

The Taylor Rule: Is It a Useful Guide to Understanding Monetary Policy?

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More than anyone else in the decade of the 1990s, John Taylor spurred research into the nature of the monetary policy pursued by the Federal Reserve System. Taylor has advanced a simple and intuitive reason for why the Fed has done a better job of controlling inflation since the early 1980s: It has raised the funds rate more aggressively in response to inflation. This article suggests a different perspective. The question should be how the Fed prevents inflation from arising in the first place, not how vigorously it responds to observed inflation.

1. TAYLOR'S RESEARCH AGENDA

Indisputably, the behavior of inflation improved in the 1980s under the leadership of Paul Volcker as chairman of the FOMC (Federal Open Market Committee) of the Federal Reserve System. John Taylor attributes the improved behavior of inflation to the Fed's increased aggressiveness in responding to realized inflation. Specifically, Taylor (1993, 1998, 1999a) argues that the FOMC sets an interest rate target based on the observed behavior of inflation and the amount of excess capacity in the economy. According to Taylor, before 1979, the FOMC raised the funds rate less than one-for-one with increases in inflation. After 1979, it raised the funds rate more than one-for-one with inflation.

Taylor presented his analysis to encourage discussion of how to move from discretion to explicit rules in the formulation of policy. His work advanced the cause of thinking about monetary policy as a systematic strategy by distilling

■ I received extremely helpful criticism from Michael Dotsey, Andreas Hornstein, Athanasios Orphanides, and Alexander Wolman. The ideas expressed in this paper are those of the author and do not necessarily reflect those of the Federal Reserve Bank of Richmond or the Federal Reserve System.

systematic behavior from actual FOMC behavior. That is, he advanced a rule for monetary policy that was both prescriptive and descriptive. The policymaker could adopt Taylor's proposed rule as a systematization of what had worked in practice rather than as an ideal based solely on an abstract model of the economy.

Taylor deduced his rule from the observed behavior of the FOMC by emphasizing two aspects of that behavior. First, the FOMC uses a short-term interest rate as its policy instrument. Second, it sets its interest rate peg (the funds rate) based on the observed behavior of the economy. In the words of former FOMC chairman William McChesney Martin, the FOMC follows a policy of "leaning against the wind." It raises its interest rate peg when economic activity is "strong" and inflation undesirably "high," and conversely. In a broad sense, any characterization of monetary policy will possess the flavor of a Taylor rule.

For all these reasons, Taylor has stimulated much useful research on monetary policy. Furthermore, more than anyone else, he has conveyed the professional consensus in economics that policymakers should conduct policy with explicit, quantitative objectives and a clear strategy for achieving those objectives.

2. THE TAYLOR RULE AND ITS PRIMARY POLICY IMPLICATION

Taylor (1993) showed that the following formula (now known as the Taylor rule) with g_π and g_x equal to .5 predicts the funds rate reasonably well over the period 1987 through 1992:

$$i_t = 2 + \pi_t + g_\pi(\pi_t - \pi^*) + g_x x_t. \quad (1)$$

The funds rate is i_t . The constant term, 2, is the assumed long-run average of the real rate of interest. The prior four-quarter inflation rate is π_t and the FOMC's inflation target is π^* . The output gap, x_t , is the percentage deviation of real GDP from a trend line measuring potential output. Taylor assumes that the FOMC's inflation target has remained unchanged at 2 percent. Taylor (1999) also contends that over time monetary policy has improved because the FOMC has responded more vigorously to deviations of inflation from this 2 percent value by increasing the magnitude of the coefficient g_π on the inflation term ($\pi_t - \pi^*$).

Taylor (1999b) illustrates the last point with the following model:

$$x_t = -\varphi(i_t - \pi_t - r) + u_t \quad (2)$$

$$\pi_t = \pi_{t-1} + \lambda x_{t-1} + e_t \quad (3)$$

$$i_t = g_0 + g_\pi \pi_t + g_x x_t \quad (4)$$

The variables are as defined above, except that π_t is current period inflation and r is the long-run average real rate of interest. The parameters φ and λ are positive. The shocks u_t and e_t are serially uncorrelated with zero mean.

Equation (2) is an IS function, which relates the output gap to the real rate of interest. Equation (3) is a Phillips curve, which relates inflation to the output gap. Equation (4) is the reaction function of the central bank, which takes the form of a Taylor rule. The trend inflation rate depends upon the target the central bank sets for inflation, which comes from its joint selection of g_π and g_0 in (4).

Taylor attributes the inflation of the 1960s and '70s to an inadequate response by the Fed to observed inflation. Inflation arose in this period because of dynamic instability caused by $g_\pi < 1$. Specifically, a positive inflation shock ($e_t > 0$) exacerbated inflation by lowering the real rate of interest ($i_t - \pi_t$). Taylor (1999b, p. 664) writes, "This relationship between the stability of inflation and the size of the interest rate coefficient in the policy rule is a basic prediction of monetary models used for policy evaluation research."

3. PUTTING THE TAYLOR RULE IN A MODEL

What problems arise in identifying the systematic part of monetary policy, especially the part that has led to better control of inflation since the early 1980s? To begin, the FOMC does not specify explicit numerical objectives or an explicit strategy for achieving such objectives. Members of the Federal Reserve have typically emphasized the discretionary aspects of monetary policy rather than the systematic aspects. (Gramley [1970] is a prototypical example.) What the economist sees is only the correlations between economic activity and the funds rate that emerge out of the policy process. In order to characterize monetary policy, the economist must infer both the FOMC's objectives and its strategy.

Even if one assumes that a functional form like the Taylor rule successfully predicts the behavior of the funds rate, what has one learned about the behavior of the FOMC? Unfortunately, the answer is "nothing" unless one has solved the identification (simultaneous equations bias) problem. One must determine that the functional form is a structural rather than a reduced form relationship. The former is a behavioral relationship that explains how the FOMC alters its policy instrument in response to the behavior of macroeconomic variables. In contrast, a reduced form is an amalgam of structural relationships embodying both the behavior of the FOMC and the public. To estimate a structural relationship, one needs two kinds of information: knowledge of the proper functional form to estimate and a model that allows for the separation of the response of the FOMC to the behavior of the public from the response of the public to the behavior of the FOMC (see Bernanke and Blinder [1992]).

In practice, this approach is too demanding. As a simpler alternative, economists attempting to characterize actual FOMC behavior posit a plausible policy rule consistent with the observed correlations between the funds rate and economic activity. They then posit a model and ascertain whether the combination of the policy rule and model predicts observed economic activity, especially inflation. That is, they test the rule and the model jointly by observing whether the combination offers a useful analytical framework for understanding monetary policy. As is the case with the more demanding procedure, one must still use a model.

This way of testing the usefulness of the Taylor rule has to date generated useful debate. However, it has not settled any fundamental issues. Economists who use the Taylor rule almost always opt for a particular class of models. The Taylor rule highlights an output gap and observed inflation. Consequently, the rule fits naturally with activist models in which the central bank controls inflation by manipulating an output gap. This article raises questions about whether a combination of the Taylor rule with such models offers a useful explanation for the historical behavior of inflation in the United States.

Real Control Models

Economists use the Taylor rule most commonly in models that embody what I term a “real control” view of inflation. (Below, I also use the term “activist.”) In such models, the central bank controls inflation through manipulation of the output gap (the amount of unutilized resources in the economy) in response to exogenous inflation shocks. Because the Taylor rule highlights the response of the central bank to the output gap and realized inflation, the rule fits well with such models. Taylor (1999b) lists papers performing simulations with these models and the Taylor rule.

Ball (1999), Svensson (1999), and Rudebusch and Svensson (1999) are examples of “backward-looking” models of the above sort in that the output gap and inflation depend on their own past values. The model of the economy shown below in equations (5) and (6), from Clarida, Gali, and Gertler (1999), is a “forward-looking” example. Equation (5), an aggregate demand or IS relationship, relates the contemporaneous output gap, x_t , to the expected future output gap, the real rate of interest, $[i_t - E_t\pi_{t+1}]$, and a shock g_t . Equation (6), a Phillips curve, relates inflation to expected future inflation, the output gap, and a shock u_t .

$$x_t = -\varphi[i_t - E_t\pi_{t+1}] + E_t x_{t+1} + g_t \quad (5)$$

$$\pi_t = \lambda x_t + \beta E_t \pi_{t+1} + u_t \quad (6)$$

The Taylor rule and the real control models referred to above will rise or fall together. If together they provide a useful description of U.S. experience,

then a Taylor rule embodying an aggressive response to inflation will work well for central banks. How satisfactory are these models? They embody two primary assumptions.

The first assumption is that the price level is a nonmonetary phenomenon.¹ Inflation arises from shocks exogenous to the central bank. The central bank can control inflation if it responds vigorously to these shocks, but it does not create inflation. The assertion that the above models treat the price level as a nonmonetary phenomenon requires fuller explanation. The models allow the central bank to control inflation. They also incorporate a Phillips curve that does not permit the central bank to affect output through sustained changes in the level of the inflation rate. In this sense, they exhibit long-run monetary neutrality.

The statement that the price level is a monetary, as opposed to a nonmonetary, phenomenon is more than an affirmation that the central bank can control inflation and that in the long run money is neutral. It implies that inflation possesses a single cause: excess money creation by the central bank. Control of the price level centers on the central bank's control over the process of creating and destroying money rather than on its manipulation of the amount of unemployed resources in the economy.

Nonmonetary models of inflation treat the price level as an atheoretical phenomenon. There is no single explanation for inflation, but instead a taxonomy of the different varieties of inflation. The primary classes in this taxonomy are demand-pull, cost-push, and expectational inflation. Economists who consider inflation a nonmonetary phenomenon use the empirical correlations of the Phillips curve as a structural relationship in their model simulations. The Phillips curve gives operational content to demand-pull inflation, which becomes the inflation predicted by the output gap (x_t). Additional inflation (the error term u_t in (6)) is either expectational or cost-push.²

¹ The only reference in Clarida, Gali, and Gertler (1999, p. 1685) to money is in the context of whether money is a suitable intermediate target, that is, whether the public's demand for money is stable and interest inelastic. Over the postwar period until 1981, M1 demand was stable and interest inelastic. The authors refer to the introduction of NOW accounts nationwide in 1981 that changed the character of M1 demand. In their words, "the aggregates went haywire." However, they ignore the more fundamental issue of whether inflation is a monetary phenomenon.

The Clarida et al. (1999) paper places monetary policy in an optimal control framework. Based on knowledge of the structure of the economy, the central bank sets an interest rate target to offset exogenous shocks. As long as the central bank sets the interest rate target optimally, money creation and destruction (the central bank itself) is not a source of disturbances. The applicability of the model then is limited to periods when the central bank pursued an optimal monetary policy. For historical investigation of monetary policy, its use would appear to be limited.

² Clarida, Gali, and Gertler (1999, p. 1667) state that the output gap measures "movements in marginal costs associated with variation in excess demand. The shock u_{t+i} , which we refer [to] as 'cost push,' captures anything else that might affect expected marginal costs. We allow for the cost push shock to enable the model to generate variation in inflation that arises independently of movement in excess demand, as appears present in the data."

The second assumption is that the central bank can systematically control the real rate of interest in a way that allows it to manipulate fluctuations in excess capacity. That is, the central bank can follow a systematic monetary policy that moves actual output relative to potential output in a predictable way. With the Taylor rule, the central bank responds directly to realized inflation, as one would expect when cost-push shocks drive inflation. The central bank controls inflation by systematically varying the output gap. The key parameter is the sacrifice ratio, the inverse of λ , in the Phillips curve. Rudebusch and Svensson (1999, p. 209) note that both their small model and the Board's larger MPS model possess a sacrifice ratio somewhat above 3. Specifically, a decline in the inflation rate of 1 percentage point requires the output gap to be negative by 1 percentage point for 3.3 years.

In these models, the structural character of the relationship between inflation and excess capacity offers the policymaker a trade-off between the variability of inflation and output. The policymaker can reduce the variability of output by increasing the variability of inflation. In this sense, real control models are activist.³

Assessing Real Control Models

Again, most economists who use the Taylor rule to explain U.S. monetary policy use real control models that embody two assumptions. First, inflation is a nonmonetary phenomenon. Second, the central bank can pursue a monetary policy that allows it to manipulate real variables (the real rate of interest and excess capacity) in a systematic fashion. Both assumptions are controversial.

Because policymakers like to see themselves as fighting inflation rather than creating it, they generally find congenial the first assumption. However, a brief overview of the U.S. historical experience suggests that this view of inflation has served policymakers poorly.⁴

William McChesney Martin was FOMC chairman from 1951 through early 1970. He was fiercely antagonistic to inflation and maintained near-price stability until the end of 1965. At that time inflation began to rise and remained high through 1971. Martin and other policymakers blamed the inflation on the rise in the government deficit produced by the Vietnam War and Great Society programs. In terms of equations (5) and (6) above, they attributed inflation to an aggregate demand shock ($g_t > 0$).

³ Some economists define an activist policy as a rule for which the central bank alters its interest rate peg in response to variations in real economic activity. However, this definition is too general to be useful. An interest rate instrument inevitably requires the central bank to take account of the way fluctuations in real economic activity affect the real rate of interest. The term "activist" most usefully refers to models in which the policymaker can supersede the working of the price system to diminish the variability of real output.

⁴ Goodfriend and King (1997), Goodfriend (1997), Hetzel (1998), and Hafer and Wheelock (2000) describe the pre-1980 views held by policymakers.

If the price level is a nonmonetary phenomenon, monetary policy is only one policy instrument available for dealing with demand-pull (aggregate-demand) inflation. Fiscal policy is another. Chairman Martin helped convince Congress to pass an income tax surcharge in June 1968 that turned a deficit equal to 3 percent of GNP into a small surplus. Policymakers chose a restrictive fiscal policy over a restrictive monetary policy to limit the rise in interest rates. However, despite widespread predictions to the contrary, neither the economy nor inflation slowed. Continued high money growth trumped restrictive fiscal policy.

Arthur Burns was FOMC chairman from early 1970 until early 1978. Like Martin, he had a visceral dislike for inflation. Prior to becoming FOMC chairman, Burns (1957) had viewed inflation primarily as an expectational phenomenon made possible by the economic security offered to individuals by the welfare state. Upon becoming chairman, he came to see inflation as driven by cost-push pressures emanating from demands by labor for wage increases ($u_t > 0$ in (6)).

On August 15, 1971, President Nixon announced the price and wage controls desired by Chairman Burns (Hetzel 1998). The controls did in fact restrain the rise in labor costs. Nonetheless, inflation surged in early 1973. This time Burns blamed the inflation on special factors, especially bad agricultural harvests and oil price increases. When those relative price increases ceased, however, inflation still continued. Burns (1979) ended his term as FOMC chairman by returning to his original belief that inflation was primarily an expectational phenomenon (in (6), $E_t\pi_{t+1} > 0$ arises independently of monetary policy). That view dominated policymakers' views until Paul Volcker became FOMC chairman in August 1979.

From the perspective of inflation as a monetary phenomenon, only the central bank can control inflation. If the central bank uses an interest rate as its policy instrument, it must achieve two tasks to ensure the monetary control necessary to control inflation. First, the central bank must stabilize expected inflation at a level equal to its inflation target. Otherwise, movements in its nominal interest rate target translate only unreliably into movements in the real rate. Second, the central bank must move its interest rate target responsively to changes in real output growth to track the economy's equilibrium real interest rate. In that way, the central bank sets its interest rate target to avoid monetary emissions and absorptions that force undesired changes in the price level.⁵

⁵ Such a policy approximates a rule for steady, moderate growth in money if the demand by the public for real money balances is stable and relatively interest inelastic. Regardless of whether such a condition holds, from this quantity theory perspective, the control of inflation by the central bank is more aptly characterized in terms of monetary control than in terms of control of the extent of the economy's unemployed resources. The central bank controls inflation by *tracking* (not *controlling*) the equilibrium real rate of interest, thereby avoiding undesired monetary emissions and absorptions that require changes in the price level.

In contrast, from the perspective of inflation as a nonmonetary phenomenon, monetary policy is not necessarily the socially optimal instrument for controlling inflation. For the control of demand-pull inflation, fiscal policy can work without the side effects produced by high interest rates on interest-sensitive sectors of the economy, like housing. With cost-push or expectational inflation, monetary policy is not the socially optimal instrument. The socially optimal way to deal with such inflation is for the government to intervene directly in the individual markets that are causing the inflation rather than to raise the unemployment rate.

Both monetary and nonmonetary views of inflation allow for central bank control of inflation. If the central bank accepts sole responsibility for the control of inflation, empirical observation will not allow economists to distinguish whether inflation is a monetary or nonmonetary phenomenon. However, the change in the political and intellectual environment in the early 1960s produced an experiment capable of discriminating between these two views. Their differing policy implications become important when society sees the control of inflation as costly, that is, when society sees λ of (6) as low. That happened in the '60s.

President Eisenhower had made the control of inflation a top priority of his administration. Moreover, he was philosophically opposed to direct intervention by government in private decisionmaking. (See Saulnier [1991], especially Chapter III.) As a result, he had to rely on the indirect control of inflation through monetary policy.

The change of presidential administration in 1961 and the altered social environment of the '60s made direct intervention by government in the economy to control inflation politically attractive. At the same time, the appearance of the Solow-Samuelson (1960) Phillips curve promised a guide for distinguishing demand-pull from cost-push inflation. When the output gap was negative and, consequently, demand-pull inflation was in check, the central bank could pursue an expansionary monetary policy. Inflation beyond that predicted by excess capacity was of the cost-push or expectational variety. Government should deal with it through direct intervention. In fact, in the '60s and '70s, to deal with perceived cost-push inflation, the government made regular use of the moral suasion of public announcements, wage and price guideposts, direct intervention in wage and price decisions, and actual controls.

The attempt to discriminate between demand-pull and cost-push or expectational inflation and to design policies of inflation control accordingly failed. After 1979, the Federal Reserve assumed sole responsibility for inflation. A simple interpretation of this failed experiment is that inflation is a monetary phenomenon. The central bank alone determines and controls inflation.

The assumption that inflation is a monetary phenomenon also provides an explanation of the temporal relationship between money growth and inflation. Friedman (1989, p. 31) estimated that two years typically elapse between a

monetary acceleration and the ensuing initial rise in inflation. The issue is not, as Taylor phrased it, whether the Fed responded vigorously enough to realized inflation, but why the Fed created the inflation in the first place.⁶

Furthermore, direct evidence for cost-push shocks is weak. By a cost-push shock, economists mean a change in a relative price that affects the absolute price level. Economists frequently cite as examples increases in the price of oil, real wages, and commodity prices, especially of food. However, unless the central bank makes money creation depend upon relative prices, there is no theoretical basis for such an explanation of inflation. If a central bank were to follow such a policy for money creation, the problem would be with its procedures for monetary control rather than its weak response to inflation when it did appear.⁷

Although some economists cite the two oil price shocks of the '70s as cost-push shocks, the evidence that these events caused the inflation of the period is problematic. For the United States, monetary policy had been expansionary well before the oil price shocks. The fact that inflation already had risen significantly before the shocks implies that monetary policy created the inflation (Hutchison 1991). Hetzel (1998) disentangles the effect of an expansionary monetary policy and the oil price increases on inflation by looking at Japan, which did not pursue an expansionary monetary policy before the second oil price shock. Although Japan imported all of its energy, it did not experience significant inflation after the second oil price rise.

Also, direct evidence for expectational inflation is lacking. Clarida, Gali, and Gertler (2000) argue that a low response coefficient on the inflation term in the Taylor rule can explain the high, variable inflation of the pre-1980 period. Specifically, a response coefficient of less than one will “lead to indeterminacy of the equilibrium and raise the possibility of fluctuations in output and inflation around their steady state values that result from self-fulfilling revisions in expectations” (Clarida, Gali, and Gertler 2000, Sec. IV B). Chari and Christiano (1998) also argue that the pre-1980 inflation was expectational. In their words, the economy fell into “expectation traps.”

According to this latter view, the Fed ratified the high rate of inflation expected by the public to avoid depressing economic activity. However, an

⁶ Keynes (1923, p. 148) in *A Tract on Monetary Reform* cites Hawtrey (*Monetary Reconstruction*) approvingly: “If we wait until a price movement is actually afoot before applying remedial measures, we may be too late. ‘It is not the *past* rise in prices but the *future* rise that has to be counteracted.’” (italics in original)

⁷ Ball and Mankiw (1995, p. 161) argue that “[A]ggregate inflation depends upon the distribution of relative-price changes.” They dismiss Milton Friedman’s criticism of relative-price (cost-push) theories of inflation with the contention that the latter’s “analysis implicitly assumes that nominal prices are perfectly flexible” (p. 162). The argument is a red herring. Certainly, the relative price changes produced by events particular to individual markets can show through to the price level. However, if the central bank does not accommodate such changes in the price level with money creation, in time they must disappear.

explanation that makes the public's expectations the driving force behind inflation conflicts with a wide variety of evidence that the public was slow to raise its expectations in response to higher inflation. Survey data on expected inflation show that expectations lagged actual inflation throughout the '70s. (See the discussion below in Section 4a.)

The second assumption of real control models is that the central bank exercises predictable control over real variables. Because the central bank controls only a nominal variable (monetary base creation), it must be able to exploit the nominal-real correlations of the Phillips curve to control real variables in a systematic fashion. Friedman (1968) and Phelps (1970) challenged this assumption in their formulation of the natural rate hypothesis, where they assumed that the correlations between excess capacity (the unemployment rate) and inflation summarized in Phillips curves arise from unanticipated monetary shocks. Lucas (1973) and Sargent and Wallace (1975) in their natural rate-rational expectations extension of the natural rate hypothesis argued the policy ineffectiveness proposition. According to this proposition, the predictable part of any monetary policy rule would not affect real variables. Consistently implemented, a Taylor rule would disappoint in its ability to control the variability of real output.⁸

Can the FOMC Make the Concept of an Output Gap Operational?

An additional assumption of the Taylor rule and the activist models that give the rule content is that the concept of an output gap is operational. That is, the central bank possesses a reliable estimate of the amount of unutilized resources in the economy. However, that assumption is problematic. There are references to the output gap in FOMC discussions before 1980. Much later, during the Clinton administration, many policymakers referred to the concept. The members of the Council of Economic Advisors and the Clinton appointees to the Board of Governors used the Taylor rule as a cross-check and relied on the idea of an output gap. However, based on my knowledge of the historical record, I believe that the FOMC from late 1979 through 1992 did not take actions based on an estimate of the output gap.

⁸ Rudebusch and Svensson (1999, p. 208) argue that the empirical correlations of the Phillips curve represent a structural relationship that the central bank can exploit systematically (the Lucas critique does not apply) because of their stability over time.

The Samuelson-Solow (1960) Phillips curve used in models in the '60s and '70s related inflation to excess capacity. Its inverse correlations disappeared with the sustained high inflation of the '70s. The correlations that remained were between changes in inflation and excess capacity (or the difference between the unemployment rate and the NAIRU: the nonaccelerating inflation rate of unemployment).

Lucas (1973) and Friedman (1976, Chapter 12, "Wage Determination and Unemployment") employed the logic of the rational expectations-natural rate hypothesis to argue that these latter correlations would also disappear if the Fed ever pursued a policy of lowering excess capacity (unemployment) by regularly raising the rate of inflation.

Because economists disagree on a theoretical construct for the output gap, there is no accepted guide for making the concept operational. In practice, economists have estimated the output gap as the percentage difference between contemporaneous output and a trend line fitted to past output. Unfortunately, due to data revisions, the estimate for contemporaneous output changes, often considerably, as time passes. Furthermore, not until many years have passed are economists likely to agree on how to fit a trend line measuring potential output. Together, these factors create enormous uncertainty about the true value of the output gap.

Croushore and Stark (1999), Orphanides (1998-03, 1999), and Runkle (1998) point out the resulting problems for making a Taylor rule operational. Orphanides and van Norden (1999, p. 24) concluded:

[T]he reliability of output gap estimates in real time tends to be quite low. Different methods give widely different estimates of the output gap in real time and often do not even agree on the sign of the gap. The standard error of the revisions is of the same order of magnitude as the standard error of the output gap.

Kozicki (1999) calculated the funds rate targets implied by Taylor rules using alternative plausible real-time measures of the output gap and inflation. She found the range of implied values for the funds rate target to be extremely wide. Kozicki (1999, p. 25) concluded, “Taylor-type rules are likely to be of limited use to policymakers facing real-time decisions.” Orphanides (1998-03, p.3) found that one-quarter-ahead forecasts of the funds rate based naively on a continuation of the existing funds rate were more accurate than the forecasts from a Taylor rule implemented with contemporaneously available data.

It is instructive to look at the reliability of estimates of the output gap over the period when an activist policy focused attention on that variable. Over the period 1966Q1 to 1979Q4, real-time estimates of the output gap (measured by the Council of Economic Advisers) averaged -4.5 percent. However, using the data available as of 1994Q4 yields an estimate of the output gap over this period of 1.6 percent.⁹ That is, the average difference in the contemporaneous estimates of the output gap and the estimate made later is 6.1 percentage points.

One can interpret monetary policy under Chairman Volcker as the abandonment of a policy rule incorporating the spirit of the Taylor rule. In the earlier period, the FOMC formulated monetary policy based on control of the output gap and on a direct response to inflation. That policy earned the appellation “stop-go,” although “go-stop” would have been more apt. In the go phase, monetary policymakers attempted to *eliminate* a perceived negative output gap with expansionary monetary policy. In the stop phase, they had to *create* a negative output gap to eliminate the inflation they had created in the go phase.

⁹ Athanasios Orphanides kindly supplied these figures.

Activist stabilization policy promised to mitigate cyclical fluctuations by controlling the variability of the output gap. Furthermore, based on empirical estimates of the Phillips curve, such policy promised that the resulting output gaps would yield only modest inflation. In its actual implementation, however, activist policy foundered on the difficulty of making the concept of an output gap operational and on the long lags in the effects of actions undertaken to control the perceived level of idle resources. As Milton Friedman (1960, p. 88) argued, responding directly to realized inflation destabilized the economy.

Under Chairman Volcker, the FOMC stopped trying to identify the amount of unemployed resources in the economy. Instead of trying to maintain output at an estimated potential level (or maintain the unemployment rate at its full-employment level), the FOMC began to move the funds rate whenever real output appeared to grow faster than its sustainable rate (Mehra 2000b). That is, the FOMC retained a sense of the slope of the trend line measuring potential output, but stopped trying to estimate its level.

Orphanides' Critique of the Taylor Rule

Athanasios Orphanides (1999, p. 41) has attacked the Taylor rule for its unrealistic demand that policymakers possess reliable information on the output gap:

The recent resurrection of interest in policy activism through rules that rely on accurate knowledge of the economy's 'full employment potential' must be recognized for the danger it embodies. Much like during the 1970s, insufficient attention appears to have been paid to the informational limitations inherent in such activist policies.

Orphanides simulates a model that would permit an activist monetary policy if the policymaker had reliable information on potential output. In particular, the model is in the spirit of the activist model of Rudebusch and Svensson (1999). In such a model, the policymaker can take advantage of the backward-looking expectations of the public to vary systematically the real rate of interest. Changes in the real rate of interest affect the output gap with a lag. In turn, changes in the output gap affect inflation with a lag. Using this model and characterizing monetary policy with a Taylor rule, Orphanides explains the inflation of the '60s and '70s as resulting from overly pessimistic contemporaneous estimates of the output gap. Because Orphanides accepts the empirical correlations of Phillips curves as structural, his criticism of activist stabilization policy stops short of the more sweeping criticisms contained in the natural rate-rational expectations critique summarized above.

Economists who accept Orphanides' demonstration that real-time estimates of the output gap are unreliable but favor Taylor rules conclude that the central bank should respond primarily to observed misses of inflation from target (Orphanides et al. 1999). However, if the central bank is credible, unintentional expansionary monetary policy actions would appear initially as increases in

output and only belatedly as increases in inflation. The long lag in the impact of expansionary monetary policy on inflation would then cause this monetary policy to destabilize the economy.

Monetary policy has been a success since the early 1980s. There is then much at stake in the debate over how to characterize it. If one can characterize it with a Taylor rule embedded in an activist model, then monetary policy should be used actively to stabilize the economy. The Fed could have avoided the inflation of the '70s while still pursuing an activist policy if it had adjusted the parameters of its rule and implemented it more cautiously. The alternative is that the inflation of the '70s derived from a fundamental misunderstanding of the nature of inflation and the inevitable failure of activist policy. The improvement in monetary policy came from the abandonment of activist monetary policy.

