CONFLICT AND INTERDEPENDENCE IN A MULTIPOLAR WORLD

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Instability (or incoherence) is an endogenously generated characteristic of an economy with important financial linkages. The international economy is such a system. The large dollar denominated indebtedness, especially of the poor countries, makes the international financial system potentially unstable. The stability of the system requires that the United States maintain both a strong trade deficit and long-term capital exports. For this not to be too great a burden on the United States the other rich countries must not base their domestic prosperity upon a strong balance of trade surplus with the United States.

“You shall not press down upon the brow of labor this crown of thorns. You shall not crucify mankind upon a cross of gold.”

William Jennings Bryan
Speech at the National Democratic Convention Chicago (1896)

1. Introduction

A century ago the conflict – and the interdependence – between debtors and creditors gave rise to the wrath of Bryan, a great American politician. To Bryan, deflation – or even the absence of inflation – was analogous to crucifying debtors. In the 1890s, as in the 1980s, the conflict revolved around banks which, as the proximate creditors and as the merchants of debt, are at the center of every crisis of indebtedness.

The conflict between debtors and creditors continues within our national states but, in addition, there is now a major conflict between debtors and creditors, between banks and their customers, that transcends national boundaries. The Latin American debt crises are the clearest examples. In the first skirmishes (to 1985) the apparent victory went to the creditors (the banks); deflation or disinflation, austerity and non-repudiation carried the day. But this victory may well have been transitory, for the cash flows needed to validate the debts was not fully forthcoming. Austerity, which decrees lower incomes for debtor countries, may not be a valid way to achieve a sustained ability to meet payment commitments.

The agreements to adopt austere domestic policies have led to debt refinancing and the folding of accrued and future interest into outstanding
debts. Bookkeeping tricks have been adopted, not to fool the stock market or the authorities but to satisfy legalistic requirements.

If we are to make things better, we need a better understanding of how economies with elaborate and large financial linkages interact. A world with large and sophisticated financial links among its units does not behave like a world in which such links are small and primitive. In a world of sophisticated capitalist financial practices, debt-deflations can occur. Debt-deflations, which were described by Irving Fisher, are interactive processes in time in which price and profit deflations lead to a decrease in capital asset prices, the flow of nominal wages and profits, a decline in investment and new financing, a further decline in prices and profits, and bankruptcy and debt repudiations which lead to further declines in profits. A debt-deflation leads to a 'breakdown' of the economy (incoherence or chaos) such as occurred in the United States in January and February of 1933 [Fisher (1932, 1933), Minsky (1982)].

If policy and institutional reforms are to help return the world to a regime of rather tranquil expansion, we need to understand what the path of our economy through time would be if it was 'left alone'. Furthermore if the non-intervention path implies 'disaster', we need to know how intervention can avert a potential 'disaster' [Weintraub (1979), Minsky (1957)].

It is in the common interest of debtors and creditors to avoid a debt-deflation and a long lasting depression which may follow. But the balance of trade structures that enable international debts to be validated impose non-trivial costs upon the creditor countries. The unemployment and industrial disruption in the United States' rust belt are not due solely to 'industrial' inefficiencies. They largely are due to exchange rate patterns that emerged as market mechanisms 'tried' to attain balance of trade positions which enable debt burdens to be carried. A conflict between, as well as within, countries emerges out of the way markets respond to the need of debtors to earn funds so they can fulfill payments due on debts. There is no guarantee that the set of responses induced by a need to meet such payment commitments will lead to cash flows that enable the debt contracts to be fulfilled.

2. Endogenous instability

The theme of this conference is 'Adjusting to Shocks'. This way of phrasing the problem prejudges the issues of how a financially complex system behaves. Implicit in the shock terminology is the idea that the internal workings of the economy lead to a tranquil expansion and that an incoherent and crisis laden performance of the economy such as has ruled over the past decade is due to external shocks such as the 'oil shock', the 'Soviet grain shock' or the 'Federal Reserve defense of the dollar shock'. If it is assumed – as the new classical rational expectations economics does – that there is an equilibrium position and a strong equilibrating process that leads the economy to full employment and stable relative prices, then the cyclical and incoherent behavior of the economy must be imputed to 'surprises', perhaps originating in the monetary system [Friedman (1968), Lucas (1983), Minsky (1984)].

The economic theory that has business cycles, incoherence and conflict result from shocks does not integrate banking and finance into the core of the analysis. The pure General Equilibrium Theory derives its results from an essentially non-monetary analysis. Money in this theory is a fiat instrument that facilitates transactions and which may be a vehicle that enables units to carry command over resources from one period to another [Hahn (1983)].

If bank money exists, there is borrowing from banks, payment commitments by debtors to banks, and payment commitments by banks to depositors. The complexity that results from borrowing for use in financing profit seeking production and the ensuing commitments to make payments to banks out of anticipated profits radically affects the behavior of the system through time.

Much is now known about the behavior of complex intertemporal systems that was not known before the age of the computer. The characteristics of the time series that a complex multi-dimensional, non-linear and time dependent system of equations generate cannot in general be determined by solving the system. But by means of computer runs the characteristics of the time series that are generated as initial conditions and parameter values are varied can be determined 'empirically', if not 'analytically' [Albin (1985), Day (1982, 1984), Vercelli (1984)].

