

NBER WORKING PAPER SERIES

HEGEMONIC STABILITY THEORIES OF
THE INTERNATIONAL MONETARY SYSTEM

Barry Eichengreen

Working Paper No. 2193

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
March 1987

Prepared for the Brookings Institution program in international economics. An earlier version of this paper was presented at the CEPR Conference on International Regimes and the Design of Macroeconomic Policy, London, November 11-13, 1986. I thank my conference discussant, Peter Kenen, as well as Dilip Abreu, Joanne Gowa, Robert Keohane, Charles Kindleberger and Kala Krishna for comments and discussion. The research reported here is part of the NBER's research program in International Studies. Any opinions expressed are those of the author and not those of the National Bureau of Economic Research.

Hegemonic Stability Theories of the International Monetary System

ABSTRACT

Specialists in international relations have argued that international regimes operate smoothly and exhibit stability only when dominated by a single, exceptionally powerful national economy. In particular, this "theory of hegemonic stability" has been applied to the international monetary system. The maintenance of the Bretton Woods System for a quarter century through 1971 is ascribed to the singular power of the United States in the postwar world, while the persistence of the classical gold standard is similarly ascribed to Britain's dominance of the 19th-century international economy. In contrast, the instability of the interwar gold-exchange standard is attributed to the absence of a hegemonic power.

This paper assesses the applicability of hegemonic stability theory to international monetary relations, approaching the question from both theoretical and empirical vantage points. While that theory is of some help for understanding the relatively smooth operation of the classical gold standard and early Bretton Woods System as well as some of the difficulties of the interwar years, much of the evidence proves to be difficult to reconcile with the hegemonic stability view.

Barry Eichengreen
Department of Economics
University of California
Berkeley, CA 94720

An international monetary system is a set of rules or conventions governing the economic policies of nations. From a narrowly national perspective, it is an unnatural state of affairs. Adherence to a common set of rules or conventions requires a certain harmonization of monetary and fiscal policies, despite that the preferences and constraints influencing policy formulation diverge markedly across countries. Governments are expected to forswear beggar-thy-neighbor policies that redistribute economic welfare from foreigners to domestic residents, and to contribute voluntarily to provision of the international public good of global monetary stability. In effect, they are expected to solve the defection problem which plagues cartels attempting to function in the absence of binding agreements and -- equivalently in this context -- the free-rider problem hindering public good provision in the absence of a means of preference revelation.¹ Since they are likely to succeed incompletely, the public good of international monetary stability tends to be underproduced. From this perspective, the paradox of international monetary affairs is not the difficulty of designing a stable international monetary system but that such systems have not only existed but even persisted for periods of decades.

Specialists in international relations have offered the notion that dominance by one country -- a hegemonic power -- is needed to insure the smooth functioning of an international regime.² The concentration of economic power is seen as a way of internalizing the externalities associated with systemic stability and of insuring its adequate provision. The application of this "theory of hegemonic stability" to international monetary affairs is

straightforward.³ The maintenance of the Bretton Woods System for a quarter century through 1971 is ascribed to the singular power of the United States in the postwar world, much as the persistence of the classical gold standard is ascribed to Britain's dominance of international financial affairs in the second half of the 19th century. "The monetary systems of the past were relatively stable when a single currency dominated: sterling through most of the nineteenth century, the dollar in the early postwar period" (Bergsten, 1975, p. 31). By contrast, the instability of the interwar gold-exchange standard is attributed to the absence of a hegemonic power, due to Britain's inability to play the dominant role and America's unwillingness to accept it.

The appeal of this notion lies in its resonance with the public good and cartel analogies for international monetary affairs, through what might be called the carrot and stick variants of hegemonic stability theory. In the carrot variant, the hegemon, like a dominant firm in an oligopolistic market, maintains the cohesion of the cartel by making the equivalent of side payments to members of the fringe. In the stick variant, the hegemon, like a dominant firm, deters defection from the international monetary cartel by using its economic policies to threaten retaliation against renegades. In strong versions of the theory (what Snidel, 1985, refers to as the benevolent strand of the theory), all participants are rendered better off by the intervention of the dominant power. In weak versions (what Snidel, 1985, p. 851, citing Keohane refers to as the coercive strand of the theory), either because systemic stability is not a purely public good or because its costs are shunted onto smaller states, the benefits of stability accrue disproportionately or even exclusively to the hegemon.

Three problems bedevil attempts to apply hegemonic stability theory to international monetary affairs. First is the ambiguity surrounding three concepts central to the theory, namely hegemony, the power the hegemon is assumed to possess, and the regime whose stability is ostensibly enhanced by the exercise of hegemonic power. Rather than adopting the general definitions offered previously and devoting this paper to their criticism, I adopt specialized definitions tailored to my concern with the international monetary system. I employ the economist's definition of economic -- or market -- power: sufficient size in the relevant market to influence prices and quantities.⁴ I define a hegemon analogously to a dominant firm: as a country whose market power, understood in this sense, significantly exceeds that of all rivals. Finally, I avoid having to define the concept of regime around which much debate has revolved by posing the question narrowly: whether hegemony is conducive to the stability of the international monetary system (where the system is defined as those explicit rules and procedures governing international monetary affairs), rather than whether it is conducive to the stability of the international regime, however defined.⁵

The second problem plaguing attempts to apply hegemonic stability theory to international monetary affairs is ambiguity about the instruments with which the hegemon makes its influence felt. This is the distinction between what are characterized above as the carrot and stick variants of hegemonic stability theory. Does the hegemon alter its monetary, fiscal or commercial policies to discipline countries that refuse to play by its rules, as "basic force" models of international relations would suggest?⁶ Does it link international economic policy to other issue areas and impose military or

diplomatic sanctions on uncooperative nations?⁷ Or does it stabilize the system through the use of "positive sanctions," financing the public good of international monetary stability by acting as lender of last resort even when the probability of repayment is slim and forsaking beggar-thy-neighbor policies even when used to advantage by other countries?⁸

The third problem plaguing attempts to implement hegemonic stability theories of the international monetary system is ambiguity about their scope. In principle, such theories could be applied equally to the design, the operation or the decline of the international monetary system.⁹ Yet in practice, hegemonic stability theories may shed light on the success of efforts to design or reform the international monetary system but not on its day-to-day operation or eventual decline. Other combinations are equally plausible a priori. Only analysis of individual cases can throw light on the theory's range of applicability.

In this paper, I structure an analysis of hegemonic stability theories of the international monetary system around the dual problems of range of applicability and mode of implementation. I consider separately the genesis of international monetary systems, their operation in normal periods and times of crisis, and their disintegration. In each context, I draw evidence from three modern incarnations of the international monetary system: the classical gold standard, the interwar gold-exchange standard, and Bretton Woods. These three episodes in the history of the international monetary system are typically thought to offer two examples of hegemonic stability -- Britain before 1914, the U.S. after 1944 -- and one episode -- the interwar years -- destabilized by the absence of hegemony. I make no effort to document

Britain's dominance of international markets prior to 1914 or the dominance of the U.S. after 1944; I simply ask whether that market power which Britain and the U.S. possessed was causally connected to the stability of the international monetary system.

Before embarking on this historical analysis, I attempt to systemize the discussion of hegemonic stability theories of the international monetary system by employing some simple tools of game theory. I analyze theoretically the implications of different structures of international economic relations for the applicability of hegemonic stability theories to international monetary affairs.

Both the theoretical and historical analyses indicate that the relationship between the market power of the leading economy and the stability of the international monetary system is considerably more complex than suggested by simple variants of hegemonic stability theory. While one cannot simply reject the hypothesis that on more than one occasion the stabilizing capacity of a dominant economic power has contributed to the smooth functioning of the international monetary system, neither can one reconcile much of the evidence, notably on the central role of international negotiation and collaboration even in periods of hegemonic dominance, with simple versions of the theory. Though both the appeal and limitations of hegemonic stability theories are apparent when one takes a static view of the international monetary system, those limitations are most evident when one considers the evolution of international monetary system over time. An international monetary system whose smooth operation at a point in time is predicated on the dominance of one powerful country may in fact be dynamically unstable.

Historical experience suggests that the hegemon's willingness to act in a stabilizing capacity at a point in time tends to undermine its continued capacity to do so over time.

The notion that a concentration of economic power may be intrinsic to the smooth operation of the international monetary system, while intuitively appealing to political scientists for whom the concept of power is bread and butter, may seem to economists as strange as, say, the pareto optimality of free trade or the efficiency of perfect competition is to nearly everyone but economists.¹⁰ The point of departure of this paper is necessarily different, therefore, from that which characterizes most work in economics, and requires of economists in the audience, like theatre goers, a willing suspension of disbelief.

I. Theoretical Foundations of Hegemonic Stability Theory

In this section, I examine the implications of different structures of international economic relations for the applicability of hegemonic stability theories to the international monetary system. I consider models of two countries faced with the decision of whether to continue to adhere to an established system. One can think of each country, having previously maintained a fixed exchange rate, as deciding whether or not to devalue.¹¹ To avoid unnecessary complications introduced by the "nth country problem," I consider gold-standard-like systems in which each country declares a parity against a common numeraire (gold).¹²

The central assumption maintained throughout this section is that

countries derive benefits from participation in the international monetary system, and that they incur costs upon defection. This might be thought of as a transactions cost associated with the existence of more than one currency (analogous to extra costs of interstate trade in the United States if there existed 50 state monies, all floating against one another). Thus, the efficiency gains of a common system are analogous to those associated with a unified currency on the national level. If both countries incur a cost with either country's defection, then systemic stability has the character of an international public good. A country will choose to incur the cost associated with interrupting public good provision when it is less than the benefits of adjustment through devaluation, as in the optimal currency area literature.¹³

The intuition for how such a model works can be derived from Figure 1, where the best-response or reaction functions for the countries are plotted. Each country is a Nash player, taking the policies of its foreign counterpart as fixed. The magnitude of the defection cost is constant. Each country has an upward sloping reaction function in e - e^* space, where e and e^* are the domestic- and foreign-currency prices of gold, so a rise in e or e^* signifies devaluation.¹⁴ The Nash equilibrium is at the intersection of the home and foreign reaction functions.

Since both countries incur a transactions cost c when either changes its exchange rate, in the neighborhood of the initial Nash equilibrium, a country will change its exchange rate in response to a change in the other only when benefits exceed that transactions cost.¹⁵ In that neighborhood, the home (foreign) reaction function is vertical (horizontal), as in Figure 1, in the range where the cost c exceeds the benefits. Assume now that the foreign

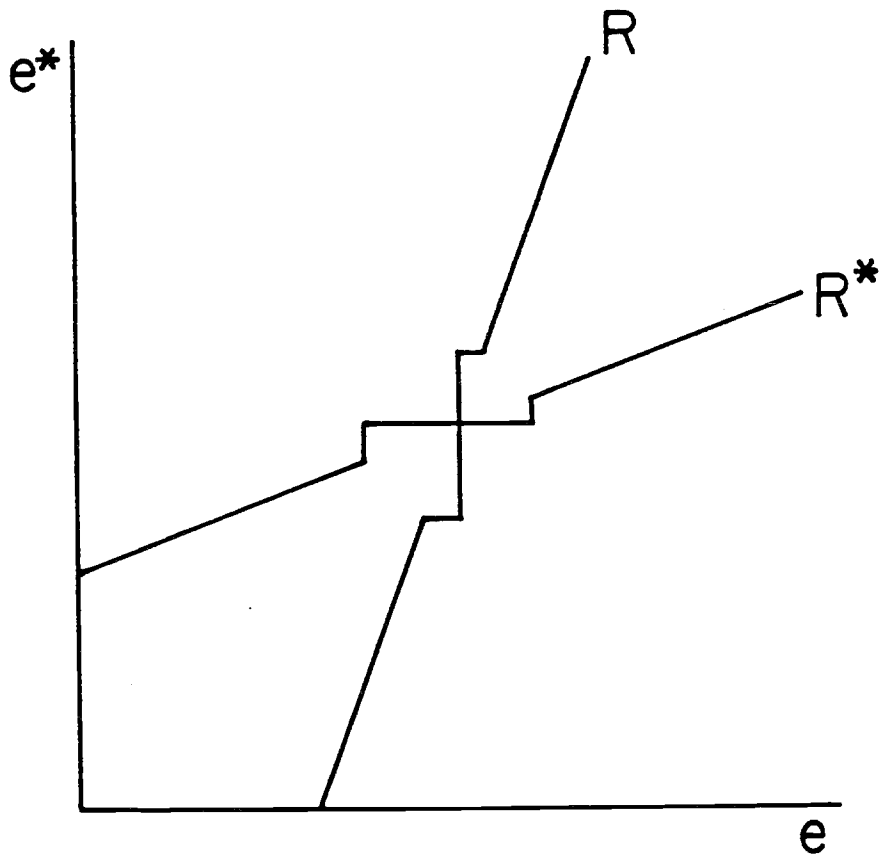


Figure 1

country "abandons its gold standard parity," defecting from the international monetary system in response to an exogenous shock which shifts its reaction function R^* upward in Figure 2.¹⁶ If the foreign devaluation is sufficiently small, the home country will not abandon its fixed parity.¹⁷

Note that Figure 2 and the results derived from it are independent of the extent to which participation in the international monetary system is an international, as opposed to a national, public good. Whether the benefits of participation are purely national (i.e., the home country incurs no cost with the foreign country's departure from the system) or the benefits are an international public good (the home country incurs a cost c with the foreign country's defection as well as with its own), the response, as depicted in Figure 2, is the same. If the benefits of the international monetary system come as a reduction of transaction costs and the participants adopt Nash strategies, the extent to which those benefits spill over internationally is irrelevant to their decisions.

