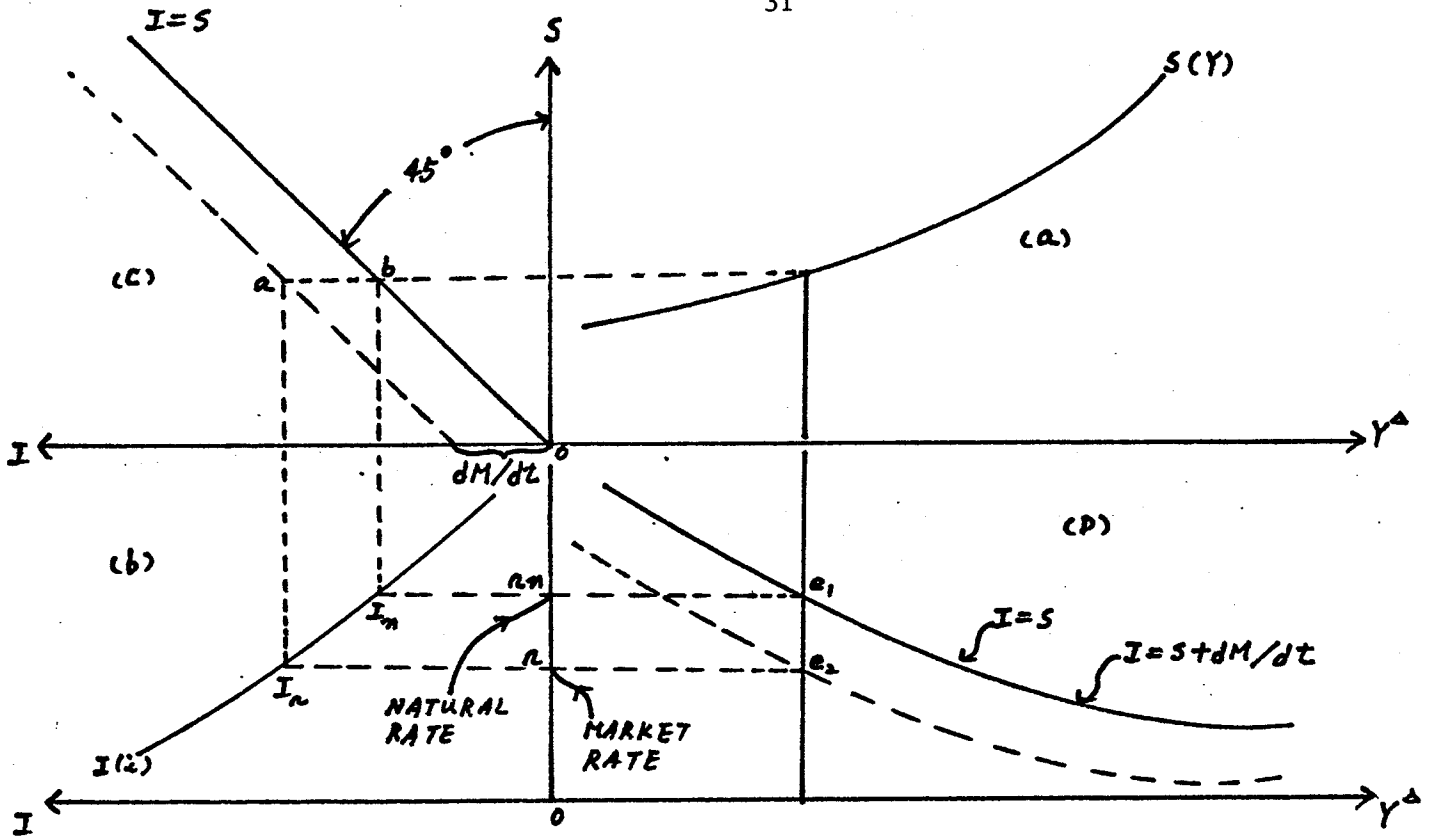
DIAG FOUR