4. PITFALLS IN ESTIMATING AN OPTIMAL TAYLOR RULE

John Taylor laid out a normative research agenda: the formulation of a monetary policy rule that will stabilize the economy. This section criticizes the Taylor rule literature that has attempted to derive an optimal rule from empirical estimation.

Choosing the Estimation Period

To begin, because the FOMC uses an interest rate as its instrument, an optimal rule describes how the interest rate responds in a way that offsets the effects of real shocks that push output away from its potential value. An optimal rule then characterizes the optimal behavior of the price system. Empirical estimation of such a rule requires estimation over a period when the central bank responded optimally to real shocks and did not itself create nominal demand shocks. In this spirit, Taylor compares policy rules estimated over periods of relative instability and stability of inflation.

This procedure raises difficult issues, however. Economists use 1980 as a dividing line between policies that failed to stabilize inflation and policies that stabilized inflation. They then typically use that year as a dividing line for estimating “bad” and “good” reaction functions. Even so, the Fed gained credibility much later than 1980. A rule implemented over a period like the '80s when the Fed did not possess credibility will not necessarily constitute an optimal rule. Such a rule may differ from the optimal rule implemented when the Fed possesses credibility. From this perspective, 1980 is not a good dividing line.

To see this point, note the undesirability of estimating an optimal rule over a period when the central bank had to suppress inflation. From a quantity theory perspective, the central bank created the inflation, not the private sector. That is, one should look for an optimal rule over a period when the central bank did not

have to correct its own past mistakes.¹⁰ Similarly, one should not estimate over a period when the central bank had to “correct” the expectational behavior of the public. It is true that the FOMC largely stabilized the inflation rate starting in 1983; however, it only gradually gained credibility for an objective of price stability. As Goodfriend (1993) documents, because the Fed lacked credibility, it had to respond to “inflation scares.”

Interpreting the Estimated Coefficient on Inflation

The key result that emerged in the empirical estimation of Taylor rules is the rise over time in the coefficient estimating the Fed’s reaction to inflation. Taylor attributes the improved control of inflation to this rise. However, such an inference is questionable. If the central bank is credible and stabilizes inflation, then the correlation between realized inflation and expected future inflation will be zero. Fluctuations in inflation will occur randomly around the central bank’s target, but those fluctuations will not alter the public’s expectation of future inflation. The latter is the relevant variable for the behavior of interest rates.

Consider again Taylor’s (1999b) model expressed in equations (2), (3), and (4). A more realistic model will determine the real rate of interest as the difference between the interest rate and expected inflation, not realized inflation, π_t . Assume a positive inflation shock, $e_t > 0$. If, as Taylor assumes, such shocks are serially uncorrelated, expected future inflation will remain unchanged and so will the equilibrium rate of interest. The transitory rise in inflation will redistribute income between parties who had entered into nominal contracts, but that is water under the bridge. The market and the central bank should not respond to realized inflation. The policy parameter g_π should be zero.

How then can one explain the increase over time in Taylor-rule regressions of the estimated value of g_π , the parameter that is supposed to capture the response of the central bank to inflation? Does the rise over time in the coefficient estimated on the inflation term reflect an independent change in the FOMC’s behavior deriving from a more aggressive response to inflation? Alternatively, does the rise reflect a response of the FOMC to a change in the public’s behavior that derives from a loss of Fed credibility? A historical review will clarify the issues.

The monetary history of the United States is one of moving from a commodity standard to that of pure fiat money. One would then expect that over time, as the public adapted to the change in regime, the value of the correlation between the interest rate and inflation would rise. Imagine a commodity

¹⁰ Taylor (1993) originally estimated his rule over the period 1987 to 1992. However, during that period FOMC actions produced a reduction in inflation. The FOMC had brought the inflation rate down to 4 percent in 1983. Faced with the strains of a worldwide banking crisis and recession, it stabilized inflation at that level. By the end of the decade, the FOMC moved to a soft-landing strategy to continue the process of restoring price stability.

standard in which the price level is stationary. In this case, a positive inflation rate will imply a subsequent negative inflation rate. The correlation between inflation and the interest rate will be negative.

In contrast, imagine a fiat money standard where changes in the inflation rate are a random walk. Now, the contemporaneous inflation rate is the best predictor of future inflation. The inflation premium in the interest rate will be equal to observed inflation. The emergence of a positive correlation between inflation and the interest rate will reflect the change in the way the public forecasts inflation based on past inflation. The increase in the correlation over time reflects a loss of credibility, not a more aggressive policy of controlling inflation.

Until the mid-1960s, the public could retain the way it had formed its expectation of future inflation under a commodity standard. Until then, a pure fiat money regime with no institutional constraints on the level of inflation was still a historical novelty (Friedman 1986). At this time, the Fed's rejection of the constraints imposed by the Bretton Woods system and its attempt to make the economy grow along an unrealistically high path for potential output caused the inflation rate to begin to wander.¹¹

As McCallum (1994, Figure 1) shows, over the period from mid-1955 to 1980, inflation went from being a low-order autoregressive process to being nearly a random walk. The public did adapt to this change in the behavior of inflation. Friedman and Schwartz (1970, p. 631) found that interest rates began to incorporate a Fisher effect (inflation premium) starting in the mid-1960s. However, the public learned only slowly.

The fact that bondholders continued to suffer losses throughout the 1970s is evidence that learning proceeded slowly. Until the beginning of the 1980s, inflation regularly exceeded the forecasts of inflation made by the public and by economists (see Darin and Hetzel [1994], Sec. 4 and Croushore and Stark [1996]). One reason the public adapted slowly to the change in the monetary regime was the association of the large increases in inflation in the '60s and '70s with the unusual events of the Vietnam War and oil price shocks. By 1979, however, the public came to see inflation as a nonstationary process. Indeed, the resulting turmoil that belief caused for bond markets provided one impetus to the change in Fed procedures in 1979 (Hetzel 1986). Paul Volcker and later Alan Greenspan made Fed credibility into the nominal anchor lost in going off the gold standard.

¹¹ The last time the FOMC raised the level of short-term interest rates to offset a balance of payments deficit and gold outflows was in November 1964.

Estimation Bias

Consider a specific example of how the change over time in the way the public has forecast inflation can raise empirical estimates of the response of the funds rate to inflation. Clarida, Gali, and Gertler (2000) estimate a forward-looking Taylor rule:

$$i_t^* = a + g_\pi(E[\pi_{t+1} | \Omega_t] - \pi^*) + g_x E[x_{t+1} | \Omega_t] \quad (7)$$

$$i_t = (1 - \rho)i_t^* + \rho i_{t-1} + \nu_t \quad (8)$$

The variable i_t^* is an implied funds rate target. According to (7), the FOMC determines i_t^* as the sum of a constant term a and responses to the miss of forecast inflation from its targeted value and to a forecast of the output gap. The FOMC forms these forecasts based on available information Ω_t . E is the expectations operator. According to (8), the FOMC smoothes the actual funds rate, i_t , by setting it equal to a weighted average of the implied target and last period's actual target. (ν_t is a random policy shock.)

Clarida, Gali, and Gertler (2000) estimate (7) and (8) through an instrumental variables procedure. Specifically, they use as a proxy for $E[\pi_{t+1} | \Omega_t]$ predicted values derived from a regression of future quarterly inflation, π_{t+1} , on four quarterly lags of past inflation as well as other lagged variables. (The time subscript one on inflation indicates one year or four quarters in the future.) Empirical estimation shows a rise in the value of g_π over time. However, this result may derive from a change in the way the public formed its expectation of inflation in response to a change in the monetary regime.

The central bank cannot set its interest rate target in a way that ignores the public's expectation of inflation. Therefore, the dependent variable of (7), the interest rate target, will on average contain an inflation premium that reflects the public's true measure of expected inflation. A problem arises if the right-hand variable used to proxy for the central bank's forecast of inflation, $E[\pi_{t+1} | \Omega_t]$, is a biased measure of the public's expected inflation. If that case, the coefficient estimated for g_π will also be biased.¹²

Consider first use of observed inflation as a proxy for $E[\pi_{t+1} | \Omega_t]$. In a world of incomplete credibility, the public will form its measure of expected inflation based in part on the observed value of inflation, not exclusively on

¹² Presumably, the central bank varies its policy instrument so that at some appropriate future horizon its inflation forecast always equals π^* . That is, the term $(E[\pi_{t+1} | \Omega_t] - \pi^*)$ in (7) will always equal zero. What one wants is the central bank's inflation forecast conditional on no change in its instrument. In the absence of such forecasts, one must use some proxy. The proxy that economists use typically depends upon the observed behavior of inflation. The problem comes because the public's expectation of inflation was not completely determined by π^* . Then the proxy used for expected inflation will be related to the inflation premium the public puts into the interest rate, which affects the behavior of i_t and i_t^* . However, that relationship can change over time in a way that biases empirical estimates of g_π .

the central bank's objective π^* . As explained above, in the pre-1980 period, the public's expectation of future inflation rose with observed inflation, but less than one for one. In the post-1980 period, it rose one for one. In a regression of (7) and (8), that fact will bias downward the coefficient estimated for g_π in the earlier period.¹³

Consider next a two-stage estimation procedure that uses as an instrument for expected inflation the forecasted value from a regression of inflation on its own past values. Again, as explained above, the sum of the weights in such a regression rose over time and approached one in 1980 with the change in the character of the monetary regime. This rise in the sum of estimated coefficients captures the change in the inflation rate from a stationary to a nonstationary series. However, the public only gradually accepted this change as the normal state of affairs. Consequently, the problem identified above arose. In the pre-1980 period, the public's expectation of inflation and the interest rate rose in line with rises in this proxy for $E[\pi_{t+1} | \Omega_t]$, but less than one for one. That fact biases downward the coefficient estimated for g_π . However, by the 1980s, that bias disappears.¹⁴

A different kind of estimation bias arises because of the difficulty in finding instruments that are orthogonal to the shocks in a Taylor rule regression. Clarida, Gali, and Gertler (2000) conduct their estimation subject to the following orthogonality condition, which comes from combining (7) and (8) and some algebra involving adding and subtracting actual inflation in period $t + k$, $\pi_{t,k}$, and the actual output gap in period $t + q$, $x_{t,q}$:

$$E\{[i_t - (1 - \rho)a - (1 - \rho)g_\pi\pi_{t,k} - (1 - \rho)g_x x_{t,q} - \rho i_{t-1}]z_t\} = 0. \quad (9)$$

The term in brackets measures the difference between the actual interest rate target and an estimate of it from (7) and (8). The authors assume that this term is orthogonal to the instruments, which include lagged inflation and the lagged output gap.

Evaluating the plausibility of this last assumption requires some knowledge of monetary history. After 1980, periodic "inflation scares" caused the FOMC to raise sharply its interest rate peg (see Hetzel [1986], Goodfriend [1993], and

¹³The problem is analogous to the one identified by Sargent (1971) in tests of the natural rate hypothesis using regressions with lagged inflation rates as a proxy for expected inflation. (See also Woodford 1999, p. 43.)

¹⁴My reading of the pre-1980 historical record is that the FOMC did increase its funds rate target in line with increases in the inflation rate that it and the public expected. The problem was that both the FOMC and the public underpredicted inflation because of the novelty of an activist monetary regime. Both the FOMC and the public knew when monetary policy was expansionary. However, they underestimated the inflationary consequences. The FOMC believed that an expansionary policy would primarily affect output growth rather than inflation when the output gap was negative. Because most policymakers believed inflation was a nonmonetary phenomenon, they ignored the warning signs coming from high rates of money growth.

Mehra [1999, 2000a]). It follows that the policy rule (7) omits a variable—the FOMC’s assessment of its credibility. Specifically, when the rate of growth of real output rose, financial markets became concerned that inflation would revive. Bond rates rose and the FOMC raised the funds rate to demonstrate its determination to prevent a rise in inflation. To capture this effect, (10) adds a credibility variable, $INFSC_t$, to (7). That variable is correlated with output growth and the output gap, x_t :

$$i_t^* = a + g_\pi(E[\pi_{t+1} | \Omega_t] - \pi^*) + g_x E[x_{t+1} | \Omega_t] + INFSC_t. \quad (10)$$

The aggressive response of the FOMC in raising the funds rate during an inflation scare would generate a positive error in a regression using (7), but not (10). Persistence of the initial shock causing the high output growth would then produce a correlation between the contemporaneous error and the instrumental variables z_t , which include lagged real output. This correlation biases the estimation results. In sum, an instrumental variables procedure does not solve the omitted variables problem.

Are the Long-run Real Rate and Inflation Target Constant?

Problems arise in the estimation of a Taylor rule if the long-run real rate of interest is not constant. The Taylor rule attributes the historically high value of the real funds rate starting in 1980 to the excess of inflation over a 2 percent inflation target. (From 1980 through 1990, the real commercial paper rate shown in Figure 2 is 4.7 percent, well above the assumed 2 percent long-run average.¹⁵) That is, the FOMC supposedly kept the real funds rate higher than its long-run average because inflation was above target. However, the 2 percent figure for the FOMC’s inflation target does not derive from internal FOMC documents. It could simply be an ad hoc way of getting a higher prediction for the funds rate by artificially creating a positive miss of an inflation target. A low inflation target compensates for an unrealistically low estimate of the long-run average real rate of interest.

In addition, the assumption that the FOMC’s objective for inflation remained unchanged during the period from 1965 through 1981 when inflation rose is implausible. In the pre-1980 period, the FOMC tried to determine whether inflation was demand-pull, cost-push, or expectational in origin. It tended to accommodate changes in inflation perceived as cost-push or expectational rather than demand-pull. The inflation rate acceptable to the FOMC then rose as actual inflation rose.

¹⁵ The Appendix explains the measure of the real rate of interest. It is the difference between the interest rate on commercial paper observed at the time of FOMC meetings and the inflation forecast made at the same time by the staff of the Board of Governors. (This series is available only through 1994 because of the five-year lag in the release of Board staff inflation forecasts.)

5. HOW WELL DOES THE TAYLOR RULE PREDICT?

Regression equation (11) embodies the Taylor rule. Equation (12) collects the actual inflation terms π_t , and (13) rewrites (12) with $k_1 + k_2 = 1$. Equation (14) combines the constant term and the inflation target term under the assumption that the inflation target and the weight the central bank assigns to it do not change ($k_4 = k_0 + k_2\pi_t^*$).

$$i_t^* = c_0 + \pi_t + c_1(\pi_t - \pi_t^*) + c_2x_t + \mu_t \quad (11)$$

$$i_t^* = c_0 + (1 + c_1)\pi_t - c_1\pi_t^* + c_2x_t + \mu_t \quad (12)$$

$$i_t^* = k_0 + k_1\pi_t + k_2\pi_t^* + k_3x_t + \mu_t \quad (13)$$

$$i_t^* = k_4 + k_1\pi_t + k_3x_t + \mu_t \quad (14)$$

The wide popularity of the Taylor rule derives from its presumed ability to predict the actual behavior of the funds rate. This section extends the work of Croushore and Stark (1999), Kozicki (1999), Orphanides (1998-03), and Runkle (1998) by examining how well a Taylor rule predicts the funds rate using data available to the FOMC at the time of its meetings. (The Empirical Appendix explains the data.) Figure 1 shows the value of the funds rate benchmark that came out of FOMC meetings and the value predicted by regression equations possessing the functional form (14).¹⁶ The regressions used to generate the predictions shown in Figure 1 are estimated separately for the periods November 1965 through July 1979, August 1979 through July 1987, and August 1987 through May 1999. The last two periods correspond, respectively, to the tenures of Paul Volcker and Alan Greenspan as FOMC chairman.¹⁷

The fit shown in Figure 1 is not particularly close. For the period November 1965 through July 1979, the standard error of estimate of the appendix

¹⁶ See the discussion in Section A of the Empirical Appendix for an explanation of the construction of the series label “funds rate benchmark.”

¹⁷ I do not compare the funds rate with predictions from a Taylor rule assumed to be different from what the FOMC actually used. Taylor (1999, section 7.4) performs this exercise as a test of the superiority of a hypothetical Taylor rule. However, predictions derived from inserting historical data into a hypothetical rule make no sense. If the hypothetical rule had been implemented, it would have produced different macroeconomic outcomes, and one should use those outcomes to test the rule. That exercise requires a model. (See McCallum [1987, 1988] for an example.)

The logic of the Taylor (1999a) experiment appears to be as follows. One can look at a period when inflation was undesirably high. Then, one FOMC meeting at a time, one can construct the funds rate implied by the hypothetical rule and historical data. If the implied funds rate is uniformly higher than the actual, one can argue that the hypothetical rule would have produced a more restrictive monetary policy and, therefore, would have been better. However, a similar exercise would be to take the following as a rule: Keep the funds rate 5 percentage points above its historically observed maximum value. That hypothetical rule would also be unambiguously more restrictive. But one has no way of knowing whether it would have been better than actual policy without model simulations.

regression (1) predicting the funds rate is 1.6. For the period August 1979 through July 1987, the value is 2.1 (appendix regression (2)). For August 1987 through May 1999, it is .76 (appendix regression (3)).

Judd and Rudebusch (1998) estimate the Taylor rule with a lagged value of the funds rate. They argue that such a term reflects interest rate smoothing by the FOMC. The appendix estimates Taylor rule regressions that include a lagged value of the funds rate. The output gap and inflation terms add little predictive power beyond that offered by the lagged value of the funds. In the pre-Volcker period, the regression basically implies that the FOMC sets the funds rate equal to its prior value. For the Volcker period, the standard error of estimate is 1.44 and for the Greenspan period, .24. Even in the Greenspan period, the prediction error seems rather large as the .24 value is basically the same magnitude as the 25-basis-point change the FOMC generally uses when it changes the funds rate.¹⁸

Can the Taylor Rule Explain Inflation?

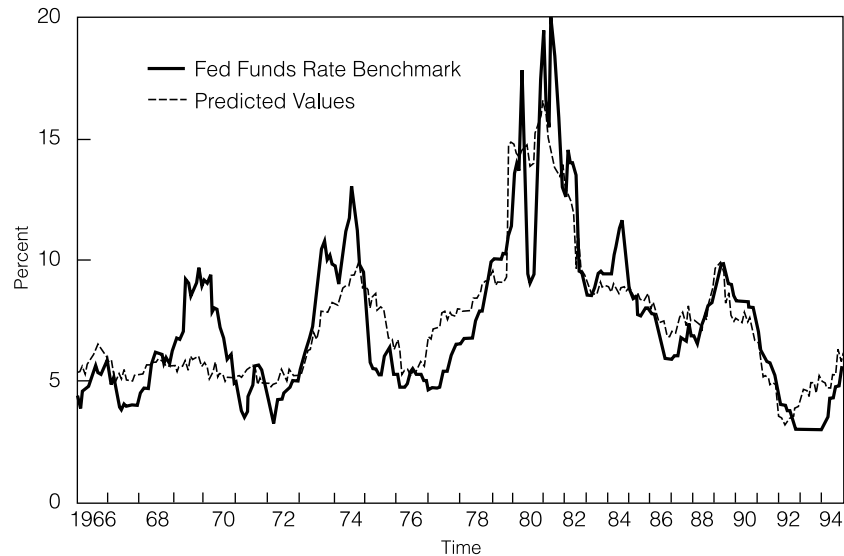
This section finds that the actual real rate of interest has generally been high when evaluated in the context of a Taylor rule. It is then puzzling that inflation persisted above the FOMC's presumed 2-percent target for so long.

Below, I construct a measure of disinflationary pressure. It is the difference between the real rate of interest and a Taylor-rule benchmark value that should maintain inflation at its prevailing level. I construct this benchmark measure under the assumption that the FOMC actually used the Taylor rule in implementing monetary policy. Furthermore, I construct it using the data contemporaneously available to the FOMC at the time of its meetings. Observations correspond to FOMC meetings.

The solid line of Figure 2 plots the short-term real rate of interest. The dashed line is the benchmark value measuring neutral monetary policy.¹⁹ I make use of the following intuitive interpretation of how the Taylor rule specifies how the FOMC sets the real funds rate implicit in its funds rate benchmark. It sets

¹⁸ For the Volcker and Greenspan periods, the standard deviations of the first differences of the funds rate benchmarks are, respectively, 1.6 and .29, only slightly higher than the standard errors of estimate from the regressions that include the lagged interest rate targets as regressors. One can think of these standard deviations as measuring the predictive ability of a naive forecast that assumes the contemporaneous value equals the prior value. The Taylor rule part of the regression then adds very little information beyond what the lagged interest rate target adds.

¹⁹ The output gap proxy used to generate this benchmark is only partially satisfactory, especially for the pre-1979 period. As Orphanides (1999) has emphasized, in the '60s and '70s, policymakers typically used a measure of the output gap derived from a trend line for potential output that was unrealistically high. The effect on Figure 2 of using a more realistic contemporaneous (pessimistic) estimate of the output gap would be to make the FOMC appear more hawkish on inflation by showing the real rate of interest to be significantly higher relative to the neutral benchmark level.

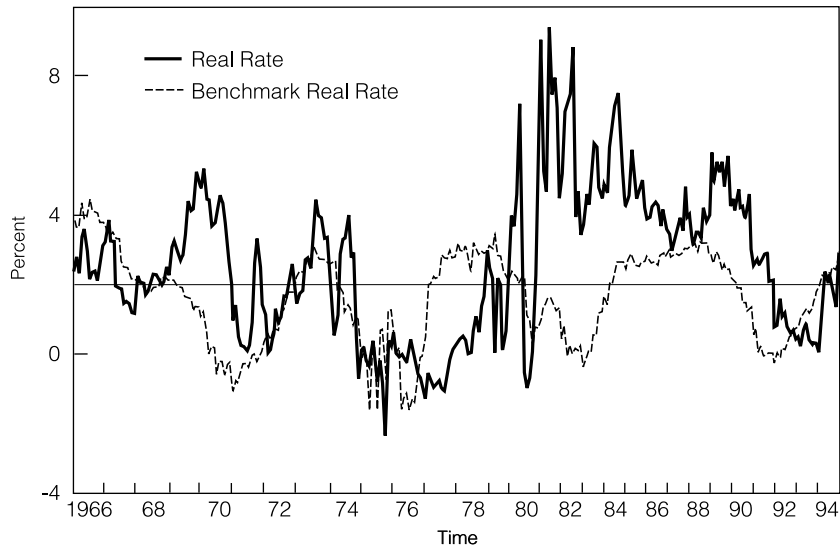
Figure 1 The Funds Rate Benchmark and Its Taylor Rule Predictions

Notes: The dashed line is the within-sample predicted values of regressions (1), (2), and (3) in the Appendix. Observations correspond to FOMC meetings, whose number per year has declined. See Appendix for discussion of the series “Fed Funds Rate Benchmark.” Tick marks indicate last observation of the year.

this implicit real rate as the sum of three components: 1) the long-run average real rate, assumed constant at 2 percent; 2) a cyclical component, assumed equal to half the output gap, $.5x_t$; and 3) an amount to correct for misses of the inflation target, $.5(\pi_t - \pi^*)$. The benchmark value measuring neutral monetary policy is the sum of the first two components: the long-run average real rate and the cyclical component of the real rate. In periods when the real rate exceeds the benchmark, inflation should fall, and conversely.

Over the entire period shown in Figure 2, the real rate of interest usually exceeded or equaled the neutral benchmark level. That is, the FOMC was setting the real rate implicit in the funds rate at a level designed to lower inflation. The major exception was the period from 1977 through 1979. Since 1980, the real rate has also generally exceeded the presumed long-run average real rate of 2 percent. Given the willingness of the FOMC to maintain disinflationary real rates of interest on average, it is hard to explain why inflation fell to its targeted value of 2 percent only in 1997.²⁰

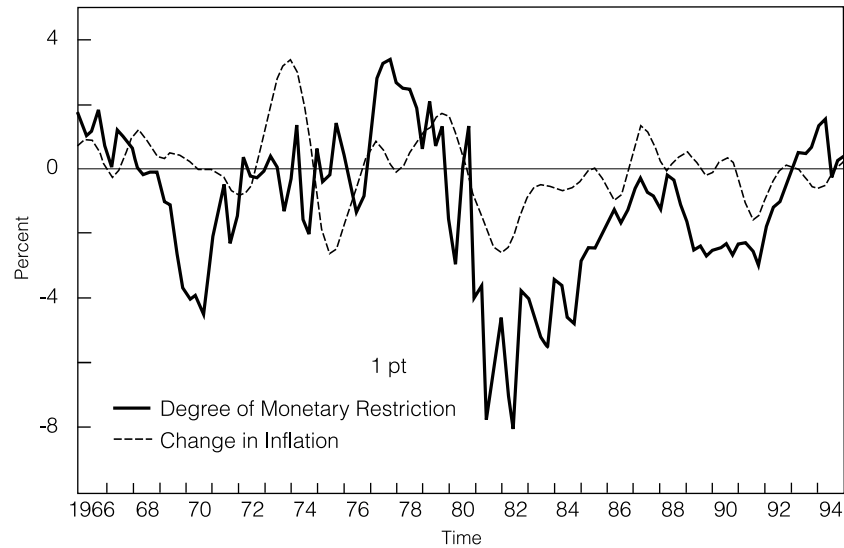
²⁰ From 1983 through 1991, CPI inflation generally exceeded its assumed target by 2 to 3 percentage points. From 1992 until early 1997, the excess was about 1 percentage point.

Figure 2 The Real Rate of Interest and Its Neutral Benchmark Value

Notes: The real rate of interest is the real commercial paper rate calculated as described in the Appendix. The neutral benchmark values are the sum of the Taylor rule components: $2 + .5x_t$, with x_t an output gap. Observations correspond to FOMC meetings. Tick marks indicate last observation of the year.

Figure 3 plots quarterly averages of the difference between the dashed and solid lines of Figure 2, that is, the neutral benchmark minus the real rate of interest. A rise in the real rate relative to the benchmark produces a fall in this measure of the stance of monetary policy. Figure 3 also plots quarterly observations of the difference between subsequently realized four-quarter (personal consumption expenditures) inflation and the prior four-quarter inflation rate. Negative values indicate that the inflation rate is falling. Falls in the solid line (an increase in the degree of monetary restriction) below zero should produce negative values of the dashed line (falls in inflation). Over the entire period shown, as measured here, monetary policy is generally disinflationary (the solid line is generally negative). However, inflation remained above 2 percent until early 1997.

Over the period 1965Q4 through 1979Q4, the correlation between the two lines is almost zero (.06). Inflation does fall starting in 1971 after a prolonged monetary tightening. However, that fall may have occurred chiefly because of the price controls instituted in August 1971. The Taylor rule fails to predict the disinflation starting in 1975. Although there is a professional consensus that

Figure 3 Monetary Restrictiveness and Changes in the Inflation Rate

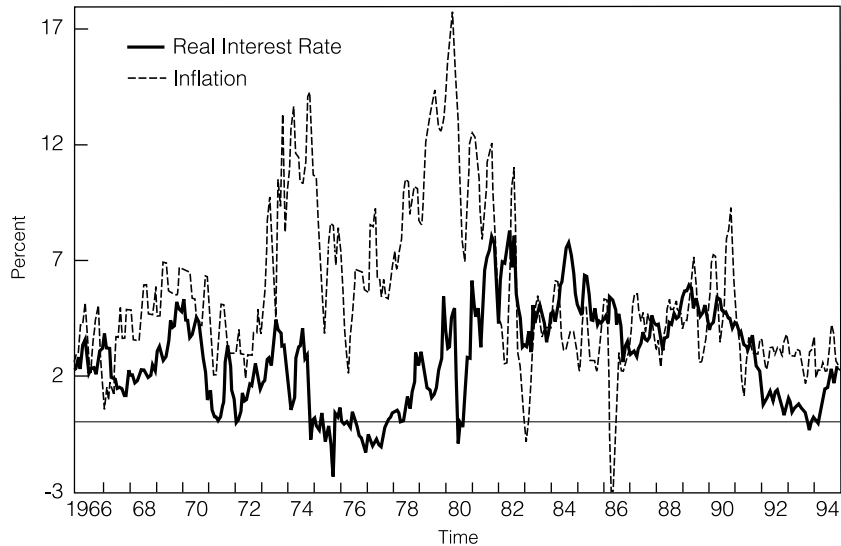
Notes: The solid line is quarterly averages of the observations of the dashed line minus the solid line of Figure 2. The dashed line is the change in (personal consumption expenditure) inflation measured as the average of the contemporaneous and future 3 quarters values minus the average of the contemporaneous and past 3 quarter values. Tick marks indicate fourth quarter.

monetary policy was highly contractionary after summer 1974, the Taylor rule does not unambiguously identify that tightness.