Assume now that the home country, denoted the hegemon, grows large relative to its foreign counterpart. The larger that country, the less it is influenced by foreign economic policies, and the more it influences policies abroad.¹⁸ The home country's reaction function will become more steeply inclined and the foreign reaction function less flat. Holding constant the fixed cost of changing the exchange rate, this will tend to lengthen the vertical segment of R and shorten the horizontal segment of R^* , as in Figure 3. It becomes increasingly likely that the home country will remain on the standard despite a foreign devaluation of given size, but less likely that the foreign country will choose to remain despite a home-country devaluation.

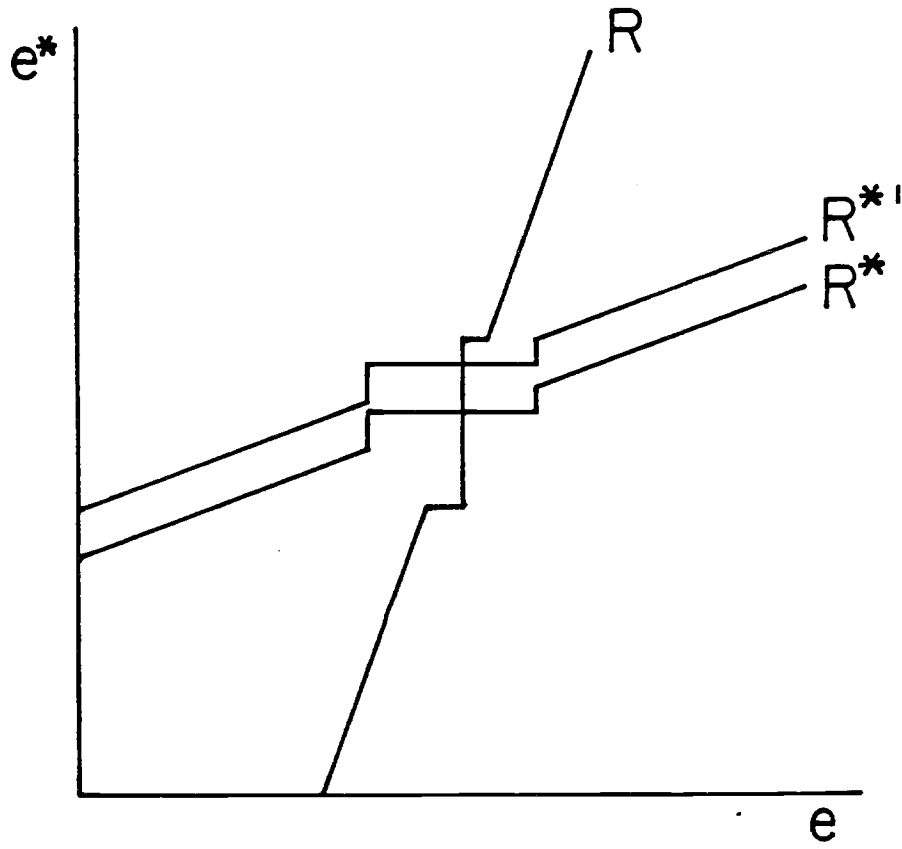


Figure 2

While the costs of defection remain the same (by assumption), the benefits to the home country (in the form, for example, of a devaluation-induced improvement in the competitiveness of domestic goods in international markets) decline as that country grows. Hence the hegemon has a greater incentive and tendency to remain on an established international monetary standard.

In contrast, the smaller a country, the greater its propensity to depart from an established international monetary standard in response to a shock of given size. In this model the existence of a hegemon, even one disinclined to defect from an established standard, does not deter its smaller counterpart from defecting. While the cost of defection is fixed, the benefits (associated with improved competitiveness) rise as the foreign country shrinks. Among the shocks for which this result holds is a home-country devaluation. In contrast to the (large) home country, which becomes increasingly likely to remain on the standard despite a foreign devaluation of given size, it is less likely that the (small) foreign country will choose to remain on that standard despite a home-country devaluation of given size. Not only does the hegemon have a greater tendency to remain on an established international monetary standard, but it has a greater capacity to drive other countries from that standard.

A shortcoming of this formulation is the unrealistic assumption made about anticipated foreign reactions. As a Nash player, each government takes the policy stance of its foreign counterpart as fixed. The logical response of the domestic government is not permitted to influence the strategy of its foreign counterpart. To relax this assumption of static expectations, it is convenient to write the the model in extensive form. I simplify by

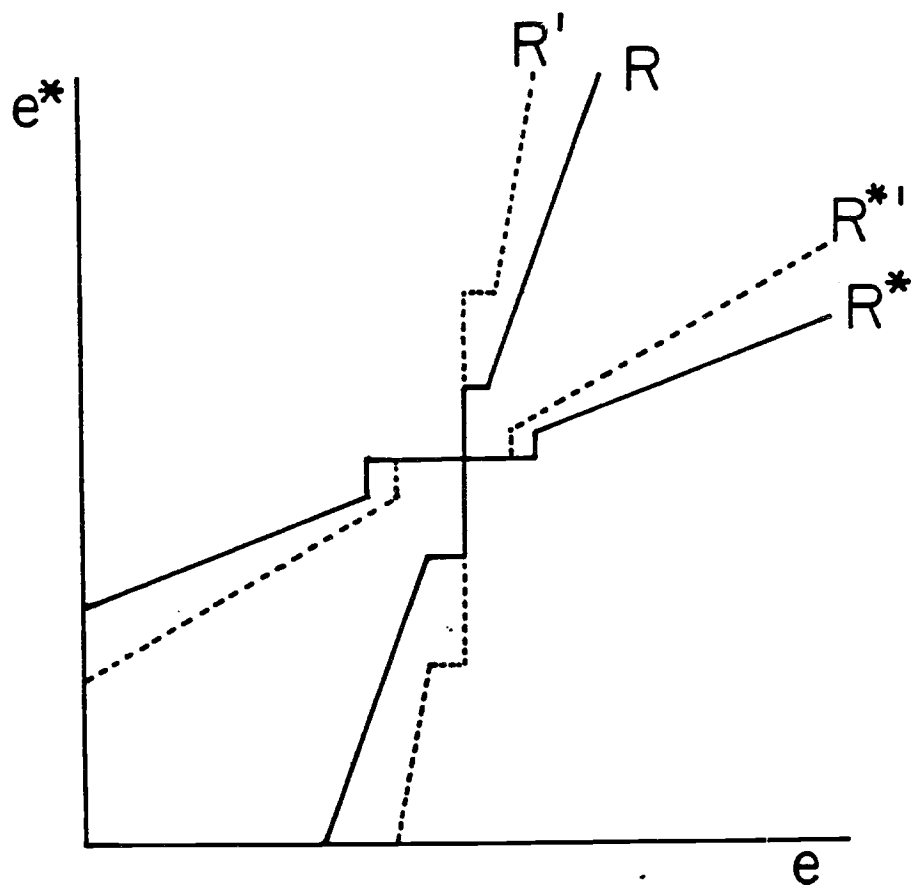


Figure 3

considering a country's choice not between a continuum of values for the exchange rate but between the current exchange rate and a devaluation of size Δe . (Again, e denotes the domestic-currency price of a unit of foreign exchange, so $\Delta e > 0$ signifies a devaluation.) I assume a constant world output \bar{Q} divided between the two countries (Q denoting home output, Q^* foreign output). At initial exchange rates (e and e^*), which for convenience are normalized to equality, the share of the foreign (home) country in world output is s ($1-s$). s and $(1-s)$ are also measures of the relative size (populations) of the two countries.

Each country can use beggar-thy-neighbor exchange-rate policy to attempt to increase its share of world output, where α is the response of output with respect to exchange-rate changes.

$$(1) \quad \bar{Q} = Q + Q^*$$

$$(2) \quad Q^* = sQ + \alpha(e^* - e)$$

$$(3) \quad Q = (1-s)Q - \alpha(e^* - e)$$

As before, individuals incur a cost c when either country defects from the established international monetary system by changing its exchange rate. International monetary stability is assumed to be pure public good, so that the cost of its destruction is borne equally by each individual. The cost to the home and foreign countries of one country's devaluation is therefore $(1-s)c$ and sc , respectively. When both countries devalue, these amounts are doubled.

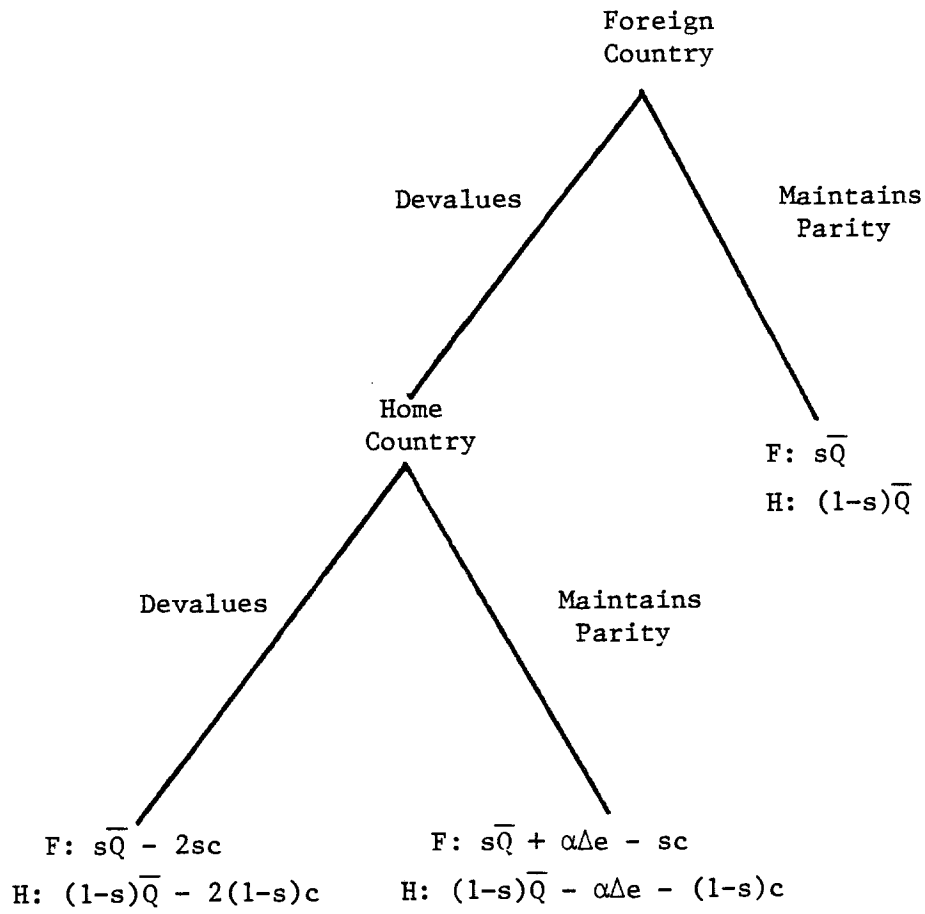
The timing of play is as follows. The foreign country moves first by

deciding whether to raise its exchange rate by Δe^* . The home country then decides whether to retaliate with a competitive depreciation of equal size.

In Figure 4 this game is represented in extensive form, with foreign-country payoffs written first. Consider two countries of equal size ($s = 1/2$), which I characterize as the absence of hegemony. There are two cases to consider, depending on the sign of $\alpha\Delta e^* - sc$. If $\alpha\Delta e^* < sc$, the benefits of increasing output through devaluation are outweighed by the costs of destroying the public good of monetary stability. Neither country devalues, and the outcome is the upper-right-hand limb of the decision tree. If $\alpha\Delta e^* > sc$, devaluation without retaliation improves the payoff for the devaluing country, while devaluation with retaliation leaves it worse off. But if $\alpha\Delta e^* > sc$, the home country prefers to retaliate. $\alpha\Delta e^* > sc$ means that the benefits to the country which moves second of reversing its initial loss of competitiveness are greater than the costs of causing additional monetary instability. Since retaliation is guaranteed, neither country has an incentive to defect.

Contrast this result with that which obtains when the foreign country is small ($s < \frac{1}{2}$). The smaller the foreign country, the larger the benefits of devaluation relative to the costs (the smaller s , the greater the probability $\alpha\Delta e^* > sc$). Analogously, the larger the home country, the smaller the benefits of devaluation relative to the costs (the smaller s , the greater the probability $\alpha\Delta e < (1-s)c$). For given values of $\alpha\Delta e$ and c , the smaller a country the greater its incentive to defect if no retaliation is anticipated, and the less the incentive for its larger rival to respond with retaliation or negative sanctions.

Figure 4



This result is identical to that which obtains in the model of Figures 1-3. The extensive-form representation merely provides additional intuition for the reasons it occurs. The defection problem confronting countries of varying size which adhere to an international monetary system is analogous to the cartel problem in the case of a dominant firm and a competitive fringe. The smaller the members of the fringe, the greater the incremental market share they are able to secure with an unmatched price cut, and the less they need worry about foregone profits due to lower prices on inframarginal sales. The larger the dominant firm, the less it is inclined to respond with a retaliatory price cut, since the costs it incurs from lower prices on inframarginal sales are larger than the benefits of regaining the incremental market share. The fringe is expected to set price equal to marginal cost, defecting from the cartel, while the dominant firm is not expected to retaliate against its smaller counterparts. An analogous result obtains in the present setting.