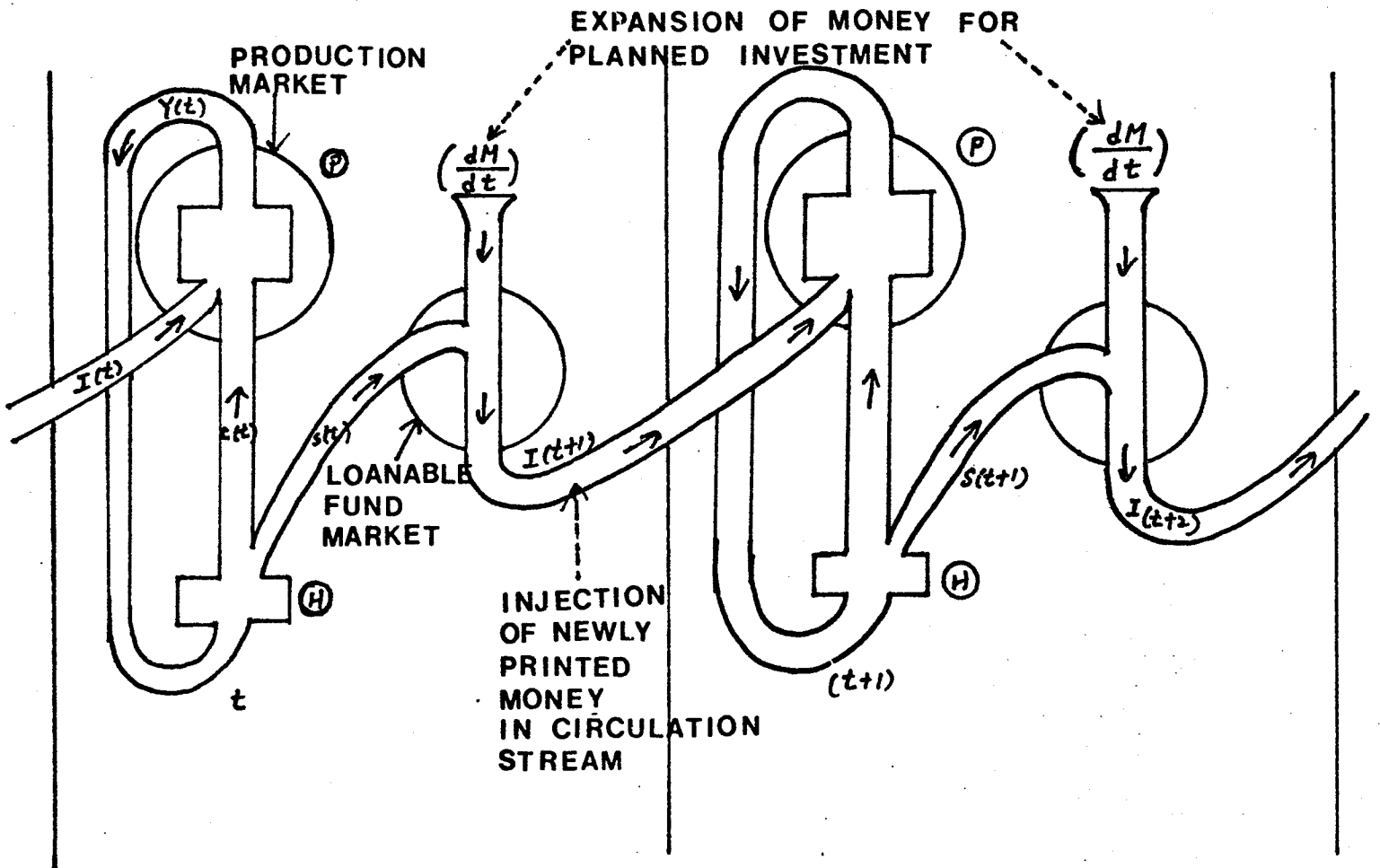
DIAG FIVE