The correlation between the two lines of Figure 3 rises to .62 over the period 1980Q1 to 1999Q1. However, the correlation derives primarily from a single episode of monetary stringency—the Volcker disinflation. The message is little more than that the FOMC can reduce inflation through a sharp rise in the funds rate. Inflation rises after 1986 even though the Taylor rule indicates that monetary policy is disinflationary.

Cost-push shocks could explain the failure of “high” interest rates to produce falling inflation. A high real rate of interest relative to the Taylor rule neutral benchmark could then be associated with rising rather than falling inflation. However, if this assumption is correct, one would expect to see the level of inflation positively correlated with the real rate of interest. That is, causation goes from inflation to the real rate rather than vice versa.

Figure 4 shows the real rate of interest and the inflation rate. It fails to reveal a consistent positive relationship. For example, contrary to the Taylor rule, the real rate of interest is somewhat higher in 1969–1970 than in 1973–1974, yet

Figure 4 Real Interest Rate and Inflation

Notes: The real interest rate is the monthly observation of the short-term real commercial paper rate. The series after 1978 differs from that of Figure 2 in that a monthly series is constructed using inflation forecasts from DRI. Inflation is the monthly annualized growth rate of the CPI. Tick marks indicate December.

the inflation rate is considerably higher in the latter period. In 1984–1985 the real rate is higher than in 1988–1989, yet the inflation rate is somewhat lower.

6. SUMMARY COMMENT

This article criticizes two assumptions of the Taylor rule literature. First, the use of the Taylor rule in activist models with cost-push shocks is a good guide for the monetary policymaker. Second, the FOMC has done a better job since 1980 of controlling inflation because it became more aggressive in responding to realized inflation.

EMPIRICAL APPENDIX

The Appendix summarizes the estimation of Taylor rules for three periods: the pre-Volcker period (November 1965–July 1979), the Volcker period (August 1979–July 1987), and the Greenspan period through to the near present (August 1987–May 1999). Section A explains the use of contemporaneously available data. Section B presents the regressions. Section C explains the construction of the series on the real rate of interest.

A. Data Used to Estimate the Taylor Rule

The observations correspond to FOMC meetings, which are monthly through 1978 and 8 per year thereafter (11 in 1980). If there were two meetings in a month, I have used the first one. For the December 1965 through October 1970 meetings, the funds rate benchmark is the actual average value in the first full statement week following the FOMC meeting. For the November 1970 through September 1979 meetings, the funds rate benchmark is the initial value set by the FOMC. It comes from the Board of Governors staff document called the Bluebook (“Monetary Policy Alternatives”) and FOMC *Memoranda of Discussion*.

For the February 1980 through October 1981 meetings, the funds rate benchmark is the actual average value in the first full statement week following the FOMC meeting with the following exceptions: November 1979, January 1980, May 1980, May 1981, and July 1981. For these meetings and for the meetings from November 1981 through December 1993, the funds rate benchmark is the value the Desk “anticipated” would prevail subsequent to the FOMC meeting as reported in the New York Fed memorandum “Open Market Operations and Securities Market Developments.” From 1994 on, the funds rate benchmark is the figure publicly announced after the FOMC meeting.

One should keep in mind that the FOMC did not use the funds rate as its policy instrument consistently over this period. In the ’60s, it used a complex of money market conditions, chiefly the short-term Treasury bill rate. In the ’70s it did set a funds rate target. From October 1979 until fall 1982, it set a target for nonborrowed reserves. Thereafter, until February 1994, it set a “reserve-position” target for banks approximated by borrowed reserves. Along with the level of the discount rate, the value of borrowed reserves determined the level of the short-term interest rate.

The important point to keep in mind is that there are two distinct kinds of policy instruments: reserve aggregates and money market conditions. With the former, the Fed sets a reserve aggregate like the monetary base or total bank reserves and the marketplace determines the level of short-term interest rates. With the latter, the Fed sets a short-term money market rate of interest

and supplies whatever reserves are necessary to defend that rate of interest. In practice, the Fed has at times implemented this latter procedure directly by setting an interest rate peg. At other times, it has controlled the short-term interest rate indirectly. For example, it has set the discount rate and a value for reserves that banks borrow through the discount window (see Cook [1989] and Hetzel [1982]). The Fed has always operated using money market conditions as its policy instrument. The funds rate benchmark series described above is a general measure of the money market conditions intended by the FOMC.

Data for calculating values of inflation π_t and the output gap x_t come from the Board of Governors staff document called the Greenbook ("Current Economic and Financial Conditions, Part 1") and from the Federal Reserve Bank of Philadelphia Real Time Data Set (Croushore and Stark 1999). The contemporaneously available data series for each FOMC meeting derives from splicing Greenbook data with the contemporaneously available longer data set from the appropriate Philadelphia Fed Real Time Data series. π_t is a four-quarter average of annualized quarterly percentage changes in the implicit nominal output deflator (GNP before 1992 and GDP thereafter).

I call the values of inflation and the output gap calculated as described below "actual" values because they rely primarily on actually available data rather than on forecasts of the future made by the Board staff. If the FOMC meeting was in the first or second month of the quarter, the four lagged inflation values averaged to calculate π_t begin with the quarter prior to the quarter of the FOMC meeting. If the FOMC meeting was in the last month of the quarter, the four lagged values begin with the contemporaneous quarter.

The output gap x_t is the percentage difference between current real output and trend real output (real GNP before 1992 and real GDP thereafter). Trend real output is the value of a trend line fitted through the past 40 quarters of data available at the time of the FOMC meeting. If the meeting was in the first or second month of the quarter, the value used for current real output is for the quarter prior to the quarter in which the FOMC meeting occurred. If the FOMC meeting was in the last month of the quarter, current real output is for the contemporaneous quarter.

I also experimented with "predicted" values of inflation and the output gap that relied more heavily on forecasts of the future made by the Board staff. If the FOMC meeting was in the first or second month of the quarter, the four lagged inflation values used to calculate average inflation begin with the contemporaneous quarter's predicted value. If the FOMC meeting was in the last month of the quarter, the four lagged values begin with the succeeding quarter's predicted value. If the FOMC meeting was in the first or second month of the quarter, the value of current real output used in calculating the output gap is quarterly real output predicted for the contemporaneous quarter. If the FOMC meeting was in the last month of the quarter, current real output is the succeeding quarter's predicted value.

The inflation target is π^* . Taylor arbitrarily assumes it is constant at 2 percent. However, if that is the case, the Taylor rule predicts that the real rate should move in line with the level of the inflation rate. Figure 4, which shows the real rate of interest and the inflation rate, fails to reveal such a consistent relationship. I therefore attempted to infer a target from FOMC documents and statements.

As a proxy, I use the inflation forecast from the Greenbook made for the quarter that was most distant in the future (usually three to four quarters into the future in the '70s and eight quarters thereafter). After November 1979, I use as an additional proxy the midpoint of the central tendency range of fourth quarter to fourth quarter inflation predicted by FOMC members and presented by the FOMC chairman at the most recent February or July Humphrey Hawkins Hearings preceding the pertinent FOMC meeting.

Although these latter figures are forecasts, forecasting inflation is not like forecasting the weather. The FOMC controls inflation over some appropriately long forecast horizon. Both the Board staff and FOMC members make their forecasts contingent on the monetary policy they consider desirable. The forecasts then reflect the outcomes the Board staff and the FOMC members consider acceptable. In that sense, these "forecasts" are acceptable benchmark values. That is, the participants in the formulation of monetary policy assumed they would behave in a way that brought their forecast of inflation into agreement with these benchmarks for inflation.

Inclusion of such a term, however, did not yield satisfactory results. For example, it often entered with the wrong sign. The results reported below drop this term. The regressions adopt the assumption of the empirical Taylor rule literature that the FOMC's inflation target is constant and is captured by the constant term of the regression equation.

B. Estimated Taylor Rules

Regression (1) fits a Taylor rule from December 1965 to July 1979. It uses the "predicted" series for inflation and the output gap described above. The standard error of estimate of the regression fitted with the "actual" series was slightly higher.

$$i_t^* = 3.0 + .69\pi_t + .21x_t + \hat{\mu}_t \quad (1)$$

(8.6) (11.0) (5.1)

Date: 11/65 to 7/79 $\bar{R} = .43$ SEE = 1.6 DW = .11 DoF = 157

(The absolute value of the t-statistic is in parentheses. \bar{R} is the corrected R-squared statistic. SEE is the standard error of estimate. DW is the Durbin-Watson statistic. DoF is degrees of freedom.)

Below, I report regression equations for the Volcker and Greenspan periods. For the Volcker period, the fit of the regressions using actual and predicted data

is basically the same. For this period, I report the regression estimated with predicted data. For the Greenspan period, I use the actual inflation and output gap data as they yield a somewhat lower standard error of estimate.

Regression equation (2) is for the Volcker period.

$$i_t^* = 4.1 + 1.16\pi_t + .14x_t + \hat{\mu}_t \quad (2)$$

$$(6.0) \quad (9.4) \quad (.95)$$

Date: 8/79 to 7/87 $\bar{R} = .66$ $SEE = 2.1$ $DW = .59$ $DoF = 63$

Regression equation (3) is for the Greenspan period.

$$i_t^* = 1.5 + 1.56\pi_t + .62x_t + \hat{\mu}_t \quad (3)$$

$$(6.2) \quad (18.9) \quad (15.4)$$

Date: 8/87 to 5/99 $\bar{R} = .82$ $SEE = .76$ $DW = .42$ $DoF = 92$

As emphasized by Taylor, the estimated coefficients on the inflation terms rise over time.

Regressions (4) and (5) add a lagged value of the funds rate for the Volcker and Greenspan periods, respectively. The regression for the pre-Volcker period is uninformative in that it implies that the FOMC sets the funds rate equal to its prior value.

$$i_t^* = .87 + .43\pi_t + .12x_t + .69i_{t-1}^* + \hat{\mu}_t \quad (4)$$

$$(1.5) \quad (3.7) \quad (1.1) \quad (8.7)$$

Date: 8/79 to 7/87 $\bar{R} = .85$ $SEE = 1.44$ $DW = 1.6$ $DoF = 62$

$$i_t^* = .20 + .22\pi_t + .13x_t + .86i_{t-1}^* + \hat{\mu}_t \quad (5)$$

$$(2.3) \quad (4.1) \quad (6.3) \quad (28.4)$$

Date: 8/87 to 5/99 $\bar{R} = .98$ $SEE = .24$ $DW = 1.8$ $DoF = 91$

C. The Real Rate of Interest

The following explains the real rate of interest used in Figure 2. It is the commercial paper rate minus predicted inflation. The commercial paper rate more closely approximates the funds rate than the Treasury bill rate. Over the period November 1965 through July 1979, the pre-Volcker period, the commercial paper rate used to construct the real rate averaged 6.6 percent, while the actual value of the funds rate averaged 6.5 percent. Reflecting its riskless and liquid character, the short-term Treasury bill rate averaged only 5.9 percent.

The commercial paper rate used to construct the real rate is recorded on the date of the Greenbook publication. Until 1970, the paper rate is the 4–6 month rate. Thereafter, it is either the 3-month or 6-month rate depending upon whether the interval from the Greenbook date to the end of the succeeding quarter is closer to 3 or 6 months. Predicted inflation is for the implicit price deflator through July 1992, the fixed-weight deflator through March 1996, and the GDP chain-weighted price index thereafter. Predicted inflation is a weighted average for the quarter in which the Greenbook was published and the succeeding quarter with the weights varying with the number of days remaining in the contemporaneous quarter after the Greenbook date and the number of days in the succeeding quarter. For a full discussion of this series, see Darin and Hetzel (1995).

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How the Asian Crisis Affected the World Economy: A General Equilibrium Perspective

Xinshen Diao, Wenli Li, and Erinc Yeldan

It has been more than two years since the financial crisis first broke out in East Asia in the summer of 1997. Now that much of the dust has settled, it is clear that the world economy was far from being mired in a global slump.¹ Furthermore, although the growth in the crisis-afflicted countries and other emerging market economies did slow quite significantly, growth was sustained in North America and Western Europe. Indeed, growth accelerated in some cases.²

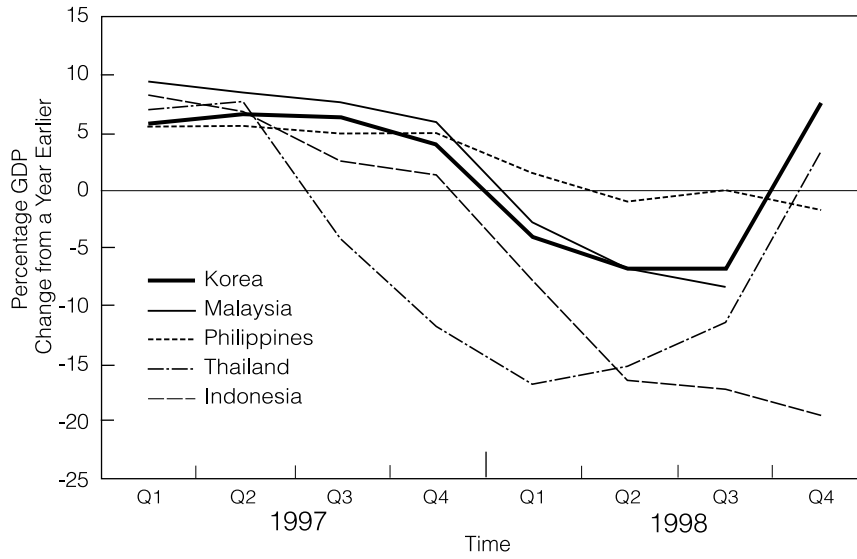
Until very recently, the conventional view was rather pessimistic. Observers feared that the economic stress that had begun in Southeast Asia would worsen and spread. For the world economy as a whole, as well as for key industrial countries, growth was expected to be slower, risks higher, and flows of capital further dislocated. Even in the United States, a country that, for most of its history, has shrugged off economic turmoil abroad, there was a fair amount of nervousness. Many economists forecasted much slower growth rates for the next few years (see among others, DRI forecasts) in light of the intensity of

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¹ According to “World Economic Outlook” (December 1998 and May 1999), annual percentage changes from a year earlier for world output are 4.3, 4.2, 2.5 and 2.3 for 1996, 1997, 1998, and 1999 respectively. The average growth rate for world output between 1990 and 1999 is 3.4 percent.

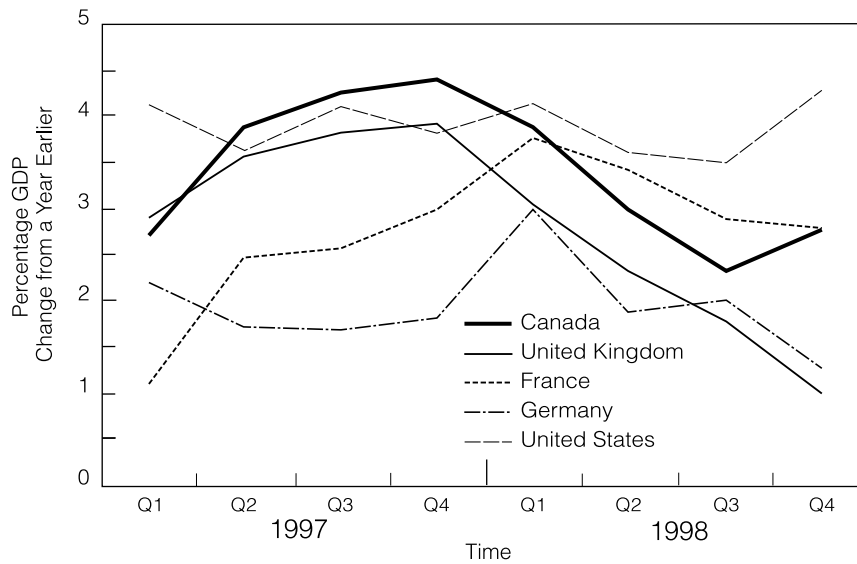
² Figure 1 depicts the change of GDP in selected Asian countries, while Figure 2 contrasts the behavior of GDP over the same period in major industrial economies. Source: “World Economic Outlook and International Capital Markets Interim Assessment,” IMF, December 1998.

Figure 1 Selected Asian Economies: Real GDP Growth



Source: IMF, International Financial Statistics

Figure 2 Selected Industrial Economies: Real GDP Growth



Source: IMF, International Financial Statistics

the Asian crisis and the distinct possibility that it could spread worldwide. The puzzling question that naturally arises is, “Why didn’t the whole world economy enter a slump?”

In this article, we attempt to answer this question from a general equilibrium perspective. The strategy here is to use a standard growth model augmented with multi-region and multi-production sectors to analyze how a set of real shocks hitting crisis countries affects the world economy as well as economies in different regions. These shocks, as will become clear later, are identified by recent research on the causes of the crisis. The mechanism that connects regions and that transmits shocks across them consists of two links: commodity trade and capital flows. Our analysis shows that much of the fear of a global recession spreading to industrial economies was not well grounded. Moreover, the burden of adjustment to the crisis was uneven across regions. The developing countries bore the brunt of this adjustment, suffering declines in economic activities. By contrast, industrial countries escaped largely unscathed. The impact the crisis had on them was small and even positive in its initial stages.

This article does not attempt to explain the crisis and its causes. Rather it measures, with the aid of a general equilibrium model of real trade and capital flows, the spillover effects of the crisis on the other regions of the world. Surprisingly, while various explanations of the East Asian financial crisis have been advanced, little effort has been devoted to analyzing its effects on the world economy. More is the pity, for the importance of such an analysis is great and indeed goes beyond what we conduct in this article. The results here suggest that policy actions that have generally been viewed as responsible for the robust growth of industrialized nations in the face of the financial crisis may not matter much after all. These actions include monetary policies adopted by industrial countries. They also include the stabilization and reform package that Asian crisis countries implemented at the insistence of the IMF. In other words, it could well be that many common concerns were overstated and not based on careful economic analysis.

1. WHAT HAPPENED?

While there is little consensus on the definite causes of the crisis, there is now evidence that the region’s economies had been confronting a deteriorating macroeconomic environment since the early 1990s (see, e.g., Krugman [1998], Radelet and Sachs [1998], Flood and Marion [1998], Corsetti et al. [1998], Chang [1999], and Whitt [1999]). A description shared by many is that given by Chang [1999]).

Several countries in the region experienced a real appreciation in their currencies during the 1990s and by 1997 had sustained sizable current account

deficits. These deficits were mostly financed through short-term foreign borrowing. Foreign portfolio and direct investment, attracted by the region's record economic growth for more than two decades, had also occurred. The growth rate of exports and industrial output in crisis countries, on the other hand, slowed substantially during the same period. This trend was largely the result of the weak Japanese import demand combined with disinflationary aggregate demand policies in most Asian economies.

The rapid inflow of capital and the slowing of growth unveiled a host of inherent structural problems in the region's financial systems. These problems included (1) lack of competition, supervision, and regulation of the financial sector, and (2) heavy government intervention in credit allocation. Under these conditions, financial intermediaries whose liabilities were guaranteed by the respective governments naturally posed a serious problem of moral hazard in which government guarantees subsidized and induced increased risk-taking, and resulted in excessive borrowing and lending, mostly from abroad.

The essence of the crisis was a huge, sudden reversal of capital flows that was a manifestation of private investors attempting to liquidate their claims brought on by a lack of confidence in the countries' financial systems. Accustomed to large-scale capital inflows, the sudden turnaround in flows was an enormous shock to the Asian economies. Moreover, with a dramatic depreciation in the real value of their currencies and high domestic interest rates, domestic credit conditions tightened, which led to a rapid rise in non-performing loans and a sudden loss of bank capital. The resulting collapse of domestic bank capital added to the contraction by further restricting bank lending. The result was the abandonment of planned investments by some firms and the curtailing of production activities by others. Accompanying the decline in current income and diminished expectations of future income, the consumption demand fell. All of the crisis countries experienced a collapse in GDP growth in 1998.

2. ECONOMICS OF ADJUSTMENT TO CRISIS

The crisis affected the rest of the world, not only through the international financial system, but also through international commodity trade and capital mobility. Since one region's imports are another's exports, the decline in imports of crisis countries, agriculture for example, can cause agricultural exporting countries to experience a decrease in their exports, and hence a fall in farm receipts. The higher the ratio of agricultural exports to total production, the larger the negative effects are likely to be.

A decline in the prices of internationally traded inputs tends to lower production cost, thus affecting the competitiveness of various sectors depending on the intensity of the use of these inputs in production. Offsetting the decline in intermediate input cost is the cost of purely domestic resources, such as

labor, that are not traded internationally. The cost of these resources may rise due to the expansion of production at home.

Another effect of the crisis is through capital markets. Capital leaving crisis countries will flow into non-crisis countries, putting downward pressure on interest rates there. The reduced domestic interest rates will in turn stimulate investment and thus growth in the domestic capital stock. Sectors that experienced increased capital formation, either directly or indirectly from these flows, will respond by increasing their demand for other resources whose productivity is increased by growth in capital stock. Thus, the growth in capital stock can, by increasing the demand for labor and associated inputs, also contribute to the bidding up of the prices of purely domestic or non-traded resources and further raise the cost of production.

Effects of the Asian crisis on the world economy depend, in the long run, on three factors: the extent to which pre-crisis expectations of long-run returns to capital were grossly in error; the likelihood that the crisis will spread to other regions; and post-crisis policies of crisis-ridden economies.

3. MODEL ECONOMY

We formalize the argument presented above, and estimate the spillover effects of the crisis on other regions of the world economy in this section. Our model, employed in the following paragraphs, belongs to the family of multi-sector, multiregion, computable general equilibrium setups. These frameworks are used widely to analyze the impact of global trade liberalization and structural adjustment programs. Our model, which draws in many ways upon recent contributions by McKibbin (1993), Mercenier and Sampaio de Souza (1994), Mercenier and Yeldan (1997), and Diao and Somwaru (2000), incorporates considerable detail on sectoral output, consumption, and trade flows—both bilateral and global.³ The model excludes financial market phenomena that capture effects such as investor confidence. Nevertheless, as will be demonstrated later, the model and the assumed shocks that disturb it account for most of the falls in investment, output, and terms of trade observed in the Asian countries. One does not need to revert to less well-defined concepts as “financial contagion,” “financial fragility,” and so on to explain the real effects of the Asian crisis.

Our scheme is to model the inherent structural problem of crisis economies as overinvestment in certain sectors. The outbreak of the crisis and its subsequent development are modeled as an impulse and response mechanism. The impulse takes the form of an adverse shock to sectoral total factor

³ Noland, Robinson, and Wang (1999) uses a similar but static computable general equilibrium framework to analyze the impact of the Asian Financial Crisis on the world economy under the assumption that Japan and/or China depreciate their currencies.

productivity and to the risk premium associated with investment in these sectors. For example, a negative shock means that productivity falls and the risk premium rises. Such an increase in risk premium can be due to either policy changes that eliminate governmental benefits to firms or impair the collateral firms could offer to potential investors.

The Asian financial crisis has also had serious negative effects on aggregate employment of resources. Many firms throughout the region went bankrupt, and the rate of labor unemployment rose. Instead of specifying increased unemployment or closed factories, however, we allowed all resources to remain employed but reduced their efficiency, thereby generating the same fall in output. The magnitude of these shocks is described in more detail below as we analyze different scenarios.

To begin then, the closed world economy is divided into three open-trading regions: developing economies, developed economies, and crisis economies. We will specify countries in each region in the next section. There are four production sectors in each region, and they each produce a single aggregate commodity. These sectors include (1) agriculture and food processes (agriculture); (2) mineral, materials, and intermediates (intermediaries); (3) manufacturing; and (4) services.

Within each region, a representative consumer makes joint decisions on consumption and savings. Similarly, on the supply side, a representative producer in each sector makes production and investment decisions simultaneously. The model also incorporates multilateral trade and capital flows among the regions. Commodities produced for domestic markets are assumed imperfect substitutes for those imported from abroad. The price of a good imported by a region, therefore, is not necessarily the same as the price of the same good produced at home or exported to other regions. A detailed description of the model is as follows.

Firms

Producers within each sector of a region are aggregated into a representative firm. A firm makes production and investment decisions to maximize its intertemporal profits. In doing so, the firm chooses levels of labor and intermediate inputs every period, taking as given prices of outputs, the wage rate, prices of intermediate inputs, and the stock of capital. Outputs are either sold in the domestic market or exported to foreign markets.

Firms are owned by a representative household or consumer, and investment is financed by the household's domestic saving and international borrowing. At each period, firms' profits, $div_{n,i,t}$ —equivalent to the gross revenue minus labor costs, intermediate input costs, and investment costs—are distributed to the household. Investment raises the stock of capital but there exist capital adjustment costs. Investment goods are purchased from other sectors,

as well as from firms' outputs. Investment goods can also be imported from abroad. Formally, a firm's problem can be described as follows:

$$\max_{\{I_{n,i,t}, L_{n,i,t}, ITD_{n,j_1,i,t}, \dots, ITD_{n,j_J,i,t}\}} V_{n,i} = \sum_{t=1}^{\infty} R_{n,i,t} div_{n,i,t} \quad (3.1)$$

s.t.

$$X_{n,i,t} = f(L_{n,i,t}, K_{n,i,t}, ITD_{n,j_1,i,t}, \dots, ITD_{n,j_J,i,t}), \quad (3.2)$$

$$K_{n,i,t+1} = (1 - \delta_{n,i})K_{n,i,t} + I_{n,i,t}, \quad (3.3)$$

where $div_{n,i,t} \equiv P_{n,i,t}X_{n,i,t} - \sum_j PC_{n,j,t}ITD_{n,j,i,t} - w_{n,t}L_{n,i,t} - PI_{n,i,t}I_{n,i,t}(1 + \phi_{n,i} \frac{I_{n,i,t}}{K_{n,i,t}})$; $V_{n,i}$ is the value of firm i in region n in the first period; $R_{n,i,t} = \prod_{s=1}^t \frac{1}{1+r_{n,s}}$ is the discount factor for future returns; $X_{n,i,t}$ is the final output; $P_{n,i,t}$ is the price of the output; $L_{n,i,t}$, $K_{n,i,t}$, and $ITD_{n,j,i,t}$ are, respectively, labor, capital, and intermediate inputs in the production of $X_{n,i,t}$; $w_{n,t}$ is the wage rate; $PC_{n,j,t}$ is the price of the intermediate input used by firm i in the production of $X_{n,i,t}$; $I_{n,i,t}$ is the quantity of new capital equipment built through investments at time t ; $PI_{n,i,t}$ is the price of the investment good; $\delta_{n,i}$ is the capital depreciation rate; and $\phi_{n,i} \frac{I_{n,i,t}}{K_{n,i,t}}$ is the adjustment cost per unit of capital investment.

Due to the presence of adjustment cost on capital, marginal products of capital differ across sectors resulting in unequal, though optimal, rates of investments. Furthermore, once investment becomes realized as fixed physical capital, it cannot be reinvested in other sectors, especially in other assets such as foreign bonds. There also exists other regional risk factors associated with investment. We model such risk by adding a risk premium on the interest rate faced by firms. That is, in each region, firms face an interest rate defined as

$$r_{n,t} = (1 + \pi_{n,t})r_t, \quad (3.4)$$

where $\pi_{n,t}$ is the risk premium for firms and is defined as an exogenous variable in the model, and r_t is the riskless interest rate facing the world. For our purposes, we assume the riskless interest rate prevails in developed economies.

A Cobb-Douglas production function relates the output of new capital equipments with the inputs in the form of sectoral goods. These inputs can be either produced domestically or imported. Hence, $PI_{n,i,t}$ can be written as a function of composite prices:

$$PI_{n,i,t} = A_{n,i} \prod_j PC_{n,j,t}^{d_{n,i,j}}, \quad (3.5)$$

where $A_{n,i}$ is the efficient coefficient for investment, $PC_{n,j,t}$ is the price of the composite good, $0 < d_{n,i,j} < 1$ and $\sum_j d_{n,i,j} = 1$.

