Economic Review

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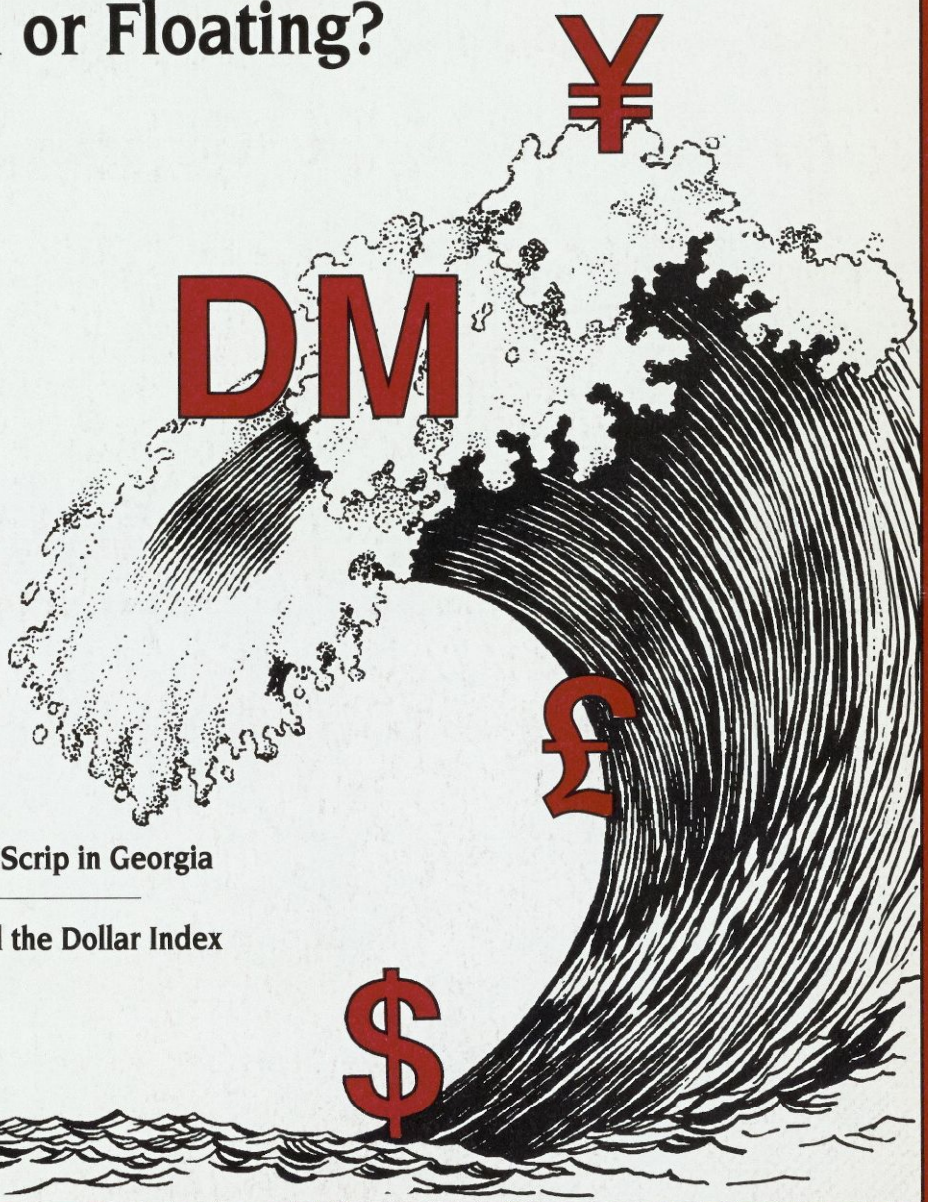
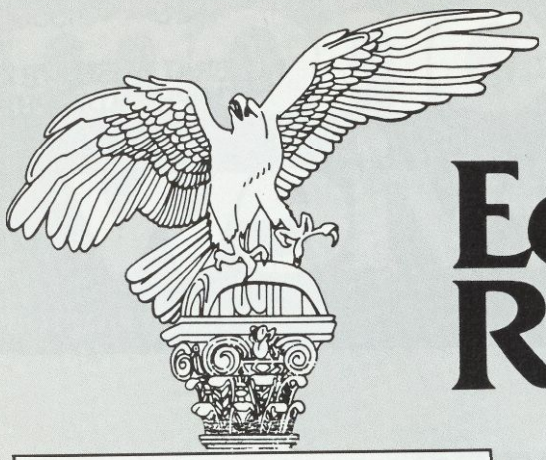
EXCHANGE RATES
Fixed or Floating?