competition becomes an <u>allocational conflict</u> if the printed money dM/dt aims at a type of product (e.g., military goods during a war) different from that traced to the circulation of M (e.g., civilian goods needed by the money-using public). Money printing can also be a source of conflict of <u>distributional justice</u>, as the purchasing power competition is between those who <u>earn</u> their income (in the case of the circulating M) and those who can gain access to the printed money (i.e., dM/dt) through political favoritism. When the power to print money is monopolized by the government of a sovereign state to promote growth, as in the LDCs (see section one), the competition of purchasing power becomes much more severe, escalating into a full-scale government-societal conflict accompanied by rampaging price inflation. Without a vision of distributional and allocational conflict, a monetary theory of price inflation degenerates into a superficial mechanical exercise. When the entire money stock is treated as an asset, the Keynesian inflation theory reviewed above represents such a case of degeneration.

2.5) Loanable Funds Theory

A rigorous formulation of the idea of the competition of purchasing power goes to the heart of the prewar loanable funds theory that recognized the inequality of savings and investment rather than their definitional equality in the Keynesian approach. (See Harris 1947, page 33.)

2.6a) $I(i) = S(Y^\Delta)$ (Keynesian)

   b) $I(i) = S(Y^\Delta) + dM/dt$ (Loanable Funds)

The Keynesian IS curve (2.6a) of diagram 2d is the solid curve reproduced in diagram 4d. For a typical monetary income level Y^Δ, the corresponding interest rate r_n is now interpreted as the <u>natural rate</u>. When a positive value of money printing (dM/dt) is given, I is greater than S. The solid curve shifts downward to a position shown by the dotted curve representing equation

2.6b. For each Y^Δ, the corresponding interest rate r (that is lower than the natural rate η_M) is the <u>market rate</u> of interest. Thus for given $S(Y^\Delta)$ and I(i), the interest rate is lowered ($r < r_n$) while the level of investment is raised ($I_r > I_M$) by money printing for every level of monetary Y^Δ.

Equation 2.6b states that voluntary savings $S(Y^\Delta)$ and money printing dM/dt are two alternative sources of supply of monetary purchasing power to meet entrepreneurial demand for money for investment <u>finance</u>. This notion of demand for money for investment finance emerged as a result of an important debate between Keynes and Ohlin, after the publication of the <u>General Theory</u> in which Keynes was quite apologetic when he stated:

> He has compelled me to attend to an important link in the causation chain which I had previously overlooked ....the additional factor previously overlooked, to which Professor Ohlin's emphasis on the <u>ex</u> <u>ante</u> character of investment decision has directed to is the following. During the interregime - and during that period only - between the date when the entrepreneur arranges his finance and the date when he actually makes his investment, there is an additional demand for liquidity........This factor should certainly be included in the list of motives (transaction, precautionary and speculative) affecting the state of liquidity preference........I should not have previously overlooked this point <u>since</u> <u>it</u> <u>is</u> <u>the</u> <u>copying</u> <u>stone</u> <u>of</u> <u>the</u> <u>liquidity</u> <u>theory</u> <u>of</u> <u>the</u> <u>rate</u> <u>of</u> <u>interest</u>. (Keynes, EJ No. 32, 1937, underlining supplied.)

> Planned investment, i.e. <u>investment</u> <u>ex</u> <u>ante</u> <u>may</u> <u>have</u> <u>to</u> <u>secure</u> <u>its</u> "<u>financial</u> <u>provision</u>" <u>before</u> <u>the</u> <u>investment</u> <u>takes</u> <u>place</u>........I should (I now think) have done well to have emphasized it when I analyzed the various sources of the demand for money in the General Theory. (Keynes, EJ, No. 37, 1937 underlining supplied.)

These apologetic remarks of Keynes obviously made no impression on his modern followers who regard M as an asset. Keynes has made it perfectly clear that the demand for money for "finance" is something quite different from the "transactions demand." While the transactions "demand" for money to pay wage bills or grocery bills is instinctive or involuntary (see section 2.4b above), the demand for finance is a voluntary calculated decision to acquire monetary purchasing power in the financial market with the full intention to command goods and services in the product market leading to capital accumulation. In a

stagnant economy with zero investment, the "transactionsdemand" is positive and the "demand for finance" is zero. In a growing economy of the real world, the "transactions demand" misses the vital part of the demand for money for finance associated with positive investment and capital accumulation. It is the "demand for finance" that will have to be stressed in formulating a theory of price inflation for growth sensitive LDCs. We will attempt to formulate a loanable funds theory that was not formulated rigorously before the War[3] and probably would not have survived against the Keynesian tide after the War. The construction of a loanable funds theory, even a crude version, is an essential first step in a counter-Keynesian revolution aiming at an inflation theory appropriate for an economy (e.g., an LDC) sensitive to the shortage of resources.

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[3] In the _Quarterly Journal of Economics_ (November 1936), the verdict on the _General Theory_ by Robertson reads "ultimately, therefore, it is not as a refutation of a common-sense account of events in terms of supply and demand for loanable funds, but as an alternative version to it." To this, Keynes complained of the lack of a formal loanable fund theory by remarking that "Mr. Robertson gives no reference to where the 'common sense account of events in terms of the supply and demand for loanable funds' is to be found....."

Section 3: Money Expansion and the Loanable Funds Theory

Having critically examined the Keynesian theory in the last section, our
present goal is to propose that the appropriate theoretical framework for the
analysis of price inflation in LDCs is provided by the prewar Loanable Funds
Theory. The Loanable Funds Theory will be examined in terms of its relation to
growth performance (3.1) and the dynamic of finance (3.2). While price
inflation has a nominal monetary cause (3.3), what lies beneath are social
conflicts that are inevitable when money printing is politicized for the
purpose of growth promotion (3.4).