Let us refer to linear accelerator multiplier models that were the vogue about thirty years ago. If a simple linear function, in which consumption depends upon income, is combined with an accelerator function, and in which investment depends upon changes in income, a linear second-order difference equation is derived. Such an equation can be solved and the solution equation tells us – depending upon the initial conditions and the parameter values – the value of the variables in each period. The value of the roots of the solution equations defines the path that will be generated; whether it will be damped or explosive, monotonic or cyclical.

Such a simple model has no place for finance – for money or banking. Some 27 years ago I used monetary factors and a basically monotonically explosive accelerator multiplier model to generate cycles or growth-monetary

1The work of Friedman and of Lucas aims to show that a transitory non-neutrality of money is consistent with a longer run 'equilibrium' neutrality of money, so that monetary shocks can lead to business cycles. Keynes, on the other hand, argued that money was not neutral; this enabled business cycles to result from endogenous processes rather than from reactions to external shocks. See Minsky (1984).
behavior constrained explosive and energized damped structures [Minsky (1957)].

Day (1982, 1984) can be interpreted as showing that the 'empirically' derived time series of processes that are non-linear, multi-dimensional and time dependent exhibit behavior that is analogous to that which I studied in the fifties, in that acceptable values are generated for a time followed by a period characterized by unacceptable values. The imposition of new initial conditions by means of interventions and rigidities can lead to a time series that exhibits an acceptable time path.

Floors and ceilings, rigidities, conventions and policy interventions are logically equivalent to 'stopping' the endogenous process and 'starting' it again with a set of initial conditions due to the interventions. This new beginning approach achieves apparent coherence even though the endogenous reactions of the system lead to chaos. The result, in the accelerator multiplier models of the 1950's and in today's non-linear systems, is a system that leads to 'bounded variation' rather than equilibrium. Endogenous processes which if left alone would lead to chaos (incoherence) can be channeled by means of constraints, institutional rigidities and policy interventions into generating acceptable paths. To an unknowing observer, the system seems to have an equilibrium, although in truth it does not [Blatt (1978)].

In the study of dynamic processes, it is apparent that the more complex the system – the larger the number of dimensions, the greater the number of intertemporal linkages and the more significant the non-linearities – the greater the likelihood that the system's path will exhibit initial coherence that breaks down into incoherence. Furthermore apparent coherence can 'spontaneously' emerge out of a period of incoherence. But, in an economic system with institutions, usages and interventions, the internal dynamics do not determine all of the economic variables that are fed into the processes that generate tomorrow. Tranquil expansion within this theoretical framework is not the result of a nice polite system seeking, achieving and sustaining a dynamic equilibrium, but rather results from the combination of dynamic processes that yield internal incoherence and a set of institutions and interventions.

In our economy the imposition of externally determined values is necessary so that apparent coherence may rule. In our world deregulation and non-intervention are policy rules that accept disasters which are in fact unavoidable, as unavoidable. One role of economic theory is to explain how systems of intervention may offset 'incoherence breeding' endogenous processes and offer guidelines for effective intervention.

Once it is accepted that apt institutes and interventions are needed then conflicts that center around who benefits from particular systems of intervention arise. All may agree that it is important to avoid a debt-deflation and the subsequent deep depression. However, as there may be a variety of ways to achieve these objectives the distribution of costs and benefits from interventions will vary. Once outcomes depend upon policies, the potential for conflict increases even as the acknowledged interdependence increases.

The complex international financial structure is a system that conforms to the conditions for the endogenous generation of chaos.

3. International financial relations

Financial interrelations do not stop at national frontiers. Both the ownership of capital assets and operating divisions – mainly, but not exclusively, in the form of multinational corporations – and financial relations – in the form of direct debt and debts to banking institutions – cross borders. Both capital asset ownership and financial interrelations mean that cash payments need to be made from one national economy to another. The international payment commitments and financial assets may be fixed or contingent and they may be denominated in the currency of either the creditor, the debtor, or some third country. Typically, but not exclusively, the denomination is either in the currency of the lender or of the financing center for the international economy.

Since World War II the largest source of funds for financing activity has been the New York money market and for much of the time the United States was the largest source of international loans and investments. As a result, international financial linkages largely, but not exclusively, take the form of dollar denominated indebtedness. This is so even if the loans are on the books of non-United States financial institutions and if the borrowers from, lenders to, or depositors in the institutions are not United States entities. There is a vast international network of dollar denominated debt which leads to large cash flows to United States entities and to the non-U.S. banks and nationals that own dollar denominated assets.

This structure makes the United States analogous to a bank and the rest of the world analogous to depositors and borrowers. The rest of the world, over each period, has to meet financial commitments on their debts. In international financial relations it appears that 'the more things change, the more they remain the same', for the international monetary and financial system that now rules is like, but not identical with, the pre-World War I structure of international monetary and financial relations. The positions taken and the operations of the Federal Reserve since the late 1970's are analogous to the operations of the Bank of England and in the decades prior to World War I. The current international monetary and financial system is a fluctuating exchange rate system with the Federal Reserve as the key operating organization. Some 70 years ago there was a thin reserve gold
standard system with the Bank of England as the key operator [Sayers (1936)].

The two apparently different systems are equivalent because before World War I the Bank of England was the essential operator in a system characterized by a vast structure of indebtedness denominated in pounds or, its equivalent, gold. Today the Federal Reserve is the essential operator in a system characterized by a vast structure of indebtedness denominated in dollars. The fact that today there is a flexible exchange rate regime rather than a gold standard is of secondary importance compared with the impact of international indebtedness denominated in the dollars.