These results are difficult to reconcile with hegemonic stability theory. Although a hegemon is unlikely to defect from an established international monetary system, which in and of itself may lend that system a semblance of stability, the hegemon is unlikely also to use its retaliatory power to deter defection by other countries. In the terminology of hegemonic stability theory, the hegemon is unlikely to use negative sanctions because they hurt the hegemon more than the targets of the action. This model suggests that a system comprised of identical or similarly sized countries is the most likely to be stable, supporting hegemonic stability theory only in the weak sense that the hegemon itself is unlikely to engage in destabilizing actions, not in

the strong sense that it is able to deter smaller participants from doing the same.

This analysis is subject to four limitations. First, positive sanctions (bribes or side payments) have not been permitted; second, only the two case has been considered; third, complete information has been assumed; and fourth, other differences between large and small countries have been neglected.

The first of these limitations is of some consequence. All players prefer bribes to no response. This is because the terms sc and $(1-s)c$ represent a bargaining inefficiency. The foreign country's gain from devaluation ($\alpha\Delta e^* - sc$) is smaller than the home country's loss in the event that the latter prefers not to retaliate ($-\alpha\Delta e^* - (1-s)c$). Any side payment greater than the first amount and smaller than the second is pareto improving. If in the absence of side payments the second player (the home country) prefers no retaliation, in their presence it will switch to bribes. Hence the passive response to defection will not be observed whether or not there is a hegemon. The dominant strategies are retaliation and bribes -- positive and negative sanctions -- to prevent the initial defection. In addition, introducing positive sanctions reduces the likelihood that negative sanctions will be preferred. Side payments which eliminate the inefficiency reduce the costs of alternatives to retaliation. Assuming the bribe equals the amount the foreign country stands to gain in the absence of home-country reaction, positive sanctions are preferred to negative sanctions whenever $(1-s)c > \alpha\Delta e^*$. While the costs of retaliation increase with the size of the dominant player, the costs of side payments decline. The more hegemonic a country (as measured by s), the more likely it will prefer positive over negative sanctions.

Moreover, side payments may undermine the stability of a system comprised of symmetrical countries. Recall the argument for stability in the absence of side payments: that whenever countries have an incentive to defect, their symmetrical counterparts have an incentive to retaliate, leaving everyone worse off and deterring defection. But if the respondents have an incentive to use positive rather than negative sanctions, this argument loses its force. Countries which defect gain if they receive bribes from other players. Potential renegades are therefore more likely to defect because the introduction of side payments reduces the costs of alternatives to retaliation.

The second limitation of the model -- two players -- is of little consequence. Extending the analysis to three or more countries only reinforces the conclusions. Assume no side payments. Then the probability that the returns to one country's depreciation $\alpha\Delta e$ outweigh the costs sc is greater with three countries than with two, since $s = 1/3$ rather than $1/2$ while the other parameters are assumed to be unchanged. Although this implies that countries which anticipate no retaliation are more likely to defect, for the same reasons it implies that the others are more likely to retaliate. Knowing retaliation is likely, leaving everyone worse off, there is still no incentive to defect. This is analogous to a common result in theoretical analyses of cartels: that a cartel of similar firms is more likely to be stable than one in which the participants are heterogeneous.

The word "knowing" is a critical part of the phrase "knowing retaliation is likely..." The incentive symmetrical countries have to retaliate against renegades serves as a deterrent only if potential renegades understand the

structure of payoffs. Similarly, the hegemon's inability to deter defection because retaliation hurts it more than those against whom that retaliation is directed fails to serve as a deterrent only if small countries understand the costs to the hegemon. In the absence of complete information, symmetry may fail to serve as an effective deterrent.

One source of uncertainty is the value policymakers attach to output gains and the costs they associate with monetary instability -- in other words, uncertainty about their objective functions. These matters are of relatively little consequence in a static game, except that, insofar as policymakers are risk averse, uncertainty may deter them from taking any action. But in a repeated game, policymakers learn over time about the preferences of their foreign counterparts, and players may invest in a reputation for retaliating which reinforces the stability of the monetary system. Alt et al. (1986) argue that large countries can most efficiently cultivate a reputation for willingness to retaliate.

A final limitation of the model is its treatment of countries as symmetrical in every respect but size. Countries which differ by size may also differ systematically in other respects. If small countries are also more open, the costs they suffer due to systemic instability may be larger owing to their exceptional dependence on international transactions (in other words, $c^* > c$), a possibility raised in the optimal currency area literature. If sufficiently strong, such structural asymmetries could offset the tendency of small countries to defect from an established system and the unwillingness of large countries to retaliate against renegades. Whether such structural asymmetries dominate behavior cannot be answered on theoretical grounds.

Thus, theory suggests no simple mapping from broad characteristics of the international monetary system to the capacity of a dominant country to use different strategies to insure the maintenance of that system. Whether history suggests such generalizations is a separate question, to which I now turn.

II. Hegemonic Stability Theories of the Genesis of Monetary Systems

Of the three episodes considered here, the origins of the classical gold standard are the most difficult to assess, for there occurred in the 19th century no centralized discussions, like those in Genoa in 1922 or Bretton Woods in 1944, concerned with the design of the international monetary system.¹⁹ There was general agreement that currencies should have a metallic basis and that payments imbalances should be settled by international shipments of specie. But there was no consensus on which precious metals should serve as the basis for money supplies or on how unimpeded international specie movements should be.

Only Britain maintained a full-fledged gold standard for anything approaching the century preceding 1913. Although gold coins had circulated alongside silver since the 14th Century, Britain was on a de facto gold standard only from 1717, when Sir Isaac Newton, as Master of the Mint, set too high a silver price of gold and drove full-bodied silver coins from circulation. In 1798 silver coinage was suspended, and from 1819 silver was no longer accepted to redeem paper currency. But for half a century following her official adoption of the gold standard in 1821, Britain essentially

remained alone. Other countries which retained bimetallic standards were buffeted by alternating gold and silver discoveries. The United States and France, for example, while officially bimetallic, first found their internal circulations placed on a silver basis by growing Mexican and South American silver production in the early decades of the 19th century, which depressed the market price of silver relative to the mint price, encouraging silver to be imported for coinage and gold to be shipped abroad where its price was higher. Starting in 1848, gold discoveries in Russia, Australia and California depressed the market price of gold below the mint price, all but driving silver from circulation and placing bimetallic currencies on a gold basis. Finally, silver discoveries in Nevada and other mining territories starting in the 1870s dramatically inflated the silver price of gold and forced the bimetallic currencies back onto a silver basis.

The last of these disturbances led nearly all bimetallic countries to adopt the gold standard, starting with Germany in 1871.²⁰ Why, after taking no comparable action in response to previous disturbances, did countries respond to post-1870 fluctuations in the price of silver by abandoning bimetallism and going onto gold? What role if any did Britain, the hegemonic financial power, play in their decisions?

One reason for the decision to go onto gold was the desire to prevent the inflation that would result from continued silver convertibility and coinage. Hence the plausible explanation for the contrast between the 1870s and earlier years is the danger of exceptionally rapid inflation due to the magnitude of post-1870 silver discoveries. Between 1814 and 1870, the sterling price of silver, of which so much was written, remained within two percentage points of

its 1814 value, alternatively driving gold or silver from circulation in bimetallic countries but fluctuating insufficiently to raise the spectre of significant price level changes. Then between 1871 and 1881 the London price of silver fell by 15 per cent, and by 1891 the cumulative fall had reached 25 per cent.²¹ Gold convertibility was the only alternative to continued silver coinage that was judged both respectable and viable.²² The only significant resistance to the adoption of gold convertibility emanated from silver-mining regions and from agricultural areas like the American West, populated by proprietors of encumbered land who might benefit from inflation.

Seen from this perspective, the impetus for adopting the gold standard existed independently of Britain's rapid industrialization, dominance of international finance, and preeminence in trade. Still, the British example surely provided encouragement to follow the path ultimately chosen. The experience of the Latin Monetary Union impressed upon contemporaries the advantages of a common monetary standard in minimizing transactions costs.²³ The scope of that common standard would be greatest for countries which linked their currencies to sterling. The gold standard was also attractive to domestic interests concerned to promote economic growth. Industrialization required foreign capital, and attracting foreign capital required monetary stability. For Britain, the principal source of foreign capital, monetary stability was measured in terms of sterling and best insured by joining Britain on gold. Moreover, London's near monopoly of trade credit was of concern to other governments which hoped that, by establishing gold parities and central banks, their dependence on the London discount market might be reduced. Aware that Britain monopolized trade in newly-mined gold and was the

home of the world's largest organized commodity markets, other governments hoped that by emulating Britain's gold standard and financial system they might secure a share of this business.

Where Britain's prominence in foreign commerce, overseas investment and the provision of trade credit forcefully conditioned the evolution of the gold standard system was in the practice by central banks of holding key currency balances abroad and in their concentration in London. It is unlikely that this practice would have developed so quickly or so far had foreign countries not grown accustomed to transacting in the London market, that it would have become so widespread in the absence of unmatched confidence in the stability and liquidity of sterling deposits, or that such a large share of foreign deposits would have gravitated to a single center had Britain not possessed such a highly articulated set of financial markets.

But neither Britain's dominance of international transactions nor the desire to emulate Bank of England practice prevented countries from tailoring the gold standard to domestic needs. Germany and France continued to allow large internal gold circulations, while other nations limited gold coin circulation to low levels. The central banks of France, Belgium and Switzerland retained the right to redeem their notes in silver, and the French did not hesitate to charge a premium for gold.²⁴ The Reichsbank could at its option issue fiduciary notes upon the payment of a tax.²⁵ In no sense did British example or suggestion dictate the form of the monetary system.

The interwar gold-exchange standard offers a radically different picture: on the one hand, the absence of a single dominant power like 19th-century Britain or mid-20th-century America; on the other, conscious efforts by the

rivals to shape the international monetary order to their national advantage.

Contemporary views of the design of the interwar monetary system were aired at a series of international meetings, the most important of which was the Genoa Economic and Financial Conference convened in April 1922.²⁶ Although the United States declined to send an official delegation to Genoa, proceedings there reflected the differing economic objectives of Britain and the U.S. British officials were aware that the war had burdened domestic industry with problems of adjustment, had disrupted trade and had accentuated financial rivalry between London and New York. Their objectives were to prevent worldwide deflation which was sure to exacerbate the problems of structural adjustment, to promote the expansion of international trade to which the nation's prosperity was inextricably tied, and to recapture the financial business diverted to New York as a result of the war.²⁷ To prevent deflation, they advocated that countries economize on the use of gold by adopting the gold-exchange standard along lines practiced by members of the British Empire. Presuming London to be a reserve center, these measures promised to restore the City to its traditional prominence in international finance. Stable exchange rates would stimulate international trade, particularly if the United States forgave its war debt claims, permitting Reparations to be reduced and encouraging creditor countries to extend loans to Central Europe.

The U.S., in contrast, was less dependent for its prosperity on the rapid expansion of trade. It was less reliant on income from financial and insurance services and perceived as less urgent the need to encourage the deposit of foreign balances in New York. Influential American officials,

notably Benjamin Strong of the Federal Reserve Bank of New York, opposed any extension of the gold-exchange standard.²⁸ Above all, American officials were hesitant to participate in a conference whose success appeared to hinge on unilateral concessions regarding war debts.²⁹

In the absence of an American delegation, Britain's proposals formed the basis for the resolutions of the Financial Commission of the Genoa Conference. These resolutions proposed the adoption of an international monetary convention formally empowering countries, "in addition to any gold reserve held at home, [to] maintain in any other participant country reserves of approved assets in the form of bank balances, bills, short-term securities, or other suitable liquid resources."³⁰ Countries participating in this system would fix their exchange rates against one another, and any that failed to do so would lose the right to hold the reserve balances of the others. The principal creditor nations were encouraged to take immediate steps to restore convertibility in order to become "gold centers" where the bulk of foreign-exchange reserves would be held. Following earlier recommendations by the Cunliffe Committee, governments were urged to economize on gold by eliminating gold coin from circulation and concentrating reserves at central banks. Countries with significantly depreciated currencies were urged to stabilize at current exchange rates rather than attempting to restore prewar parities through drastic deflation which would only delay stabilization.

To implement this convention, the Bank of England was instructed to call an early meeting of central banks, including the Federal Reserve. But efforts to arrange this meeting, which bogged down in the dispute over war debts and reparations, proved unavailing. Still, if the official convention advocated

by the Financial Committee failed to materialize, the Genoa resolutions were not without influence.³¹ Many of the innovations suggested there were adopted by individual countries on a unilateral basis and compromised the distinguishing features differentiating the prewar and interwar monetary standards.³²

The first effect of Genoa was to encourage the adoption of statutes permitting central banks to back notes and sight deposits with foreign exchange as well as gold. New regulations broadening the definition of eligible assets and specifying minimum proportions of total reserves to be held in gold were widely implemented in succeeding years. The second effect was to encourage the adoption of gold economy measures, including the withdrawal of gold coin from circulation and provision of bullion for export only by the authorities. The third effect was to provide subtle encouragement to countries experiencing ongoing inflation to stabilize at depreciated rates. Thus, Genoa deserves partial credit for transforming the international monetary system from a gold to a gold-exchange standard, from a gold coin to a gold bullion standard, and from a fixed-rate system to one in which central banks were vested with some discretion over the choice of parities.

Given its dominance of the proceedings at Genoa, Britain's imprint on the interwar gold-exchange standard was as apparent as its influence over the structure of the prewar system. That British policymakers achieved this despite a pronounced decline in Britain's position in the world economy and the opposition of influential American officials suggests that planning and effort were substitutes, to some extent, for economic power.