3.1) Politicized Loanable Funds Theory for Growth Promotion in LDCs

The prewar Loanable Funds Theory was developed for the industrially
advanced countries at a time when growth and development had not yet become a
distinct economic discipline. Indeed, the distinction between DCs and LDCs in
economics was a postwar phenomenon associated with the revival of theoretical
interest in economic development. The Loanable Funds Theory is suitable as a
framework for inflation analysis in the LDCs because its core argument aptly
depicts the growth-promotional role of the government via money printing and
the inevitability of price inflation when such a policy is persistently
pursued.

In the developmental process of the LDCs, shortages of saving and
entrepreneurship are the two major bottlenecks for capital accumulation.
Diagram (4), presented earlier, shows that money printing can provide an
improvised solution to both problems. First of all, the interest cost is
lowered artificially for infant entrepreneurs. Thus, the printing of
purchasing power leads directly to the manufacture of windfall profits that
encourage private investment. By the same magic stroke of money printing,

resources can be made available to investors at levels that exceed the voluntary saving capacity. Before the War, the natural flow of resources could be distorted by the elastic supply of money generated by the _private_ banks, and this could lead to economic instability due to "monetary overinvestment." (See "Monetary Over-Investment Theories" in Haberler 1946.) When money printing was politicized after the War for growth promotion, reasons monetary over-investment became more severe on account of its persistence and directional non-neutrality. (See 1.3ab in section 1.) Money printing became politically popular because windfall profits appeal to vested interests while "over-investment" appeals to vested ideas (i.e., growth promotion).

The gap between saving and investment (i.e. dM/dt=ab) in diagram 4 is referred to as _forced saving_ in the Loanable Funds literature because the saver's sovereignty is violated. In the case of the PRC, people were never granted the right to make saving decisions and were always "forced to save" in the party state before 1978. When viewed in the light of this historical background, money printing and forced saving are quite natural at the present time, because what has been covertly subverted (i.e., the saver's sovereignty) was never respected as a tradition in the first place. Price inflation has occurred now because, with monetization, the money using public can effectively challenge the austerity decisions of the government.

3.2) The Dynamics of Finance

All inflation theories are dynamic because their aim is to explain price changes over time. The demand for money for finance is a dynamic concept in the Loanable Funds Theory that recognizes a time lag between _money printing_ and _money injection_ that take place in the finance and product markets, respectively and separately. The injection of money will lead to an increase of the total money stock in the circulation stream and this is conducive to price inflation

according to the time-honored equation of exchange.

a) <u>The Creation and Injection of Purchasing Power for Planned Investment</u>

In the dynamic macroeconomic framework shown for two consecutive periods in diagram 5, the product market and the loanable funds market are marked off separately. In the financial market, saving (S_t) and money printing (dM/dt) in this period will be used to finance planned (or <u>ex ante</u>) investment (I_{t+1}) in this period in preparation for the actual spending of I_{t+1} to buy capital goods in the <u>next</u> period. Denoting real saving (investment) by $S_t(I_t)$, we have

3.1) $p_t S_t + \frac{dM}{dt} = p_t I_* + 1$

There is a time lag between the creation of purchasing power ($\frac{dM}{dt}$) (in the finance market) and the actual spending of the same for investment in the product market. Through the spending of newly printed purchasing power, more money is <u>injected</u> into the circulation stream to augment the total money stock held by the money-using public. While the creation of purchasing power is a "conspiracy" between the government and a minority of borrowers (those favored by the authorities), that conspiracy will affect everyone and meet the resistance of the vast majority of the money-using public when the new money is injected. When the demand for finance is satisfied by the printing of money rather than by voluntary saving from earned income, the injection of new money always runs into "purchasing power competition" in the product market.

b)   <u>The Equation of Exchange and Inflation</u>

The equation of exchange explains why and how much price inflation will occur when the total money stock is increased.

3.2a)   pY=MV implying,

b) $\eta_p = E + \eta_V$ where

c) $E = \eta_M - \eta_Y$

The inflation rate (η_p) is determined by of E, the excess of η_M over

the real GNP growth rate η_Y, and η_v, the growth of velocity. (See 3.2b.) The equation of exchange can be written in equivalent forms involving the Marshallian k (=1/V):

3.3a) $M^\Delta = kY$ where

   b) $M^\Delta = M/P$, $k=1/V$

   c) $\eta_V = -\eta_k > 0$

Equation 3.3a can be interpreted as a behavioral equation of the demand for real money ($M^\Delta = M/p$), with a coefficient k per unit of real income flow (Y). However, for inflation analysis, it is far more convenient to interpret $\eta_V > o$ (or $\eta_k < o$) as a _quickening of the pace of spending_ by the money-using public in its protest against the encroachment on the saver's sovereignty by the political authority. (See 2.4b in last section.)