The vast set of financial links among economies that are denominated in dollars, means that the Federal Reserve is often constrained by the need to maintain the dollar-centric international financial structure just as Bank of England operations before World War I were often reactions to developments in international financial markets [Kindleberger and Laffargue (1982)]. In discussing the operations of the Bank of England in the heyday of both the international gold standard and London’s power as the financial center of the capitalist (at that time, the entire world, R.S. Sayers remarked that ‘it is the duty of every bank and most of all of a central bank, to be rich’ [Sayers (1936, p. 27)]. Being rich means that a bank, a central bank, or any other debtor for that matter, has the power to force a ‘cash flow’ in its favor (i.e., to make its liabilities scarce), without imposing costs that are too high on itself and on its debtors.

A country whose money is the principal currency of denomination for international indebtedness and whose national money market is the international money market is like a banker. For its currency and financial center if function as the world’s currency and financial center two criteria need to be satisfied; the rest of the world can acquire sufficient amounts of its currency so that payment commitments can be fulfilled and the central bank and national economic policy of the key currency country can make its currency scarce without extracting too high a price from either the home or foreign countries.

International financial developments are important in determining ‘big’ changes in United States monetary policy. The Federal Reserve shifted towards monetarism in 1979 largely because the dollar denominated international debt structure was under pressure as foreign and domestic holders fled from the dollar. It abandoned ‘monetarism’ in mid-year 1982 as a response to the flight to the dollar that peaked with the Mexican and Penn Square crises. A ‘constraining money supply orientation’ was the Federal Reserve’s reaction to a falling dollar and an accommodating money supply stance was the reaction to a rising dollar. There is now a ‘flexible band’ within which monetary policy operates. The boundaries are determined by market flights either to or from the dollar. The autonomy of the Federal Reserve to operate with domestic money supply, interest rates or even  ‘economic’ conditions, such as prices or employment, as targets is limited because it has an overriding responsibility to maintain orderly conditions and to abort incipient financial crises and panics. Because of the links that exist among the United States money market, offshore money markets and offshore operations of United States banks, the Federal Reserve must function as a lender of last resort to the international financial system.

To understand today’s international financial system and the effects of monetary policy actions we have to start with each ‘day’s’ initial position: a structure of inherent international financial linkages that takes the form of debts, in good part to banks which in turn have ‘depositors’ [Minsky (1979)]. This is different than the balance of imports and exports, the usual entry point for the study of international financial relations. The international financial structure leads to flows of payments, in the currency of denomination of the debts, from debtors to banks and from banks to ‘depositors’. The normal functioning of this structure of financial linkages also requires that there be a flow of funds from depositors to ‘banks’ and from ‘banks’ to ‘borrowers’.

The non-United States domicile of leading agents in dollar denominated financial transactions is a vital special property of today’s structure. While the responsibility for maintaining the viability of the international financial structure falls largely on the United States, the proximate beneficiaries from the viable financial structures include banks, firms, and households which are not United States entities. Such a concentration of responsibility (and costs) and dispersal of benefits can interpose political obstacles to actions needed to assure the viability of today’s financial structure: United States workers may lose jobs so that Brazilian debts to Swiss bankers that manage accounts for Arab interests can be validated.

4. Elementary characteristics of banks and banking

Banks can run a book in any unit – dollars, marks, Ecu’s, cigarettes or turpents. A risk averter bank, especially in a regime of fluctuating exchanges, will keep a closed book: dollar deposits will be offset by dollar assets, etc. When assets and liabilities do not match for each currency of denominations, the book is ‘open’. Fixed exchanges – a gold standard – is a device that limits losses and gains from having open positions.

Just as nature abhors a vacuum, a banker abhors an open position. However his ‘closed’ book will be a ‘banker’s book’; the liabilities will be of shorter term than the assets. Each bank therefore has a rollover problem: maturing liabilities are normally paid from the proceeds of issuing new liabilities. During periods of financial turbulence, such as the summers of 1979 and 1982, when holders of bank liabilities seek to change the currency
of denomination of their assets, banks may develop open positions. Deposits are shifted among currencies to accommodate depositors, even as assets remain in their initial currency. Such positions are open only until the assets mature.\footnote{In the late summer of 1979 some banks papered over emerging open positions in which Swiss franc liabilities exceeded their Swiss franc assets by issuing long-term debt denominated in Swiss francs.}

The discount window at the Central Bank is a refuge for banks caught in a rollover problem. However, access to the Federal Reserve is restricted to member banks or U.S. chartered banks. A Mexican, German or Swiss bank does not have direct access to the Federal Reserve. Dollars to meet withdrawals will be available either from a bank's own resources (securities that are marketable for dollars in New York are part of every international bank's position) or from the home Central Bank. A Central Bank's ability to provide dollars depends upon its dollar balances and arrangements with the Federal Reserve for swaps of its domestic currency for dollars. The Federal Reserve exercises its responsibilities for resolving any international rollover or flight problem by keeping orderly conditions in the United States money market and by providing dollars to domestic banks and to foreign central banks by way of discount, swap or similar arrangements.\footnote{The final collapse of the Continental Illinois Bank of Chicago was triggered by a withdrawal of jumbo deposits by, it is presumed, Japanese banks; this led to a flight of other offshore deposits. The Federal Reserve made this withdrawal possible by a massive infusion of funds through the discount window. Finally, the authorities announced that they stood ready to validate not only all deposit liabilities at the Continental Illinois but also all deposit liabilities at the other 'major' or 'giant' banks. In this way the high powered money of the international banks was protected.}

Debits denominated in dollars mean that every day payments of interest and principal must be made in dollars. Debtors can have dollars to meet such payments commitments because of

1. a surplus due to current income (profits or a 'favorable' trade balance),
2. borrowing,
3. sale of assets,
4. stock of dollars on hand.