Depression Scrip in Georgia

Inflation and the Dollar Index



Economic Review

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Flexible Exchange Rates: An Idea Whose Time Has Passed?

Joseph A. Whitt, Jr.

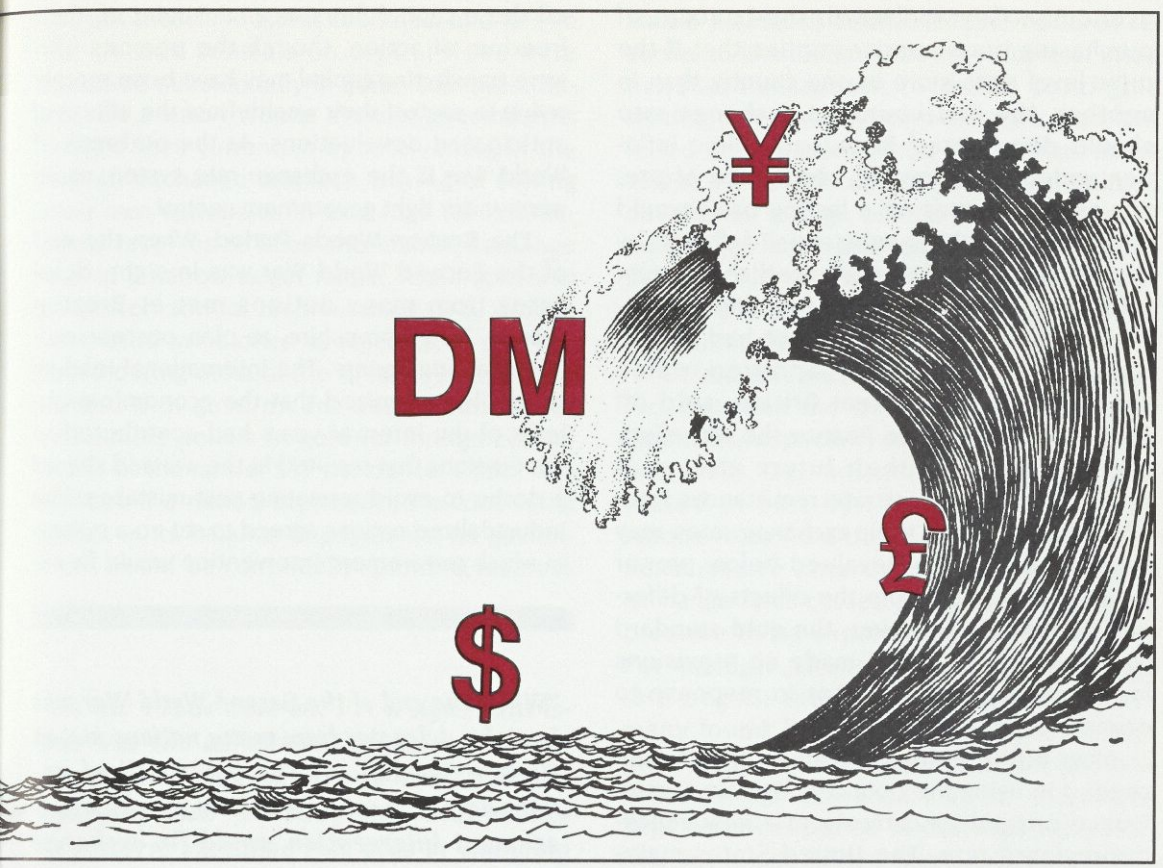
Given the current flexible exchange rate system's disappointing performance, especially during recent years, the debate over whether major industrialized nations should return to a fixed rate system has intensified. After a brief description of various episodes of fixed and floating exchange rates during the past century, the author discusses the arguments for and against a return to fixed rates. He concludes that limits on exchange rate movements are feasible in principle but that fixing exchange rates would probably require governments to give up some of their economic autonomy.