3.3) _Causation of Price Inflation_

Price inflation is always attributable to conflicts or the lack of societal consensus in regard to the output composition of production (or what should be produced) and/or income distribution equity (or how to share economic benefits fairly). In the growth sensitive LDCs, the production contradiction is a government-societal conflict in respect to the division of output for consumption or accumulation; the distributional conflict is between the favored entrepreneurial class and the money-using public that is exploited by the money-printing government. A sense of these conflicts is conveyed by the notion of forced saving in the Loanable Funds theory.

   a) _Savings and the Forced Savings Rate_

When equation 3.1 is divided by the price level (p), we have approximately (when the interval of planning for _ex ante_ investment is short)

3.4a) $(dM/dt)/p = I-S$ implying

   b) $J = (dM/dt)/pY = I/Y - S/Y$

The term $(dM/dt)/p$ in equation 3.4a will be referred to as _forced saving_,

since it is the additional amount of real goods and services that can be snatched away from the market for investment beyond the quantity sanctioned by voluntary saving (S).   In equation 3.4b, J is the <u>forced saving rate</u>, as it is the amount of forced saving expressed as a fraction of real GNP.   These concepts follow logically from the notion of demand for money for finance in the loanable funds approach.

b)   <u>Growth Promotion with Forced Saving</u>

When money printing is politicized in a growth-sensitive LDC (see Section I, 1.2b) to achieve a high forced saving rate, (J) becomes a primary policy objective of growth promotion to expand the output capacity (dY/dt) over time. Let us denote the (average) <u>voluntary</u> propensity to accumulate (s) and the marginal productivity of investment (θ) as[4]

3.5a) $dY/dt = \theta I$ (or $\eta_Y = \theta I/Y$)

b) $s = S/Y$

In 3.5a, θ is the incremental output capacity per unit of real investment (I) (its inverse ($1/\theta$) is the marginal capital-output ratio).   In 3.5b, the voluntary average propensity to accumulate (s) is saving (S) expressed as a percentage of capacity output (Y).   The resemblance of s to the Keynesian average propensity to save is only superficial, because Y is the capacity output the expansion of which is directly traceable to investment.   When equation 3.4b is substituted into 3.5a we have

3.6) $\eta_Y = \theta s + \theta J$

Notice that $s\theta = s/(1/\theta)$ is a saving-pushed growth rate of capital of the Harrod-Domar variety, as it is the ratio of s to the marginal capital-output ratio ($1/\theta$).   A similar interpretation can be given to θJ.   Thus the rate of

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[4] From the production function $Y = f(K, L)$, we have $\partial Y/\partial t = f_K dK/dt$ when L is fixed. Thus θ in 3.5a is the marginal productivity of capital. In LDCs, characterized by the shortage of capital and the redundancy of the labor force, it is reasonable to assume $dY/dt = f_K I$.

expansion of GNP is related to the "pushing" force of voluntary saving θs and the politicized forced saving via money printing (θJ). A high forced saving rate is politically irresistible because it appears to be a costless and convenient way to promote growth.

    c) <u>Forced-Saving Rates and the Severity of Price Inflation</u>

    Since the forced-saving rate (J) (in equation 3.4b) is a result of money printing, its potency to give that extra push to the expansion of output capacity (θJ in eq. 3.6) is realizeable only at the social cost of price inflation. For, with the aid of the equation of exchange (eq. 3.2a), the forced saving rate can be written as:

3.7) $J = \eta_M / V$ (Proof: $J = (dM/dt)/PY = ((dM/dt/M) \cdot (M/PY) = \eta_M / V$

which is the ratio of the money growth rate η_M to V. Thus a high value of J is realizeable by a higher money printing rate (η_M) by the government and a slower pace of money spending by the money-using public (V). The two causes of price inflation (E and η_V in eq. 3.2b) can be written as follows:

3.8a) $\eta_p = E + \eta_V$ where

    b) $E = u\eta_M - \theta s$

    c) $u = 1 - \theta/V = (v - \theta)/V$

Proof: $E = \eta_M - \eta_Y = \eta_M - (\theta s + \theta J)$ by 3.6)

             $= \eta_M (1 - \theta/V)$ by 3.7 QED.

    Thus the severity of price inflation can be decomposed into the effect of E when V is constant, and an η_V effect. The two sub-cases can be analyzed separately.