The fourth item -- stock of dollars -- can be eliminated. Cash holdings are economized by holding short-term dollar denominated financial assets which can be readily marketed. The sale of assets, borrowing and a trade surplus (profits) are the significant ways in which debtors obtain the cash that is required by their debts.

The ownership by foreign monetary authorities and international banks of short-term marketable dollar instruments is a critical element in determining the 'borders' to the band within which the Federal Reserve must operate. If their holdings of dollars and dollar instruments increase substantially more rapidly than the felt need for dollar assets by these offshore banking institutions then there will be low interest rates in the United States. Dollar assets will be used to reduce dollar denominated liabilities. The dollar will tend to depreciate; this can trigger a run from the dollar. If, as in 1979, this unfavorable 'foreign position' is accompanied by domestic inflation and 'low' interest rates, then a flight by domestic holders to collectables, gold and being in debt will accompany a flight to other currencies.

In the recent past, asset sales have exacerbated rather than ameliorated the international payments problem. International payment difficulties lead to a fear of political and social instability. Such fear leads to a felt need for a safe haven by holders of assets denominated in a wide variety of home currencies. Downside pressure on home currencies on the exchange results in a perverse increase in the demand for dollars, thereby amplifying initial difficulties. Current account deficits and a run to the dollar will quickly erode any initial 'buffer' of cash or marketable securities.

Market or non-concessional lending depends upon borrower and lender expectations of future incomes. For international financing, current lending reflects expectations of favorable balance of payment conditions for the borrowing country. The rest of the world has to earn sufficient dollars on its trade and current services account to pay interest on its debt; if not now, then in that future that guides expectations leading to current actions.

5. A tiers perspective on financial relations

We can visualize the balance of payments of a country as a series of tiers. These tiers represent the way payments or receipts arise. Because of our concern with financial flows and the sources of funds that validate financial commitments, payments and receipts that are due to the inherited commitments are separated from those that are due to current output. We also separate the flow of new financing that can be assumed to be voluntary and those that are the 'balancing' or 'settling' item. Thus we break the balance of payments into four tiers:

(I) payments due on outstanding financial instruments (interest, dividends and maturing debts),
(II) the 'balance of trade',
(III) investments, both rollover and new,
(IV) short-term balancing items -- bank deposits, central bank positions in foreign currency and 'traditionally' gold movements.

Interest, dividends and the amount of the principal that is due over a period are the first tier. The payment commitments on account of liabilities
are visualized as equivalent to overhead or fixed costs that businesses have to cover before they can book profits. Of course interest payments and the repayment of principal on debts are contractual and dividend payments are contingent upon earnings. If a ‘national economy’ has a large ‘nut’ to make in the form of dividends, then payments will ‘decrease’ when profits fall. If the payments are mainly contractual (interest and the repayment of principal) then they will not contract in a recession. If international financial relations are largely in the form of ownership of capital or the ownership of equity shares, then a decline in profits in the ‘debtor’ country will reduce the international payments in tier one, whereas if the international financial relations are mainly in the form of debts a domestic ‘recession’ does not reduce payment commitments.

The interest, dividends, and repayment of principal due over a year set the stage within which international trade and investments take place. In the current world the explosion of the dollar denominated international debt, especially that of the less developed and developing countries, has pushed interest and principal payment commitments to the fore.

The ‘burden’ of a dollar denominated debt in a domestic currency increases with the depreciation of the domestic currency. There is no such impact of dividends which are stated in the domestic currency. With dollar denominated debt the creditor does not carry any of the costs of a depreciation in a country’s currency whereas for dividends a depreciation transforms a fixed home currency dividend into a lower dollar dividend. The run up of the dollar relative to other currencies after mid-year 1982 led to a decline in the dollar denominated profits of many multinational firms, even though the profits earned in the various local currencies where these firms operated need not have declined.

This first tier can be broken into two parts, one that records the interest and dividends that are paid and the second that records the payments on account of the principals of debts that are falling due. If a country ‘earns’ enough in tier (II) to pay the interest and dividends on its debts, then the principal amount that is due will be rolled over as long as international financial markets are functioning ‘well’. In this case the country, in a terminology I have used before, is engaged in speculative finance. In the same terminology, if a country does not ‘earn’ enough to meet its interest payments and the interest due but not earned is capitalized then it is engaged in Ponzi finance. The distinction between speculative and Ponzi finance is of vital importance in any evaluation of international financial relations [Minsky (1982a)].