Of the three cases considered here, U.S. dominance of the Bretton Woods

negotiations is most clearly supportive of hegemonic stability theories of the genesis of the international monetary system.³³ U.S. dominance of the postwar world economy is unmistakable.³⁴ Yet despite the trappings of hegemony and American dominance of the proceedings at Bretton Woods, a less influential power, Great Britain, was able to secure surprisingly extensive concessions in the design of the international monetary system.

American and British officials offered different plans for postwar monetary reconstruction both because they had different views of the problem of international economic adjustment and because they represented economies with different strengths and weaknesses. British officials were preoccupied by two weaknesses of their economic position. First was the spectre of widespread unemployment. Between 1920 and 1938, unemployment in Britain had scarcely dipped below double digit levels, and British policymakers feared its recurrence. Second was the problem of sterling balances. Britain had concentrated its wartime purchases within the sterling bloc and, because they were allies and sterling was a reserve currency, exporters had accepted settlement in sterling, now held in London. Since these sterling balances were large relative to Britain's gold reserve, even the possibility that they might be presented for conversion into gold threatened plans for the restoration of convertibility.³⁵

U.S. officials, in contrast, were confident that the competitive position of American industry was strong and little preoccupied by the spectre of unemployment. The concentration of gold reserves in the United States combined with the economy's international creditor position freed them from worry that speculative capital flows or foreign government policies might

undermine the dollar's stability. U.S. concerns centered on the growth of preferential trading systems from which its exports were excluded, notably the sterling bloc.

The British view of international economic adjustment was dominated by concern over inadequate liquidity and asymmetrical adjustment. A central lesson drawn by British policymakers from the experience of the 1920s was the difficulty of operating an international monetary system in which liquidity or reserves were scarce. Given how slowly the global supply of monetary gold responded to fluctuations in its relative price and how sensitive its international distribution had proven to be to the economic policies of individual states, it was foolhardy in their view to base the international monetary system on a reserve base comprised exclusively of gold. Given the perceived inelasticity of global gold supplies, a gold-based system threatened to impart a deflationary bias to the world economy and to worsen unemployment. This preoccupation with unemployment due to external constraints was reinforced by another lesson drawn from the 1920s: the costs of asymmetries in the operation of the adjustment mechanism. If the experience of the 1920s was repeated, surplus countries, in response to external imbalances, would need only to sterilize reserve inflows, while deficit countries would be forced to initiate monetary contraction to prevent the depletion of reserves. Monetary contraction, according to Keynes, whose views dominated those of the British delegation, facilitated adjustment by causing unemployment. To prevent unemployment, symmetry had to be restored to the adjustment mechanism through the incorporation of sanctions compelling surplus countries to revalue their currencies or stimulate demand.

From the American perspective, the principal lessons of interwar experience were not the costs of asymmetries and inadequate liquidity but the instability of floating rates and the disruptive effects of exchange-rate and trade protection. U.S. officials were concerned to insure order and stability in the foreign exchange market and to prevent the development of preferential trading systems cultivated through expedients such as exchange control.

The Keynes and White Plans that formed that basis for negotiations are too well known to require more than brief summary.³⁶ Exchange control and the centralized provision of liquidity ("bancor") were two central elements of Keynes's plan for an international clearing union. Provision of bancor was designed to permit "the substitution of an expansionist, in place of a contractionist, pressure on world trade."³⁷ Exchange control would insulate pegged exchange rates from sudden moves to liquidate short-term balances. Symmetry would be insured by a charge on creditor balances held with the clearing bank.

The White Plan acknowledged the validity of the British concern with liquidity but was intended to prevent both inflation and deflation rather than to exert an expansionary influence. It limited the Stabilization Fund's total resources to \$5 billion, in contrast to \$26 billion under the Keynes Plan, and was patterned on the principles of American bank lending, under which decision-making power rested ultimately with the bank, in contrast to the Keynes Plan's resemblance to the British overdraft system, in which the overdraft was at the borrower's discretion.³⁸ The fundamental difference, however, was that the White Plan limited the total U.S. obligation to its \$2 billion contribution, while the Keynes Plan limited the value of unrequited

U.S. exports that might be financed by bancor only to the total drawing rights of other countries (\$23 billion).

It is typically argued that the Bretton Woods Agreement reflected America's dominant position, presumably on the grounds that the Fund Charter specified quotas of \$8.8 billion (much closer to the White Plan's \$5 billion than to the Keynes Plan's \$26 billion) and a maximum U.S. obligation of \$2.75 billion (in contrast to \$2 billion under the White Plan and \$23 billion under the Keynes Plan). Yet, relative to the implications of simple versions of hegemonic stability theory, a surprising number of British priorities were incorporated as well. One was the priority Britain attached to exchange rate flexibility. The U.S. initially had wished to invest the Fund with veto power over a country's decision to change its exchange rate. Subsequently it proposed that 80 per cent of Fund members be required to approve any change in parity. But the Articles of Agreement permitted devaluation without Fund objection when needed to eliminate fundamental disequilibrium. Lacking any definition of this term, there was scope for devaluation by countries other than the United States to reconcile internal and external balance. On only one occasion did the Fund in fact treat an exchange rate change as unauthorized.³⁹ If countries hesitated to devalue, they did so as much for domestic reasons as for reasons related to the structure of the international monetary system.

Another British priority incorporated into the agreement was tolerance of exchange control. Originally, the White Plan obliged members to abandon all exchange restrictions within six months of ceasing hostilities or joining the Fund, whichever came first. A subsequent U.S. proposal would have required a

country to eliminate all exchange controls within a year of joining the Fund. But Britain succeeded in incorporating into the Articles of Agreement a distinction between controls for capital transactions, which were permitted, from controls on current transactions, which were not. In practice, even non-discriminatory exchange controls on current transactions were sometimes authorized under IMF Article VIII.⁴⁰ As a result of this compromise, the U.S. protected itself from efforts to divert sterling bloc trade toward the British market, while Britain protected herself from destabilization by overseas sterling balances.⁴¹

Compared to the above, British efforts to restore symmetry to the international adjustment mechanism proved unavailing. With abandonment of the overdraft principle, the British embraced White's "scarce currency" proposal, under which the Fund was empowered to ration its supply of the scarce currency and members were authorized to impose limitations on freedom of exchange operations in that currency. Thus, a country running payments surpluses sufficiently large to threaten the Fund's ability to supply its currency might face restrictions on foreign customers' ability to purchase its exports. But the scarce currency clause had been drafted by the United States not with the principle of symmetry in mind but in order to deal with problems of immediate postwar adjustment --specifically, the prospective dollar shortage. With the development of the Marshall Plan, the dollar shortage never achieved the severity anticipated by the authors of the scarce currency clause, and the provision was never invoked.

If the "Joint Statement by Experts on the Establishment of an International Monetary Fund," made public in April 1944, bore the imprint of

the U.S. delegation to Bretton Woods, to a surprising extent it also embodied important elements of the British negotiating position, most notably on the issues of parity adjustment and exchange control. It is curious from the perspective of hegemonic stability theory that a war-battered economy, Britain, heavily dependent on the dominant economic power, America, for capital goods, financial capital and export markets was able to extract significant concessions in the design of the international monetary system.⁴² Not only was Britain ably represented in negotiations, but the U.S., not just Britain, required an international agreement and wished to secure it even while hostilities in Europe prevented enemy nations from taking part in negotiations and minimized the involvement of allies on whose territory the war was fought. The U.S. therefore had little opportunity to play off countries against one another or to brand as renegades any which disputed the advisability of its design. Still the world's second largest economy, Britain symbolized, if it did not actually represent, the other nations of the world and was able to advance their case more effectively than if they had attempted more actively to do so on their own.

What conclusions regarding the applicability of hegemonic stability theory to the genesis of international monetary systems follow from this evidence? In the two clearest instances of hegemony, the United Kingdom in the second half of the 19th century and the United States following World War II, the leading economic power significantly influenced the form of the international monetary system, by example in the first instance, by negotiation in the second. On these grounds, hegemonic stability theory cannot be dismissed. But the evidence also underscores the fact that the

hegemon has been incapable of dictating the form of the monetary system. In the first instance, British example did nothing to prevent significant modifications in the form of the gold standard adopted abroad. In the second, the exceptional dominance of the U.S. economy in the immediate post-World-War-II world was unable to eliminate the need to compromise with other countries in the design of the monetary system.

III. Hegemonic Stability Theories of the Operation of Monetary Systems

A. Adjustment

Adjustment under the classical gold standard has frequently been characterized in terms compatible with hegemonic stability theory. The gold standard is portrayed as a managed system whose preservation and smooth operation were insured through its regulation by a hegemonic power, Great Britain, and its agent, the Bank of England. In the words of Cohen (1977, p. 71, emphasis in original), "The classical gold standard was a sterling standard -- a hegemonic regime -- in the sense that Britain not only dominated the international monetary order, establishing and maintaining the prevailing rules of the game, but also gave monetary relations whatever degree of inherent stability they possessed."

Prior to 1914, London was indisputably the world's leading financial center. A large proportion of the world trade -- 60 per cent by one estimate -- was settled through payment in sterling bills, with London functioning as a clearing house for importers and exporters of other nations.⁴³ British discount houses bought bills from abroad, either directly or through the

London agencies of foreign banks. Foreigners maintained balances in London to meet commitments on bills outstanding and to service British portfolio investments overseas. Foreign governments and central banks held deposits in London as interest-earning alternatives to gold reserves. Although the pound was not the only reserve currency of the pre-1914 era, sterling reserves matched the combined value of reserves denominated in other currencies. At the same time, Britain possessed perhaps £350 million of short-term capital overseas. Though it is unclear whether Britain was a net short-term debtor or creditor before the war, it is certain that there existed a large volume of short-term funds responsive to changes in domestic interest rates.⁴⁴

Such changes in interest rates might be instigated by the Bank of England. By altering the rates at which it discounted for its customers and rediscounted for the discount houses, the Bank could affect rates prevailing in the discount market.⁴⁵ But the impact of Bank Rate was not limited to the bill market. While in part this reflected the exceptional integration characteristic of British financial markets, it was reinforced by institutionalization. In London, banks automatically fixed their deposit rates half a percentage point above Bank Rate. Loan rates were similarly indexed to Bank Rate but at a higher level. Though there were exceptions to these rules, changes in Bank Rate were immediately reflected in a broad range of British interest rates.

An increase in Bank Rate, by raising the general level of British interest rates, induced foreign investors to accumulate additional funds in London and to delay the repatriation or transfer of existing balances to other centers. British balances abroad would be repatriated to earn the now higher

rate of return. Drawings of finance bills, which represented half of total bills in 1913, were similarly sensitive to changes in interest rates. Higher interest rates would spread to the security market and delay the flotation of new issues for overseas borrowers. In this way the Bank of England was able to insulate its gold reserve from disturbances to the external accounts.⁴⁶

Because of the size of the London market and the Bank of England's leverage over the interest rates prevailing there, Bank Rate seemed to have "a controlling influence on the British balance of payments, regardless of what other central banks were doing."⁴⁷ When Bank Rate was raised, Britain's external position strengthened even when "other central banks raised or lowered their discount rates along with Bank rate, as they normally did."⁴⁸ Hence, the hegemonic center was rarely threatened by convertibility crises under the classical gold standard.

But why did the Bank of England's exceptional leverage not threaten convertibility abroad? The answer commonly offered is that the Britain's unrivaled market power led to a de facto harmonization of national policies. As the Report of the Macmillan Committee characterized the prewar situation, Britain could "by the operation of her Bank Rate almost immediately adjust her reserve position. Other countries had, therefore, in the main to adjust conditions to hers."⁴⁹ As Keynes wrote in the Treatise on Money, "during the latter half of the nineteenth century, the influence of London on credit conditions throughout the world was so predominant that the Bank of England could almost have claimed to be the conductor of the international orchestra."⁵⁰

Since fiscal harmonization requires no discussion in an era of balanced

budgets, explaining the stability of the classical gold standard reduces to explaining the desire and ability of central banks to harmonize their monetary policies in the interest of external balance. External balance, or maintaining gold reserves adequate to defend the established gold parity, was the foremost target of monetary policy in the period preceding World War I. In the absence of a coherent theory of unemployment, much less a consensus on its relationship to monetary policy, there was relatively little pressure for central banks to accommodate domestic needs. This is not to say that external balance was the sole target of policy, only that when internal and external balance came into conflict, the latter took precedence.⁵¹ Viewed from an international perspective, British leadership played a role in this process of harmonization insofar as the market power and prominence of the Bank of England served as a focal point for policy coordination.