Households

In each region a representative household owns labor and financial assets, including the equity in domestic firms and foreign bonds. The household allocates income to consumption and savings to maximize lifetime utility:

$$\max \sum_{t=1}^{\infty} \left(\frac{1}{1+\rho} \right)^t U(TC_{n,t}) \quad (3.6)$$

subject to the following budget constraint:

$$SAV_{n,t} = w_{n,t}L_{n,t} + TI_{n,t} + div_{n,t} + r_t B_{n,t-1} - PTC_{n,t}TC_{n,t}, \quad (3.7)$$

where ρ is the positive rate of time preference, $TC_{n,t}$ is the aggregate consumption at time t , $SAV_{n,t}$ is the household saving, $B_{n,t-1}$ is the stock of foreign assets, $r_t B_{n,t-1}$ is the interest earned from ownership of foreign bonds, $PTC_{n,t}$ is the consumer price index, and $TI_{n,t}$ is the lump-sum transfer of government revenues from taxes and tariffs. We assume no government saving-investment behavior. The government spends all its tax revenues either on consumption or as transfers to the household. $TC_{n,t}$, the instantaneous consumption, is generated from the consumption of final goods by maximizing a Cobb-Douglas function:

$$TC_{n,t} = \Pi_t c_{n,i,t}^{b_{n,i}}, \quad (3.8)$$

subject to

$$\sum_i PC_{n,i,t} c_{n,i,t} = PTC_{n,t} TC_{n,t}, \quad (3.9)$$

where $c_{n,i,t}$ is the final consumption for good i and consumption shares $b_{n,i}$ satisfy $0 < b_{n,i} < 1$, and $\sum_i b_{n,i} = 1$.

World Commodity Markets and Capital Flows

International trade flows are tracked by their origin and destination. The variable $M_{n,s,i,t}$ represents the trade flow of commodity i from region n to s at time t and is endogenous in the model.

When a country's current consumption plus its investments exceeds its current domestic income, the country experiences a trade deficit in which imports exceed exports. If the reverse is true, the country experiences a trade surplus, or an excess in exports over imports. If the country does not own enough foreign assets to offset a deficit, the trade deficit has to be financed by international borrowing (i.e., $SAV_{n,t}$ is negative). Once international borrowing occurs, foreign capital flows into the country. The current period's foreign borrowing becomes a net debt burden that either increases the country's total outstanding debt or reduces its foreign assets, i.e.,

$$FB_{n,t} = \sum_i^J \sum_s^N (PW_{n,s,i,t} M_{n,s,i,t} - PW_{s,n,i,t} M_{s,n,i,t}), \quad (3.10)$$

$$B_{n,t+1} = (1 + r_t)B_{n,t} + FB_{n,t}, \quad (3.11)$$

where $FB_{n,t}$ is the foreign trade deficit of region n , $PW_{n,s,i,t}$ is the world price of commodity i from region n to s at time t , and $B_{n,t}$ is the foreign debt. A negative $FB_{n,t}$ implies trade surplus for region n , while a negative $B_{n,t}$ is foreign assets for n .

We define a region's real exchange rate as a ratio of the region's consumer price index over the same index for the region of developed economies, i.e., the consumer price index for developed economies is chosen as a numeraire.⁴ Movements in a region's real exchange rate reflect changes in the price level relative to that of developed economies. These movements do not capture any changes in the region's exchange rate policy or policies for financial or monetary sectors.

Government Policies

Government policy instruments include import tariffs, indirect taxes imposed on production processes, and sales taxes on final consumption.⁵ Our main purpose here is to suggest how the effects of government interventions and weak financial systems might lead to overinvestment in financially dubious projects within crisis-ridden economies. Information necessary to address these matters, however, is not available in a quantifiable form in the original database. For, as discussed earlier, such government intervention has often taken the form of implicit insurance that is equivalent to a stock of contingent public liabilities reflected neither by data on debt nor on the deficit until contingent liabilities become actual ones, that is, until the crisis occurred. Even though there were differences in the specifics of the governments' policies to enable firms to expand their investment, they all led to the same outcome: excessive concentration of investments in certain key sectors of the economy. For these reasons, we introduce an "investment subsidy policy" to capture the basic features of government interventions in firms' investment strategies. The subsidy, granted only for manufacturing firms with no comparable provisions for the other three sectors,⁶ is designed to lower firms' capital installation (adjustment) costs as

⁴ This price index is the average of consumption good prices weighted by their base year levels of consumption.

⁵ Further information about these instruments along with their initial levels are included in the database used for conducting the calibration. See Global Trade Analysis Project (GTAP) Database, version 3, in McDougall (1997).

⁶ In Korea, excess investments and associated profitability problems were concentrated in the manufacturing sector, whereas in other countries, such as Thailand, the focus was on the real estate sector (Huh 1997). Data availability limits our analysis to the case of subsidy to the manufacturing sector. Since the manufacturing sector is more export-oriented, this arrangement allows for a higher probability that the crisis will be propagated to the rest of the world. Therefore, our analysis can be viewed as a worst-case scenario from the viewpoint of non-crisis economies.

well as to put a ceiling on the interest rate they face. We assume that the investment subsidy is financed by a lump-sum tax on (or a lowered government transfer to) the household.

More formally, let $s_{n,i,t}$ be the subsidy rate on the capital installation cost, and $\gamma_{n,i,t}$ be the difference in percentage between the market interest rate and government's interest ceiling. Then the capital adjustment cost function is redefined for the manufacturing sector of crisis-ridden economies as $(1 - s_{n,i,t})\phi_{n,i}\frac{I_{n,i,t}^2}{K_{n,i,t}}$ and equation (3.4) becomes

$$r_{n,i,t} = (1 + \pi_{n,t})(1 - \gamma_{n,i,t})r_t, \quad (3.12)$$

where $s_{n,i,t}$ and $\gamma_{n,i,t}$ are positive for manufacturing and zero for the other three sectors in crisis economies.

Equilibrium

Equilibrium requires that at each time period three conditions hold. First, in each region, the demand for production factors equal their supply. Second, the world total demand for each sectoral good equals its total supply. Third, aggregate household savings equal zero. In the steady state equilibrium, the following constraints must also be satisfied for each region:

$$r_n = r_{ss},$$

$$r_{ss} = \frac{div_{i,ss}}{V_{i,ss}},$$

$$I_{i,ss} = \delta_i K_{i,ss},$$

$$FB_{ss} + r_{ss}B_{ss} = 0.$$

Readers can find more details of the model, including Euler equations used to solve the model and a glossary of variables, in the appendix of our working paper, "Challenges and Choices in Post-Crisis East-Asia: Simulations of Investment Policy Reform in an Intertemporal, Global Model" (Federal Reserve Bank of Richmond Working Paper 98-7).

4. SIMULATION ANALYSIS

In their recent paper, Corsetti, Pesenti, and Roubini (1998) undertake an extensive analysis of the macroeconomic environment and financial system of crisis-ridden economies. Shunning a purely financial panic explanation, they conclude that common domestic and international shocks hit several East Asian economies in the 1996–1997 period. Our simulation pursues this line of argument. Because we lack a full-fledged theory on financial-real economy linkages, however, we directly implement the real, or nonmonetary, consequences of the

crisis on investment patterns. We do so by shocking the model (that is, by increasing the risk premium and the difficulty of undertaking capital investment in the region) to simulate the investment contraction. The actual crisis produces currency depreciation as well as increases in domestic interest rates, prices, unemployment, and bankruptcy rates in the affected countries. Such outcomes are likely to cause investment to fall and economic growth to slow. Since the intertemporal general equilibrium is a real or nonmonetary phenomenon in which variables expressed as nominal or monetary magnitudes, including currency exchange rates and many financial assets, are not explicitly recognized, it cannot capture directly the effects of currency depreciation on world financial and asset markets.⁷

Our list of crisis economies includes a number of Asian countries (Indonesia, Korea, the Philippines, Thailand, Malaysia, Singapore, Hong Kong, and Taiwan), two Latin American countries (Brazil and Argentina), and one European country (Russia) to better capture the later development of the crisis. The developed region includes EU countries, the United States, Canada, Australia, New Zealand, and Japan. The remaining countries are in the group of developing nations.

Tables 1 and 2 summarize the trade flows for the three regions across the agriculture, intermediaries, manufacturing, and services sectors. Crisis economies import chiefly from developed economies. Other developing economies import from crisis and developed economies. Finally, developed economies import agriculture, intermediary goods, and services from both crisis and other developing economies, but import manufacturing goods mostly from the former. Crisis economies share with other developing economies a similar trade structure in the sense that they export most of their commodities to developed economies in all sectors except manufacturing. Developed economies export to both crisis and other developing economies.

Our model employs investment subsidy to reduce the cost of capital adjustment. It also uses a ceiling on interest rates to reduce the risk of investment in the manufacturing sector. For our baseline solution, we choose the subsidy rate that produces a total subsidy equal to 2.2 percent of total investment. Similarly, we choose an interest rate ceiling that results in manufacturing firms facing a rate 30 percent lower than the market rate of crisis economies. The subsidies are received only by firms investing in the manufacturing sector and they are set equivalent to 40 percent of the capital adjustment costs of this sector.⁸ The rest

⁷ However, the apparatus allows us to introduce the concept of real exchange rate as the ratio of domestic versus foreign commodity baskets. See Obstfeld and Rogoff (1996, Ch. 4) for an analytical exposure.

⁸ According to Dalla and Khatkhate (1995)'s calculation, the interest subsidy involved in policy loans in Korea amounted to over 1 percent of GNP and 6.2 percent of government expenditure in 1991; the cumulative subsidy during 1981–1991 amounted to 2 trillion won per annum.

Table 1 Share of Imports by Region and Sector

Imp. Region	Exp. Region	Agriculture	Intermediaries	Manufacturing	Services
Crisis	Developing	0.08	0.055	0.01	0.03
	Developed	0.92	0.945	0.99	0.97
Developing	Crisis	0.292	0.41	0.174	0.194
	Developed	0.708	0.59	0.826	0.806
Developed	Crisis	0.784	0.852	0.976	0.85
	Developing	0.216	0.148	0.024	0.15

Table 2 Share of Exports by Region and Sector

Exp. Region	Imp. Region	Agriculture	Intermediaries	Manufacturing	Services
Crisis	Developing	0.222	0.062	0.054	0.042
	Developed	0.778	0.938	0.946	0.958
Developing	Crisis	0.06	0.171	0.426	0.172
	Developed	0.94	0.829	0.574	0.865
Developed	Crisis	0.854	0.866	0.881	0.865
	Developing	0.146	0.134	0.119	0.135

of the model is calibrated to the 1995 Global Trade Analysis Project (GTAP) Database (see footnote 4) under the assumption that the initial current account is in balance for each region. That is, each region's initial current account is assumed to be "sustainable" and consistent with its initial interest rate.

Baseline Scenario

In our baseline simulation, we proceed as follows. For the first three years, we exogenously raise the value of the region's risk premium, $\pi_{n,t}$, in Equation (3.12) and reduce the technological coefficient, $A_{n,i}$, in the sectoral investment functions in equation (3.5) for crisis-ridden countries. Then, for the following three years, we slowly lower the risk premium and raise $A_{n,i}$ to its original level. The shocks are chosen so that simulated changes in output in the crisis economies match, during the first seven years, that of the actual changes in these regions in the years 1997, 1998, and 1999 and the IMF projection for these countries for the years 2000–2003 ("World Economic Outlook and International Capital Markets Interim Assessment," International Monetary Fund,

December 1998).⁹ The comparison of simulated and actual results, as well as the IMF projections, is in Figure 3. The simulation results for other variables and for the other two regions are summarized in Figures 4–6.

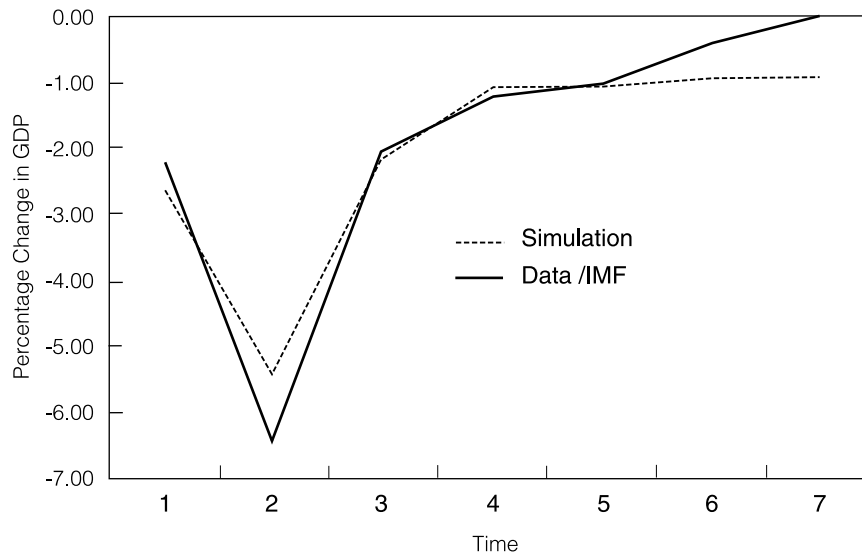
Outcomes of the simulation closely track both the development of the crisis and the IMF's projections. GDP in crisis countries decreases with a fall in investment. With the depreciation of the crisis area's real exchange rate, the price of traded goods increases relative to the price of goods domestically produced and consumed. Exports increase, imports decrease, and the trade balance improves. A trade surplus together with a low level of investment produces a current account surplus for these crisis economies.

The model also depicts the simulated effects of the crisis on the world economy as well as on the other countries. As can be seen in Figure 4, world GDP falls by 0.47 percent in the first year of the simulation. GDP falls 0.23 percent in developing economies but rises slightly (0.02 percent) in the developed region in the first year. Growth further slowed for all three regions in the second year and started to recover beginning in the third year. These effects are mainly the results of corresponding changes in the levels of international commodity trade and capital mobility.¹⁰

The counterpart of the decline in commodity imports of crisis economies is a corresponding fall in the exports of non-crisis regions. In the simulation, exports fall by 5–8 percent in developed economies and 1–2 percent in developing economies during the first two years after the crisis. Since exports as a percentage of total output are smaller in developed economies (11.7 percent) than in developing economies (19.2 percent), it follows that the same degree of export decline has a relatively smaller impact on GDP of developed economies. Moreover, the export decline in developed economies stems from decreased demand, especially for manufacturing and services of crisis economies and other developing economies. Conversely, the export fall experienced by developing economies stems mainly from competitive pressure exerted by crisis economies who have a trade structure similar to their developing country counterparts. Although the simulation produced a depreciation in the real exchange rate in developing economies, it was relatively

⁹ The growth rate for the crisis-ridden region is a weighted (by GDP) average of the growth rates of each country in the region minus their average growth rate from 1990–1996. These numbers correspond to the percentage changes in GDP from the steady state reported from the model.

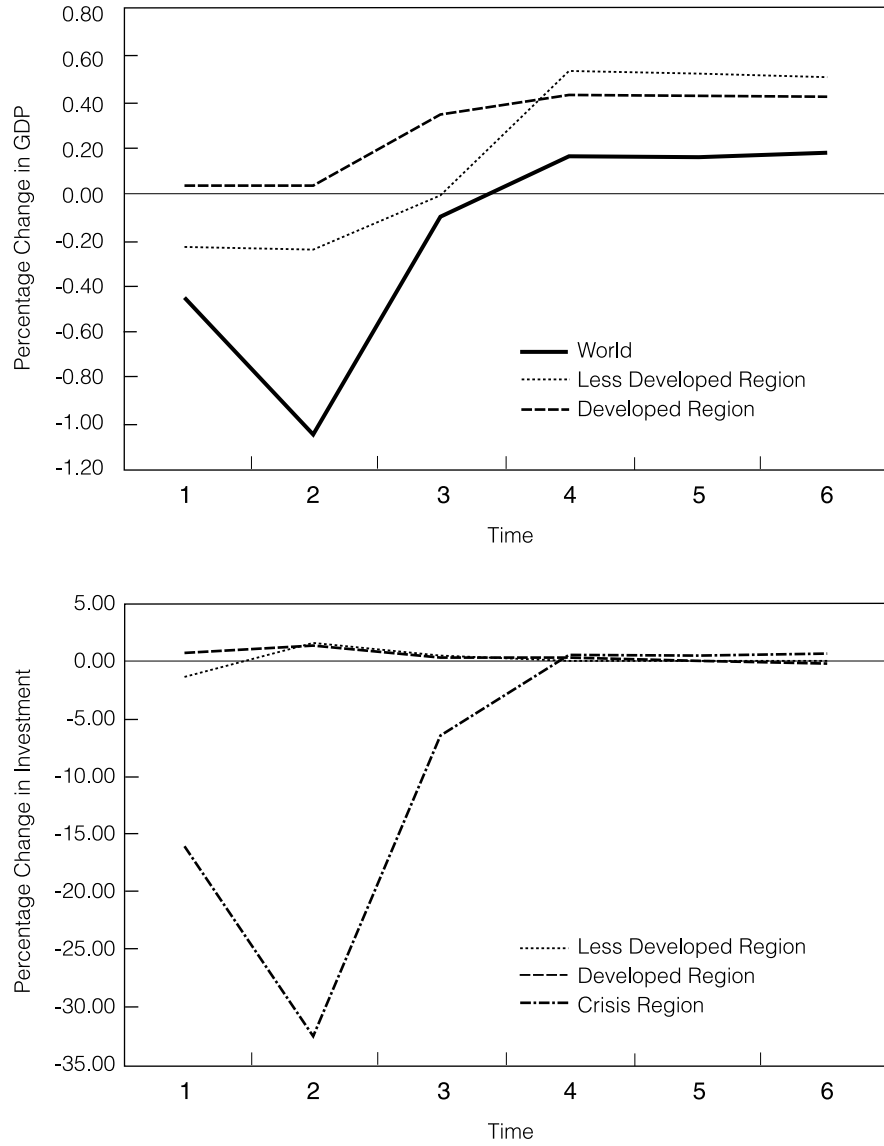
¹⁰ According to IMF ("World Economic Outlook," 1999), the change of growth rates in world output (detrended by a 3.4 percentage average growth rate for world output from 1990 to 1999) are 0.78, -0.914, and -0.114 percent for 1997, 1998, and 1999 respectively. The weighted (by their GDP) change of GDP growth rates for Canada, the United Kingdom, France, Germany, and the United States (detrended by their respective average growth rates from 1990 to 1999) are 0.16, 0.051, and -0.21 percent for 1997, 1998, and 1999 respectively. Although our simulation does not match the exact numbers, it does reproduce the qualitative patterns.

Figure 3 GDP Changes in Crisis Hit Economy

insignificant compared with the depreciation in crisis economies. Since exchange rate depreciation tends to spur exports by making them less expensive, we find that exports in developing economies decrease, but at a slower rate than in developed economies. Conversely, imports for both developed economies and other developing economies increased, with the rate of increase being higher for developed economies. These numbers from our simulation are broadly consistent with the actual ones. Among the five developed economies discussed earlier (Canada, the United Kingdom, France, Germany, and the United States), all of them experienced substantial increase in their imports (year by year) between 1997 and 1999. Only the United Kingdom and the United States had large drops in their exports. The other countries experienced an increase in their exports; however, the increase in their exports was outpaced by a corresponding increase in their imports. For the five crisis economies (Korea, Malaysia, the Philippines, Thailand, and Indonesia), all except Malaysia experienced a substantial decline in imports in 1997 and 1998. And, except for Korea and Indonesia in 1998, all experienced a large increase in their exports.

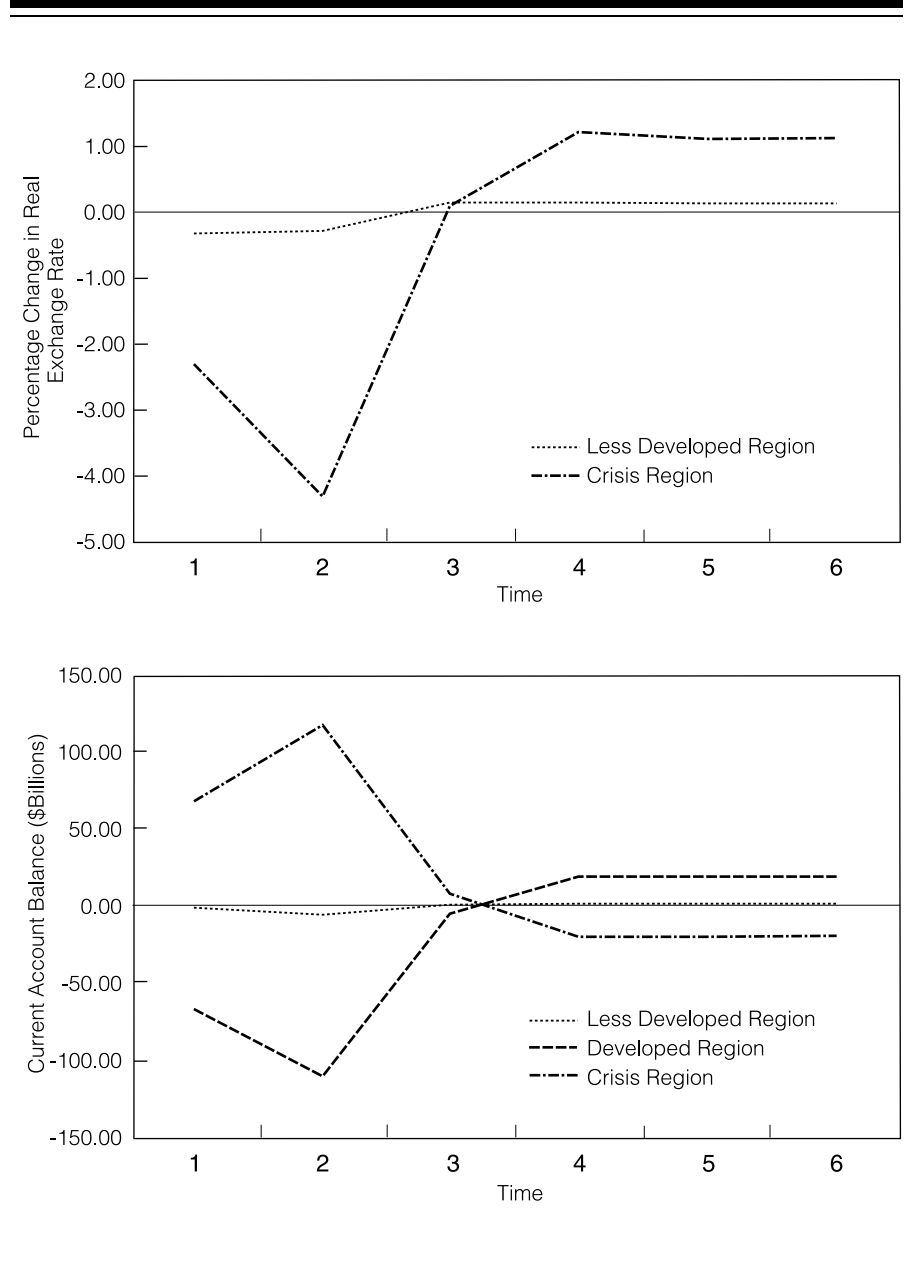
The decrease in exports and increase in imports in developed economies produced a trade balance deficit that was financed by large capital inflow into these economies. This inflow, when transformed into an increase in capital stock, raises the production potential, hence GDP, of developed economies. The developing economies, however, do not benefit from such capital inflows

Figure 4a The Impact of the Crisis on World Economy



and investment falls initially and only rises slightly after that. With a negative change, or appreciation, in its real exchange rate, its GDP falls slightly. Given that developed economies account for about 70 percent of world GDP and

Figure 4b The Impact of the Crisis on World Economy



that the crisis does not affect them much, the world GDP only falls by 0.47 percent in the first year of the simulation, even though the crisis economies and developing economies register GDP falls of 3 and 0.23 percent.

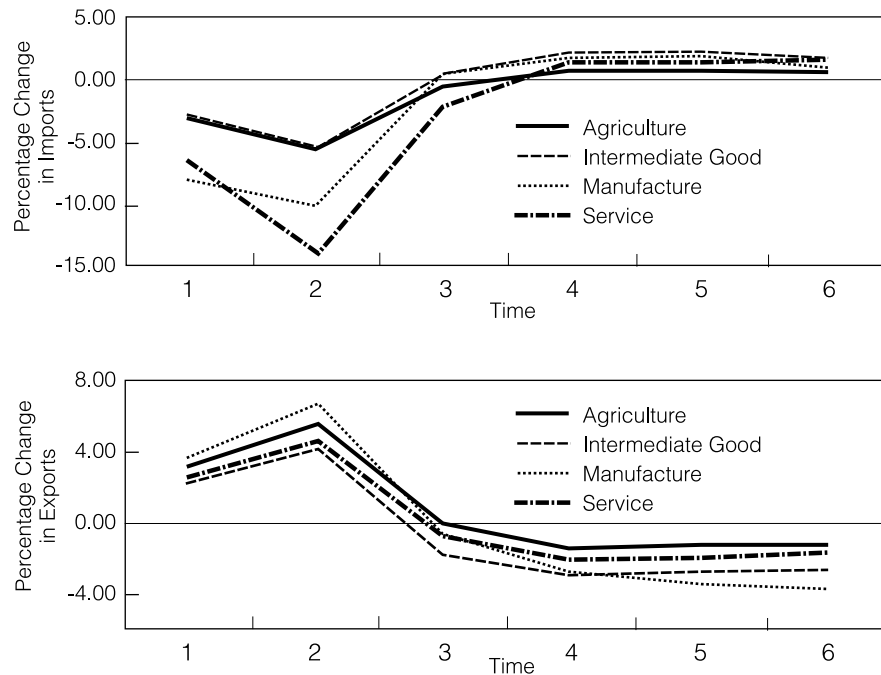
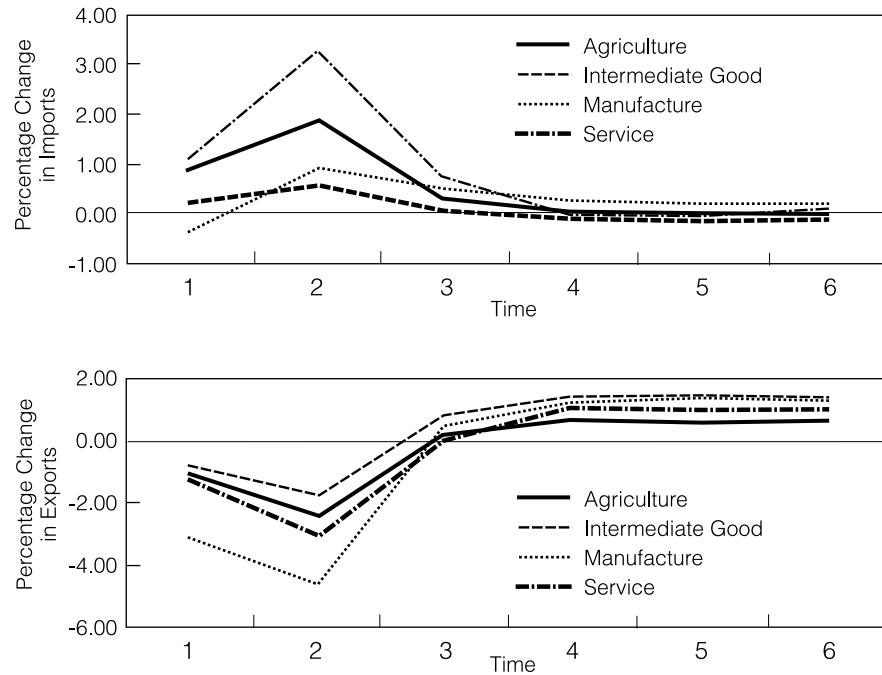
Figure 5a Sectoral Effects of the Crisis: Crisis Hit Economy

Figure 5 documents sectoral export and import changes for each region for the first six years following the crisis. We observe that, for crisis economies, exports rise and imports fall during the first two years in all four sectors. By the third year, exports in all four sectors have reversed their signs and are showing negative percentage changes. Imports in intermediate goods and manufacturing have also reversed their signs and become positive, though it takes longer for imports in agriculture and service to recover. For other developing countries, exports decline in all four sectors in the first two years, then recover starting from the third year. Except for the first year in manufacturing, imports have increased. In developed economies, exports decline in all four sectors, more so in manufacturing and service, in the first two years. This decline in exports is a result of the decreased import demand of crisis economies, a decreased demand that more than offsets the increased import demand coming from other developing economies.