If a country has a large volume of international debt denominated in dollars and if the interest rate on this debt ‘floats’ with New York or London dollar interest rates then the country may be in a speculative financial posture at low interest rates and in a Ponzi financial posture at high interest rates. Over a period of Ponzi finance the principal of debt outstanding increases without any increase of real productive resources, such as would occur in a profit oriented debt financing. As a result the burden of debt may increase relative to productive capacity so that a return to a speculative financial posture with a lowering of interest rate is difficult. A sharp rise in interest rates can transform an initial speculative financial posture into a Ponzi posture, but after a bout of high interest rates even a substantial lowering of interest rates may not transform a Ponzi financial structure into a ‘speculative’ structure. We are dealing with a historical process in which the ‘undoing’ of relations built up over time is not costless.

The current balance of trade and services account is the second tier. For a debtor this tier has to be in ‘surplus’, if not now then expected over some relevant horizon, for payment commitments on debt are to be fulfilled. This tier is analogous to the gross profits after taxes of a private business. In terms of validating external debts denominated in dollars it is not enough for debtor units to have a large cash flow in the domestic currency; they must also be able to transform the domestic currency cash flow into dollars. Ultimately, the availability of dollars to validate debt depends upon the balance of trade. A favorable balance of trade, i.e., an excess of the value of exports over imports, not necessarily now but expected over a reasonable future is the basis of a debtor country’s viability. Just as it is necessary for a debtor country to generate a sufficient surplus over a reasonable horizon so, because the sum of all national surpluses and deficits is zero, it is necessary that creditor countries run a deficit on their current trade account.

Whereas a surplus of exports over imports tends to increase employment and profits within a country, an export deficit tends to depress profits and employment. Whereas the balance of payments is an abstract concept, a deficit in the trade balance takes the form of concrete plant closings, loss of domestic markets by domestic firms and a generally ‘low’ flow of aggregate profits. Intervention to protect industries, jobs and to revitalize lagging industries is a ‘natural’ political response to an unfavorable trade balance.

The third tier consists of international capital movements that take the form of loans to or equity investments in entities in a foreign country. Such capital movements supply foreign exchange to the borrowing country, as does a favorable balance of trade.

Recall that the payments on tier (I) included the payments on account of maturing debt. Maturing debt may be rolled over into new short-term debts or they may be funded into long-term debt. One part of international financial transactions over any period is the rolling over and funding of debt. Another part is the net change of indebtedness. Capital movements may make it possible for the payment commitments on interest (and dividend) accounts to be met with a smaller surplus on the trade and services account than would be necessary in the absence of such relations. In mid-year 1983
pressure was put on various commercial banks to maintain and increase their credits to Brazil so as to ease the ‘burden’ of interest payments that were falling due. Similarly in early 1984, the United States Treasury intervened so that credits would be advanced to Argentina to pay overdue interest on bank debts.

The fourth tier consists of ‘balancing items’ which include changes in ‘credits’ in a bank, assets negotiable in the money market of the center, or in titles to gold. Under the international gold standard, the ‘balancing’ of the various countries took place in the London Money Market by shifting titles to gold and by varying sterling balances. Today the adjustments take place by varying positions in dollar assets in New York, but without gold and without strong and believable commitments by national authorities to maintain exchange rates within some quite narrow band. As a result, the adjustment process involves changing exchange rates. Because of international indebtedness and of the payment commitments due to such indebtedness, market reactions to serious ‘imbalances’ over the first three tiers may aggravate rather than ease an initial imbalance.

6. The relation among the tiers in a mature gold standard

Under the gold standard Britain had a huge accumulation of offshore bonds and equities; as a result the British had a large net income each year from interest and dividends. British ‘renters’ had larger incomes than the interest, dividends, and rents paid by British households, industry and government supported [Keynes (1910)].

Britain usually ran a deficit in its current trade and services account; this tier (II) deficit was smaller than its tier (I) surplus so that Britain had a surplus in the sum of the ‘capital income’ and current ‘trade’ account flows.

In a typical year run over and new overseas investments by Britain were so great that the sum of the first three tiers was negative. The balance of payments was balanced by a combination of short-term capital ‘import’ on Britain and a movement of gold out of the Bank of England. The short-term capital exports into Britain took the form of an increase in sterling balances of foreign households, businesses and banks, private and central. The sterling balances were deposited in London banks or holdings of British money market assets.

The increase of gold or sterling balances augmented the liquid asset holdings of the banks or the central bank of countries that were on a sterling (or a gold) standard. These liquid assets served as the reserve base for central banks and commercial banks. (Prior to World War I not all countries had a central bank. The United States Federal Reserve Act was passed in 1913.) Inasmuch as the holding of income earning assets in the London or in their

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Table 1
Schematic balance of payments, pre-World War I, Britain and the rest of the world.

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<thead>
<tr>
<th>Tier</th>
<th>Britain</th>
<th>Rest of the world</th>
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<tbody>
<tr>
<td>(I)</td>
<td>A. Interest and dividends</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>B. Maturing debts</td>
<td>+</td>
</tr>
<tr>
<td>(II)</td>
<td>Trade and services</td>
<td>-</td>
</tr>
<tr>
<td>(I)+(II)</td>
<td>A. Rollover investments</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>B. New investments</td>
<td>+</td>
</tr>
<tr>
<td>(I)+(II)+(III)</td>
<td>Short term balancing items, gold</td>
<td>-</td>
</tr>
<tr>
<td>(I)+(II)+(III)+(IV)</td>
<td>+</td>
<td></td>
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</tbody>
</table>

*+ = surplus, - = deficit.

domestic money market was superior to holding sterile gold for profit oriented banks (and central banks), gold would leave the Bank of England only if sterling balances became too great or increased too fast so that interest rates in Britain fell relative to other interest rates.