But if the Bank of England could be sure of defeating its European counterparts when they engaged in a tug of war over short-term capital, mere harmonization of central bank policies, in the face of external disturbances, would have been insufficient to prevent convertibility crises on the Continent. The explanation for their absence would appear to be the greater market power of European countries compared to their non-European counterparts. Some observers such as Ford (1962) and Triffin (1968) have distinguished the market power of capital-exporting countries from the inability of capital importers to influence the direction of financial flows. Others have suggested the existence of a hierarchical structure of financial markets: below the London market were the less active markets of Berlin, Paris, Vienna, Amsterdam, Brussels, Zurich and New York, followed by the still

less active markets of the Scandinavian countries, and finally the nascent markets of Latin America and other parts of the non-European world.⁵² When Bank Rate was raised in London, redistributing reserves to Britain from other regions, compensatory discount rate increases on the Continent drew funds from the non-European world or curtailed the normal volume of capital outflows. Developing countries, whether due to the thinness of markets or absence of relevant institutions, were unable to prevent these events. In times of crisis, therefore, convertibility was threatened primarily outside Europe and North America. If Britain and Europe managed the system, they did so "partly at the expense of its weakest members."⁵³

Thus, insofar as hegemony played some role in the efficiency of the adjustment mechanism, it was not the British hegemony of which so much has been written but the collective hegemony of the European center relative to the non-European periphery. Not only does this case study force the conception of the hegemon to be revised, therefore, but since the stability of the classical gold standard was enjoyed exclusively by the countries of the center, it supports only the weak form of hegemonic stability theory -- that the benefits of stability accrued exclusively to the powerful.⁵⁴

The relationship between hegemonic power and the need for policy harmonization is equally relevant to the interwar gold-exchange standard. One interpretation of Nevin's (1955) argument that "the existence of more than one center...[led] to the existence of more than one policy" is that in the absence of a hegemon there was no focal point for policy, interfering with efforts at coordination.⁵⁵ But more important than a declining ability to harmonize policies may have been a diminished desire to do so. Although the

advent of explicit stabilization policy was not to occur until the 1930s and 1940s, an important contrast between the 1920s and the prewar period was nonetheless the extent to which central banks formulated monetary policy with internal conditions in mind.⁵⁶ The rise of socialism and the example of Bolshevik revolution in particular provided a counterweight to central bankers' instinctive wish to base policy solely on external conditions. External adjustment was rendered difficult by policymakers' increasing hesitancy to sacrifice other objectives on the altar of external balance. Britain's balance-of-payments problems, for example, cannot be attributed to "the existence of more than one policy" in the world economy without considering also a domestic unemployment problem which placed pressure on the Bank of England to resist restrictive measures that might strengthen the external accounts at the expense of industry and trade.

Under Bretton Woods, the problem of adjustment was exacerbated by the difficulty of utilizing exchange-rate changes to restore external balance. Hesitancy to change their exchange rates posed few problems for countries in surplus but confronted those in deficit with the choice between aggravating unemployment and tolerating external deficits, where the latter was infeasible in the long run and promoted an increase in the volume of short-term capital that moved in response to anticipations of devaluation. Although the IMF Charter did not encourage devaluation, the hesitancy of deficit countries to employ this option is easier to ascribe to the tendency of governments to attach their prestige to the stability of established exchange rates than to U.S. hegemony, however defined. Where the singular role of the U.S. was important was in precluding a dollar devaluation. A possible solution to the

problem of U.S. deficits that did not threaten other countries' ability to accumulate reserves was an increase in the dollar price of gold, i.e. a dollar devaluation. It is sometimes argued that the U.S. was incapable of adjusting via exchange-rate changes since other countries would have devalued in response to prevent any change in bilateral rates against the dollar. This, however, ignores that raising the dollar price of gold would have increased the dollar value of monetary gold, reducing the global excess demand for reserves and encouraging other countries to increase domestic demand and cut back on their balance-of-payments surpluses. But while a rise in the price of gold, advocated by Gilbert (1968) and Harrod (1971) among others, might have alleviated central banks' immediate dependence on dollars, it would have done nothing to prevent the problem from recurring, and would have promoted skepticism about the American government's commitment to the new gold price, thereby encouraging other countries to increase their demands for gold and bringing forward the date of future difficulties.

Does this evidence on adjustment support hegemonic theories of international monetary stability? The contrast between the appearance of smooth adjustment under both the classical gold standard and Bretton Woods and the adjustment difficulties of the interwar years suggests that the policies of a dominant power served as a sheet anchor for international adjustment because other countries found a fixed target easier to hit than a moving one. As in Luce and Raiffa's (1957) "battle of the sexes" game, what mattered was not so much the particular stance of monetary policy but that the leading players settled on the same stance. The argument, advanced by Snidel (1985b) in a similar context, is that a dominant player is best placed to signal the

other players the nature of the most probable stance.⁵⁷ But while the London money market and the Bank of England played singular roles in the operation of the classical gold standard, as did the New York market and the Federal Reserve in the operation of Bretton Woods, the effectiveness of the adjustment mechanism under the two regimes reflected not just British and American market power but the existence of an international consensus on the objectives and formulation of monetary policy which permitted central bank policies to be harmonized. The essential role of Britain before 1914 and the U.S. after 1944 was not so much to force other countries to alter their policies as to provide a focal point for policy harmonization.

B. Liquidity

Under the classical gold standard, the principal source of liquidity was newly mined gold. It is hard to see how British dominance of international markets could have much influenced the changes in the world price level and mining technology upon which these supplies depended. As argued above (p. 19), where Britain's prominence mattered was in facilitating the provision of supplementary liquidity in the form of sterling reserves, the stock of which grew at an accelerating rate starting in the 1890s. It is conceivable, therefore, that in the absence of British hegemony a reserve shortage would have developed and the classical gold standard would have exhibited a deflationary bias.

Liquidity was an issue of more concern under the interwar gold-exchange standard. Between 1915 and 1925, prices rose worldwide due to the inflation associated with wartime finance and postwar reconstruction and combined with

economic growth to increase the transactions demand for money. Yet under a system of convertible currencies, world money supply was constrained by the availability of reserves. Statutory restrictions required central banks to back their money supplies with eligible reserves, while recent experience with inflation deterred politicians from liberalizing the statutes in question. The output of newly mined gold had been depressed since the beginning of World War I, and experts offered pessimistic forecasts of future supplies. Increasing the real value of world gold reserves by forcing a reduction in the world price level would only add to the difficulties of an already troubled world economy. Countries were encouraged, therefore, to stabilize on a gold-exchange basis to prevent the development of a gold shortage.

There are difficulties with this explanation for interwar liquidity problems that emphasizes a shortage of gold.⁵⁸ For one, the danger of a gold shortage constraining the volume of transactions was alleviated by the all but complete withdrawal of gold coin from circulation, as a result of which the percentage gold cover of short-term liabilities of all central banks was little different in 1928 than it had been in 1913, while the volume of the liabilities backed by that gold stock was considerably increased. It is hard to see why a gold shortage, after having exhibited only weak effects in previous years, should have had such a dramatic impact starting in 1929. It is even less clear how the absence of a hegemon contributed to the purported gold shortage. The obvious linkages between hegemony and the provision of liquidity work in the wrong direction. The obvious method of increasing the monetary value of reserves was a round of currency devaluation, which would revalue gold reserves and, by raising the real price of gold, increase the

output of the mining industry. As demonstrated in 1931, when the pound's depreciation set off a round of competitive devaluations, sterling remained the linchpin of the international currency system; the only way a round of currency devaluation could have taken place, therefore, was if Britain had stabilized in 1925 at a lower level. But had her dominance of the international economy not eroded to the same extent over the first quarter of the 20th century, this would have increased rather than reducing the political pressure for Britain to return to gold at the prewar parity.⁵⁹ It seems unlikely, therefore, that the more successful maintenance of British hegemony, *ceteris paribus*, would have alleviated any gold shortage.

The alternative and, in my view, more appealing explanation for interwar liquidity problems emphasizes mismanagement of gold reserves rather than their overall insufficiency. It blames France and the U.S. for absorbing disproportionate shares of global gold supplies and for imposing deflation on the rest of the world.⁶⁰ Between 1928 and 1932, French gold reserves rose from \$1247 million to \$3257 million of constant gold content, or from 13 to 28 per cent of the world total. Meanwhile, the U.S., which had released gold between 1924 and 1928, facilitating the reestablishment of convertibility in other countries, reversed its position and imported \$1486 million of gold between 1928 and 1930. By the end of 1932 the U.S. and France together possessed nearly 63 per cent of the world's central monetary gold. The British Macmillan Committee attributed to this maldistribution of gold "a large measure of responsibility for the heavy fall in prices in recent years."⁶¹

The maldistribution of reserves can be understood by focusing on the systematic interaction of central banks. This approach builds on the

literature that characterizes the interwar gold standard as a competitive struggle for gold between countries which viewed the size of the gold reserve as a measure of national prestige and as insurance against financial instability.⁶² France and the United States in particular, but gold standard countries generally, repeatedly raised their discount rates relative to one another in efforts to attract gold from abroad. By leading to the accumulation of excess reserves these restrictive policies exacerbated the problem of inadequate liquidity, but by offsetting one another they failed to achieve their objective of attracting gold from abroad. As Keynes explained, "...what helps each [central bank] is not a high Bank rate but a higher rate than the others. So that a raising of rates all round helps no one until, after an interregnum during which the economic activity of the whole world has been retarded, prices and wages have been forced to a lower level."⁶³

The origins of this competitive struggle for gold are popularly attributed to the absence of a hegemon. The competing financial centers, London, Paris and New York, worked at "cross-purposes" because, in contrast to the preceding period, no one central bank was sufficiently powerful to call the tune.⁶⁴ Before the war, the Bank of England had been sufficiently dominant to act as a leader, setting its discount rate with the reaction of other central banks in mind, while other central banks responded in the manner of a competitive fringe. By using this power to defend the gold parity of sterling despite the maintenance of slender reserves, it prevented the development of a competitive scramble for gold. But after World War I, with the United States unwilling to accept responsibility for leadership, no one central bank formulated its monetary policy with foreign reactions and global conditions in

mind, and the noncooperative struggle for gold was the result.⁶⁵ In this interpretation of the interwar liquidity problem, hegemony -- or, more precisely, its absence -- plays a critical role.

In discussing the provision of liquidity under Bretton Woods, it is critical to distinguish the decade ending in 1958, when the convertibility of European currencies was restored and before which U.S. dominance of international trade, foreign lending and industrial production was unrivaled, from the decade that followed. In the first period, the most important source of incremental liquidity was dollar reserves. Between 1949 and 1958, a period during which global reserves rose by 29 per cent, less than a third of the increment took the form of gold and one-fifteenth quotas at the IMF. Sterling's role as a reserve currency was limited almost entirely to Commonwealth members and former British colonies that had traditionally held reserves in London and whose trade was heavily directed toward Britain. Consequently, the accumulation of dollar balances comprised roughly half of incremental liquidity in the first decade of Bretton Woods.

In one sense, U.S. dominance of international markets facilitated the provision of liquidity. Following the conclusion of World War II, the U.S. had amassed 60 per cent of the world's gold stock, worth, at \$35 an ounce, six times the value of the official dollar claims accumulated by foreign governments by 1949. There was little immediate question, given U.S. dominance of global gold reserves, of the stability of the gold price of the dollar and hence little hesitation to accumulate incremental liquidity in the form of dollar claims. But in another sense, U.S. international economic power in the immediate postwar years impeded the supply of liquidity to the

world economy. Wartime destruction of industry in Europe and Japan left U.S. manufactured exports highly competitive in world markets and rendered Europe dependent on U.S. capital goods for industrial reconstruction. The persistent excess demand for U.S. goods tended to push the U.S. balance of payments into surplus, creating the famous "dollar shortage" of the immediate postwar years. While U.S. hegemony left other countries happy to hold dollar claims, it rendered them extremely difficult to obtain.

Various policies were initiated in response to the "dollar shortage," including discrimination against dollar area exports, special incentives for European and Japanese exports to the United States, and a round of European currency devaluations starting in September 1949. Ultimately the solution took the form of two sharply contrasting actions by the hegemon: Marshall Plan grants in the amount of \$11.6 billion between mid-1948 and mid-1952, and Korean war expenditures. Largely as a result of these two programs, U.S. trade surpluses shrank from \$10.1 billion in 1947 to \$2.6 billion in 1952; more importantly, U.S. government grants and private capital outflows exceeded the surplus on current account. By 1950, the U.S. balance of payments was in deficit and, after moving back into surplus in 1951-52, deficits returned to stay. Insofar as its singular economic power encouraged the U.S. to undertake both the Marshall Plan and the Korean War, hegemony played a significant role in both the form and the adequacy of the liquidity provided in the first decade of Bretton Woods.

Between 1958 and 1969, global reserves grew more rapidly, by 51 per cent, than they had in the first decade of Bretton Woods. Again, gold comprised a minor share of the increment, about one-twentieth, and IMF quotas one-eighth.

While foreign exchange reserves again provided roughly half, Eurodollars and other foreign currencies grew in importance, their contribution actually exceeding that of official claims on the United States.⁶⁶ In part these trends reflected economic recovery and rapid growth in Europe and Japan. More importantly, they reflected the fact that, starting in 1965, the value of foreign government claims on the United States exceeded U.S. gold reserves. Prudence dictated that foreign governments diversify their reserve positions out of dollars.