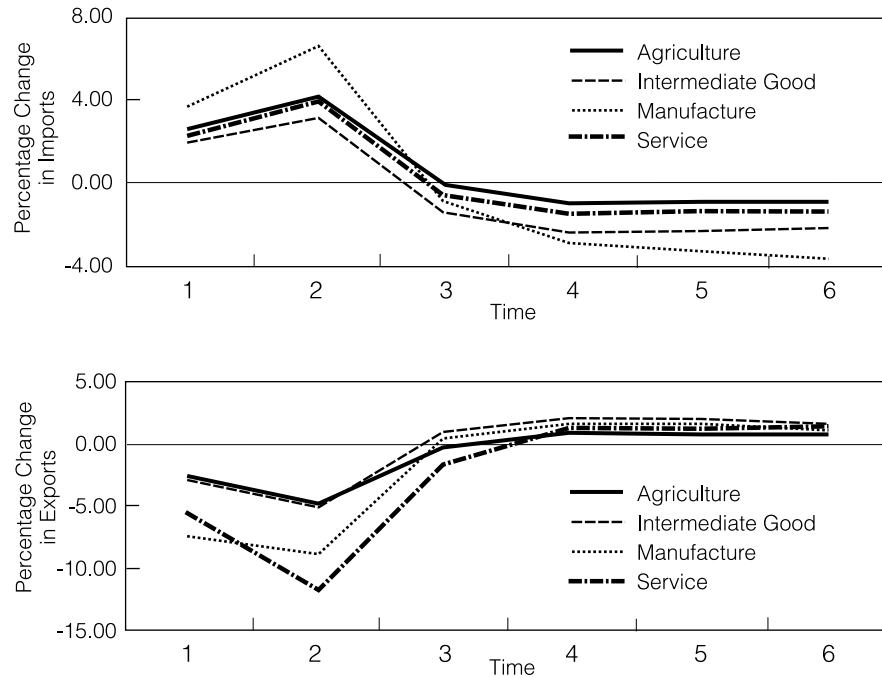
Figure 6 depicts changes in bilateral trade flows between crisis-ridden economies and the other two economies. Following the crisis, the real exchange rate depreciation in crisis-ridden regions causes, by cheapening the

Figure 5b Sectoral Effects of the Crisis: Other Developing Economy

region's exports while rendering its imports dearer, a fall in its imports and rise in its exports. Since one region's imports are another's exports, the developed region's exports of manufactured goods and services suffer a fall both from the reduced import demand of the crisis-ridden region and the competitive effect of that region's increased exports, which displace, or crowd out, the exports of the developed region.

Alternative Scenarios

In our simulation of the baseline scenario, we attempted to replicate both (1) the development or unfolding of the crisis and (2) the most recent IMF projections. One may argue that these events and projections already take into account policy actions mentioned earlier. Therefore, it is not surprising that, by matching growth rates of crisis countries to these numbers, we saw little or no impact on the world economy and its constituent industrial economies. Put another way, had it not been for the policy considerations, growth rates for crisis economies would have been slower and thus the effects of the crisis on the world and industrial economies larger. For example, concerns were manifest that the crisis

Figure 5c Sectoral Effects of the Crisis: Developed Economy

would, by enhancing investment risk in two ways, divert investment away from emerging markets. First was the risk that the crisis would, through contagion, generate additional crises. Second was the risk that the crisis may, by raising public fear, make potential investors more risk-averse than they were before. Both types of risk would inhibit investment in emerging markets. Consequently, we construct two alternative scenarios to account for possible implications of this risk.

Scenario One

In scenario one, we disturb, or shock, the crisis-ridden region's risk premium so that GDP declines in the region are consistent with the IMF projection back in October 1998 ("World Economic Outlook," International Monetary Fund, October 1998).¹¹ It takes about ten years for the GDP in the crisis-ridden region to completely recover. We find that the pattern of changes in investment, GDP,

¹¹ The decline in GDP for the crisis hit region was projected to be -3.6 , -6.4 , and -4.3 respectively for the first three years.

Figure 6a The Impact of the Crisis on the Bilateral Trade between Crisis Hit Region and Other Regions

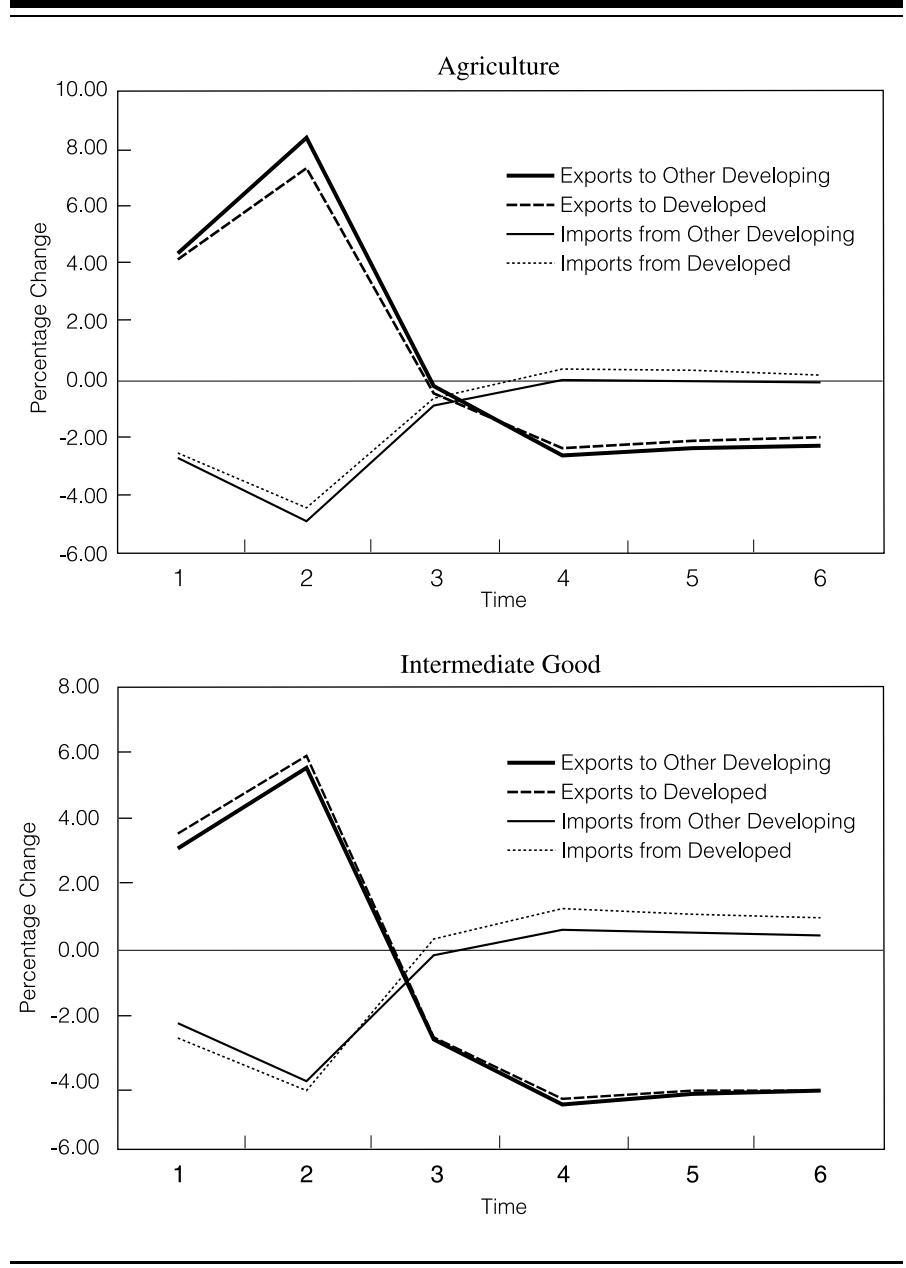
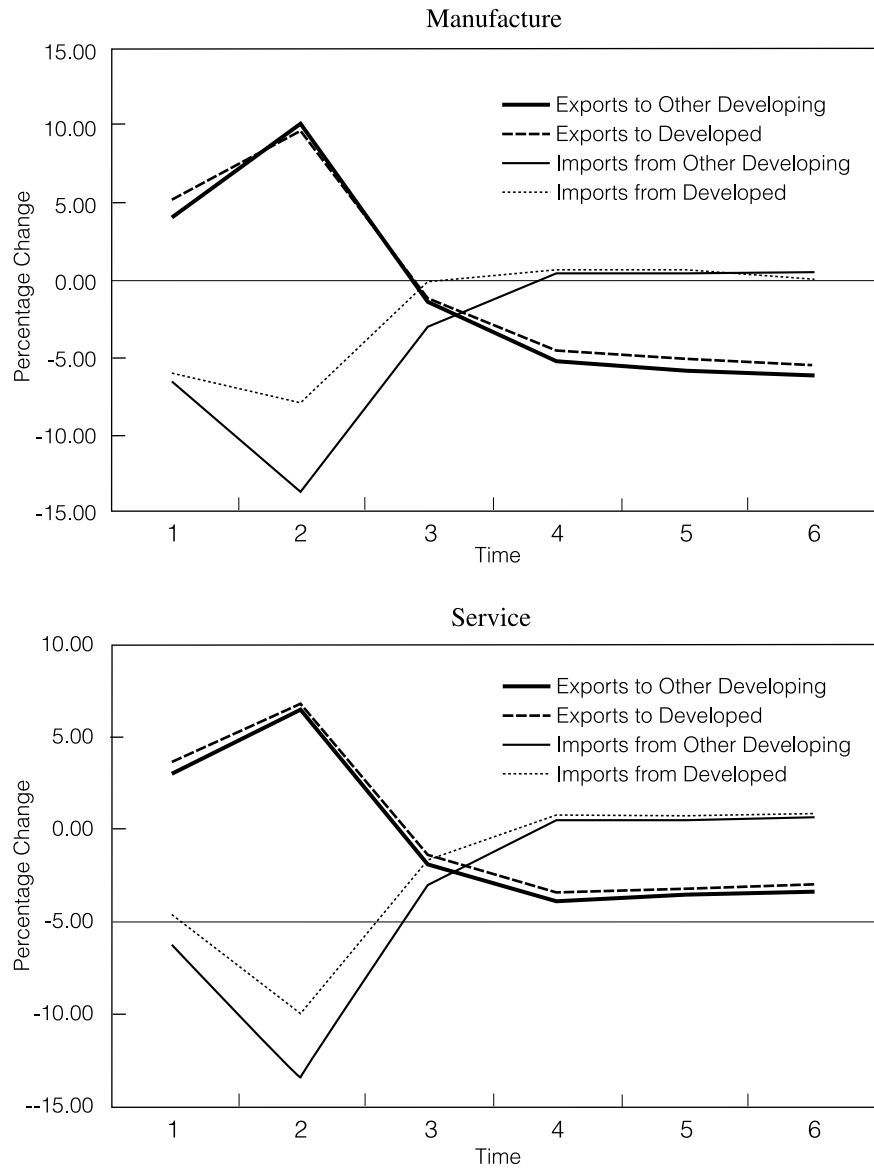


Figure 6b The Impact of the Crisis on the Bilateral Trade between Crisis Hit Region and Other Regions



current account, exports, imports, and the real exchange rate are the same as baseline simulation results, but the magnitude is bigger. The world GDP drops 0.64 percent the first year, 1.32 percent the second year, and 0.31 percent the third year. GDP in the other developing region declines for two consecutive years (−0.30 and −0.29 percent), while GDP in the developed region increases slightly in the first year (0.01 percent), decreases for the next year, and begins to recover in the third year (−0.002 and 0.035 percent, respectively). Capital flows going from the crisis-ridden region to the other developing region and the developed region are more severe. In particular, countries in the developed region show large capital account deficits.

Scenario Two

In scenario two, we consider the policy reforms undertaken by crisis economies during the period. In particular, we eliminate the government's investment subsidy and remove the ceiling interest rate in the manufacturing sector. Of course, without an explicit banking sector, the model cannot capture all effects of a change in the government's investment policy, especially the effects of government intervention in the banking system. Note, however, that even though the model lacks an explicit banking system, it maintains an effective financial capital market economy in a theoretically consistent framework.

It is obvious that the investment-subsidy policy distorts firms' investment decisions and thus leads to overinvestment in manufacturing and possibly underinvestment in other sectors, such as services. It follows that removing such policy distortions would lower manufacturing investment and increase investment allocated in the other sectors. Eliminating the investment subsidy to manufacturing also affects the trade structure of the crisis-prone region as investors now require a higher premium to hold assets of manufacturing firms. In the crisis-ridden region, GDP also worsens for the first few years compared with its counterpart in the baseline scenario.¹² For countries in the developed region, GDP again was not affected much—the growth rate was 0.01 percent for the first year, −0.08 percent for the second year, and 0.32 percent for the third year—although its current account deficits declined further. Moreover, the simulated investment policy reform conducted by the crisis-ridden region generates relatively modest aggregate effects in the short and medium run. The main reason is that the expected gains from the investment policy reform take the form of enhancement to economic efficiency, i.e., gains in productivity growth. Our model cannot capture such endogenous gain, however, as it is based on neoclassical growth theory in which productivity growth is exogenous. In actual policy setting, one may encounter many other forms of distortions in

¹² For the crisis hit economies, GDP declined 3.6, 6.8, and 3.3 percent for the first three years, and 2.5 percent for the fifth year.

industrial policies, in banking systems, or in capital markets of crisis-ridden economies. We would expect once countries implemented such essential reforms, adjustments in their economies as well as in the entire world would be much larger than they are in our simulations.

In summary, our simulation analysis indicates that the crisis reduced GDP in developing economies, but raised GDP in developed economies. Furthermore, the crisis had a larger effect on developing than on developed economies. Capital flows from crisis economies to non-crisis economies, developing and developed, caused capital account deficits in both regions, more so in the developed region.

5. CONCLUDING COMMENTS

The preceding paragraphs have investigated the impact of the East Asian Crisis on the world economy with the aid of an intertemporal general equilibrium model. Admittedly our model is incomplete; it contains no monetary or financial sectors. Still, despite the absence of a full-fledged model of real-financial linked theoretical apparatus, we were able to estimate the real effects of the crisis by examining its consequences on investment demand. Our simulation results, conducted under three reasonable scenarios, revealed that the crisis had by far the largest negative impact on other developing economies. The impact on industrial economies, on the other hand, is generally small and even positive initially. Our analysis suggests that the fear of a “global slump” was not well founded. The corollary is that policy actions associated with the “recovery” of the world economy may not have mattered at all, since there was no global slump from which to recover.

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Benjamin Strong, the Federal Reserve, and the Limits to Interwar American Nationalism

Part I: Intellectual Profile of a Central Banker

Priscilla Roberts

This essay on Benjamin Strong, the first governor of the Federal Reserve Bank of New York (1914–1928), evolved from the author’s research on the development of an American internationalist tradition during and largely in consequence of the First World War. Viewing Strong’s activities in the broader context of the world view and diplomatic preferences of the educated East Coast establishment, a foreign policy elite to which Strong belonged and most of whose norms he accepted, greatly illuminates his broader motivations and the interwar relationship between finance and overall international diplomacy. Strong’s work for international stabilization also provides revealing insight into the limits of American internationalism during the 1920s and the degree to which, in both finance and diplomacy, the interwar years represented a transitional period between the restricted pre-1914 American world role and the far more sophisticated assumptions which would guide United States policies in the aftermath of the Second World War.

Strong’s career as governor encompassed 15 years of rapid domestic and international change. The outbreak of the First World War just a few weeks

■ This article is based on a paper presented as part of the seminar series at the Federal Reserve Bank of Richmond. The author, Priscilla Roberts, is Lecturer in History and Director of the Centre of American Studies, University of Hong Kong. The article benefited greatly from the comments of Robert Hetzel, Marvin Goodfriend, and Roy H. Webb. Thanks are due to all for so generously sharing their time and expertise. The views expressed are the author’s and not necessarily those of the Federal Reserve Bank of Richmond or the Federal Reserve System.

after he became governor in 1914 greatly enhanced the economic position of the United States. American manufacturers, financed by American bankers, provided much of the materiel essential to the Allied war effort, causing a flood of gold into the United States and tipping the international balance of trade and payments heavily in favor of the United States. When the war ended in 1918, European nations' ability to undertake postwar reconstruction depended upon the extent to which they could tap into the accumulated American capital reserves. During the war the U.S. economy boomed but American prices soared. Once fighting ended in late 1918, a short but intense recession occurred in 1920–1921, the product of a combination of the cessation of wartime orders and the Federal Reserve Board's efforts to end inflation by raising interest rates. After 1922, for most of the decade the American economy boomed, enjoying both real growth and price stability and generating the surplus funds necessary to enable Americans to invest heavily overseas. In the mid-1920s, private American loans financed both the return of most European countries to the gold standard and a wide array of European government and business enterprises. The American stock market slump of October 1929 marked the end of this prosperity. It precipitated a range of interlocking domestic and international economic difficulties whose constantly intensifying destructive synergy led to the worldwide Great Depression, the impact of which persisted until the late 1930s. The Federal Reserve System's inability to cope with the crisis led directly to the Banking Act of 1935, which greatly enhanced the powers of the Washington-based central Federal Reserve Board while diminishing those of the constituent regional Federal Reserve Banks.

1. THE CONTEXT OF STRONG'S IMPERIALISM

It is worth remembering that Strong was merely one individual in a group of prominent interwar American figures who were committed to what they termed "internationalist" policies and who often worked closely together to this end. This foreign policy elite generally favored expanding their country's international diplomatic and economic role. Its members usually supported American intervention against Germany in the First World War and U.S. participation in an international organization to maintain peace and in efforts to facilitate Europe's postwar economic recovery. Many also endorsed international arms limitation and some an American guarantee of France's security against a potential future German attack. There was a strong Anglophile element to their thinking: Most believed that an Anglo-American alliance, formal or informal, and Anglo-American diplomatic and economic cooperation would be fundamental to any acceptable postwar settlement.¹

¹ On this outlook, see Priscilla Roberts, "The First World War and the Emergence of American Atlanticism 1914–20," *Diplomacy and Statecraft* 5:3 (November 1994), 569–619; idem, "The

Insights drawn from more traditional diplomatic history, as opposed to economic history, can help to illuminate some of Strong's policy choices, suggesting that his financial activities can only be fully understood when viewed in the overall context of contemporaneous broad internationalist developments within the United States. In particular, his profound sympathy for the Allies during the First World War, his support for American assistance to the Allied cause, and his belief that Anglo-American cooperation, economic and otherwise, must provide the foundation of the postwar international order, were far from unique. This outlook was shared not only by most in the New York financial community, the Morgan partners, for example, but also by the majority of the American East Coast elite, such as Theodore Roosevelt, his secretary of state, Elihu Root, Root's protege Henry L. Stimson, and numerous others.

The Anglo-American emphasis of the First World War and the 1920s seems to have derived, in large part, from the broadly Anglo-Saxonist views of the late-nineteenth- and early-twentieth-century U.S. upper crust. Roosevelt and the circle around him subscribed to Mahanist views that American security and the Monroe Doctrine had always depended upon Britain's goodwill and the consequent tacit protection that the British fleet afforded against the depredations of other European powers.² The Anglo-Saxonist movement reached its apogee in the years around the turn of the century. Throughout the nineteenth century, especially from the 1880s onwards, historians and political theorists, such as the British Edward August Freeman, John Mitchell Kemble, and John Richard Green, and their American counterparts, James K. Hosmer, Herbert Baxter Adams, John W. Burgess, and the even more influential Reverend Josiah Strong, John Fiske, and Mahan himself, disseminated and popularized the belief that the Anglo-Saxon race, in effect the British and Americans, was uniquely capable of self-government and had evolved the best and most democratic institutions to date.³ In addition, many admired the British Empire as an

Anglo-American Theme: American Visions of an Atlantic Alliance, 1914–1933," *Diplomatic History* 21:3 (Summer 1997), 333–64.

² See Alfred T. Mahan, *The Interest of America in Sea Power, Present and Future* (Boston: Little Brown, 1897), esp. 27, 49–51, 107–34, 189–90, 257–59; idem, *The Interest of America in International Conditions* (Boston: Little Brown, 1910), esp. 35–124, 155–85; idem, *Lessons of the War With Spain* (Boston: Little Brown, 1899), 289–98; Robert Seager, *Alfred Thayer Mahan: The Man and His Letters* (Annapolis: Naval Institute Press, 1977), 148–49, 225–26, 268–69, 522–25; Howard K. Beale, *Theodore Roosevelt and the Rise of America to World Power* (Baltimore: Johns Hopkins University Press, 1956), 144–45; William C. Widenor, *Henry Cabot Lodge and the Search for an American Foreign Policy* (Berkeley: University of California Press, 1980), 87–91, 149, 158–59; Kenton J. Clymer, *John Hay: The Gentleman in Politics* (Ann Arbor: University of Michigan Press, 1975), 125–29.

³ The origins of this tradition are covered in Reginald Horsman, *Race and Manifest Destiny: The Origins of American Racial Anglo-Saxonism* (Cambridge, MA: Harvard University Press, 1981). For its later development, see Stuart Anderson, *Race and Rapprochement: Anglo-Saxonism and Anglo-American Relations, 1895–1904* (Rutherford, NJ: Fairleigh Dickinson University Press, 1981); Beale, *Theodore Roosevelt*, 41–47; David S. Healy, *US Expansionism: The Imperialist*

example of enlightened government.⁴ Prominent British statesmen, for their part, were eager to welcome the United States into the imperialist club as a fellow Anglo-Saxon power which would, they hoped, be an ally. Conscious of their own isolation vis-à-vis the new European powers, especially the increasingly assertive Wilhelmine Germany, they hoped that the United States and Britain might establish at least a de facto alliance.⁵

This viewpoint informed Strong's own Manichaeic interpretation of the war as a global struggle between the forces of good and evil. It was reinforced by Strong's personal ties with Britain, and given added ideological underpinning by the belief that Britain and the United States shared a common Anglo-Saxon heritage, one incomparably superior to that of any other nation. On the outbreak of the First World War, every indication is that Strong's sympathies were automatically and unhesitatingly pro-Ally, and that he was determined to do all in his power to assist the Allies. This sentiment was entirely typical of the social circles in which he moved.⁶ It also had a major impact upon his conduct of wartime and postwar Federal Reserve business, predisposing him to close cooperation with Britain and to a world view to which intimate Anglo-American collaboration was fundamental.

The prominence of international considerations in Strong's policymaking should also be perceived as part of the broad outlook of the New York financial community, and as one aspect of the development since the late nineteenth century of a sense that the United States was a world power, which should both behave and be treated as one. One important goal of the Federal Reserve System's founders, particularly those New York bankers who were among its most prominent architects, was to provide the United States with a central banking system which would enable their country to fulfill its potential as an international financial power. Throughout the First World War and the 1920s,

Urge in the 1890s (Madison: University of Wisconsin Press, 1970), 13–16, 29–33, 123–24, 138–42; Richard Hofstadter, *Social Darwinism in American Thought*, rev. ed. (Boston: Beacon Press, 1955), 170–84; Michael H. Hunt, *Ideology and US Foreign Policy* (New Haven: Yale University Press, 1986); Bradford Perkins, *The Great Rapprochement: England and the United States, 1895–1914* (New York: Atheneum, 1968), 74–83.

⁴ See Roberts, "The First World War," 592. See also Robert E. Osgood, *Ideals and Self-Interest in America's Foreign Relations: The Great Transformation of the Twentieth Century* (Chicago: Chicago University Press, 1953), 66–70; Hofstadter, *Social Darwinism*, 179–84; Beale, *Theodore Roosevelt*, chs. 1–2; Healy, *US Expansionism*, 33, 38–39, 114, 122–25, 129–37; Hunt, *Ideology and US Foreign Policy*, 79–81.

⁵ See Anderson, *Race and Rapprochement*, 86–94, 112–29; Beale, *Theodore Roosevelt*, 96–96, 139–40; David Dumbleby and David Reynolds, *An Ocean Apart: The Relationship Between Britain and America in the Twentieth Century* (London: Hodder and Stoughton, 1988), 40–41; Osgood, *Ideals and Self-Interest*, 58–59; Perkins, *Great Rapprochement*, 51–53, 65–67; D. C. Watt, *Personalities and Policies: Studies in the Formulation of British Foreign Policy in the Twentieth Century* (London: Longmans, 1965), 28–30.

⁶ For a broader exploration of this outlook, see Roberts, "The Anglo-American Theme," 333–64.

Strong and other leading New York bankers perceived the System primarily in this light, as part of America's mechanisms for dealing with the outside world. Although their numbers were relatively small, they were highly influential. They included some of the brightest up-and-coming young men from the top East Coast banks. Among them were Henry P. Davison of J. P. Morgan and Company, the intellectual Paul M. Warburg of Kuhn, Loeb and Company, and Frank A. Vanderlip of the National City Bank of New York, not to mention Strong himself and his colleague Fred I. Kent of the Morgan-associated Bankers Trust Company. In the early twentieth century all these institutions had substantial international interests and plans to enhance them. For the U.S. finance system, which until late in the nineteenth century had looked to Europe to provide capital, their activities represented a new departure.⁷

From this perspective, the creation and operation of the Federal Reserve System were an integral part of the increasingly assertive U.S. policies which characterized the early part of the century. The United States flexed its military muscles in the Venezuela crisis and the Spanish-American War, as it sent the Great White Fleet around the world, acquired the Philippines, administered the customs of several Latin American countries, participated in international arbitration conferences, helped to settle the Russo-Japanese War, intervened in Mexico, and ultimately developed the plans which would eventually result in the League of Nations. In this sense, it seems highly significant that as a young man Strong was one of a coterie of youthful diplomats, journalists, financiers, and military men, whose shared belief that the United States must assume a much greater world role than in the past brought them together in a small, exclusive private club, often termed "the Family," at 1718 H Street in Washington, D.C.⁸

It can also be argued that, as with a number of other American internationalists among his contemporaries, Strong's passionate devotion to internationalism and to European economic reconstruction fulfilled certain personal needs of his own. He was a man who needed a purpose, even a mission, in life. Shortly before his death, Strong wrote: "All of my experience of life (and sometimes it grips me hard) convinces me that nowhere can one get better guides than from the teachings of Christ and [Abraham] Lincoln. . . . Maybe it's this point of view which gives me more joy when salaries are raised than when the discount rate is."⁹ Indeed, to some degree his internationalist activities served as a near-religious faith for him. In the United States, Strong was perhaps the

⁷ See Lawrence Broz, *The International Origins of the Federal Reserve System* (Ithaca: Cornell University Press, 1997).

⁸ See A. J. Bacevich, "Family Matters: American Civilian and Military Elites in the Progressive Era," *Armed Forces and Society* 8 (Spring 1982), 405-18.

⁹ Strong to Walter T. Stewart, July 6, 1928, File 1117.2, Benjamin Strong Papers, Federal Reserve Bank of New York, New York.

most dedicated advocate of Europe's recovery, and it became a cause to which he literally devoted his life. Perhaps for personal reasons, Strong virtually drove himself to death in the service of the Federal Reserve System and European reconstruction. After the suicide of his first wife and his divorce from her successor in 1916, by all appearances Strong's only interest in life became his work. Shortly after his second marriage ended, Strong suffered the first of a recurrent series of bouts of tuberculosis brought on by overwork, a malady whose associated complications ultimately killed him. Even when confined to a Colorado or Arizona sanatorium, supposedly recuperating, he habitually wrote lengthy letters to associates on every aspect of Federal Reserve policy. The "determination" to finish the "job" of European reconstruction was perhaps the only thing keeping him alive. In 1928 Strong recounted his doctor's reaction when he learned of his patient's decision to retire as governor, a choice which seems to have been precipitated by his relationship with a much younger opera singer, whom he intended to marry:

His advice was to quit as soon as possible and do it with as little effort as possible. But he was not satisfied with that advice until he knew my plans, as he feared that after a few months, inactivity might be worse than the work would be after a long rest. He feels I need an anchor and naturally thought of an occupation. . . . He feels that for five years past and longer I have been kept alive only by my determination to keep alive until a job was finished, once I let go that idea I would crack.¹⁰

It was perhaps not entirely surprising that shortly afterwards Strong died, still supposing that the task of European economic reconstruction had been successfully completed.