<u>Constant V Case</u>

    When V is constant, equation 3.8b becomes $\eta_p = E$. A high voluntary propensity to accumulate (s) always contributes not only to an increase in output but also to a lessening of the pressure for price inflation, especially

when θ is high (i.e. when output capacity expands rapidly with investment).

The linkage of s with price inflation in this way has always been recognized by

the followers of Keynes in the early postwar years. Thus Alvin Hansen made the

following observation regarding the U.S. economy in 1957:

> Our economy is equipped with three powerful safeguards against peacetime
> inflation: (1) our prodigious capacity to increase production under
> pressure (<u>i.e. a high θ</u>), (2) our capacity, both corporate and individuals,
> to save at high income levels (<u>i.e. a high s</u>); and (3) our demonstrated
> capacity at responsible fiscal and monetary management (<u>i.e. central bank
> autonomy</u>). (<u>Hansen 1957</u> page 42, underlining supplied).

Hansen would certainly have agreed that, when an economy is deprived of

such safeguards (e.g. in the LDCs or the U.S. after 1973), the pertinent theory

of price inflation is the Loanable Funds Theory.

The term $u=1-\theta/V$ in 3.8c is an "inflation multiplier" which magnifies the

impact of the money growth rate on the inflation rate. It is reasonable to

assume that the multiplier is positive.

3.9a) $u > 0$ implied by

   b) $V > \theta$

Equation 3.9b shows that V and θ really have the same dimension of being a

flow-stock ratio. When θ is fixed, the multiplier U takes on a higher value

when V is larger or, in other words, when the money-using public spends their

money at a faster pace. When V is fixed, it takes on a higher value when θ is

small, or when investment financed by money printing has limited output-raising

effects. In the prewar literature a small θ is traceable to a long gestation

period for investment, while, more recently, it has been amenable to a

supply-side interpretation.[5/] The money-spending habit (V) and the gestation

lag θ must obviously be part of the theory of price inflation when its root

cause is traceable to economic scarcity.

[5/] For the notion of the "gestation" (or "construction") period in prewar
business cycle literature, see Haberler, page 136.

<u>Variable V Case</u>

When evaluating equation 3.8a, we see that an increasing pace of spending, proxied by a positive $\eta_V > 0$, really applies additional pressure for price inflation. Equation 3.7 implies:

3.10) $\eta_J = ^\eta\eta_M - \eta_V$

Hence the forced-saving rate is increased by money acceleration $^\eta\eta_M$, while decreased by η_V. Thus η_J can be interpreted as the result of a tug of war in purchasing-power competition between the money-printing government $(^\eta\eta_M)$ and the money-using public, with the latter protesting against the money-printing policy that encroaches on their saver sovereignty. They can protest effectively by spending their money faster (η_V).

In the party-controlled PRC, a faster pace of spending by the money-using public reduces the value of J and is an effective way to frustrate the government's growth-promotion effort. In the absence of a meaningful goverment-societal dialogue, inflation can occur if an ambitious investment program, dictated by the government with a view to future growth, is not sanctioned by high voluntary saving on the part of a society that, having lost faith in the future, is preoccupied primarily with the present.

It is well known that, when society is infected with an inflation psychology, the public will insist on a high value of $\eta_V > 0$, (Cagan 1956). In this situation (i.e., when $\eta_V > 0$), the government will have to give up its practice of promoting growth through money printing. Otherwise, money printing would have to accelerate $(^\eta\eta_M > 0)$ to maintain a constant forced-saving rate $(\eta_J = 0)$. Equation 3.8a implies that in th latter case, price inflation will get out of control because both η_M and u will increase through time. While it is convenient and easy for a government to initiate a forced-saving policy to promote growth via money-printing, it is very difficult to sustain it when citizens with inflation expectations have the freedom to

spend money to protect themselves. For these reasons, an economy's reliance on forced saving to promote growth is intrinsically unstable. For the PRC, now a monetized LDC economy, the best cure for price inflation in the long run is to stop it in its tracks before it gathers momentum. The Chinese people do have the power to defeat any forced-saving policy by stepping up the pace of their spending.

Section 4: Modeling of Monetary and Fiscal Policy for Inflation Analysis

One major institutional difference between the socialist PRC and a capitalist DC or LDC is in respect to their fiscal systems. The socialist government receives the lion's share of its revenue as taxes and "profit" in its capacity as "owners" of state enterprises, and allocates the lion's share of its expenditures for investment in them. In contrast, government expenditures allocated for investment in public enterprises in capitalist countries are relatively small or even insignificant. Thus for inflation analysis in the PRC, the Loanable Funds model outlined in the last section must be expanded to include fiscal policies (4.1). Following that, we can then investigate the time-honored topic of the impact of government budget deficits on price inflation (4.2). When this model is applied to the socialist PRC, the root cause of inflation is shown to arise from monetary policies directed toward promoting growth and enhancing political stability.