The role of U.S. hegemony in the provision of liquidity during this second decade has been much debated. The growth of liquidity reflected both supply and demand pressures -- both demands by other countries for additional reserves which translated into balance of payments surpluses, and use by the United States of its capacity to consume more than it produced by running balance-of-payments deficits financed by the willingness of other countries to accumulate dollar reserves. The U.S. was criticized sharply, mainly by the French, for exporting inflation and for financing purchases of foreign companies and pursuit of the Vietnam War via the balance of payments.⁶⁷ Although these complaints cannot be dismissed, it is incorrect to conclude that the dollar's singular position in the Bretton Woods System permitted the U.S. to run whatever balance-of-payments deficit it wished.⁶⁸ Moreover, it is difficult to envisage an alternative scenario in which the U.S. balance of payments was zero yet the world was not starved of liquidity. Owing to the sheer size of the American economy, new claims on the U.S. continued to vastly exceed the contribution of new claims on any other nation to incremental liquidity. Moreover, U.S. economic, military and diplomatic influence did

much to encourage if not compel other countries to maintain their holdings of dollar claims. Thus, U.S. dominance of international markets played a critical role in resolving the liquidity crisis of the 1960s.⁶⁹

The distinguishing feature of Bretton Woods is not that other countries continued to hold dollar reserves in the face of exchange rate uncertainty and economic growth abroad, for neither development deterred them from holding dollars under the flexible-exchange rate regime of the 1970s and 1980s. Rather, it is that they continued to hold reserves in the face of a one-way bet resulting from the fact of dollar convertibility at a fixed price when the dollar price of gold seemed poised to rise. In part, the importance of American foreign investments and the size of the U.S. market for European exports caused other countries to hesitate before cashing in their chips. Yet foreign governments also saw dollar convertibility as essential to the defense of the gold-dollar system, and viewed the fixed exchange rates of that system as an international public good worthy of defence. Not until 1965 did the French government decide to convert into gold some \$300 million of its dollar holdings and to subsequently step up its monthly gold purchases from the U.S. But when pressure on U.S. gold reserves mounted following the 1967 devaluation of sterling, other countries, including France, instead of capitalizing on the one way bet, sold gold instead. They joined the U.S. in the formation of a gold pool whose purpose was to sell a sufficient quantity of gold to defend the official price. Between sterling's devaluation in 1967 and closure of the gold market on March 15, 1968, the pool sold \$3 billion of gold, of which U.S. sales were \$2.2. France purchased no gold in 1967 or 1968, presumably due in part to foreign pressure.⁷⁰ U.S. leverage undoubtedly contributed to their

decisions. But a plausible interpretation of these events is that foreign governments, rather than simply being coerced into support of the dollar by U.S. economic power, were willing to take limited steps to defend the international public good of a fixed exchange rate system defined in terms of the dollar price of gold.

What does this discussion imply for the role of hegemony in the provision of international liquidity? The strongest evidence for the importance of a hegemon is negative evidence from the interwar years, when the absence of a hegemon and the failure of competing financial centers to effectively coordinate their policies contributed greatly to the liquidity shortage. In other periods when a dominant economic power was present, it is difficult to credit that power with exclusive responsibility for insuring the adequate provision of liquidity. Under the gold standard, the principal source of incremental liquidity was newly-mined gold, to which Britain contributed only insofar as her financial stature encouraged other countries to augment their specie holdings with sterling reserves. After World War II, U.S. economic power similarly rendered dollars a desirable form in which to acquire liquid reserves, but the same factors that made dollars desirable also rendered them difficult to obtain.

C. Lender-of-Last-Resort Function

If adjustment were always accomplished smoothly and liquidity were consistently in adequate supply, there would be no need for an international lender of last resort to stabilize the international monetary system. Yet countries' capacity to adjust and the system's ability to provide liquidity

may be inadequate to accommodate disturbances to confidence. Like domestic banking systems, an international financial system based on convertibility is vulnerable to problems of confidence which threaten to ignite speculative runs. Like depositors who rush to close their accounts upon receiving the news of a neighboring bank failure, exchange-market participants, upon hearing of a convertibility crisis abroad, may rush to liquidate their foreign-exchange balances because of incomplete information about the liabilities and intentions of particular governments. This analogy leads Charles Kindleberger (1973, pp. 290-291; 1978, pp. 188-194), for example, to adopt from the domestic central banking literature the notion that a lender of last resort is needed to discount in times of crisis, provide countercyclical long-term lending and maintain an open market for distress goods, and to suggest that, in the absence of a supranational institution, only a hegemonic power can carry out this international lender-of-last-resort function on the requisite scale.

Of the episodes considered here, the early Bretton Woods era provides the clearest illustration of the benefits of an international lender of last resort. The large amount of credit provided Europe in the form of grants and long-term loans and the willingness of the U.S. to accept European and Japanese exports even when these had been promoted by the extension of special incentives illustrate two of the lender-of-last-resort functions identified by Kindleberger: countercyclical lending and provision of an open market for distress goods. Traditional histories of the Marshall Plan characterize it in terms consistent with the benevolent strand of hegemonic stability theory: the United States was mainly interested in European prosperity and stood to

benefit only insofar as that prosperity promoted geopolitical stability. Revisionist histories have more in common with the coercive strand of hegemonic stability theory; they suggest that the U.S. used Marshall aid to exact concessions from Europe on most-favored-nation status for Germany, IMF exchange-rate oversight, and Swiss links with the OEEC.⁷¹ While it is certain that the European countries could not have moved so quickly to relax capital controls and quantitative trade restrictions without these forms of U.S. assistance, it is not clear how far the argument can be generalized. The Marshall Plan coincided with a very special era in the history of the international monetary system, in which convertibility outside the U.S. had not yet been restored and hence there was little role for the central function of the lender of last resort: discounting freely when a convertibility crisis threatens.⁷² Later, in the 1960s, when convertibility was threatened, rescue operations were mounted not by the United States but cooperatively by the Group of Ten.

Kindleberger has argued that the 1929-31 financial crisis might have been avoided by the intervention of an international lender of last resort. The unwillingness of Britain and the United States to engage in countercyclical long-term lending and to provide an open market for distress goods surely exacerbated convertibility crises in the non-European world. Both the curtailment of overseas lending and the imposition of restrictive trade policies contributed greatly to the balance-of-payments difficulties which led to the suspension of convertibility by primary producers as early as 1929.⁷³ Gold movements from the periphery to London and New York in 1930 heightened the problem and hastened its spread to Central Europe.

But it is not obvious that additional U.S. loans to Britain and other European countries attempting to fend off threats to convertibility would have succeeded in significantly altering the course of the 1931 financial crisis in Europe. Heading off the crisis would have required a successful defense of the pound sterling, whose depreciation was followed almost immediately by purposeful devaluation in some two dozen other countries. In the instance, Britain succeeded in obtaining a substantial amount of short-term credit abroad in support of the pound, raising \$650 million in New York and Paris after only minimal delay. Total short-term lending to countries under pressure amounted to approximately \$1 billion, or roughly 10 per cent of total international short-term indebtedness and five per cent of world imports (more than the ratio of total IMF quotas to world imports in the mid-1970s).⁷⁴ It is noteworthy that these credits were obtained not from a dominant power but from a coalition of creditor countries.

Could additional short-term credits from an international lender of last resort have prevented Britain's suspension of convertibility? If the run on sterling reflected merely a temporary loss of confidence in the stability of fixed parities, then additional loans from an international lender of last resort, like central bank loans to temporarily illiquid banks, might have permitted the crisis to be surmounted. But if the loss of confidence had a basis in economic fundamentals, no amount of short-term lending would have done more than delay the crisis in the absence of measures to eliminate the underlying imbalance. The existence of an international lender of last resort could have affected the timing but not the fact of collapse.

The fundamental disequilibrium that undermined confidence in sterling is

typically sought in the government budget. The argument is that Britain's budget deficit, by stimulating absorption, in conjunction with the collapse of foreign demand for British exports, weakened the balance of trade. Although the Second Labour Government fell in 1931 precisely because of its failure to agree on measures to reduce the size of the budget deficit, historians disagree over whether the budget contributed significantly to the balance of payments deficit.⁷⁵ The trade balance, after all, was only one component of the balance of payments. The impact on the balance of payments of shocks to the trade balance appear to have been small compared to the Bank of England's capacity to attract short-term capital. If this is correct and the 1931 financial crisis in Britain reflected mainly a temporary loss of confidence in sterling rather than a fundamental disequilibrium, then additional short-term loans from the United States or a group of creditor countries might have succeeded in tiding Britain over the crisis. But the loans required would have been extremely large by the standards of either the pre-1914 period of British hegemony or the post-1944 period of U.S. dominance.

The international lender-of-last-resort argument is more difficult to apply to the classical gold standard. Cohen (1977, pp. 81-82) asserts that the three lender-of-last-resort functions identified by Kindleberger -- maintaining an open market, providing countercyclical foreign lending, and discounting freely in times of crisis -- were practiced by Britain prior to 1913. But, according to Moggridge, Kindleberger argues the opposite: that under the classical gold standard, certain international crises, like that of 1873, were rendered severe by the absence of an international lender of last resort.⁷⁶ By my reading, Kindleberger's views are more circumspect. He

examines whether international loans were solicited and whether their extension might have moderated the 1873 crisis. But he notes that in 1873, as in 1890 and 1907, the hegemonic monetary authority, the Bank of England, would have been the "borrower of last resort" rather than the lender. These facts might be reconciled with the theory of hegemonic stability if the lender, Paris, is elevated to the status of a hegemonic financial center, a possibility to which Kindleberger is led to by his analysis of late-19th-century financial crises. But elevating Paris to parity with London would do much to undermine the view of the classical gold standard that attributes its durability to management by a single financial center.

What does this historical analysis of the lender-of-last-resort function imply for the validity of hegemonic theories of international monetary stability? It confirms that there have been instances, notably the aftermath of World War II, when the economic power of the leading country so greatly surpassed that of all rivals that it succeeded in insuring the system's stability in times of crisis by discounting freely, providing countercyclical lending and maintaining an open market. It suggests, at the same time, that such instances are rare. For a leading economic power to effectively act in this lender-of-last-resort capacity, not only must its market power exceed that of all rivals but it must exceed that of its rivals by a very substantial margin. British economic power in the 1870s and U.S. economic power in the 1960s were inadequate in this regard, and other economic powers -- France in the first instance, the Group of Ten in the second -- were needed to cooperate in provision of lender-of-last-resort facilities.

IV. The Dynamics of Hegemonic Decline

Might an international monetary system that depends for its smooth operation on the dominance of a hegemonic power be dynamically unstable? There are two channels through which dynamic instability might operate: first, the system itself might evolve in directions which attenuate the hegemon's stabilizing capacity; second, while the system remains the same, its operation might influence relative rates of economic growth in such a way as to progressively reduce the economic power and, by implication, the stabilizing capacity of the hegemon.⁷⁷

The hypothesis that the Bretton Woods System was dynamically unstable was mooted by Robert Triffin as early as 1947.⁷⁸ Triffin focused on what he saw as inevitable changes in the composition of reserves, arguing that the system's viability hinged on the willingness of foreign governments to accumulate dollars, a willingness that depended in turn on confidence in the maintenance of dollar convertibility. Although gold dominated the dollar as a source of international liquidity (in 1958, the value of gold reserves being four times the value of dollar reserves when all countries were considered, two times when the U.S. was excluded), dollars were the main source of liquidity on the margin. Yet the willingness of foreign governments to accumulate dollars at the required pace and hence the stability of the gold-dollar system were predicated on America's commitment and capacity to maintain the convertibility of dollars into gold at \$35 an ounce. The threat to her ability to do so was that, under a system in which reserves could take the form of either dollars or gold, a scarce natural resource whose flow supply was insufficiently

elastic to keep pace with the demand for liquidity, the share of dollars in total reserves could only increase, pyramiding an ever-growing volume of foreign dollar liabilities on a fixed or even shrinking U.S. gold reserve. Thus, the very structure of Bretton Woods -- specifically, the monetary role for gold -- progressively undermined the hegemon's capacity to insure the system's smooth operation through the provision of adequate liquidity.⁷⁹

Dynamic instability also could have operated through the impact of the international monetary system on the relative rates of growth of the U.S. and foreign economies. If the dollar was systematically overvalued for a significant portion of the Bretton Woods era, this could have reduced the competitiveness of U.S. exports, stimulating foreign penetration of U.S. markets. Assuming that the dollar was overvalued due to some combination of European devaluations at the beginning of the 1950s, subsequent devaluations by developing countries, and to the inability of the U.S. to respond to competitive difficulties by altering its exchange rate, how might this have depressed the relative rate of growth of the U.S. economy, leading to hegemonic decline? One can think of two arguments, one which proceeds along Heckscher-Ohlin lines, another which draws on dynamic theories of international trade.

The Heckscher-Ohlin hypothesis builds on the observation that the U.S. was relatively abundant in capital (both human and physical). Since, under Heckscher-Ohlin assumptions, U.S. exports were capital intensive, any measure which depressed exports would have reduced its rate of return. Reducing the rate of return would have discouraged investment, depressing the rate of economic growth and accelerating the U.S. economy's relative decline.

The dynamic trade theory hypothesis builds on the existence of learning by doing in the production of traded goods. If, as in Krugman (1984, 1985), production costs fall with cumulative output and the benefits of learning are external to the firm but internal to domestic industry, then exchange-rate overvaluation, by depressing the competitiveness of exports, will inhibit their production and reduce the benefits of learning. If overvaluation is sufficiently large and persistent, it will shift comparative advantage in their production to foreign competitors. The weakness of this hypothesis is that it is predicated on the unsubstantiated assumption that learning effects are more important in the production of traded than nontraded goods. Its strength lies in the extent to which it conforms with informal characterizations of recent trends.