2. STRONG AS INTERNATIONALIST

Strong was unquestionably a major force in the post-World War I economic reconstruction of Europe. During the 1920s, credits extended by the New York Federal Reserve Bank to the Bank of England, the Banque de France, the Reichsbank, and other central banks, underpinned the restoration of the gold standard throughout most of Western Europe. This was an endeavor in which Strong worked closely with the New York financial community, especially the preeminent investment bank, J. P. Morgan and Company. Once a country had made the commitment to return to the gold standard and had undertaken the preparatory fiscal work of balancing budgets, cutting expenditures, and, in general, observing orthodox economic principles, the Morgan banking firm generally handled the American portion of loans to European governments,

¹⁰ Strong to Stewart, July 26, 1928, *ibid.*; on Strong's temperament, see also Lester V. Chandler, *Benjamin Strong: Central Banker* (Washington, DC: Brookings Institution, 1958), 1–2, 47–53.

facilities intended to finance stabilization and thereby, it was hoped, promote economic recovery from the ravages of war. On occasion the New York Federal Reserve Bank also furnished credits to central banks in countries undertaking stabilization measures. These undertakings were by no means purely American in character, though the war had so diminished the ability of Europe's central bankers to orchestrate such endeavors and of private bankers to float the associated loans that the Europeans required American assistance to do so. The 1920s return to the gold standard was choreographed by a concert of central bankers, an enterprise in which Strong and the Morgan partners were closely associated with the Bank of England, the Banque de France, the Reichsbank, and the central banks of Austria, the Netherlands, Italy, and Belgium, as well as with those countries' leading private bankers. Biographies of Montagu Norman have also drawn attention to the close friendship that existed between him and Strong and their joint commitment to restore the gold standard in Europe and so implement a return to the international financial normalcy of the prewar years.¹¹ Norman was very conscious that Britain's loss of financial stature because of the war meant that, to accomplish postwar economic reconstruction, Europe "need[ed] the active cooperation of our friends in the United States," the Federal Reserve and private bankers whose financial participation and assistance was a *sine qua non* for the success of all such schemes.¹²

During the First World War, disputes among New York bankers over the impact which Federal Reserve policies might have upon the outcome of the European war led to fierce debates within the System. In the 1920s, by contrast, much of the New York financial community essentially shared a common outlook as to the desirability of accomplishing Europe's financial rehabilitation. While those investment bankers with German ties found the Morgan firm and its allies moved too slowly for their liking in providing loans to finance German recovery, they differed over timing rather than over fundamentals.¹³ At least

¹¹ On these endeavors, see Richard Hemmig Meyer, *Bankers' Diplomacy: Monetary Stabilization in the Twenties* (New York: Columbia University Press, 1970); Stephen V. O. Clarke, *Central Bank Cooperation 1924–31* (New York: Federal Reserve Bank of New York, 1967); Chandler, *Benjamin Strong*, chs. 6–11; R. S. Sayer, *The Bank of England, 1891–1944*, 3 vols. (Cambridge: Cambridge University Press, 1976), Vol. 1, chs. 7, 8, 15; Sir Henry Clay, *Lord Norman* (London: Macmillan, 1957), chs. 5, 6; Andrew Boyle, *Montagu Norman* (New York: Weybright and Talley, 1967), chs. 7, 8; Barry Eichengreen, *Golden Fetters: The Gold Standard and the Great Depression 1919–1939* (New York: Oxford University Press, 1992), chs. 4–7.

¹² Quotation from Norman to G. Vissering, November 16, 1921, File G3/177, Bank of England Archives, London; see also, for example, Norman to W. H. Clegg, October 13, 25, December 17, 1921, *ibid.*; Norman to V. Moll, February 6, 1922, *ibid.*; Norman to Baron Havenstein, June 23, 1922, File G3/178, *ibid.*

¹³ See Roberts, "The American 'Eastern Establishment' and World War I: The Emergence of a Foreign Policy Tradition" (Ph.D. diss., Cambridge University, 1981), 530–36. Initially the National City Bank of New York, the largest United States commercial bank, was far less wedded to European recovery and currency stabilization than the investment banks, declining to participate in the Austrian stabilization loan of 1923 and querying the 1925 Federal Reserve line of

in part, Strong's dominance of the Federal Reserve System during the 1920s reflected the fact that the New York financial constituency was firmly united behind him, another indication of the manner in which, despite the attempts of the System's founders to prevent any one region attaining such influence, New York was able to prevail on most important issues.

The roots of Strong's policies during the 1920s can be traced back at least to the First World War. Strong became governor of the Federal Reserve Bank of New York almost concurrently with the outbreak of war in Europe. Like other New York bankers, Strong perceived the war as providing an opportunity to expand America's international financial role, to allow New York to become a center which could aspire to rival London's preeminent position. One field of opportunity for the United States was the development of a market in commercial paper, or bankers' acceptances, previously a London monopoly. The new Federal Reserve Act permitted the Federal Reserve Banks to buy, or rediscount, such paper.¹⁴ A second was the potential for U.S. banks to play a far greater role in international finance than ever before, floating loans which would likewise once have been left to the London market. Strong eagerly promoted the development of American acceptance financing, welcoming the manner in which the war facilitated the growth of a U.S. acceptance market.¹⁵

On several wartime trips to London, Strong developed far closer ties than before with British bankers—including those in the Bank of England—and explored the possibilities of obtaining for the United States a decidedly more substantial share of international financing. Even before the United States intervened in the First World War, Strong perceived that after the war Europe would desperately require capital for reconstruction, and that his country would possess the only substantial reservoir thereof.¹⁶ Some American bankers,

credit which the Bank of England negotiated to support Britain's return to gold. Later in the decade, however, the National City overinvested in foreign loans, particularly German bonds, and suffered severe losses in the subsequent European financial crash. *Ibid.*, 537–39; Silvano A. Wueschner, *Charting Twentieth-Century Monetary Policy: Herbert Hoover and Benjamin Strong, 1917–1927* (Westport, CT: Greenwood Press, 1999), 65–67, 72, 88–89; Harold van B. Cleveland and Thomas F. Huertas, *Citibank 1812–1970* (Cambridge, MA: Harvard University Press, 1985), 145–50, 167–68.

¹⁴ See James Livingston, *Origins of the Federal Reserve System: Money, Class, and Corporate Capitalism, 1890–1913* (Ithaca: Cornell University Press, 1986), 202–03; Burton I. Kaufman, *Efficiency and Expansion: Foreign Trade Organization in the Wilson Administration, 1913–1921* (Westport, CT: Greenwood, 1974), 30, 76; Carl P. Parrini, *Heir to Empire: United States Economic Diplomacy, 1916–1923* (Pittsburgh: University of Pittsburgh Press, 1969) 103–04; Broz, *International Origins*, 142–159; Clyde William Phelps, *The Foreign Expansion of American Banks: American Branch Banking Abroad* (New York: Ronald Press Company, 1927), 104–11.

¹⁵ Strong to Paul M. Warburg, August 5, September 10, 1915, Box 12, Paul M. Warburg Papers, Yale University Library, New Haven, CT; Chandler, Benjamin Strong, 83–96; Priscilla Roberts, “‘Quis Custodiet Ipsos Custodes?’: The Federal Reserve System's Founding Fathers and Allied Finance in the First World War,” *Business History Review* 73:4 (Winter 1998), 585–620.

¹⁶ Strong to Fred I. Kent, July 10, 1915, U. S. Senate, 74 Cong., 2d Sess., *Hearings Before the Committee Investigating the Munitions Industry*, 40 vols. (Washington, DC: Government Printing

particularly the Morgan partners, consciously discountenanced predictions of postwar American commercial and financial predominance.¹⁷ Strong carefully emphasized that his country's financiers hoped not to shoulder aside their British counterparts, but to enter into a partnership with them. He told Norman: "I do hope that you and other sensible and friendly people in London do not attach too much importance to the vain-glorious boasting of the American press about these financial developments."¹⁸ Even so, in a speech in March 1916, Strong—though sweetening the pill by emphasizing his own complete support for the Allied cause—told prominent London bankers:

[T]his war might entail tremendous sacrifices upon the English people, including the bankers, and if it involved the surrender of some part of the world[']s banking to New York, at least we believed that it would be surrendered upon fair terms, on fair competitions [sic], and that some of us felt that if this great sacrifice had to be made, England, which had established the standard of commercial honor and integrity throughout the world, would rather relinquish this great trust into the hands of those who spoke their own language and who believed in the same institutions, and had, I hoped, the same high ideals of honor and integrity.¹⁹

While some British financiers, including the officials of the Bank of England, Sir Felix Schuster of the Union of London and Smith's Bank, the partners of Morgan Grenfell and Company, J. P. Morgan and Company's sister firm, and Sir Charles Addis of the Hong Kong and Shanghai Banking Corporation, were prepared to welcome or at least—in return for access to U.S. funds—tolerate American cooperation, others were less sanguine.²⁰ Yet few British bankers were likely to welcome wholeheartedly any diminution of their own country's financial predominance. Not unsympathetically, Strong recounted that, when he visited Britain in 1916, Sir Edward Holden, chairman of the London City and Midland Bank, "made an address at the Manchester Chamber of Commerce in which he referred to efforts of American bankers to undermine Lombard Street's

Office, 1934–36), 30:9527; Strong, diary, March 28, 1916, File 1000.2, Benjamin Strong Papers, Federal Reserve Bank of New York.

¹⁷ See, for example, Thomas W. Lamont, address before Cosmopolitan Club, March 31, 1915, 29–30, File 144-20, Thomas W. Lamont Papers, Baker Library, Harvard Business School, Boston, MA; Lamont, "Financial Illusions of the War," 209–11, *ibid.*; Dwight W. Morrow, "Address delivered at New York State Bankers Association Dinner," January 7, 1916, "Speech to Commercial Club," November 9, 1916, Speeches File, Dwight W. Morrow Papers, Robert Frost Library, Amherst College, Amherst, MA. Strong congratulated Morrow on the first of these speeches. See Strong to Morrow, January 16, 1916, File Bankers Association, New York State, *ibid.*

¹⁸ Strong to Norman, March 22, 1917, File 1116.1, Strong Papers.

¹⁹ Strong, diary, March 10, 1916, reporting speech at London Clearing Banks dinner, File 1000.2, *ibid.*; cf. Strong to Alexander Mackenzie, July 1, September 17, 1915, File 1112.5, *ibid.*; Strong to Sir Edward Holden, April 19, 1917, File 1112.3, *ibid.*

²⁰ Strong, diary, March 6–8, 10, 13, 21, 22, 23, 1916, File 1000.2, *ibid.*

supremacy and he was so overcome by the mere thought that the old man broke down and wept.”²¹ Strong’s policies towards Britain rather neatly exemplify the Anglo-American relationship of “competitive cooperation,” which the historian David Reynolds perceives as characterizing the immediate pre-World War II period.²²

Yet, even as Strong pursued an enhanced financial position for his country, he also implemented policies that might be perceived as assisting Britain and the other Allies at the expense of the United States. It is hard to exaggerate the depth of Strong’s commitment to the Allies. Like many others of the East Coast upper-crust elite, those Anglophiles whom Henry F. May has termed the “custodians of culture,” Strong perceived the First World War as a global struggle between the forces of good and evil, Prussianism, Kaiserism, and autocracy against democracy, freedom, civilization, and Christianity.²³ Even before American intervention, he identified himself almost completely with the Allied cause. Publicly explaining the meaning of the war in 1917, Strong stated:

Four hundred years ago [sic] the Anglo-Saxon race received the first great bill of rights upon which their personal liberties are founded, when King John of England signed the great Magna Charta at Runnymede. For two hundred and fifty years that race in England has been engaged in building up constitutional government. It was the beginning, the foundation of our personal liberties; the foundation of the liberties of the English-speaking peoples throughout the world. It was bequeathed to us one hundred and fifty years ago by Great Britain, and for substantially four hundred years we English-speaking people, and those from other countries whom we have adopted, have been developing our institutions based upon that foundation of constitutional law. For forty years, since the war between Prussia and France, a military autocracy in Germany, filled with lust for power, has been building up a great military structure, on an entirely different theory of personal or autocratic government, and now they have come into conflict—so the question is, which is going to win? That is the greatest problem the human race has ever faced—constitutional government against personally organized military government, with the Kaiser at its head.²⁴

Strong’s support for the Allied cause was slightly less fervent than that of many of his associates, for example the members of the Morgan firm. The Morgan

²¹ Strong to James Brown, September 4, 1916, *Munitions Hearings*, 31:9937.

²² See David Reynolds, *The Creation of the Anglo-American Alliance, 1937–1941* (Chapel Hill: University of North Carolina Press, 1981).

²³ See Henry F. May, *The End of American Innocence: A Study of the First Years of Our Own Time, 1912–1917* (New York: Oxford University Press, 1959), 363–37; Roberts, “The First World War,” 575–56; idem, “The Anglo-American Theme,” 338–30.

²⁴ See Strong, “The Sale of Liberty Bonds,” address to the Four-Minute Men, New York City, October 1, 1917, in Strong, *Interpretations of Federal Reserve Policy in the Speeches and Writings of Benjamin Strong*, ed. W. Randolph Burgess (New York: Harper & Row, 1930), 41.

partners, to whom he had always been extremely close, and whom he would probably have joined had they not persuaded him to take the Federal Reserve position instead, financed and handled most of the Allied war purchases in the United States.²⁵ Like the Morgan partners, well before American intervention Strong was determined to do all he could to help the Allies. To this end, he pushed for interpretations of the new Federal Reserve System's regulations that would assist the Allies in their increasingly desperate quest to obtain American financing for the war purchases which were vital to their ability to continue fighting the war. In doing so, Strong at least temporarily undercut the development of a New York acceptance market. By permitting repeated extensions of commercial credits against Allied war purchases, he effectively converted these securities into medium-term unsecured loans to the Allied powers, which absorbed most of the capital that would otherwise have been available to finance genuine acceptances.²⁶ Strong was also one of those bankers who supported the extension of American loans and credits to the Allies. In addition, in 1916 he negotiated correspondent relationships for the New York Federal Reserve Bank with the Bank of England and the Banque de France, one purpose of which was to facilitate the Allies' American fund-raising.²⁷

Strong's efforts to assist the Allies involved him in lengthy and fiercely contested battles with another major figure in the Federal Reserve System, the New York banker Paul M. Warburg. The intellectual Warburg was perhaps Strong's closest friend; the two men had been allies in the struggle to create the Federal Reserve System, and Warburg was one of those who persuaded him to accept the position of governor. The German-born Warburg himself became a vice-governor of the Federal Reserve Board, and probably its strongest voice.

²⁵ On the Morgan firm's wartime role, see "Memorandum Relative to Financing by J. P. Morgan & Co. during the World War," no date, File 213-7, Lamont Papers; Kathleen Burk, *Britain, America, and the Sinews of War, 1914-1918* (Boston: Allen Unwin, 1985), chs. 1-5; idem, *Morgan Grenfell 1838-1988: The Biography of a Merchant Bank* (Oxford: Oxford University Press, 1989), 103-34; Vincent P. Carosso, *Investment Banking in America: A History* (Cambridge, MA: Harvard University Press 1970), 204-07; Ron Chernow, *The House of Morgan: An American Banking Dynasty and the Rise of Modern Finance* (New York: Atlantic Monthly Press, 1990), ch. 10; Edward M. Lamont, *Ambassador from Wall Street: The Story of Thomas W. Lamont, J. P. Morgan's Chief Executive* (Lanham, MD: Madison Books, 1994), 67-85; Harold Nicolson, *Dwight Morrow* (New York: Harcourt Brace, 1935), 172-93; Roberts, "The American 'Eastern Establishment' and World War I," 247-61.

²⁶ See Roberts, "'Quis Custodiet Ipsos Custodes?,'" 592-617.

²⁷ See Roberts, "'Quis Custodiet Ipsos Custodes?,'" 605-06; Chandler, *Benjamin Strong*, 93-98; Paul P. Abrahams, "The Foreign Expansion of American Finance and Its Relationship to the Foreign Economic Policies of the United States" (Ph.D. diss., University of Wisconsin, 1967), 82-83; Sayers, *Bank of England*, 1:93. For details of these negotiations, see Strong diary and letters during European trip of 1916, File 1000.2, Strong Papers; *Munitions Hearings*, 27:8239-8252; exhibits 2354-2395, *ibid.*, 8428-8455; File Federal Reserve Board-Bank of England 1915-1918, Box 329, 74 Cong., 2nd Sess., U.S. Sen., Papers of the Special Committee Investigating the Munitions Industry, Record Group 46, National Archives, Washington, DC.

Until American intervention in April 1917, he and Strong waged a persistent battle as to whether Federal Reserve regulations should be framed and interpreted in such a way as to facilitate the Allies' ability to finance their war purchases in the American market. Perhaps not surprisingly, while both men couched their arguments in terms of the best interests of the United States, Strong invariably favored courses which would assist the Allies while Warburg, though more neutral and pacifist than pro-German, supported measures which would encourage the Allies to consider a negotiated peace settlement. Initially, Strong was victorious; then, in late 1916 it seemed that Warburg and his allies on the Federal Reserve Board, W. P. G. Harding, its chairman, and Adolph C. Miller, a fellow governor, had finally triumphed, thanks to assistance from President Woodrow Wilson. Shortly afterwards German determination to wage unlimited submarine warfare on the United States impelled an American declaration of war, and the whole issue became moot. Even so, it demonstrated the manner in which noneconomic considerations, particularly sympathies for one or another European country, could affect the judgment of figures within the Federal Reserve System.²⁸

To some degree this long-running debate prefigured Strong's continuing pattern of behavior during most of the 1920s, when he habitually gave international considerations a high priority. As early as 1916, Strong supported postwar "disarmament" and "a formal, definite understanding between all the great nations, including the United States, that differences between nations will be settled without force and that settlement, if necessary, will be imposed upon parties to disputes by a combination of the neutrals."²⁹ Moreover, he hoped that this would rest upon a foundation of Anglo-Franco-American cooperation and understanding, though he feared that for political reasons any such alliance would have to remain informal.³⁰ In negotiating the correspondent relationship with the Bank of England, he told Lord Cunliffe, its governor, that he favored such an arrangement not simply for commercial reasons, but also because he "believed . . . that the world's future very largely depends upon the character of the understandings between your people and ours."³¹

Whereas many pro-Ally Americans tended to believe that any lasting peace settlement must be contingent on a conclusive Allied victory, in late 1916 Strong endorsed Woodrow Wilson's attempts to bring about a negotiated peace

²⁸ See Roberts, "'Quis Custodiet Ipsos Custodes?'" 585-620.

²⁹ Strong to Warburg, December 15, 1916, File 211.3, Strong Papers; see also Strong to Warburg, November 17, 1916, *ibid.*, Strong, diary, March 28, 1916, File 1000.2, *ibid.*; Strong to James Bryce, October 23, 1916, File 1111.3, *ibid.*

³⁰ Strong, diary, March 28, 1916, File 1000.2, *ibid.*; Strong to Bryce, October 23, 1916, File 1111.3, *ibid.*

³¹ Strong to Cunliffe, December 3, 1918, File 1115.1, *ibid.*

settlement, provided that American influence was employed to win peace terms favorable to the Allies.³² Even before this, he had opposed a punitive peace settlement, arguing that “when the war stops—it should actually STOP;” whereas the imposition of harsh economic terms upon Germany would effectively continue hostilities through nonmilitary channels and “lead to a renewal of the very conditions which gave rise to the present war.”³³ He warned his British friend Lord Bryce, a former ambassador to the United States, that his country, while willing in principle to participate in the postwar international settlement, might well refuse to guarantee “peace arrangements in which was consciously planted the germ of later strife.” In addition, he told Bryce, British attempts to subjugate Germany economically might lend added force to the contentions of those Americans who advocated commercial competition with Britain, and that such policies would in any case be unworthy of England’s distinguished and honorable diplomatic record.³⁴

Strong was indeed concerned by proposals that the British and French developed at the Paris Economic Conference of June 1916, which appeared to envisage a protectionist trading bloc of the Allied nations. The meeting’s recommendations included the postwar prohibition of trade with former enemy states, the elimination of enemy firms in Allied countries, the common pooling of the Allies’ natural resources, their cooperative purchase of raw materials not otherwise available, restrictions on former enemy powers’ shipping, and measures to encourage mutual trade among the former Allies.³⁵ Although the British contended that such an Allied economic bloc would be aimed only at their quondam enemies, not at the United States, Strong warned British friends that such commercially discriminatory measures would severely impede the achievement of any type of postwar Anglo-American entente or cooperation. He believed that if the United States “avoided trouble with Germany and kept out of the war” such measures, although supposedly intended merely as anti-German, “would inevitably be directed to some extent against us.” A free trader, he also feared that proposals such as those advanced at the Paris Economic Conference gave added weight to the arguments of those Americans who supported protective tariffs, export trade combinations, “and other similar projects, all possibly proper enough as weapons of defence, but which will, I hope, not be required in order to face a world which has armed itself with

³² Strong to Bryce, January 12, 1917, File 1111.3, *ibid.*; see also Strong to J. H. Treman, December 21, 1916, File 333.221, *ibid.* Somewhat erroneously, Strong believed that the German leaders were willing, even eager, to make peace. Strong to W. P. G. Harding, November 20, 1916, *Munitions Hearings*, 31:9674.

³³ Strong, diary, March 9, 1916, File 1000.2, Strong Papers.

³⁴ Strong to Bryce, October 23, 1916, File 1111.3, *ibid.*

³⁵ See Parrini, *Heir to Empire*, 15–17; Gerd Hardach, *The First World War, 1914–1918* (London: Penguin, 1977), 237–41; Kaufman, *Efficiency and Expansion*, 166–75.

every political contrivance for a commercial strife to be carried to the point of extermination.”³⁶

Strong’s attitude towards European reconstruction was thus moderate and pragmatic, but he never doubted that the United States should participate in this enterprise. From before American intervention until his death, Strong remained dedicated to the cause of facilitating European recovery. Inevitably, one consequence of this would be a great increase in U.S. international financial activities, a development consonant with Strong’s long-time interest in building up the United States as a world economic power. After American intervention, he stated publicly, repeating his utterances while his country was still neutral, that the United States would possess the only large resources of postwar capital available to finance Europe’s economic recovery.³⁷

When the war ended, Strong continued to state the case for the provision of American capital to finance European recovery, both as immediate long-dated credit for food and raw materials to tide Europe over the impending winter of 1919–1920, and longer-term loans and investment capital to facilitate economic redevelopment. Like many leading American bankers, at the end of the war Strong believed that economic reconstruction was far more vital to the restoration of European stability than the settlement of political questions. As he had earlier, Strong opposed a Carthaginian peace, supporting the imposition of a relatively moderate, rather than harshly retributive, reparations settlement on Germany. He also supported the reduction or even cancellation of the war debts that the Allies owed the United States.³⁸ He called for speedy ratification of the Treaty of Versailles, even if some of its terms were imperfect, on the grounds that until this took place the maintenance of a technical state of war with Germany would reinforce American businessmen’s prevailing uncertainty as to European conditions, discouraging private American investment in Europe. He also hoped that after ratification the League of Nations machinery would provide some of the administrative infrastructure needed to accomplish economic reconstruction and solve such problems as German reparations and Allied war debts.

In the long term, Strong hoped for extensive American private investment in Europe, which he believed should be predicated upon European governments’ return to strict financial discipline, balanced budgets, governmental economy, currency stabilization, minimal state intervention, and the removal

³⁶ Strong, “Interview with Lord Kitchener,” March 24, 1916, File 1000.2, Strong Papers; Strong, diary, March 28, 1916, *ibid.*; Strong to Bryce, October 23, 1916, File 1111.3, *ibid.*

³⁷ Strong, “An Appeal to Buy Bonds,” address at mass meeting at the Metropolitan Opera House, New York City, September 27, 1918, in *Interpretations*, 53.

³⁸ See Strong, “Memoranda,” on inter-Allied debts and reparations, Strong to Leffingwell, July 31, 1919, Strong, “Memorandum,” August 30, 1919, Strong, diary, September 13, 1919, all in File 1000.3, Strong Papers.

of preferential tariff barriers. In the short term, Strong argued, the American government should be prepared to extend some credits to European businessmen and governments, to tide them over their immediate difficulties.³⁹ Strong even expected the U.S. government to write off some such assistance, telling Russell C. Leffingwell, the Under Secretary of the Treasury who later became a leading Morgan partner, that “a part of the problem can be dealt with on a business basis and a part of it must be dealt with on an eleemosynary basis.”⁴⁰

In 1919 several American bankers to whom Strong was close, including his old friend Paul Warburg and Fred I. Kent, the president of the Bankers Trust Company, together with leading British and Dutch financiers, were instrumental in drafting the Amsterdam Memorial, signed by J. P. Morgan, Jr., as well as many leading European and American statesmen, bankers, and industrialists. This international petition called for the extension of large-scale American credits and loans to European governments and businesses, lenient intergovernmental debt settlements, a reparations assessment relatively generous to Germany, and a readiness on the part of both Americans and Europeans to make sacrifices for these ends. Strong firmly approved of the Memorial’s prescriptions, although he declined to sign it, on the grounds that “my relations with our treasury department [are] of such an intimate character that I feared the possibility of its being misunderstood and causing embarrassment which would, of course, have done harm rather than help the effort.”⁴¹ The Amsterdam Memorial led the League of Nations in December 1920 to endorse the ter Meulen plan, named after a Dutch banker, which called for European governments to issue bonds that could be used to guarantee private credits to finance Europe’s recovery. Although he had some reservations as to the degree of statism this undertaking involved, Strong suggested that American bankers might participate if their own government was prepared to take “an active and official part in the plans for European reconstruction.”⁴²

As early as 1921 Strong was eager to cooperate with other central banks to devise schemes to facilitate Europe’s economic recovery, probably through a variety of private credits guaranteed by European governments. At this time Charles Evans Hughes, the Secretary of State, refused to permit him to

³⁹ Strong to Leffingwell, July 31, August 21, 30, 1919, Strong, “Memorandum,” August 30, 1919, Strong to Harding, September 11, 1919, File 1000.3, Strong Papers; Strong to Norman, March 20, 1920, File 1116.1, *ibid.*

⁴⁰ Strong to Leffingwell, July 31, 1919, File 1000.3, *ibid.*

⁴¹ Strong to G. Vissering, March 29, 1920, File 1150.0, *ibid.*; for the drafts and text of the memorial and much correspondence among its supporters, see the materials in Box 17, Warburg Papers; the Warburg Memorial Collection, Boxes 18 and 19, Record Group 56, Records of the Department of the Treasury, National Archives II, College Park, MD; and Boxes 20 and 22, Robert H. Brand Papers, Bodleian Library, Oxford, England.

⁴² Strong to Hoover, June 9, 1921, quoted in Wueschner, *Charting Twentieth-Century Monetary Policy*, 27.

undertake such activities.⁴³ Strong also continued to urge Anglo-American financial and economic cooperation in promoting European economic recovery.⁴⁴ He remained anxious that financial and commercial rivalries should not disrupt Anglo-American harmony. Noting Britain's eagerness to attract American credit and investment capital, Strong suggested to Lord Cunliffe, Montagu Norman's predecessor as governor of the Bank of England, that "if this problem is approached in a friendly and cooperative spirit they [the British] are the one nation in the world to which credit will be freely given here, because, after all, it is the English businessman and banker that we trust."⁴⁵ Writing to Norman the same day, Strong stated: "I believe the greatest difficulty comes from a fear on the part of your London bankers of the [Sir Edward] Holden [chairman of the London City and Midland Bank] type that we are going to encroach upon the English banking preserves. Frankly, I don't see how it can be avoided for a time because when the period of unsettlement is over we are going to have the reserve of banking in this country and it is bound to find an outlet."⁴⁶ Writing in 1920 to an official of the New York Federal Reserve Bank, Strong stated that their institution "should always have it in mind" that its policies could adversely affect the British. "By this I do not mean to suggest that our policy should be shaped with regard to their interests, but rather that when our policy does appear to impose hardship upon them, the least we can do with such an intimate association is to keep them advised and give them some explanation of the reasons for our course."⁴⁷

As Strong's words suggest, and as the 1920s would demonstrate, however fervent his personal commitment to internationalism, the parameters within which he and the Federal Reserve System operated imposed distinct restrictions upon the degree to which he could make European recovery and stabilization his first priority. He could not ignore political pressures, internecine sectional disputes among American bankers and within the Federal Reserve System, and the domestic demands of the U.S. economy. Strong was also firmly wedded to orthodox, pre-Keynesian economic tenets rooted in the thinking of the prewar era. His policies in the decade after the war would demonstrate both the ambitious scope of internationalist central banking objectives in the United States and the de facto obstacles to their attainment.

⁴³ See Wueschner, *Charting Twentieth-Century Monetary Policy*, 27–32.