4.1) Monetary and Fiscal Policies

Seen in a historical perspective, public finance was not a part of macroeconomics in the inter-war period. The integration of monetary policies and fiscal policies in the same theoretical framework of reasoning, directed at the issue of economic instability, was a notable contribution of Keynes. Since a contemporary LDC is concerned primarily with growth, monetary and fiscal policies should be integrated in the loanable funds framework to illuminate the growth-promotional role of the government. Monetary policy becomes a growth- promotion instrument because it can bolster profits and command resources for investment finance through forced saving. (See 3.1 in Section 3.) Fiscal policies via deficit finance can also become a growth-promotional instrument for the same reason. However, to examine the inflationary impact of fiscal

policies, we must decompose government expenditures into components that may or may not be directly relevant to growth.

a)   The Public and Private Demand for Finance

Equation 3.1 can be modified by adding a term (B), which corresponds to the government budget deficit (i.e., the gap between expenditure G and revenue T):

4.1) $dM/dt = B + pI - pS$ where $B = G - T$

Money printing (dM/dt) now serves to plug both the I-S gap and the budget deficit gap (B). The printing of monetary purchasing power allows the beneficiaries (i.e., the government itself and the private money borrowers) to command resources in the product market. The two-gap approach indicates that the plugging of two types of "demand in finance" by means of artificially printed purchasing power is the root cause of price inflation.

As the two borrowing parties compete for the demand of loanable funds, money printing can prevent private borrowers (I) from getting squeezed out of the finance market by B as the market rate of interest is lowered. Thus, by money printing, the profit for investors is raised while the interest burden of the government is lowered. The political pressure for money printing is irresistible both because private entrepreneurs and the finance minister welcome it and because society can be persuaded to accept this convenient and "costless" method of growth promotion.

b)   The Growth Promotion Role of Public Expenditures (G)

The issue of whether or not government expenditures (G) can contribute to an increase in the supply of real output (dY/dt) is obviously a matter of crucial importance. Certain government expenditures for public consumption (e.g., investment in human capital or social infrastructure such as education, health, roads) do serve a constructive growth-promoting purpose. However, these growth-promotional expenditures are usually viewed as

public consumption because of the long gestation lag involved. The prewar monetary over-investment theory made it abundantly clear that the financing of investment projects with long gestation periods through monetary expansion invites concurrent inflation, in spite of its long-run contribution to productivity expansion.

Expenditures on national defense and law enforcement serve no growth-promotion purposes for the same reason, i.e. they do not contribute to a concurrent expansion of output. Indeed, there are government expenditures (e.g. on welfare) that are counter-productive to growth promotion when considered from the "supply side." For the analysis of price inflation, one has to assess the timing of output response associated with different types of government expenditures. For simplicity we shall assume that the term B in 4.1 will not contribute to any expansion of output.

4.2) Taxation Without Consent and the Inflation Tax

It is well known that money printing that allows the government to acquire the real resources needed to fight a long war is comparable to taxation without consent. Similarly, in a peacetime economy, forced saving is comparable to an inflation tax. In the two-gap approach, voluntary and forced saving accommodate the two types of demand for finance (I and B) jointly.

a) Taxation Without Consent

Let us assume that all government expenditures (G) are of the public-consumption or non-productive variety; then investment (I) is the only expenditure that contributes to output expansion dY/dt. Equations (4.1) and (3.5) imply:

4.2a) $\quad (\frac{dM}{dt})/p = B/p + I - S$

b) $\quad J = (\frac{dM}{dt})/pY = B^{\Delta} + (\frac{dY}{dt})/\theta - s$ where

c) $\quad B^{\Delta} = B/pY$

d) $\quad \eta_Y + \theta B^{\Delta} = \theta J + s\theta$

All the equations in the monetary model described in the last section are generalized with the addition of one term related to the budget deficit. Thus forced saving (dM/dt)/p is used to finance the I-S gap and the real budget gap (B/p) (eq. 4.2a). In 4.2b the forced-saving rate (J) includes a new term (B^Δ) representing the <u>deficit-income ratio</u> (i.e., the real government budget deficit as a fraction of GNP) (eq 4.2c). The forced-saving term (θJ) supplements voluntary saving ($s\theta$) to solve a new type of problem beyond growth promotion (η_Y), namely to provide resources for public consumption unsupported by tax payments. Equation 4.2b shows that the impounding of resources by money printing (θJ) supplements voluntary savings ($s\theta$) for the promotion of growth (η_Y) and/or political stability (θB^Δ). (See below.)