Precisely the same arguments have been applied to the downfall of the interwar gold-exchange standard. The interwar system, which depended for liquidity on gold, dollars and sterling, was if anything even more susceptible than its post-World-War-II analog to destabilization by the operation of Gresham's Law. As noted above, the legacy of the Genoa Conference encouraged central banks to accumulate foreign exchange. Promoting the use of exchange reserves while at the same time attempting to maintain gold convertibility threatened the system's stability for the same reasons as under Bretton Woods. But because foreign exchange reserves were not concentrated in a single currency to the same extent as after World War II, it was even easier under the interwar system for central banks to liquidate foreign balances in response to any event which undermined confidence in sterling or the dollar. Instead of initiating the relatively costly and complex process of acquiring

gold from foreign monetary authorities in the face of, at the least, moral suasion to refrain, central banks only needed to swap one reserve currency for the other on the open market. Gresham's Law operated even more powerfully when gold coexisted with two reserve currencies than with one.⁸⁰

This instability manifested itself when the 1931 financial crisis, by undermining faith in sterling convertibility, induced a large-scale shift out of London balances. Once Britain was forced to devalue, faith in the stability of the other major reserve currency was shaken, and speculative pressure shifted to the dollar. The National Bank of Belgium, which had lost 25 per cent of the value of its £12 million sterling reserve as a result of Britain's devaluation, moved to liquidate its dollar balances. The Eastern European countries, including Poland, Czechoslovakia and Bulgaria, then liquidated their deposits in New York. Between the ends of 1930 and 1931, the share of foreign exchange in the reserve portfolios of 23 European countries fell from 35 to 19 per cent, signaling the demise of the exchange portion of the gold-exchange standard.

The argument that structuring the international monetary system around a reserve asset provided by the leading economic power led eventually to that country's loss of preeminence has been applied even more frequently to Britain after World War I than to the U.S. after World War II. Because the gold-exchange standard created a foreign demand for sterling balances, Britain was able run larger trade balance deficits than would have been permitted otherwise. In a sense, Britain's reserve currency status was one of the factors that facilitated the restoration of sterling's prewar parity. Despite an enormous literature predicated on the view that the pound was overvalued at

§4.86, there remains skepticism that the extent of overvaluation was great or the impact on the macroeconomy was significant.⁸¹ While it is not possible to resolve this debate here, the point relevant to the theory of hegemonic stability is that evidence of reserve-currency overvaluation is as substantial in the earlier period when hegemony was threatened as in the later period when it was triumphant.

Of the three monetary systems considered here, the classical gold standard is the most difficult to analyze in terms of the dynamics of hegemonic decline. It might be argued (following Matthews, et al., 1982, p. 526) that the pound was overvalued for at least a decade prior to 1913; and that Britain's failure to devalue resulted in sluggish growth which accelerated the economy's hegemonic decline.⁸² The competitive difficulties of older British industries, notably iron and steel, and the decelerating rate of economic growth in the first decade of the 20th century are consistent with this view.⁸³ According to Matthews, et al. (1982, Table 8.1), the source of the deceleration in the rate of British economic growth was both a decline in productivity growth and a fall in the rate of domestic capital formation. This fall in the rate of domestic capital formation, especially after 1900, reflected not a decline in British savings rates but a surge of foreign investment. Thus, for Britain's hegemonic position in the international economy to have caused her relative decline, it would have had to be responsible for her exceptionally high propensity to export capital. The volume of British capital exports in the decades preceding World War I has been attributed, alternatively, to the spread of industrialization and associated investment opportunities to other countries and continents, and to

imperfections in the structure of British capital markets resulting in a bias toward investment overseas.⁸⁴ It is impossible to resolve this debate here. But the version of the market-imperfections argument that attributes the London capital market's disinterest in domestic investment to Britain's relatively early and relatively labor-intensive form of industrialization implies that the same factors responsible for Britain's mid-19th century hegemony -- that the industrial revolution occurred there first -- may also have been responsible for the capital-market biases that accelerated her hegemonic decline.

Although the classical gold standard experienced a number of serious disruptions, such as the 1907 panic when a financial crisis threatened to undermine its European core, the prewar system survived these disturbances intact. Eventually, however, the same forces that led to the downfall of the interwar gold-exchange standard would have undermined the stability of the prewar system.⁸⁵ As the rate of economic growth continued to outstrip the rate of growth of gold, the supply of which was limited by the availability of ore, countries would have grown increasingly dependent on foreign-exchange reserves as a source of incremental liquidity. As in the 1960s, growing reliance on exchange reserves, in the face of relatively inelastic gold supplies, would have eventually proven incompatible with the reserve center's ability to maintain gold convertibility.

de Cecco argues that the situation was already beginning to unravel in the first decade of the 20th century -- that the Boer War signaled the end of the long peace of the 19th century, thereby undermining the willingness of potential belligerents to hold their reserves as deposits in foreign

countries. "In the years following the Boer War, the international monetary system once more showed a distinct tendency towards becoming a pure gold standard..."⁸⁶ More importantly for our purposes, he suggests that the system was destabilized by the growth of U.S. economic power relative to that of the U.K. Given the experimental nature of Treasury efforts to accommodate seasonal variations in money demand, the U.S. relied heavily on gold imports whenever economic conditions required an increase in money supply, notably during harvest and planting seasons.⁸⁷ When the demand for money increased, the U.S. imported gold, mainly from the Bank of England, which was charged with pegging the sterling price of gold on the London market with a gold reserve of only £30 million. As the American economy grew, both its average demand for gold from London and that demand's seasonal fluctuation increased relative to the Bank of England's primary reserve and its capacity to attract supplementary funds from other centers. To rephrase de Cecco's argument in terms of hegemonic stability theory, the growth of the U.S. relative to the U.K. undermined Britain's capacity to stabilize international financial markets -- specifically, its ability to simultaneously serve as the world's only free gold market, providing however much gold was required by other countries, and at the same time to maintain the stability of sterling, the reference point for the global system of fixed exchange rates. In a sense, de Cecco sees indications of the interwar stalemate -- a Britain incapable of stabilizing the international system and a U.S. unwilling to do so -- emerging in the first decade of the 20th century. From this perspective, the process of hegemonic decline which culminated in the international monetary difficulties of the interwar years was at most accelerated by World War I. Even before the

war, the processes which led to the downfall of established monetary arrangements were already underway.

V. Conclusion

Much of the international relations literature concerned with prospects for international monetary reform can be read as in search of an alternative to hegemony as a basis for international monetary stability. Great play is given to the contrast between earlier periods of hegemonic dominance, notably 1890-1914 and 1945-1971, and the nature of the task presently confronting aspiring architects of international monetary institutions, who require an alternative to hegemony as a basis for systemic stability in an increasingly multipolar world. In this paper I have suggested that hegemonic stability theories are helpful for understanding the relatively smooth operation of the classical gold standard and the early Bretton Woods System as well as some of the difficulties of the interwar years. At the same time, much of the evidence is difficult to reconcile with the hegemonic stability view. Even when individual countries occupied positions of exceptional prominence in the world economy and even when that prominence found reflection in the form and functioning of the international monetary system, that system was still fundamentally predicated on international collaboration. Keohane's notion of "hegemonic cooperation" -- that cooperation is required for systemic stability even in periods of hegemonic dominance, although the presence of a hegemon may be conducive to the evolution of cooperative behavior -- seems directly applicable to international monetary relations. The importance of

collaboration is equally apparent whether one is concerned with the design of the international monetary system, its operation under normal circumstances, or the management of crises. Despite the usefulness of hegemonic stability theory when applied to short periods and well-defined aspects of international monetary relations, the international monetary system has always been "after hegemony" in the sense that more than a dominant economic power was generally required to insure the provision and maintenance of international monetary stability.

Moreover, in precisely those periods when the existence of an exceptionally important economic power most forcefully conditioned the form of the international system, the potential for instability, in a dynamic sense, was greatest. Above all, historical experience demonstrates the speed and pervasiveness of changes in national economic power; since hegemony is transitory, so must be any international monetary system which takes hegemony as its basis. Given the costs of international monetary reform, it would seem unwise to predicate a new system on such a transient basis.

Footnotes

1. See also Olson and Zeckhauser (1966).
2. See Gilpin (1975), Krasner (1976) and, more recently, Cowhey and Long (1983), Gowa (1984), Lipson (1982), Snidal (1985a), Stein (1984), and Yarborough and Yarborough (1985). I refer to this as "the theory of hegemonic stability," a phrase coined by Keohane (1980). In the words of Keohane (1980, p. 132) the theory of hegemonic stability posits that "hegemonic structures of power, dominated by a single country, are most conducive to the development of strong international regimes whose rules are relatively precise and well obeyed."
3. Attempts to test the applicability of hegemonic stability theory have considered international trade policy (Krasner, 1975; Conybeare, 1983; Lawson, 1983; McKeown, 1983), international investment (Gilpin, 1975), international monetary arrangements (Keohane, 1982; Odell, 1982; Oye, 1986), and the international administration of world oil prices (Keohane, 1980, 1984; Alt et al., 1986). The theory's popularity was stimulated by Kindleberger's (1973) argument, following Brown (1940), that the international financial system and macroeconomic environment of the interwar years were destabilized by lack of leadership by a dominant economic power willing to provide the public good of international monetary stability by acting as international lender of last resort.
4. Alternatives to this definition are offered by Hart (1976).
5. The concept of regime was introduced into the international relations literature by Ruggie (1975). For critical analyses of its uses, see Young (1980, 1983) and Strange (1982). Keohane (1980, p. 132) defines a regime as "the rules, norms and procedures that guide the behavior of states and other important actors." Since my method of analysis does not hinge on a particular definition of the international monetary regime, it is competitive with a range of alternative definitions. I prefer to distinguish between the monetary system, which is made up of a set of explicit rules and procedures (pegging rules, intervention strategies, IMF statutes governing reserve availability, for example), and the international monetary regime as a broader framework that incorporates the explicit rules comprising the system but embeds them within a set of implicit understandings about how economic policymakers will behave (implicit promises to coordinate macroeconomic policies or to provide loans in time of convertibility crisis, for example). Thus, while the compass of the international monetary system is limited to matters that impinge directly on monetary affairs, the international monetary regime may involve issues that impinge indirectly, such as trade policy or diplomatic action. In effect, I am distinguishing between the monetary "system" and "regime" in the same way that Mundell (1972, p. 82) distinguishes the monetary "system" and "order":

"A system is an aggregation of diverse entities united by regular interaction according to some form of control. When we speak of the

international monetary system we are concerned with the mechanisms governing the interaction between trading nations, and in particular between the money and credit instruments of national communities in foreign exchange, capital, and commodity markets. The control is exerted through policies at the national level interacting with one another in that loose form of supervision that we call cooperation.

An order, as distinct from a system, represents the framework and setting in which the system operates. It is a framework of laws, conventions, regulations, and mores that establish the setting of the system and the understanding of the environment by the participants in it. A monetary order is to a monetary system somewhat like a constitution is to a political or electoral system. We can think of the monetary system as the modus operandi of the monetary order."

6. See March (1966).
7. For discussions of issue linkage, see Cooper (1972-3) and Haas (1980).
8. Kindleberger (1973), p. 28; Keohane (1980), p. 136.
9. For example, Kindleberger (1973) is primarily concerned with the role of hegemony in insuring the smooth operation of an extant system, while Gilpin (1975) and Krasner (1976) focus instead on the role of hegemony in system design and formation. Similarly distinctions are emphasized by Stein (1984).
10. Gilpin's (1975) characterization is a bit strong: "Economists do not really believe in power; political scientists, for their part, do not really believe in markets."
11. I identify the stability of the international monetary system with the maintenance of a set of fixed exchange rates for simplicity alone. The two should not be taken as synonymous. The system could as easily be defined as a set of EMS-like rules for parity adjustment or rules of the game governing open market operations.
12. Under the classical gold standard and the interwar gold-exchange standard, this was the practice of most countries. As discussed below, under the Bretton Woods System, the dollar was pegged to gold but other countries had the choice of declaring parities against either gold or the dollar. Alternatively, this formulation may be thought of as the problem of two neighboring countries which depend heavily on one another but whose policies are of little consequence to the rest of the world.
13. For a recent review of that literature, see Sachs (1986).
14. A minimal model generating such reaction functions might take the following form. Each country maximizes an objective function V of the form:

$$(F1) \quad V = [y^2 + x^2]$$

The two endogenous variables of concern x and y (for example, output and prices) evolve according to:

$$(F2) \quad y = a_0 + a_1 e - a_2 e^*$$

$$(F3) \quad x = b_1 e - b_2 y$$

where all the parameters $a_i > 0$. (Identical equations exist for the foreign country with asterisks reversed.) A necessary condition for the reaction function to be upward sloping is:

$$(F4) \quad 2a_1 a_2 > 2b_2 a_2 (b_1 - b_2 a_1)$$

15. In other words, if the equations for the reaction functions in Figure 1 are:

$$(F5) \quad \hat{e} = f_0 + f_1 e^*$$

$$(F6) \quad \hat{e}^* = g_0 + g_1 e$$

then the response, in the neighborhood of the initial Nash equilibrium, is:

$$(F7) \quad de = \begin{cases} f_1 de^* & \text{if } f_1 de > c \\ 0 & \text{if } f_1 de \leq c \end{cases}$$

$$(F8) \quad de^* = \begin{cases} g_1 de & \text{if } g_1 de > 0 \\ 0 & \text{if } g_1 de \leq 0 \end{cases}$$

16. The shock can be thought of as an increase in the foreign counterpart to a_0 in equation F2. For that shift to induce a shift in the foreign reaction function, the benefits of that shift again would have to exceed the costs.

17. Sufficiently small means that $f_1 de^* \leq c$ as in equation F7 above.

18. In other words, as the home country grows in size, a_2 in equation F2 shrinks relative to the other parameters of the model.

19. A limited parallel is the International Monetary Conference of 1881, which brought together the members of the Latin Monetary Union, discussed below. Another candidate is the conference which resulted from the U.S. Bland-Allison Act of 1878. This statute instructed the President to invite members of the Latin Monetary Union and other European countries to a conference intended to result in mutual adoption of a bimetallic system based on a common ratio of silver to gold. See Hepburn (1924).