⁴⁴ Strong to Russell C. Leffingwell, July 31, 1919, File 1000.3, Strong Papers; Strong to Montagu Norman, November 22, 1918, February 5, May 21, 1919, File 1116.1, *ibid.*, Strong to Lord Cokayne, May 23, 1919, File 1115.2, *ibid.*

⁴⁵ Strong to Cunliffe, February 5, 1919, File 1115.1, *ibid.*

⁴⁶ Strong to Norman, February 1919, File 1116.1, *ibid.*; cf. Strong to Norman, November 22, 1918, May 2, 1919, *ibid.*; Strong to Cunliffe, December 3, 1918, Cunliffe to Strong, January 5, 1919, File 1115.1, *ibid.*; Strong to Leffingwell, July 25, 31, 1919, Strong, diary, July 28, 1919, File 1000.3, *ibid.*

⁴⁷ Strong to Pierre Jay, March 30, 1920, File 320.113, *ibid.*

Benjamin Strong, the Federal Reserve, and the Limits to Interwar American Nationalism

Part II: Strong and the Federal Reserve System in the 1920s

Priscilla Roberts

1. BENJAMIN STRONG: CONTEMPORARY VIEWS

Controversial in life, the dominating figure of Benjamin Strong, first governor of the Federal Reserve Bank of New York, continues to precipitate debate long after his death in 1928. “There are,” intoned former President Herbert Hoover, “crimes far worse than murder for which men should be reviled and punished.”¹ Perhaps slightly biased by the fact that the Great Depression had ruined his presidency, he was referring to what he perceived as deficiencies in Federal Reserve policy during the 1920s. In particular, Hoover believed that the United States Federal Reserve System, most of whose members he unkindly characterized as “mediocrities,” had been overly influenced by the priorities of its dominant figure, Benjamin Strong. Describing Strong as “a mental annex to

■ This article is based on a paper presented as part of the seminar series at the Federal Reserve Bank of Richmond. The author, Priscilla Roberts, is Lecturer in History and Director of the Centre of American Studies, University of Hong Kong. The article benefited greatly from the comments of Robert Hetzel, Marvin Goodfriend, and Roy H. Webb. Thanks are due to all for so generously sharing their time and expertise. The views expressed are the author’s and not necessarily those of the Federal Reserve Bank of Richmond or the Federal Reserve System.

¹ See Herbert Hoover, *The Memoirs of Herbert Hoover*, Volume III: *The Great Depression 1929–1941* (New York: Macmillan, 1941), 14.

Europe,” Hoover laid much of the blame for the stock market crash of 1929 and the subsequent Great Depression on the governor’s deep commitment to facilitating Europe’s economic recovery from the damage done by the First World War. During the 1920s, the majority of Europe’s governments, led by Great Britain, returned to the gold standard. Britain’s insistence on doing so at what Hoover termed a “fictitious rate” of \$4.86 to the pound sterling, in his opinion far too high, and Strong’s acquiescence in these policies, in turn led Strong to expand American credit by keeping American discount rates relatively low and manipulating the Reserve System’s open market operations. The rationale for this was that keeping interest rates lower in the United States than in Britain eased pressures on sterling and enabled the Bank of England, whose governor, Montagu Norman, was Strong’s closest friend, to maintain an overvalued pound. Hoover ascribed Strong’s policies to what he viewed as the malign persuasions of Norman and other central bankers, especially Hjalmar Schacht of the Reichsbank and Charles Rist of the Bank of France. He believed that due to Strong’s unwise predilections, from the mid-1920s onward the United States experienced credit inflation, which fuelled the stock market bubble that collapsed in the Great Crash of 1929. Although Hoover suggested that other economic weaknesses, including a “weak banking system” and the low purchasing power of farmers and white-collar employees, contributed to this, he argued that imprudent Federal Reserve policies bore the primary responsibility for the crash and the Depression.²

Hoover was not alone among Strong’s contemporaries in expressing the view that Strong’s efforts to aid Britain’s return to the gold standard laid the foundation for the Depression by triggering stock market speculation. At the onset of the Great Depression, Russell C. Leffingwell, a leading partner in the investment bank J. P. Morgan and Company, agreed with those who condemned Strong’s policies and ascribed to them at least some responsibility for the boom and final crash of that decade’s second half. Leffingwell did so even though Strong had close ties to the Morgan banking firm, which had provided much of the financing for European nations’ stabilization efforts.³

Within the Federal Reserve System, Strong’s rate policies of the mid-1920s also provoked substantial regional opposition, particularly from midwestern and agricultural elements, who generally endorsed Hoover’s subsequent analysis.⁴ It is generally accepted that in 1924 Strong engineered low interest rates in the United States, which by making the dollar and sterling respectively less and more attractive to investors drove up the foreign exchange value of the British

² *Ibid.*, 2–15, quotations from 8 and 9.

³ Leffingwell to Lamont, August 29, 1931, File 102-15, Thomas W. Lamont Papers, Baker Library, Harvard Business School, Boston, MA; cf. Leffingwell to Lamont, March 8, 1929, File 102-13, *ibid.*; Leffingwell to Lamont, May 29, 1929, File 103-14, *ibid.*

⁴ See note 10, below.

currency and facilitated Britain's return to the gold standard.⁵ The records not only of Strong's correspondence with Montagu Norman, but also the Bank of England's files on relations with the Federal Reserve Bank of New York, reveal how closely British and American bankers kept in touch on their respective discount rates.⁶ Throughout the 1920s, two of the Federal Reserve Board's directors, Adolph C. Miller, a professional economist, and Charles S. Hamlin, perennially disapproved of the degree to which they believed Strong subordinated domestic to international considerations; indeed, they and Strong had generally disagreed over Federal Reserve policies ever since all three men joined the System in 1914.⁷ In 1925 Hoover, then Secretary of Commerce and in the early 1920s an ally of Strong's in the quest to bring about European economic recovery, also demonstrated great reservations toward Strong's policy of reducing United States rates in order to facilitate Britain's return to gold at its prewar parity, and worked behind the scenes to precipitate congressional questioning of its wisdom.⁸

The issue of government control over foreign loans also brought Strong—and other New York bankers—into direct conflict with the Secretary of Commerce, clashes which probably contributed to Hoover's later antagonism towards Strong. Indeed, one consequence of their disputes was that after mid-1922 the two men, once fairly close collaborators, ended their formerly extensive correspondence, generally communicated through intermediaries, and only met on one subsequent occasion, in November 1923.⁹ Hoover believed that the U.S. government should have the final say as to whether a foreign loan was in the national interest, and demanded that American bankers obtain preapproval of

⁵ Strong to Andrew Mellon, May 27, 1924, File Gold (Miscellaneous), 1922–1925, Box 86, Record Group 56, Records of the Department of the Treasury, National Archives II, College Park, MD; Lester V. Chandler, *Benjamin Strong: Central Banker* (Washington, DC: Brookings Institution, 1958), 241–46, 300–07; Stephen V. O. Clarke, *Central Bank Cooperation 1924–1931* (New York: Federal Reserve Bank of New York, 1967), 85–96; Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States 1867–1960* (Princeton: Princeton University Press, 1963), 282–284, 288; Elmus R. Wicker, *Federal Reserve Monetary Policy 1917–1933* (New York: Random House, 1966), 80, 89–90; R. S. Sayers, *The Bank of England, 1891–1944*, 3 vols. (Cambridge: Cambridge University Press, 1976), I:139–40; Sir Henry Clay, *Lord Norman* (London: Macmillan, 1967), 140–44; Boyle, *Montagu Norman* (New York: Weybright and Talley, 1967), 183–84; Silvano A. Wueschner, *Charting Twentieth-Century Monetary Policy: Herbert Hoover and Benjamin Strong, 1917–1927* (Westport, CT: Greenwood Press, 1999), 57, 75–85; Barry Eichengreen, *Golden Fetters: The Gold Standard and the Great Depression 1919–1939* (New York: Oxford University Press, 1992), 191–92.

⁶ See correspondence in Series OV31 and OV32, Bank of England Archives, London; Strong's extensive correspondence with Norman, Files 1116.1–1116.8, Benjamin Strong Papers, Federal Reserve Bank of New York, New York.

⁷ See Chandler, *Benjamin Strong*, 44–45 and pass.; Donald F. Kettl, *Leadership at the Fed* (New Haven: Yale University Press, 1986), 24–25, 33–35; Wueschner, *Charting Twentieth-Century Monetary Policy*, esp. 71, note 99, and chs. 4 ff.

⁸ See Wueschner, *Charting Twentieth-Century Monetary Policy*, 77, 84, 90–104.

⁹ *Ibid.*, 42, 104.

all such loans from the Department of Commerce. He was also eager to demand that the proceeds of American loans should be spent on American products. Like most of his fellow bankers, Strong opposed all such restrictions, viewing them as an undesirable extension of government supervision over aspects of the economy that should be left to the free market. In correspondence with Hoover and others, Strong expressed his views at length. The outcome was that American bankers found themselves obliged to notify the State Department of all foreign issues; the department could and sometimes did object to them on grounds of the national interest, but Hoover's attempts to force borrowers to spend the proceeds in the United States failed.¹⁰

The most notorious episode of monetary ease, however, occurred in July and August 1927, when Strong, though alarmed by the American market's speculative and inflationary tendencies, nonetheless forced through the Federal Reserve System a decrease in the discount rate from 4 to 3 percent. This move relieved the excessive pressures to which the initial level of American interest rates was subjecting the dangerously shaky pound. In July 1927 the central bankers of Great Britain, the United States, France, and Germany had met on Long Island in the United States to discuss means of strengthening Britain's gold reserves and the general European currency situation. Strong's reduction of discount rates and purchase of £12 million of sterling, for which he paid the Bank of England in gold, appear to have been the direct result of this conference. Indeed, according to Charles Rist, one of the French bankers who attended, Strong said that the American authorities would reduce discount rates as "un petit coup de whisky for the stock exchange."¹¹ Strong pushed this reduction through the Federal Reserve System despite strong opposition not just from Miller, but also from James McDougal, the governor of the Chicago Federal Reserve Bank, who represented Midwestern bankers who generally

¹⁰ Strong, diary, August 6, 1919, File 1000.3, Strong Papers; Strong to S. Parker Gilbert, May 23, 1921, File 012.5, *ibid.*; Strong to Gilbert, June 2, 1921, File Federal Reserve Board 1921, Box 70, Record Group 56, National Archives II; Strong to Charles Evans Hughes, April 14, 1922, File 800.51/312, Record Group 59, Records of the Department of State, National Archives II, College Park, MD; memorandum by Strong, attached to Hoover to Hughes, April 29, 1922, 800.51/316, *ibid.*; Gilbert to Strong, October 18, 1925, enclosing Gilbert to Secretary of State, October 16, 1925, and Gilbert to Garrard B. Winston, October 18, 1925, Strong to Gilbert, November 7, 1925, File 1012.1, Strong Papers; Chandler, *Benjamin Strong*, 265–66; Carl P. Parrini, *Heir to Empire: United States Economic Diplomacy, 1916–1923* (Pittsburgh: University of Pittsburgh Press, 1969), 188–94; Michael J. Hogan, *Informal Entente: The Private Structure of Cooperation in Anglo-American Economic Diplomacy 1918–1928* (Columbia, MO: University of Missouri Press, 1977), 98, 100; Herbert Hoover, *The Hoover Memoirs*, Vol. 2 *The Cabinet and the Presidency 1920–1933* (London: Hollis and Carter, 1952), 85–91; Wueschner, *Charting Twentieth-Century Monetary Policy*, 33–35, 38–42.

¹¹ See Chandler, *Benjamin Strong*, 375–77; Clarke, *Central Bank Cooperation*, 123–24; Sayers, *Bank of England*, 1:336–345; Clay, *Lord Norman*, 236–37; Boyle, *Montagu Norman*, 231; Eichengreen, *Golden Fetters*, 212–13; Wueschner, *Charting Twentieth-Century Monetary Policy*, 137–39. Rist's recollection of Strong's remark is quoted in Sayers, *Bank of England*, 1:340.

did not share New York's preoccupation with international financial markets. Indeed, the Chicago Bank only reduced its rates when the Federal Reserve Board ordered it to do so.¹²

In a confidential memorandum written shortly afterwards for use at a meeting of the Federal Advisory Council, Strong specifically denied that his close relationship with the Bank of England had affected his policy choice on this issue. The rate reduction had, he claimed, facilitated European purchases of America's "marginal production of export goods," the market for which would disappear should European currencies collapse. He also cited, as he had on numerous earlier occasions since the First World War, the menace of domestic American inflation were Europe to ship over excessive amounts of gold.¹³ Yet Frank Altschul, a leading partner in the New York branch of the multinational investment bank Lazard Freres, told Emile Moreau, the governor of the Bank of France, "that the reasons given by Mr. Strong as justification for the reduction in the discount rate are being taken seriously by no one, and that everyone in the United States is convinced that Mr. Strong wanted to aid Mr. Norman by supporting the pound."¹⁴ Other correspondence in Strong's own files suggests that he was giving priority to international conditions rather than to American exporters' needs. Writing to Norman, who praised his handling of the affair as "masterly," Strong described the rate reduction as "our year[']s contribution to reconstruction."¹⁵

2. STRONG AND THE GREAT DEPRESSION: THE CURRENT DEBATE

Since the 1930s, economic historians have focused on Strong's central role in setting early Federal Reserve policies; the likely relationship between these policies to the Great Depression; the possibility that, had he lived, Strong might have averted the slump; and Strong's involvement in international economic

¹² Strong's own version is given in Strong, "The Chicago Rate Controversy," September 11, 1927, File 320.121, Strong Papers. Accounts may also be found in Chandler, *Benjamin Strong*, 438–55; Clarke, *Central Bank Cooperation*, 124–34; Wicker, *Federal Reserve Monetary Policy*, 106–16; Wicker, "Federal Reserve Monetary Policy," 336–37; Friedman and Schwartz, *Monetary History*, 288–89; Sayers, *Bank of England*, 1:340–341; Clay, *Lord Norman*, 237; Boyle, *Montagu Norman*, 231; John Kenneth Galbraith, *The Great Crash 1929*, reprint ed. (Boston: Houghton Mifflin, 1997), 55; Eichengreen, *Golden Fetters*, 211–14; Wueschner, *Charting Twentieth-Century Monetary Policy*, 136–37, 140–45.

¹³ Strong, "The Chicago Rate Controversy," September 11, 1927, File 321.121, Strong Papers.

¹⁴ See Emile Moreau, *The Golden Franc: Memoirs of a Governor of the Bank of France: The Stabilization of the Franc (1926–1928)* (Boulder, CO: Westview Press, 1991), 343, diary entry for August 24, 1927.

¹⁵ Strong to Norman, August 9, 1927, Norman to Strong, August 11, 1927, File 1116.7, Strong Papers.

affairs, especially central banks' efforts during the 1920s to restore international currency stability.

Several historians have suggested that Strong's economic policies during the 1920s were fundamentally sound and that, had he survived, he might well have taken more decisive action than did his successors in the Federal Reserve System to deal with the slump that developed into the Great Depression. In their *Monetary History of the United States*, Milton Friedman and Anna Schwartz argue that the root cause of the Great Depression was the Federal Reserve System's "great contraction" of money in the late 1920s and the early 1930s. Indeed, they even suggest that the term 'Great Contraction' should replace the traditional nomenclature of 'Great Depression.' Friedman and Schwartz undermine one of Hoover's major arguments when they point out that the 1920s were a period of minimal inflation when the monetary expansion failed even to match the growth in national income. They agree with Hoover, however, in ascribing to Strong a dominating position within the System, certainly that of first among equals. In their view, "foreign considerations were rarely important in determining the policies followed but were cited as additional justification for policies adopted primarily on domestic grounds whenever foreign and domestic considerations happened to coincide."¹⁶ Moreover, one of the major problems affecting Federal Reserve monetary policy was that after Strong's death in 1928, the System suffered a year of stasis, since a "dispute [over raising the discount rate] between the [Federal Reserve] Board and the New York Bank largely paralyzed monetary policy during almost the whole of the important year 1929." While tensions between the Board and the member banks had always existed, "So long as Benjamin Strong was alive, his unquestioned preeminence kept the struggle submerged. . . . Strong's death in October 1928, preceded by a few months of inactivity, triggered a phase of overt conflict." Although Friedman and Schwartz attribute the onset of the Depression to the collapse of the banking system, they also believe that Strong's absence was a major reason for the inadequate Federal Reserve response.¹⁷

Lester V. Chandler largely agrees with Friedman and Schwartz, arguing as they do that by raising interest rates and contracting money and credit in the late 1920s, the Federal Reserve System initiated the deflationary monetary policy that led to the Great Depression. As the Depression developed, the System only half-heartedly relaxed its monetary stringency. As a result, between 1929 and 1932 the money supply effectively fell by almost 25 percent and thereby created a vicious spiral of continuous intensification of the Great Depression's effects. For most of 1929, inconclusive battle was joined within the Federal

¹⁶ See Friedman and Schwartz, *Monetary History*, chs. 5, 6, 7, quotation from 269; Milton Friedman, "Real and Pseudo Gold Standards," *Journal of Law and Economics* 5:1 (October 1961), 68–70.

¹⁷ Quotations from Friedman and Schwartz, *Monetary History*, 255.

Reserve System as to whether commercial paper resulting from the financing of “speculative” transactions should be eligible for discount, with several members of the Board, notably the two long-time directors Adolph Miller and Charles Hamlin, arguing that ruling it ineligible would discourage stock speculation. According to Chandler, then, in the early 1930s the Fed radically failed to meet the needs of the economy, thereby helping to precipitate the greatest contraction in United States history.¹⁸ The popular historian John Brooks suggests that, had Strong “been given another year of life, his full attention would surely have focused on the American situation and his firm hand might have done much to set things to rights in time.”¹⁹ Although Chandler rather hedges his bets, the final pages of his biography of Strong seem to endorse this viewpoint, as does an article by the economist Robert L. Hetzel.²⁰

Historical debate still continues as to whether Strong’s concern to facilitate European economic recovery compromised the American economy and, in particular, led him to subordinate United States monetary policies to the demands of European reconstruction. Chandler, Strong’s sole biographer to date, tends to favor this approach.²¹ The economist John Kenneth Galbraith, by contrast, goes so far as to describe as “formidable nonsense” the view that Strong’s 1927 determination to lower discount rates in the United States was “an act of generous but ill-advised internationalism” that ultimately caused the Great Depression.²²

An assessment minimizing the impact of Strong’s death is given in work by Meltzer and Karl Brunner, Silvano Wueschner, and Elmus R. Wicker. While stressing different economic factors, they alike tend to downplay the role of Strong. Wicker argues that consistent policies were followed throughout the 1920s, both before and after Strong’s demise, and that changes in gold flows and international monetary relations were primarily responsible both for the Federal Reserve’s successes during the greater part of the 1920s and for its failure to respond adequately to the Great Depression.²³ Brunner and Meltzer emphasize the Federal Reserve System’s continuing reluctance to make substantial open market purchases, with the resulting constriction upon the money

¹⁸ See Lester V. Chandler, *America’s Greatest Depression 1929–1941* (New York: Harper & Row, 1970), chs. 5 and 7; cf. Friedman, “Real and Pseudo Gold Standards,” 70–72.

¹⁹ See John Brooks, *Once in Golconda: A True Drama of Wall Street 1920–1938* (New York: Harper & Row, 1969), 98–99.

²⁰ See Chandler, *Benjamin Strong*, 457 ff; Robert L. Hetzel, “The Rules versus Discretion Debate over Monetary Policy in the 1920s,” *Federal Reserve Bank of Richmond Economic Review* 71 (November/December 1985), 3–14.

²¹ See Chandler, *Benjamin Strong*.

²² See Galbraith, *Great Crash*, 9, 11.

²³ See Elmus R. Wicker, “Federal Reserve Monetary Policy, 1922–33: A Reinterpretation,” *Journal of Political Economy*, 73:4 (August 1965), 325–43; idem, *Federal Reserve Monetary Policy*.

supply, as the primary factor; again, they suggest that these policies were similar to those the Federal Reserve System had followed throughout the 1920s, and that it was their timing, not the inherent wisdom of the protagonists, that made their impact so disparate.²⁴

Elmus R. Wicker and Silvano A. Wueschner defend Strong against charges that his policies neglected U.S. interests, yet question the thesis that he would have been successful in combating the Great Depression. Wicker suggests that Strong had a sophisticated appreciation of the importance of international factors to the U.S. economy, and that, far from being “quixotic,” his policies were inspired by a prudent concern for his own country’s interests. Wicker also argues that Strong’s fundamental commitment to the gold standard precluded any likelihood that he would have done better than his successors in countering the Great Depression.²⁵

Wueschner’s recent study *Charting Twentieth-Century Monetary Policy* likewise portrays Strong as the representative of New York financial interests, and his support for European stabilization and Britain’s return to gold as “required if the involvement of the American banking community in international finance and debt settlements was to yield the current and future returns that it gave promise of yielding.” He also confesses himself skeptical that, had Strong not died, he would have provided vigorous and successful leadership in the subsequent financial crisis.²⁶ Wueschner not only draws attention to Strong’s dominating personality but also illuminates those conflicts that arose between Strong and New York financial forces on the one hand and agricultural, interior interests within the United States, and those between Strong and Herbert Hoover, then Secretary of Commerce. Wueschner brings out the manner in which disputes among Board members, including Adolph C. Miller as well as Hoover and Strong, over the primacy of domestic or international considerations in the setting of Federal Reserve policy, continued from the time of the First World War throughout the 1920s and culminated in the famous 1927–1928 debates over Federal Reserve discount policy. He pays particular attention to the close relationship between Strong and Norman. He also makes it clear that the National City Bank, New York’s largest commercial bank, did not ascribe the same primacy to international recovery as did Strong and the Morgan investment banking interests with whom he was closely associated. Wueschner argues that internecine Federal Reserve System policy disputes “contributed

²⁴ See Karl Brunner and Allan H. Meltzer, “What Did We Learn from the Monetary Experience of the United States in the Great Depression?” *Canadian Journal of Economics* 1 (1968), 334–48, reprinted in Allan H. Meltzer, *Money, Credit and Policy* (Aldershot: Edward Elgar Publishing, 1995), 104–18.

²⁵ See Wicker, “Federal Reserve Monetary Policy, 1922–33,” 325–43; idem, *Federal Reserve Monetary Policy*.

²⁶ See Wueschner, *Charting Twentieth-Century Monetary Policy*, 161.

in some degree to the inability of the system to develop a coherent Federal Reserve policy that could provide the regulatory instrumentality that the nation needed.”²⁷

Yet another respected historian goes so far as to ascribe at least part of the responsibility for the Great Depression and Europe’s financial collapse in the early 1930s to Strong’s dominating figure. Barry Eichengreen’s massive recent work *Golden Fetters* argues forcefully that the overall strategy of European interwar reconstruction was misguided and that its reliance on the restoration of the gold standard created an unduly rigid economic system which itself precipitated the Great Depression and was then unable to remedy the situation. Eichengreen, one of Strong’s most severe critics, suggests that the deep commitment of Strong, Norman, and other international bankers to returning the pound, the mark, and European currencies to the gold standard at overly high parities, which they were then forced to maintain at all costs, including deflationary policies, had the effect of undercutting Europe’s postwar recovery. Not only did Strong and his fellows help through their policies to precipitate the Great Depression, but their continuing attachment to gold acted as a straitjacket confining economic and fiscal policies within narrow bounds that effectively precluded expansionist options. Eichengreen draws attention to the inflexibility that was one result of the gold standard and to the manner in which bankers’ desire to protect their national currencies’ convertibility into gold at almost any cost drastically limited the options available to them when responding to the crisis. He argues that in 1927 Strong’s narrow reliance on the gold standard, which emphasized the financial predominance of the United States—the possessor of by far the greatest holdings of gold in the world—as opposed to a broader-based gold-exchange standard, which would have permitted the use of both foreign exchange reserves and gold to back national currencies, exacerbated nascent international economic problems. Eichengreen also implies that in 1928 Strong might well have been more daring in reducing discount rates in the United States and that the Federal Reserve System’s later reluctance to do so, its determination to force “liquidation” of all assets, greatly enhanced the Great Depression’s severity and severely affected European countries. At the same time, Eichengreen points out that to adopt any other course might well have been more difficult for Strong in the post-1928 period, since whereas before that time there was relatively little conflict or incompatibility between the System’s domestic and international objectives, at least where American interest rates were concerned, after 1928 this was no longer the case.²⁸

Peter Temin lays much of the responsibility for the crisis upon the Great War and its impact on the international monetary system. Like Eichengreen,

²⁷ Ibid., quotation from 130.

²⁸ See Eichengreen, *Golden Fetters*, esp. chs. 4–10.

he suggests that the international gold standard itself was one of the major factors underlying and reinforcing the Great Depression, since “the conditions that had sustained it before the war no longer existed.”²⁹ Temin agrees with Wicker that Strong’s fundamental commitment to the gold standard precluded any likelihood that he would have done better than his successors in countering the Great Depression.³⁰ Charles P. Kindleberger even questions the image of Strong as a dominating figure who set a clear objective, referring to the “Hamlet-like indecision” of his policies toward stock market speculation in 1927 and 1928.³¹

3. STRONG AND THE LIMITS OF INTERNATIONALISM

Whatever historians’ specific opinions of Strong’s policies, he is clearly a figure whom students of pre-1930 Federal Reserve policies cannot ignore. This essay does not propose to answer the fundamentally irresolvable question of whether, had he lived, Strong might have prevented the Great Depression. It does, however, address the issue of the degree to which Strong’s internationalist predilections influenced him in setting domestic monetary policy. Overall, it seems that while international considerations undoubtedly ranked high in Strong’s order of priorities, clearly defined limitations restricted his commitment to assisting Europe, and these boundaries broadly reflected the nature of and constraints upon American internationalism in the interwar period.

For Strong, European reconstruction was not simply a policy but a cause, almost a religious faith. In 1927 he told Norman:

Long ago I had reason to ponder the question whether I would allow discouragements to dissuade me from favoring a constructive attitude toward reconstruction abroad. There have been many and serious ones, at times, and many reasons, as well as temptations to quit and let the old world solve its own problems.

Considering everything, (and that included personal satisfaction and the like) I decided to allow no discouragements to alter our position. It has at times involved serious risks to my own position and prestige in the System and the country.³²

According to Hoover’s bitter post-presidential charges, Strong recklessly placed the interests of the international financial system ahead of United States domestic concerns. In practice, the picture was more complex, reflecting the distinct

²⁹ See Peter Temin, *Lessons from the Great Depression* (Cambridge, MA: MIT Press, 1989), quotation from 25.

³⁰ *Ibid.*, 34–35.

³¹ See Charles P. Kindleberger, *Essays in History: Financial, Economic, Personal* (Ann Arbor: University of Michigan Press, 1999), 13.

³² Strong to Norman, August 9, 1927, File 1116.7, Strong Papers.

boundaries of Strong's commitment to European recovery and the limitations that broadly characterized the outlook of most contemporary internationalists, bankers among them, as well as the influence of political constraints. These, in turn, illuminate the significant differences that generally distinguished interwar American internationalism from the variety that prevailed after the Second World War.

There is no reason to doubt that Strong believed his work for European currency stabilization also promoted the best interests of the United States. He argued frequently that uncertain exchange rates, especially when the dollar was at a premium against other currencies, made it difficult for American exporters to price their goods competitively.³³ As he had done during the war, on numerous later occasions Strong also stressed the importance of preventing an influx of gold into the United States and consequent domestic inflation; to avoid this, Strong argued, Americans should make loans to Europe, pursue lenient debt policies, and accept European imports.³⁴

Neither Strong nor his friend Norman appears ever to have questioned the parities at which they stabilized first the mark and then sterling; rather, they accepted that returning the pound to gold at prewar exchange rates was likely to require British deflation and American efforts to use lower United States interest rates to alleviate pressures on sterling. In 1931 Leffingwell wrote to Thomas W. Lamont, a fellow Morgan partner:

You will remember that when Monty [Norman] came over to discuss with us plans for the return to the gold standard, I asked him whether it was politically possible for the Bank of England to raise the bank rate from time to time to defend her gold and to complete the operation. He assured me that it was. He was mistaken about this. The general strike soon followed and instead of Monty's defending the gold standard and completing the deflation on classical lines by making money dearer in England, he called upon Ben to defend it

³³ Strong to Junnosuke Inouye, August 29, 1921, File 1330.1, *ibid.*; Strong to William Hailey, October 24, 1921, File 1112.5, *ibid.*; Strong to Herbert Hoover, April 22, 1922, File 013.1, *ibid.*; Strong to Mellon, May 27, 1924, File Gold (Miscellaneous) 1922–1925, Box 86, Record Group 56, National Archives II; Strong, "The Chicago Rate Controversy," September 11, 1927, File 320.121, Strong Papers; memorandum written by Strong, December 25, 1924, included in "Open Market Hearings," extract from Strong's testimony before a Hearing of the House Committee on Banking and Currency, April 1926, in Strong, *Interpretations of Federal Reserve Policy in the Speeches and Writings of Benjamin Strong*, ed. W. Randolph Burgess (New York: Harper & Row, 1930), 256–61; Strong, "Credit Arrangement with the Bank of England," extract from his testimony before the House Committee on Banking and Currency, April 1926, *ibid.*, 275–90; Chandler, *Benjamin Strong*, 266–68.