In the mature gold standard of the quarter century prior to World War II, the Bank of England gold holdings were very small relative to trade and debts denominated in sterling. London was ‘new issues’ center of the world economy and the British supplied a large portion of the global financing on new issues. Net long-term investments [tier (III)] was a significant negative item in Britain’s balance of payments.

Whenever the balancing item, short-term investment in the British money market became too great (British interest rates fell as other interest rates rose) gold would flow out. This threatened the viability of the Bank of England’s gold standard. The Bank of England reacted to the gold drain by raising the bank rate; the interest rate at which it supplied funds to the London money market.

A higher bank rate led to higher short-term interest rates in London, which in turn led to higher long-term rates. These higher rates led to a decrease in the long-term financing floated in Britain so that the sum of the first three tiers (interest income, trade and services, and long-term investments) for Britain became positive or at least less negative. As a result the gold movement turned around. The balance of payment difficulties were halted and reversed, not because exports or imports changed, but because of changes in the flow of long-term investment funds. The pound sterling was valued as a reserve currency because Britain, the international ‘banker’, was rich in the sense of Sayers; it was able to force a cash flow in its favor by actions that did not cause undue pain to either its trading partners or to its own industry.

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Under a gold or a sterling exchange standard the transformation of local currency earnings into the currency of indebtedness was taken for granted; under flexible exchanges an excess demand for the currency of denomination of international debt leads to a rise in the price of the currency of denomination. This increases the burden of the debt in the domestic currency. Such exchange rate movements increase borrowers and lenders risk; it is a barrier to long-term financing. With long-term loans down [Tier (III) approaches zero], the supply of the currency of denomination decreases. The market situation that led to the initial exchange rate depreciation is made worse; depreciation will continue until either the debtor countries income falls sufficiently to decrease imports, relative price changes increase exports and decrease imports, or 'interventions' that lead to financing on non-market terms take place.

In a 'thin' gold standard, the flow of gold to the center country (Britain in the pre-World War I years) prompts an expansion of domestic credit. In a sterling exchange standard, the flow of deposits from foreign reserve holdings to domestic holders tends to lower sterling interest rates; financing terms for both domestic and foreign borrowers improve.

A gold standard imposes monetary ease on the country with the equivalent of an appreciating currency and constraint on the country with the equivalent of a depreciating currency. The necessity of such symmetric developments is less strong under a sterling (or a dollar) standard (such as ruled after World War II) than under a 'pure' gold standard. An asymmetry is most evident in a flexible exchange rate structure. In the crises since 1982, the I.M.F. imposed 'austerity' on Mexico, Brazil and Argentina, but did not impose 'expansion' on the United States.

Reciprocal financing was built into the financial interrelations of the mature gold standard. Because the sum of tiers (I) and (II) usually was positive and the sum of tiers (I), (II) and (III) usually was negative for Britain the total of long-term investment during a period exceeded the borrowing by the center on short-term account. Britain spent part of the income earned abroad to support a standard of living greater than its domestic production could support and invested part of it abroad. Britain invested so much abroad that it 'borrowed' funds for part of its offshore investment. By such borrowing, British institutions interposed a bankers guarantee which gave the foreign depositors a secure liquid monetary asset; monetary reserves were created in this financing relation.

7. The relation among the tiers since World War II

In the early post-war period (mid-1940's and 1950's) international indebtedness was at a minimum due to the war-time export booms in basic materials and Britain's use of its offshore assets to finance the war. In the immediate aftermath of the war, transfer payments dominated the exchange balances for the advanced countries that required imports for reconstruction needs.

The balance of payments of the early postwar era was dominated by a U.S. trade surplus and more than offsetting long-term investment and unilateral transfers. As a result, there was a need to 'import' short-term 'capital' into the United States. This took the form of increasing foreign bank balances in New York and foreign holdings of United States Treasury securities.

These United States assets acted as a reserve (or high powered) money for foreign banking systems. Given the need for international liquidity the result was a welcomed improvement in the liquid asset position of the central and commercial banks of the rest of the world. A regime of mutual benefits existed; the trade surplus helped sustain profits and employment in the United States, long-term capital movements financed overseas economic expansion and recovery, and the offsetting or balancing short-term capital movements to the United States improved liquidity and served as the basis for credit expansion in various national banking systems.

Throughout this period the long-term capital movements from the United States exceeded the short-term capital movements to the United States. As a result, there was a net accumulation of indebtedness to the United States. This led to positive interest, dividends, and maturing debt cash flows to the United States. The balancing of the balance of payments now required a combination of larger long-term investments, greater unilateral transfers from the United States, smaller liquid asset gains by the rest of the world, or a decline in the United States' trade balance.

The 'solution' to this dilemma is for the United States to go 'negative' on its trade and service account (i.e., emulate pre-World War I Britain). But this implies lower profits and an increased difficulty in achieving full employment. From the United States' perspective the balance of payments structure necessary for international financial stability and for continued world economic expansion implies an unfavorable profit and financial environment for domestic employment and economic expansion.

8. The instability of flexible exchange rate systems with financial links

Today's enormous international debt is not mainly direct debt. Instead, banks have interposed their guarantee between the debtors, who owe it money, and the creditors, to whom banks owe money. The banks that interpose their guarantee for dollar accounts are not necessarily United States domiciled banks, the debtors are of course 'foreign' and the creditors of the banks need not be United States entities.