20. Although German politicians had previously perceived the country's silver standard as beneficial to the development of its Eastern European trade, by 1870 most of that region had suspended convertibility. Germany used the proceeds of the indemnity received as victor in the Franco-Prussian War to purchase gold on the world market, thereby contributing to the ongoing rise in

its price. Silver inflation led to the suspension of silver coinage and convertibility by Holland, Denmark, Norway, Sweden, France and the countries of the Latin Monetary Union (Belgium, Switzerland, Italy and Greece), making gold the basis for the monetary standard in every European country except those which retained inconvertible paper. In 1879 the U.S. ended the Greenback Period and Russia and Japan restored gold convertibility. While neither Italy nor the Habsburg Monarchy adopted formal convertibility, from the turn of the century both pegged their currencies to gold. Further details may be found in Eichengreen (1985a).

21. de Cecco (1985), p. 42 and Table 8.

22. A third option, maintaining bimetallism but raising the relative price of gold, had been discredited by the difficulties of the Latin Monetary Union and evoked little enthusiasm when advocated by the U.S. at the international conference convened under the provisions of the Bland-Allison Act of 1878. Contemporaries recognized that international cooperation was necessary for the successful functioning of a bimetallic system. The more countries participated in a bimetallic system, the greater the probability that their common mint ratio would dominate the market ratio. But of the major countries, only the U.S. and Italy favored immediate adoption of a global bimetallic standard. While France, Holland and Austria also favored bimetallism, they viewed its immediate implementation on a global basis as impractical. Germany, Belgium and the Scandinavian states favored immediate adoption the gold standard, Germany so strongly as to boycott the conference. The record of conference proceedings is U.S. Senate (1879). See Russell (1898), Chapter V.

23. In 1850 Belgian and Swiss silver coins were new and full bodied, in contrast to French coins which had lost up to 8 per cent of their silver content through wear. Hence French coins were exported to Belgium and Switzerland, while Belgian heavy coins were exported to Germany and the Netherlands. In 1862, Italy adopted a bimetallic standard, but her silver coins were only 0.835 per cent pure and hence ended up being shipped to France. The confusion which resulted convinced the countries involved to adopt a common standard which entailed the French parity of 15 1/2 ounces of silver per ounce of gold and silver coins 0.835 per cent pure. See Willis (1900).

24. White (1933), pp. 182-200.

25. Bloomfield (1959), pp. 13-15 and passim.

26. These are reviewed by Traynor (1949).

27. A more politically oriented assessment of policymakers' objectives is provided by Costigliola (1984).

28. For further discussion of Strong and the American position, see Clarke (1973).

29. Costigliola (1977), p. 916; Traynor (1949), p. 72.
30. For the text of the resolutions and related correspondence, see United Kingdom (1924).
31. Details are provided in Eichengreen (1985b), pp. 151-152.
32. The significance of the Genoa resolutions is discussed at greater length in Eichengreen (1986a).
33. This is the conclusion of Keohane (1984), p. 37, for example.
34. In the immediate post-World-War-II period, the United States produced a majority of global industrial output of the capital goods and equipment needed for economic reconstruction abroad. It was the largest holder of gold and the major creditor on long-term capital account. Observers anticipated that its creditor position would strengthen yet further as the U.S. continued to finance deficit spending for European reconstruction. Such observations lead Keohane (1984, pp. 36-37) to conclude that the extent of American predominance after World War II was unprecedented, unmatched even by Britain prior to World War I.
35. See Sayers (1956), pp. 438-440 and Cairncross and Eichengreen (1983), chapter 4.
36. See in particular Horsefield (1969) and Gardner (1956).
37. Horsefield (1969), 3:3, para. 1.
38. See for example Cohen (1982).
39. Dam (1982), p. 92.
40. Tew (1977), p. 109.
41. Fund procedures also represented a compromise between the British preference for free access to Fund resources and the American preference for conditionality. The Articles of Agreement flatly stated that a country "shall be entitled" to buy currency from the IMF providing only that currency was needed for purposes consistent with the Fund agreement. Initially it was unclear whether the Fund had legal authority to make borrowing subject to conditions. But in 1948 the IMF's Board of Executive Directors asserted its right to limit access to Fund reserves if the member was using its resources in a manner contrary to the purposes of the organization and to make that access subject to conditions. The conditionality that evolved treated access to successive credit tranches in different ways. While attempts to borrow in the gold tranche would receive "the overwhelming benefit of any doubt," access to higher tranches would be subject to increasingly stringent conditions. Horsefield (1967), 3, p. 228.
42. This portrayal of Bretton Woods as neither an American triumph nor a

defeat is at variance with characterizations of Bretton Woods as a construct of the American hegemon. But it is not inconsistent with the view that, as a compromise between the Keynes and White Plans, "the compromise contained less of the Keynes and more of the White Plans." Rolfe (1966), p. 78.

43. Williams (1968), p. 268.

44. Lindert (1969), pp. 56-57.

45. Of course, the Bank might have to intervene with purchases or sales of bills and bonds to render its rate effective. Sayers (1936), Chapter II.

46. This brief account draws on Moggridge (1972), pp. 8-9.

47. Cleveland (1976), p. 17.

48. Cleveland (1976), p. 17.

49. Committee on Finance and Industry (1931), p. 125.

50. Keynes (1930), vol. II, pp. 306-307. Evidence to this effect is presented by Eichengreen (1986b). Regression results reported there reveal that, while the Bank of England's discount rate was responsive to changes in French and German rates, the influence of the Bank of England rate over foreign rates was stronger and more systematic.

51. As Sayers (1957, p. 61) described the British case, while the Bank of England was "a little sensitive to the state of trade," in deciding whether to change Bank Rate it "looked almost exclusively at the size of its reserve." An extensive literature analyzes the extent to which central banks of the classical gold standard era adhered to the "rules of the game," which dictated that they should adjust their policies in order to bring about external balance. The classic study, Bloomfield (1959), revealed that external considerations were by no means the sole determinant of monetary policies prior to 1913. But if central banks were in fact responsive to internal considerations, this raises the question of how they managed to successfully defend their gold standard parities. A recent reexamination of the evidence for this period by Pippinger (1984) emphasizes the distinction between short-run and long-run policy responses. Pippinger concludes that in the short run the Bank of England may have hesitated to take the steps needed to restore external balance and neutralized gold outflows, but in the long run the goal of maintaining the gold standard dominated, leading the Bank to reverse its initial sterilization of gold flows to insure that external balance would be restored.

52. See for example Cohen (1971).

53. Hirsch (1967), p. 28.

54. I define the strong form of hegemonic stability theory as that advanced by Snidel (1985): that the benefits of stability accrue to both the hegemon

and other countries. As on p. 2 above, I define the weak form as versions in which benefits accrue only to the hegemon. It is tempting to suggest a parallel between this "collective hegemony of the center countries" and Gowa's (1984) argument, which she attributes to Keohane and Snidel, that even in the absence of a hegemon the public good of collective stability might still be provided so long as the number of countries is sufficiently small for them to solve the free-rider problem. But the case considered here differs in that the instability, rather than being eliminated, is shifted onto countries that are not members of the hegemonic cartel.

55. Nevin (1955), p. 12.

56. On the U.S. see Wicker (1966), and on the U.K. Eichengreen, Watson and Grossman (1985). A general discussion of the growing conflict between the needs of internal and external balance is provided by Beyen (1949), Chapter II.

57. Snidel (1985b) refers to this problem as a "coordination game."

58. The leading exponent of the gold shortage theory was Gustav Cassel. For a summary of his views, see Cassel (1932), and, for a critical perspective, Hardy (1936). The argument presented here draws on Eichengreen (1986a).

59. The most compelling argument for returning to gold cited the importance of the prewar parity for the maintenance of Britain's position in international transactions -- specifically, its importance for maintaining London's preeminent position in international finance. See Moggridge (1969).

60. Gold inflows into France can be attributed to stabilization of the franc at an undervalued rate in 1926 in conjunction with statutory limitations which prevented the Banque de France from expanding the domestic credit component of the money supply through open market operations. Inflows into the United States can be attributed to the misguided policies of the Federal Reserve: initially, its failure to moderate the Wall Street boom responsible for curtailing U.S. foreign investment and for inducing capital inflows into the United States; subsequently, its failure to prevent the contraction of the money supply, which created an excess demand for money which could be met only by gold inflows. On French policy see Eichengreen (1986c). On the controversy over U.S. policy see Friedman and Schwartz (1963) and Wicker (1966).

61. Committee on Finance and Industry (1931).

62. See Eichengreen (1984a, 1985b).

63. Keynes (1928), pp. 778-779.

64. Viner (1932), p. 28; Gayer (1937), p. 29.

65. As one Bank of England official put it, "such leadership as we possessed has certainly been affected by the position which America has gained." Macmillan Committee evidence of Sir Ernest Harvey, Q7515, 2 July 1930,

reprinted in Sayers (1976), vol. 3, p. 205.

66. Statistics are drawn from IMF publications, notably the Annual Reports.

67. The evidence typically invoked is that the Johnson Administration financed the Vietnam War without a tax increase until 1968, and that, except for 1969, monetary policy was expansionary over much of the period.

68. The size of the deficit, if not its existence, served as a non-negligible constraint on policy. When, for example, in 1960 the dollar price of gold on the London market rose above the U.S. Treasury's selling price, inducing foreign monetary authorities to purchase substantial amounts of U.S. gold, these events so alarmed the Eisenhower Administration that it responded by reducing the number of military dependents abroad, cutting back foreign Defense Department procurement, and tying U.S. development assistance to American exports. Restrictions on capital outflows, including the interest equalization tax, the Voluntary Foreign Credit Restraint Program and the Foreign Direct Investment Program, were imposed from 1963. As Tew (1977, p. 79) puts it, U.S. authorities "were not conspicuously less ready than those of other deficit countries to adopt measures to prevent [the deficit] from getting worse."

69. The most notable instance of the use of U.S. power -- clearly an illustration of the stick variant of hegemonic stability theory -- was when in 1967 Germany explicitly agreed to forego any future conversions of dollars into U.S. gold in response to American threats to reduce troop levels in Europe. See Bergsten (1975), ch. 4.

70. When in 1967 Algeria purchased \$150 million of gold from the U.S., "presumably at French instigation" (Solomon, 1977, p. 115), the world was provided a reminder of the difficulties posed by the free rider problem confronting efforts to supply a public good.

71. See the discussion in Milward (1984), pp. 114-125.

72. The notable exception to this generalization is the abortive attempt to restore sterling convertibility in 1947, which was in fact taken at the hegemon's insistence and failed in part because the U.S. was unwilling to supply the funds needed to defend sterling. See Cairncross and Eichengreen (1983), ch. 4, and Milward (1984), ch. 1.

73. The links between foreign lending, foreign trade and currency convertibility in this period are analyzed by Eichengreen and Portes (1987).

74. These are the calculations Moggridge (1981), p. 66.

75. Moggridge (1970) argues yes, while in Cairncross and Eichengreen (1983), largely on the basis of econometric simulations, I argue no.

76. Moggridge (1981), p. 49, citing Kindleberger (1978), p. 188.

77. After writing this section, I discovered its resemblance, both in general and in its particular emphasis on the role of foreign investment, to Gilpin (1975).

78. See Triffin (1947), Triffin (1960) and Kenen (1960).

79. See Triffin (1960). For conventional views of the dollar shortage/glut, see McDougall (1960). Ironically, it was the hegemonic power -- the United States -- which had insisted on retaining a monetary role for gold at Bretton Woods. The British would have preferred to free themselves from dependence on yellow metal, so long as the clearing union rather than the United States regulated the creation of reserves. But the U.S. was suspicious that the clearing union might be an engine of inflation and hesitant to demonetize gold just when it had accumulated a majority of world stocks. Given U.S. opposition to British plans for the large-scale creation of liquidity by the clearing union, restraints on U.S. ability to unilaterally determine global liquidity in the form of a monetary role for gold were a second-best solution for the British.

80. This same argument is advanced by Bergsten (1975), ch. 4, although he suggests that the existence of a well-defined institutional framework can minimize this source of instability.

81. On April 4th and 18th, 1925, Keynes published an analysis under the title "Is Sterling Over-Valued?" Keynes (1925a). See also Keynes (1925b). A reassessment of Keynes's evidence is in Moggridge (1969).

82. Crafts (1985), following Foreman-Peck (1979), suggests that learning-by-doing and its associated externalities were particularly important in the new traded-goods industries of the turn of the century, such as motor cars, implying that the dynamic effects emphasized by new trade theory may have also come into play.

83. McCloskey (1970), Table 2, pinpoints the deceleration in the rate of British economic growth as taking place in the first decade of the 20th century. The traditional view of the British climacteric is also criticized in Coppock (1969) but subsequently defended in Kennedy (1974).

84. For the traditional view which emphasizes capital market imperfections, see Macmillan Committee (1931), Kindleberger (1964), or Landes (1969). The revisionist view is represented by McCloskey (1970).

85. In Kindleberger's (1970, p. 213) words, "The problem posed by Gresham's Law exists not only on the gold-exchange standard, but on the gold standard itself."

86. de Cecco (1984), p. 125.

87. At the beginning of the century, Treasury Secretary Shaw began managing public deposits in such a way as to provide some seasonal elasticity of money supply but, as the text notes, these early efforts were modest and

experimental. On the seasonality of U.S. money demand, see Eichengreen (1984b).

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