³⁴ Strong to Hoover, April 22, 1922, File 013.1, Strong Papers; Strong to Mellon, May 27, 1924, File Gold (Miscellaneous) 1922–1925, Box 85, Record Group 56, National Archives II; Strong, "The Reconstruction of World Finance," address before executive council, American Bankers Association, October 3, 1922, in *Interpretations*, 146–47; Strong, "Prices and Price Control," unpublished article prepared by him in April 1923, *ibid.*, 231–34.

by making it cheaper in America. This Ben did for Monty consistently and persistently, and successfully until the return of France to the gold standard in 1927 and her adoption of a definite deflation policy. This seemed to make it necessary for Ben to adopt an active (instead of passive) inflation policy in the latter part of that year. Ben's long illness in 1928, and the stupidity and stubbornness [sic] of the Washington Federal Reserve Board in 1929, left the inflation policy uncorrected until it was too late to correct it without the disaster of September and October 1929.³⁵

It should be noted that, Leffingwell's ex post facto criticisms notwithstanding, in 1925 the Morgan firm had enthusiastically endorsed and provided a credit facility to back Britain's return to gold. Despite Leffingwell's effective condemnation of Strong's policies as inflationary, there is substantial evidence to suggest that, in practice, Strong was generally cautious in assisting with European recovery. Leffingwell's implicit suggestion that, had Strong survived, Federal Reserve discount rate policies in 1928 would have followed a different path can perhaps be viewed as a lefthanded tribute to Strong's predominating concern to protect his own country's interests.

Leffingwell's assertions as to Strong's easy money policy notwithstanding, Strong often seems to have placed American domestic interests above those of the international financial system. Most notably, he was never prepared to permit the vast quantities of gold that accrued in the United States during the First World War and for most of the 1920s to trigger domestic inflation within the United States, despite the fact that such policies would have greatly eased the burdens which European nations faced in resuming the gold standard. As early as July 1915, Strong went so far as to state that the enormous quantity of gold with which the Allies had paid for many of their war supplies was "deposited with us in trust until the tide turns when we probably will have to let some part of it go to Europe."³⁶ In the interim, Strong made every effort to ensure that the influx of gold did not encourage domestic inflation, even though the consequent price differential between the United States and Europe would have greatly facilitated the ability of European nations to export to the United States and hence would have hastened their economic recovery.

By preference, if no other considerations intervened, in the immediate post-war period Strong was largely wedded to economic orthodoxy, and tended to take a fairly hawkish and conservative line on raising the discount rate to damp down inflationary and speculative tendencies. His policies therefore reflected a delicate balancing act between international and domestic priorities. Just

³⁵ Leffingwell to Lamont, August 29, 1931, File 102-15, Lamont Papers; cf. Leffingwell to Lamont, March 8, 1929, File 102-13, *ibid.*; Leffingwell to Lamont, May 29, 1929, enclosing Leffingwell to Edward C. Grenfell, May 29, 1929, File 103-14, *ibid.*

³⁶ Strong to Fred I. Kent, July 10, 1915, U.S. Senate, 74 Cong., 2d Sess., *Hearings Before the Committee Investigating the Munitions Industry*, 40 vols. (Washington, DC: Government Printing Office, 1934-36), 30:9527; Strong, diary, March 28, 1916, File 1000.2, Strong Papers.

after the First World War, Strong was eager to raise discount rates, advocating stringent monetary policies designed to drive down the soaring wartime cost of living. His friend Russell Leffingwell, then Under Secretary of the Treasury, initially opposed this anti-inflationary policy, probably largely because it would drive up the interest rates on Treasury certificates, thereby making government financing more expensive. In a classic example of bureaucratic politics, the Treasury's primary preoccupation was to reduce and eventually pay off the high national debt that had accumulated during the war years. Carter Glass, the Democratic politician who became Treasury Secretary in late 1918, may also have feared the impact of higher increased rates and consequent deflation on the outcome of the approaching presidential election. Early in 1920, after a lengthy and sometimes heated dispute which nonetheless left their mutual respect for each other undiminished, Leffingwell joined Strong after the Treasury had issued the Liberty bonds to finance long term the outstanding government debt. The two men also sought to check increasing stock market speculation.³⁷

A side effect of higher American interest rates was that the dollar rose against other currencies, so that prospective European borrowers found the cost of both American goods and the capital needed to finance economic recovery had risen. European debtors of the United States whose obligations were denominated in dollars also faced increased payments. Intensifying European misery, the financial assistance which Strong and others had earlier urged the American government to provide for European relief and reconstruction never materialized. Federal Reserve rates were by no means the only factor which contributed to the American recession of 1920–1921; tighter fiscal policy and the cessation of most war-related government orders in mid-1919 were also significant, but deflationary rate policies magnified their impact. Still, by December 1920 a visit to London had led Strong to fear the high rate policy had

³⁷ Strong to Leffingwell, February 6, 28, December 19, 1919, Leffingwell to Strong, February 6, October 8, 1919, File 012.4, Strong Papers; Leffingwell, "Memorandum Concerning Strong's Confidential Letter of December 19, 1919," May 4, 1920, Leffingwell to Charles A. Morss, May 14, 1920, Letterbook 43b, Russell C. Leffingwell Letterbooks, Manuscripts Division, Library of Congress, Washington, DC; numerous other memoranda in the Leffingwell letterbooks for this period, copies of which are usually also in the File Federal Reserve Banks—Discount Rates (Policy Letters) 1918–1920, Box 66, Record Group 56, National Archives II; Rixey Smith and Norman Beasley, *Carter Glass: A Biography* (New York: Longmans Green & Co., 1939), 182–85; Chandler, *Benjamin Strong*, 148–69; Wicker, *Federal Reserve Monetary Policy*, 33–45; Friedman and Schwartz, *Monetary History*, 221–31; Wueschner, *Charting Twentieth-Century Monetary Policy*, 10–17. Leffingwell himself retrospectively minimized the significance of this debate, pointing out that those "trivial variations of rates" Strong suggested would not "have been an appreciable factor towards the control of inflation." He suggested, moreover, that once the Treasury had decided that a genuine inflationary problem existed, it took the initiative in early 1920 in raising discount rates to 6 percent. It was perhaps not entirely coincidental that the Treasury decision to do so coincided with Glass's departure. Leffingwell to S. Parker Gilbert, March 1, 1922, File Federal Reserve Banks—Discount Rates (Policy Letters) 1922, Box 66, Record Group 56, National Archives II.

been carried to the point at which the high price of American capital was endangering the prospects for European recovery, and he was prepared to recommend a decrease in rates. Although for some months afterward American domestic conditions caused him to retreat from this suggestion and leave discount rates as they were, in autumn 1921 the Federal Reserve System adopted, possibly—though this is uncertain—on Strong’s suggestion, what he described as “a rather aggressive program towards easing up money conditions, not entirely in our own interest but somewhat in the interest of world recovery.”³⁸

Over time Strong’s commitment to European recovery apparently intensified appreciably, but limits remained. Most significantly, Strong was not prepared to countenance major price inflation in the United States even to facilitate Britain’s return to gold. Eichengreen has suggested that a major factor undercutting Britain’s return to gold was the Federal Reserve System’s policy of “sterilizing” gold imports, i.e., through sales of government securities reducing the money supply by the amount of the additional gold received. By preventing inflation in the United States, which such gold shipments would otherwise have precipitated, these policies made it almost impossible for European countries suffering from a balance of payments deficit to reverse the process, as their own products became cheaper. Had Strong been prepared to countenance inflation in the United States, the price differential between the two countries would have shrunk, making it unnecessary for Britain to adopt such stringent and deflationary monetary policies in the quest to return to gold.³⁹

Even though by the mid-1920s this situation had persisted for ten years, Strong may still have regarded—or at least found it convenient to regard—the American gold stockpile as a temporary phenomenon, soon to be liquidated by the vast upsurge in U.S. loans and investments in Europe that began in 1923 and which he believed Britain’s return to gold would further encourage. (Like most international bankers, he expected subsequent European recovery to generate increased European exports to the United States.)⁴⁰ Moreover, in fairness to Strong, in 1924 he suggested to Andrew Mellon, the Secretary of the Treasury, that to facilitate Britain’s return to gold, it would be necessary to have “some small advance in prices here and possibly some small decline

³⁸ Strong to Federal Reserve Bank, New York, December 12, 1920 (not sent), File 1000.4, Strong Papers; quotation from Strong to William Hailey, October 24, 1921, File 1111.2, *ibid.*; Strong to Norman, June 27, July 5, November 1, 1921, File 1116.2, *ibid.*; Chandler, *Benjamin Strong*, 174–177; Friedman and Schwartz, *Monetary History*, 234–35; Wueschner, *Charting Twentieth-Century Monetary Policy*, 17–21; Friedman, “Real and Pseudo Gold Standards,” 67–68.

³⁹ See Eichengreen, *Golden Fetters*, esp. 203–07; Chandler, *Benjamin Strong*, esp. 282–303; Friedman, “Real and Pseudo Gold Standards,” 69–70.

⁴⁰ Such policies were entirely compatible with central banking theories that, when gold was valued at a fixed price, short-term gold policy could be used to pursue other objectives, such as maintaining stable interest rates or prices. See Marvin Goodfriend, “Central Banking Under the Gold Standard,” *Carnegie-Rochester Conference Series on Public Policy* 29 (1988), 85–124.

in their [British] prices. . . . The burden of this readjustment must fall more largely upon us than upon them.”⁴¹

Yet, after making all such allowances, Strong undoubtedly had taboos he would not contemplate breaking, of which countenancing excessive domestic inflation was probably the most pronounced. His reaction to the British economist John Maynard Keynes’s mere mention of American policies of “demonetizing gold and locking it up in Washington” was instructive. To Carl Snyder, head of the New York Reserve Bank’s research division, Strong tetchily complained that Keynes

must think we are indeed very stupid people. If we are going to permit this gold, which does its initial damage the minute it arrives here, to do further damage by permitting it to become the basis of a great inflation, he and others of his stripe are consciously or unconsciously looking to this country to indulge in a great inflation for their benefit. We are not going to do it if it can be helped and if they would be sensible enough to get their own houses in order and manage their own damn currency in a sensible, civilized fashion, they would shortly be able to come over here and get the gold they need to present a respectable monetary face to the world. I am thoroughly tired and impatient of the ravings of these inflationists who want us to play the part of cat’s paw and pull their chestnuts out of the fire when they haven’t the courage to do it themselves.⁴²

Not only Strong but many of his American and European compeers were familiar with the economic writings of Keynes, notably *A Tract on Monetary Reform* (1923) and the more polemical *The Economic Consequences of Mr. Churchill* (1925), which suggested that their gold standard and monetary goals were logically incompatible. Keynes specifically opposed sterling’s return to gold at the \$4.86 parity Norman favored and which, to Norman and many other British officials, was not negotiable. To them, this valuation was not merely an economic goal but a matter of national honor, a symbolic reaffirmation of Britain’s prestige and a public demonstration that the country had regained its pre-1914 international position. In the 1920s Keynes, by contrast, remained an economic maverick whom financial authorities, while admitting his brilliance, regarded with considerable suspicion. His fondness for public controversy and invective, most evident in the publication of *The Economic Consequences of the Peace* (1919) with its stinging attacks on Woodrow Wilson, led many British and American bankers to consider him somewhat unstable, while the views expressed therein led him to be labeled undesirably “pro-German” for some years.⁴³

⁴¹ Strong to Mellon, May 27, 1924, File Gold (Miscellaneous), 1922–1925, Box 86, Record Group 56, National Archives II; cf. Chandler, *Benjamin Strong*, 283.

⁴² Strong to Carl Snyder, February 4, 1924, File 320.454, Strong Papers.

⁴³ See Robert Skidelsky, *John Maynard Keynes*, Volume 2: *The Economist as Saviour 1920–1937* (London: Penguin Press, 1994), 189; Hession. This view of Keynes as pro-German pervades

When Norman sent him a copy of Keynes's *Tract on Monetary Reform*, Strong commented "that some of his conclusions are thoroughly unwarranted and show a great lack of knowledge of American affairs and of the Federal Reserve System." Of Keynes himself, he wrote, "I have a great respect for his ability and the freshness and versatility of his mind, but I am much afraid of some of his more erratic ideas, which impressed me as being the product of a vivid imagination without very much practical experience."⁴⁴ "Mr. Keynes seems to have rather overdone himself," Norman dismissively responded, "a fact which perhaps comes from his trying to combine the position of financial mentor to this and other countries with that of a high-class speculator (by which I mean one whose sole object is to buy stocks when they are cheap and sell them when they are dear)."⁴⁵ Other American bankers shared their skepticism. "Keynes is always perverse, Puckish," Leffingwell wrote in 1931. "He attacks anything sound or established or generally accepted, partly for the fun of it, partly for the purpose of stimulating debate. In doing so he is utterly irresponsible. He doesn't care how much harm he does in giving aid and comfort to the enemies of sound finance."⁴⁶ In rejecting Keynes's views, Strong, Norman, and their compeers simply reflected the conventional wisdom of their day.⁴⁷

Two factors help to account for Strong's reluctance to take major risks to facilitate Europe's return to the gold standard. The first was that, like most international bankers of his time, he believed implicitly in the orthodox economic principles of the gold standard, balanced budgets, and stable prices. It is worth noting that Norman, who as a fellow central banker of similarly orthodox economic views likewise detested inflation, found this perspective entirely acceptable and apparently never suggested to his colleague that the United States should tolerate greater inflation, accepting this state of affairs as the price it must pay if European currencies were to return to gold.⁴⁸ For

the correspondence for the early 1920s between the editors of *Foreign Affairs*, Archibald Cary Coolidge and Hamilton Fish Armstrong. Archibald Cary Coolidge Files, Boxes 17–20, Hamilton Fish Armstrong Papers, Mudd Manuscripts Library, Princeton University, Princeton, NJ.

⁴⁴ Strong to Norman, January 4, 1924, File 1116.4, Strong Papers.

⁴⁵ Norman to Strong, January 30, 1924, *ibid.*

⁴⁶ Leffingwell to Lamont, August 29, 1931, File 103-15, Lamont Papers. By 1945, however, Leffingwell had gained greater respect for Keynes, stating that he was "not popular over here, but he knows his facts and his economics better than anyone else." Leffingwell to Lamont, September 13, 1945, File 104-5, *ibid.*

⁴⁷ On the limitations of American economic thinking at this time, see also Chandler, *America's Greatest Depression*, 111–14.

⁴⁸ Despite his own opposition to Britain's return to gold at pre-1914 parities, Keynes simultaneously expressed apprehension that the United States might jettison its existing policy of accepting gold which it would "maintain . . . at a fixed value" and instead "be overwhelmed by the impetuosity of a cheap money campaign," one which would lead the United States to release all its gold simultaneously, with drastic effects on the international monetary system. John Maynard Keynes, *A Tract on Monetary Reform* (London: Macmillan, 1923), 169, 175–76.

the majority of British and American international bankers and economists in the 1920s, Strong included, their formative years had fallen in the prewar period, when—as Eichengreen demonstrates—the self-regulating international gold standard worked better than in any period before or since.⁴⁹ They looked back to that time as a norm whose restoration—including return to gold at prewar parities—was the goal they sought to attain. In this sense they endorsed the presidential campaign slogan of Warren G. Harding in 1920 for a “return to normalcy.” It is also worth noting that the profound admiration American international financiers felt for the British financial system made it almost impossible for them to appreciate how weak the British economic position was and how detrimentally the First World War had affected Britain. Notwithstanding some domestic British opposition, both Strong and Norman appear to have taken it as a *sine qua non* that sterling must return to gold at the prewar parity.⁵⁰

In Strong’s defense one should also note that even had he been prepared to acquiesce in far greater U.S. price inflation than occurred in the 1920s, political pressures might well have prevented him implementing such policies. Economic policy is, like politics, the art of the possible. Memories of the inflation and subsequent deflation of the 1917–1921 period helped to ensure that during the 1920s the maintenance of stable prices and the need to avoid either excessive inflation or deflation became a major political concern and was viewed as a primary objective of the Federal Reserve System. (Memories of these previous monetary policies and their political and economic consequences may also have been another reason why, in the late 1920s, the Federal Reserve System hesitated to act decisively in either raising or reducing rates.) Despite Strong’s oft expressed belief that central bankers should remain immune from political pressures, in practice, as Wueschner has pointed out, he was highly sensitive to political considerations.⁵¹ Although Strong doggedly resisted attempts to pass legislation demanding that the Federal Reserve System employ rate policy and open market operations to ensure price stability, preferring that Federal Reserve officials should be allowed to use their discretion in attaining this objective, it was a goal he broadly shared.⁵² Publicly and in correspondence with Norman he frequently stressed the importance of maintaining price stability.⁵³ In this, he reflected the views of most central bankers.

Even more broadly, internal political developments throughout Europe jeopardized central bankers’ interwar efforts to return to gold. Eichengreen

⁴⁹ See Eichengreen, *Golden Fetters*, ch. 1.

⁵⁰ See, e.g., Strong to Norman, June 3, July 9, 1924, Norman to Strong, June 16, October 16, 1924, File 1116.4, Strong Papers.

⁵¹ See Wueschner, *Charting Twentieth-Century Monetary Policy*, xvi, 21, 36–37, 44–45, 50, 64.

⁵² *Ibid.*, 54, 79, 119–20; Chandler, *Benjamin Strong*, 199–204; Hetzel, “Rules Versus Discretion Debate,” 7–11, 14.

⁵³ See Kindleberger, *Essays in History*, 12.

plausibly argues that in the 1920s the commitment to defend the international gold standard in difficult times encountered new obstacles in many nations, not just the United States, in the form of domestic policy objectives that interfered with the honoring of the commitment. One major reason was that the post-World War I broadening of the franchise in most European countries due to the spread of universal suffrage had made it far more difficult than before for governments and central bankers to resist electoral pressures for increased social spending and the reduction of interest rates, regardless of such policies' impact upon the international monetary system.⁵⁴ French monetary policies appear to give some confirmation to this thesis. Throughout the 1920s and 1930s, the French were far less committed than any other major European nation to maintaining the international gold standard system. Although they finally returned to gold in 1927, they did so—to the regret of Emile Moreau, the governor of the Banque de France—below pre-1914 parities, which effectively subjected the pound to additional deflationary pressures. (Revealingly, Strong showed little interest in the precise par value of the franc.)⁵⁵ For much of the Great Depression, French actions, including not only a gold sterilization but, ironically, a tenacious attachment to gold several years after most other countries had abandoned it, continued to compromise the international financial system and efforts to coordinate economic policies, just as French fiscal policies in the early 1920s rejected the balanced budget norms which international financiers demanded. The effective secession of a leading European country from gold standard norms made it commensurately more difficult for others to continue to observe them.⁵⁶ Increasingly, countries pursued their own national economic priorities even if the priorities conflicted with efforts to implement coordinated transnational financial cooperation.

⁵⁴ See Eichengreen, *Golden Fetters*. Early in his career, the distinguished historian Paul M. Kennedy likewise drew attention to the degree to which the extension of the franchise in early-twentieth-century Britain vastly increased the political constituency for increased social welfare spending, if necessary at the expense of defense budgets. Paul M. Kennedy, *The Realities Behind Diplomacy: Background Influences on British External Policy, 1865–1980* (London: George Allen & Unwin, 1981) 47–51, 236–40.

⁵⁵ Melvyn P. Leffler, *The Elusive Quest: America's Pursuit of European Stability and French Security, 1919–1933* (Chapel Hill: University of North Carolina Press, 1979), 166.

⁵⁶ *Ibid.*, chs. 4–8; H. Clark Johnson, *Gold, France, and the Great Depression, 1919–1932* (New Haven: Yale University Press, 1997); Eichengreen, *Golden Fetters*, esp. chs. 8–10; Prefaces by Milton Friedman, Stephen D. Stoller and Trevor Roberts, and Jacques Rueff to Moreau, *Golden Franc*, x–xxi, 1–10; Charles P. Kindleberger, *A Financial History of Western Europe*, 2nd ed. (New York: Oxford University Press, 1993), ch. 19; Friedman, “Real and Pseudo Gold Standards,” 70. On French budgetary policies in the early 1920s, see also Stephen D. Schuker, *The End of French Predominance In Europe* (Chapel Hill: University of North Carolina Press, 1973).

4. CONCLUSION

Just before he died, Strong felt that the reconstruction of Europe was virtually completed and his policies had been successful.⁵⁷ Other leading bankers shared this view. During World War II, his sometime critic Leffingwell reflected, “As I look back over the 1920’s it seems to me that the job we did in the reconstruction of currencies all over the world was a good one.” Expanding this theme, 18 months later he added:

[T]he British war debt settlement of 1922 or 1923 and gold resumption of 1925 . . . gave hope to the human race which did not altogether disappear until in 1931 the Hawley-Smoot tariff, the veto of the German-Austrian customs union, the failure of Credit Anstalt, Hoover’s panicky defense of his moratorium, and the May and Macmillan reports pulled the plug.⁵⁸

Such optimistic views notwithstanding, between the wars Federal Reserve policies towards European recovery shared the prevailing weaknesses of broader American internationalism, revealing the half-hearted nature of the post-1918 U.S. assumption of a greater world role. Charles P. Kindleberger suggests that between the wars one of the major international economic structural problems was the fact that, while Britain was no longer strong enough to play the role of international economic hegemon, the United States was not prepared to assume the associated burdens and responsibilities of the role it inherited.⁵⁹ Warren I. Cohen has described this period as one of “empire without tears,” when the United States wished to enjoy the benefits of international influence at the lowest cost possible, refusing to bind itself to commitments overseas or make the sacrifices almost inherent in a world hegemonic position.⁶⁰ The diplomatic historian Melvyn P. Leffler has pointed out that post-World War I American foreign policymakers were subjected to various conflicting and often inconsistent demands, including among others domestic political pressures and calls for fiscal economy at home, which decidedly limited the extent to which U.S. officials were prepared to make concessions to Europeans on such economic issues as war debts, reparations, or trade and tariffs, as well as exchange rates.⁶¹

⁵⁷ Strong to Owen D. Young, August 17, 1928, File 320.122, Strong Papers.

⁵⁸ Leffingwell to Lamont, April 4, 1940, File 103-22, Lamont Papers; Leffingwell to Lamont, October 10, 1941, File 106-11, *ibid.*; also Leffingwell to Lamont, September 11, 1940, File 103-23, *ibid.*

⁵⁹ See Charles P. Kindleberger, *The World in Depression, 1929–1939* (Berkeley: University of California Press, 1973), 25–29; *idem.*, *Essays in History*, 45–46.

⁶⁰ See Warren I. Cohen, *Empire Without Tears: America’s Foreign Relations, 1921–1933* (New York: Knopf, 1987).

⁶¹ See Melvyn P. Leffler, “Political Isolationism, Economic Expansionism or Diplomatic Realism? American Policy toward Western Europe 1921–1933,” *Perspectives in American History* 8 (1974), 428–30; *idem.*, “The Origins of Republican War Debt Policy, 1921–1923: A Case Study in the Applicability of the Open Door Interpretation,” *Journal of American History* 59:4 (December 1972), 585–601.

Numerous other historians, among them Frank Costigliola, Joan Hoff Wilson, and John Braeman, have drawn attention to the tentative, unsystematic, and often contradictory character of American international thinking between the wars, the profound hesitancy with which presidential administrations in the 1920s recognized any American responsibility whatever for managing the international economic and political system, and the degree to which the United States preferred to rely upon the unilateralist policies Wilson terms “independent internationalism.”⁶² In this context, Strong’s determination neither to abandon prewar European currency parities nor to demand economic sacrifices of the United States in support of them epitomizes the halfhearted and hesitant nature of his country’s overall interwar international outlook. The Federal Reserve System’s own development trajectory closely paralleled the broader pattern of the evolution of the United States as a world power. Mira Wilkins rightly reminds us that between the wars the U.S. government deliberately eschewed formal involvement in European recovery and points out “how new to world finance New York was” and how ill-equipped the inexperienced existing economic institutions were to handle the new international financial challenges.⁶³ Viewed from this perspective, Strong’s efforts to facilitate European interwar economic recovery represented a remarkable departure, especially when one recalls that the Federal Reserve System had only existed since 1913. To paraphrase Samuel Johnson, their significance was not merely that they were flawed, but that they were made at all. If Strong was no more enlightened than his contemporaries, this was because he was a man of his times. A product of the late Victorian era who fundamentally embraced that period’s economic norms, he lacked, unlike the brilliant but often exasperating Keynes, the visionary ability to construct a new paradigm of political economy.

Paradoxically, the very failure of Strong and his American and European peers and their principles to provide lasting solutions to international economic difficulties between the wars was high among the factors impelling American officials, when reconstructing the post-1945 world, to follow guidelines very different from those followed in the 1930s. By the end of the Second World War, the U.S. government was prepared to play the leading part in this enterprise; moreover, European nations were then far more dependent economically upon the United States than they had been in the 1920s, which greatly facilitated

⁶² See Joan Hoff Wilson, *American Business and Foreign Policy, 1920–1933* (Lexington: University of Kentucky Press, 1971); John Braeman, “Power and Diplomacy: The 1920s Revisited,” *Review of Politics* 44:3 (July 1982), 423–469; Frank Costigliola, *Awkward Dominion: American Political, Economic, and Cultural Relations with Europe, 1919–1933* (Ithaca: Cornell University Press, 1984).

⁶³ See Mira Wilkins, “Cosmopolitan finance in the 1920s: New York’s emergence as an international financial centre,” in *The State, the Financial System, and Economic Modernization*, eds. Richard Sylla, Richard Tilly, and Gabriel Tortella (Cambridge: Cambridge University Press, 1999), 283; cf. Chandler, *America’s Greatest Depression*, 112–14.

American attempts to induce them to cooperate with American-led reconstruction efforts. At that time, the United States insisted upon fixing exchange rates at economically viable levels, and Treasury officials were prepared to accept an outflow of excess gold from the United States in payment for European exports. More broadly, the impact of the Great Depression and the Second World War impelled the United States to play the role of international political, not just economic, hegemon, establishing a range of American-led institutions intended to implement world recovery and stability, including the United Nations, the International Bank for Reconstruction and Development, and the International Monetary Fund. Moreover, when these proved insufficient, the United States quickly instituted supplementary measures, including the Marshall Plan, NATO, individual loans to particular countries, and assorted military and economic international aid programs.

Within the Federal Reserve System itself, Strong's dominance of the System and the acrimony this often generated ultimately helped to bring reform. An institution that could be so susceptible to domination by a single individual, albeit one of great determination and ability, had inherent structural problems. The general dissatisfaction non-East Coast bankers expressed over New York's predominance in the System might in any case have precipitated demands for Federal Reserve reform. Yet it was above all the System's failure to cope with the crisis of the Great Depression that fueled the pressures leading to the 1935 Banking Act's overhaul of the Federal Reserve System. The primary purpose of the Federal Reserve System had been to prevent or at least alleviate the panics and depressions of the pre-1913 period. The operation of Murphy's Law ensured that, by the cruel workings of chance, Strong's disappearance from the System coincided with the period in which the System came under far greater stress than ever before. Given the emphasis its founders had originally placed on decentralizing power within the System, it may well be that the difficulties of the 1920s and the Great Depression were experiences necessary to enable the System's reform.

In his memoirs, Herbert Hoover blamed Benjamin Strong's internationalism for the Depression. According to Hoover and other critics of Strong such as Adolph Miller, the dominating governor of the Federal Reserve Board in Washington, Strong's "easy money" policies designed to assist Britain's return to the gold standard produced a speculative rise in stock prices on the New York Stock Exchange. The inevitable bursting of that speculative bubble led to the Great Depression. But this picture hardly fits the Benjamin Strong who, in his support of the fateful decision in 1928 to raise interest rates and force a monetary contraction to bring down stock prices, was an economic nationalist. High interest rates in the United States pulled capital out of Europe and forced monetary deflation there and elsewhere. The international gold standard that Strong had labored so hard to create became an engine of worldwide deflation.

The truth of the matter is that Strong, in his support of the rate hikes and monetary contraction, was only adhering to the commonly accepted real-bills views of his time. According to these views, central banks should thwart the speculative extension of credit to prevent increases in asset prices that would ultimately collapse and lead to deflation and depression. If Strong was guilty in holding these views, then so too was the entire banking community, commercial and central. The lesson is clear. Instead of looking for a single individual to blame for causing the Great Depression, it is surely more enlightening and productive to recognize the flaws in the views underlying the policies that produced that catastrophic episode. Such recognition is part of a broader understanding of how America's shift from isolationism to internationalism after World War II promoted the more peaceful and prosperous world of the second half of the twentieth century.