These offshore dollar denominated deposits impart a special instability to
the current international financial situation. To some unknown extent the owners of dollar deposits have no special need to be in possession of dollars - as would be true of U.S. domiciled owners.

Any move by owners of dollar denominated assets to shift to assets denominated in other currencies puts downward pressure on the dollar exchange rate. With a depreciating dollar a movement out of the dollar can quickly escalate into a run on the dollar. A financial system with a large volume of international debt and several potential currencies of denomination is unstable, unless there are institutional arrangements that limit the gains and losses of being in one currency or another. This is what fixed exchanges, the gold standard, achieves.

Central banks intervene to prevent and control runs. From the perspective of the Federal Reserve, a depreciating dollar may lead to banks developing open positions as they 'finance' dollar assets by liabilities in other currencies. Open positions mean that a depreciating dollar adversely affects the net worth of the banks that are involved. The Federal Reserve will feel a need to intervene to contain and reverse a run on the dollar.

In 1979 there was a run on the dollar. The run was not only from the dollar to other currencies but there also was a domestic 'run' to gold, collectables and real estate. The runs were triggered by domestic United States inflation and by the prior growth of excess holding of short-term dollar assets by overseas organizations.

To break the run, the Federal Reserve increased income available from holding dollars and adopted an anti-inflationary position that had credence in financial markets. For a number of years 'money supply control', i.e., monetarism, had been touted by economists of reputation as a way of containing inflation [Mayer (1978)]. The 'adoption' of monetarist language and procedures by the Federal Reserve accompanied credit tightening so that interest rates rose to new heights. These interest rates disrupted the domestic and international long-term capital market, so that international borrowing from banks increased.

In 1980, 1981 and 1982 high interest rates re-established the well-nigh exclusive position of the dollar as the currency of denomination of international debts. The appreciating dollar and the high interest rates led depositors in the international banks to prefer dollar deposits. The multicurrency system that was emerging in the 1970s was put to rest.

The 'excuse' for the high interest rate policy that began in 1979 was that money supply control was necessary to control domestic inflation. The high interest rates that accompanied money supply control were interpreted as unavoidable side effects. One effect of a high dollar interest rate is to increase the interest payments due on outstanding international debts. This meant that excess demand for the dollar ruled; the dollar appreciated. In the context of inelastic, with respect to price, demands for many imported manufactured items as well as an inelastic demand for imports of raw materials and oil, the rise in dollar interest rates meant that for many countries interest due on loans had to be 'capitalized'. Instead of paying interest by dollars earned through exports, interest was being paid by borrowing from banks or international agencies.

If international debt is denominated in dollars the 'component' of the total demand for dollars on the foreign exchanges is that due to interest payments has a 'positive slope' with respect to the dollar interest rate. If the payments due to international debt are large relative to the balance on trade account, then the non-investment, non-balancing part of the demand for dollars on the exchanges will be positively sloped with respect to interest and exchange rates. This implies that other currencies will depreciate with respect to the dollar. This depreciation will continue even as high interest rates lead to higher interest rates; market reactions to exchange rate disequilibrium exacerbate the disequilibrium.

This imbalance means that a 'run to the dollar' is likely. Such a run depresses the stock and bond market and leads to an appreciating dollar. The home currency needed to meet payment commitments on dollar denominated debts rapidly increases; the burden of indebtedness measured in the home currency may become intolerable. Incoherence emerges in financial markets. This forces interventions by the Federal Reserve System and the central banks of debtor countries.

In mid-year 1982, as the Penn Square domestic fiasco and the break in the exchange value of the Mexican peso took place, emergency lender of last resort interventions to refinance exposed positions and a retreat from the monetarist emphasis upon the money supply to a more traditional central bank emphasis upon accommodating financing and refinancing needs took place.

There is a 'corridor' beyond whose borders runs to and runs from the dollar occur. The Federal Reserve and cooperating central banks have to operate so that neither an excessive build-up of short-term dollar balances, which triggers a flight from the dollar, or an excessive burden of interest payments, which triggers a flight to the dollar, occurs.

9. Some implications of the huge dollar denominated debt

'Peculiar' aspects of the current situation are that there is a large accumulation of dollar denominated 'bank' or 'money market' assets by the oil exporting countries that are thinly populated and large dollar books of non-United States banks. A United States deficit on current account that is large enough to provide dollars for interest on perhaps $1,000 billion of such debt will cause severe employment dislocations and downward pressure on the profitability of United States industry. 'Protectionist' pressures to close
the gap in the trade balance is to be expected. If this pressure results in quotas and tariffs which effectively decrease the current account deficit of the United States then there will be a shortfall of dollars to meet payment commitments. As a result, currencies of the rest of the world will depreciate even further against the dollar which opens new United States markets to imports. The large volume of outstanding dollar denominated debts implies that a continuing strong trend in the dollar's exchange rate is most likely. This means that the burden of indebtedness measured in the various domestic currencies of dollar denominated debt will increase, even as the competitive position of United States industries deteriorates.\(^5\)

10. Conclusion

If the world economy is to do better, the need for dollars by countries with dollar denominated debt must not lead to unfavorable profits and chronic unemployment in the United States or to restrained growth in the debtor countries. In the heyday of the international gold standard, the poorer countries were provided with income to service sterling or other gold standard denominated debt by a combination of trade account deficits of Britain and other gold standard countries and long-term capital movements. To the extent that dollars are furnished through long-term investments, the pressure on the current account and on the exchanges can be eased. However, the increase in long-term debt that this implies requires an expected growing favorable trade balance for the debtor countries. The problem returns to the possibility of maintaining full employment in the United States in the face of a need for substantial dollar balance of trade deficits: the United States and the net holders of dollar balance need to emulate the British posture of the heyday of the gold standard. Income earned because of international indebtedness must be used in part to finance a deficit on the current account, with the remainder financing long-term international investment. Long-term international investment must also be financed by short-term dollar balances that accrue to the debtor countries. This combination of long lending and short borrowing furnishes liquid assets that serve as the monetary base for the debtor countries as well as the finance for long-term investment.