b) <u>Causation of Price Inflation</u>

When equation 4.2 is substituted into 3.2b we have:

4.3) $\quad \eta_p = \eta_M(1-\theta/V) + \theta B^\Delta - s\theta + \eta_V$

As compared with equation (3.8), we see that the only difference is the addition of a new term, θB^Δ. Notice that the budget deficit contributes to a higher inflation rate when it accounts for a higher percentage of GNP--as we would expect. Since a larger public deficit amounts to a diversion of resources from growth-promotion to consumption, it will lead to heavier price-inflation pressure when the marginal productivity of investment (θ) is high.

4.3) <u>Growth with Political Stability</u>

While monetary expansion is used in DCs for stabilization and in LDCs for growth-promotion purposes, it is used in the PRC at present to promote political stability as well. The cure for price inflation must therefore also be centered on a political solution.

a) <u>Promotion of Growth and Political Stability</u>

Since the founding of the socialist state 40 years ago, the politically

sensitive urban class in the PRC has gradually become accustomed to and taken for granted government guarantees -- not only of a package of welfare benefits such as education, health and social insurance, but also of basic needs such as food, clothing and shelter. Those who are younger than 40 know only a way of life that relies on the patronage of the political power for the provision of the basic needs of daily existence, and the guarantee of such basic needs by the State has become a minimum condition for political stability.

At present, much of the government deficit in the PRC (represented by the term θB^Δ in eq 4.3) consists of transfer payments to finance the basic needs of the urban population. When the government precluded the bankruptcy of state enterprises by monetary subsidies, it essentially guaranteed the basic needs of the workers in these factories. (The proposed bankruptcy laws explicitly confirm these guarantees in case a state enterprise declares bankruptcy in court.) State subsidization of state trading to make up the difference between the high procurement prices of agricultural goods (paid to the farmers) and the low retail prices in the urban centers also guarantees the basic needs of the urban population. Seen in historical perspective, the foundation of political stability has shifted from austerity discipline through ideological indoctrination before 1978 to a political guarantee system (θB^Δ) after 1978 via the granting of monetary purchasing power in a monetized society.

The terms on the left-hand side of equation 4.2d succinctly summarize the political-economic causation of price inflation in the PRC. The political guarantee (θB^Δ) and the ambitious growth promotion goal by money printing (i.e., η_Y, aimed at the quadrupling of GNP by the year 2000) must be regarded as the primary causes. Inflation will be unavoidable when these pressures overwhelm the growth rate sanctioned by voluntary savings ($s\theta$) and forced savings (θJ), as depicted in equation 4.2d -- and the public responds by spending money at an increasingly faster rate.

b) <u>The Cure for Price Inflation</u>

To maintain <u>growth with political stability</u>, monetary expansion in the PRC
will be unavoidable. Thus to control price inflation, it is essential to
increase the voluntary saving capacity (θs). For this purpose, the populace
must have a clear vision of the benefits that voluntary saving can bring to
them. The experience of Taiwan has shown that the voluntary saving capacity
can be quite high when individual Chinese are allowed the freedom of
accumulating a variety of financial assets (stocks, bonds, and deposits in the
formal financial markets) -- i.e., the freedom to earn property income
(interest and profits) as good "capitalists" who have an insatiable drive for
accumulation.

In the PRC at present, families cannot purchase stocks and bonds because
the proprietorship of the state enterprises is yet to be privatized. As long
as the Party insists on the thought of "Marxism and Maoism" they have a strong
precautionary motive not to be labeled "capitalists" in the first place.
Under these conditions, families can satisfy their drive for accumulation only
by acquiring bank deposits (M), furniture, or TVs. Thus, in the short run, a
high propensity to save can be sustained only by a high-interest policy that
induces the populace to hold cash (M). However, a sustained high rate of
voluntary saving accompanied by the growth of a money stock (M) that circulates
slowly is almost an impossibility, according to the monetarists (Friedman 1956,
1970). In the long run a high average propensity to save can be sustained only
when families are given more freedom to become "capitalists" -- i.e., to become
part owners of the state enterprises or, more promisingly, the exclusive owners
of private enterprises. Ultimately, inflation control is a
political-ideological issue in the PRC.

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