Should the major industrialized countries support a return to fixed exchange rates? This question has garnered increased attention in the past few years as large fluctuations in key exchange rates have led some observers to conclude that the current floating exchange rate system, which arose more by default than design in the early 1970s, has failed. Critics argue that floating exchange rates have allowed large, unpredictable movements that have depressed international trade and at times resulted in massive job losses in particular industries. Ronald I. McKinnon (1974, 1988) has advocated a return to fixed rates since the early days of floating, while John Williamson (1983) prefers a system of target zones that would allow limited flexibility of exchange rates. More recently, Arthur J. Rolnick and Warren E. Weber (1990) of the Federal Reserve Bank of Minneapolis have favored fixing exchange rates, and *The Economist* (1990) magazine, which advocated the move to flexible exchange rates during the early 1970s, has editorialized that the experiment with flexible rates has been a failure. However, supporters argue that floating rates help economies adjust to policy and other shocks and that fixing exchange rates would only make things worse.

To give some background on how the current system arose, this article includes a brief historical review of the experience with exchange rates during the past century. That discussion leads to the main arguments for and against a return to fixed exchange rates in light of recent experience.

Changes in the Exchange Rate System during the Past Century

During the past century, the exchange rate system has oscillated between fixed and floating rates several times.[1] In the late nine-



teenth century, exchange rates between the currencies of the major industrialized countries were fixed because each country was on the gold standard. Each currency was redeemable for a fixed amount of gold; for example, U.S. dollars could be freely redeemed at the rate of $20.67 per ounce. Because gold could be transferred from one country to another with little cost or regulatory restriction, arbitrage in the gold market kept exchange rates between currencies fixed. Even so, the size of gold flows prior to 1914 was modest for two reasons. Most international trade was financed using British pounds, even when the trade was between third countries (for instance, Mexican exports to France). In addition, there was considerable confidence that the existing pattern of exchange rates would be maintained. As a result, when capital flowed from one country to another, as was common because government restrictions on capital flows were rare, settlement usually was done through the banking system, without requiring physical movements of gold.

The gold standard came to an abrupt end in 1914 with the outbreak of World War I. During the war the combatant governments imposed numerous restrictions on international trade and on citizens' seeking to convert paper money into gold; these governments also printed large amounts of money to help pay wartime expenditures. When the conflict finally ended, various governments, including Great Britain and France, proclaimed their intention to return eventually to prewar exchange rates. In the meantime, however, they allowed their currencies to float.

Because prewar exchange rates were no longer consistent with economic equilibrium, the decision to return to them was a dubious one. As argued at the time by Swedish

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economist Gustav Cassel, the concept of purchasing power parity implies that if the price level rises more in one country than in another, the first country's exchange rate should depreciate.[2] Because wartime inflation varied considerably, restoration of prewar exchange rates on a lasting basis would have required either substantial deflation by countries that had experienced the largest price rises during the war or substantial additional inflation by countries that had experienced the smallest. In addition, some countries, notably Great Britain, sold off many foreign assets to finance the war effort, thereby reducing their future stream of dividend and interest rate remittances from abroad. As a result their exchange rates may have needed to be devalued below prewar levels, even aside from the effects of differential inflation. However, the gold standard was a rigid system that made no provisions for changing exchange rates in response to economic circumstances.