The key variables that determine Federal Reserve policy in the circumstances that now rule are the volume of short-term dollar holdings of foreign private banks and central banks and the course of exchange rates. Too great a level and rate of increase in offshore dollar holdings that leads to a depreciation of the dollar requires a tightening of United States credit conditions to prevent a run from the dollar, and too small a level and rate of increase in offshore holdings of dollars requires an easing of United States credit conditions to prevent a run to the dollar.

The evolution of international financial relations among countries since World War II has produced a new straightjacket. This time it is not the gold standard that constrains the key central bank, the Federal Reserve. We now have a financial stability straightjacket that constrains the freedom of action of the Federal Reserve. Although it is possible to visualize a pattern of international financial flows such that financial stability is compatible with a close approximation to full employment at stable prices in the United States, it may very well be that the prospects for realizing such a pattern is a pious hope. Protectionism, extreme of tariffs or quotas by the United States, will tend to make things worse not better. For the problem to be manage, the United States needs to be able to generate and sustain a close approximation to full employment without generating inflation. This may require institutional constraints upon the exploitation of market power by firms and labor.

International debt can be made to 'go away', at least in part, by moving the debt from the portfolios of private banks to some international organization which will then refinance the debt at concessionary rates. However the funds for refinancing have to come from somewhere. That somewhere either will have to pay market rates or the funds are furnished by central banks. If market rates are paid and the assets earn below market concessionary rates then a subsidy is necessary. If the funds used in the concessionary refinancing are central bank funds, then the 'reserve base' of the monetary system of the participating central banks increase; concessionary refinancing can be an engine of monetary inflation.

The world is not in a gridlock from which there is no way out but the dimensions of the problem are indicated by the need to maintain a reasonable approximation to full employment in the United States even as profits of American business are held down by a large deficit on trade account. There is no solution without a large United States trade deficit. This implies that a major portion of the income and profit sustaining expenditure in the United States will have to come from a Federal deficit rather than profit determined investment. Hopefully the non-market determined expenditures by the Federal government will be real income and productivity enhancing, but the record on this account is not good. Military expenditures and transfer payments are the preferred expenditures.

In today's structure it does no or little good to impose austerity on the debtor countries, where austerity implies unemployed resources and a decline of income. What should be 'imposed' is an emphasis upon full employment and economic expansion based upon domestic resources. The current heavily indebted countries should be under an injunction to find an expansion path that is consistent with the economizing of foreign exchange. The center

\(^5\)If a fixed exchange rate ruled then money wages or costs of production in the United States would rise relative to wages and costs in the debtor countries.
countries – the United States, Japan and the affluent countries of Europe – should be under an injunction to maintain their income and employment even as they welcome imports from the heavily indebted countries.

It is possible to do better than the record of the 1980s. One key requirement is for the United States to achieve and maintain a closer approximation to full employment without restricting imports. But the United States cannot now do it alone. The other rich countries – Japan and Western Europe in particular – need to help by maintaining their own prosperity without depending upon a strong balance of trade surplus. Since 1980 the United States, Japan and the affluent countries of Europe have not done their part.

Without international understanding and cooperation a 'cross of debt' will replace Bryan's 'cross of gold'.

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THE TWO OIL PRICE SHOCKS
Some explanations
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This paper examines the forces behind the two oil shocks of 1973/1974 and 1979/1980. It argues that oil shocks were competitive responses to several different factors: expected increase in the long-run production costs of oil, changes in oil ownership, low short-run elasticity of oil demand and aggressive stockpiling policies, led by expectations of further disruptions.

1. Introduction

The purpose of this paper is to explain why the oil price shocks of 1973/1974 and 1979/1980 occurred. Although these shocks are strictly linked with what happened in the commodity markets, throughout we shall confine ourselves to the oil market. This 'Marshallian' method of analysis prevents us from considering both the implications of changes in such general variables as the floating dollar or the economic policy switches of regimes and the problem of macroeconomic adjustment to these shocks.

We believe that, despite the plethora of books and articles that have been produced to describe and explain the two oil crises of the 1970s, it is still worth analyzing what happened.

In this paper, we shall consider first of all some explanations of the first oil crisis. Then we shall introduce the explanations given for the second oil shock. Finally, we shall try to compare them and to draw some conclusions.

2. The first oil shock, 1973/1974

The first oil price shock coincided with the Arab-Israeli war in October 1973: in the few months following that event, the official price of Arabian Light (the ‘marker crude’) increased from $2.5 to $10/barrel (see fig. 1).

In what follows, we discuss the various explanations that have been given for this price rise and complement them with our views.

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