After a few years of turmoil, Britain succeeded in fixing the pound at its prewar rate. France pegged its currency at a new, much-depreciated rate. The United States maintained its prewar peg to gold. However, the new pattern of exchange rates was probably not consistent with long-run equilibrium; Britain maintained the pound only by short-term borrowing from foreigners, while France eventually developed balance of payments surpluses that swelled French gold reserves. In any event, the restored system of fixed exchange rates only lasted a few years before the Great Depression disrupted it. In response to mass unemployment, many governments boosted tariffs and some imposed quotas on imports in hopes of stimulating demand for domestically produced goods. In addition, some governments apparently devalued their currencies in an attempt to boost exports and cut imports. Such tactics may boost employment in one country, but they do so at the expense of employment elsewhere; hence they came to be known as "beggar-thy-neighbor" policies. Also during this period, government-pegged exchange rates sometimes came under severe pressure as a result of private capital flows from one country to another. The governments regarded these capital flows as a constraint on their freedom of action, though the persons who were transferring capital may have been merely trying to protect their wealth from the effects of anticipated devaluations. At the outbreak of World War II, the exchange rate system again went under tight government control.

The Bretton Woods Period. When the end of the Second World War was in sight, delegates from many nations met at Bretton Woods, New Hampshire, to plan postwar economic arrangements. The international leaders generally recognized that the economic problems of the interwar years had contributed to the tensions that resulted in the war and shared a desire to avoid repeating past mistakes. The industrialized nations agreed to set up a system in which government intervention would fix exchange rates. Unlike under the gold standard, if a nation were running a continual balance of payments surplus or deficit, its exchange rates would be altered to bring an end to the payments imbalance; however, the change in exchange rates could only be made with the agreement of the nation's major trading partners. This condition was intended to prevent beggar-thy-neighbor policies. In addition, restrictions on international capital flows were maintained; otherwise, it was feared, private currency speculators would put unbearable pressure on the exchange rate pegs, forcing exchange rate changes inconsistent with economic fundamentals (see Ragner Nurkse 1945).

"When the end of the Second World War was in sight, delegates from many nations met at Bretton Woods. . . . The industrialized nations agreed to set up a system in which government intervention would fix exchange rates."

The early postwar years were dominated by the problems of reconstruction, but in the 1950s the Bretton Woods system came into full operation. Exchange controls on trade in goods and services were largely eliminated in

the advanced industrial countries, and late in the decade controls on capital flows were loosened substantially in some countries. Under the Bretton Woods system, governments pegged their currencies by intervening in the foreign exchange markets, buying or selling their own currencies in exchange for international reserves to keep the market exchange rate in a narrow target range. While gold was one international reserve asset, U.S. dollars were used more often as reserves, in part because during most of the Bretton Woods period the U.S. government was committed to redeeming dollars in gold for foreign central banks at the rate of $35 per ounce. Under this system, if a nation experienced a continuing deficit in its balance of payments, its government would be continually spending reserves to maintain the currency peg. As its reserves dwindled, the government would eventually face a dilemma: either impose unpopular austerity measures to stop the deficit; borrow reserves from other governments, thereby becoming subject to various conditions imposed by the lenders; or abandon the exchange rate peg and devalue.

"As the 1960s wore on, . . . a significant issue was the adjustment problem, the tendency of governments to resist either changing their monetary and fiscal policies to preserve exchange rate pegs or changing the exchange rate to make it consistent with given monetary and fiscal policies."

As the 1960s wore on, the system was more and more strained. A significant issue was the adjustment problem, the tendency of governments to resist either changing their monetary and fiscal policies to preserve exchange rate pegs or changing the exchange rate to make it consistent with given monetary and fiscal policies. For example, the British government postponed changing its exchange rate for several years in the mid-1960s, before finally devaluing in 1967. Another concern was the liquidity problem stemming from the lack of a stable source of additional international reserves to finance the growing volume of international transactions. With the world gold stock growing slowly, central banks gradually relied more and more on U.S. dollars as reserves. However, Robert Triffin (1960) pointed out that as foreign central bank holdings of dollars got larger and larger, the U.S. pledge that it would be willing to redeem dollars for gold at $35 an ounce was becoming increasingly untenable.[3]

A third issue was the growing policy conflict between the United States and other countries, especially West Germany. In the late 1960s, U.S. inflation rose substantially, fueled in part by the Vietnam War. The unique role of the dollar as the main international reserve currency in a system of pegged exchange rates caused part of the inflationary pressure to be exported to other countries. For example, in maintaining the exchange rate peg for the Deutschemark, West Germany found it necessary to buy more and more dollars in exchange for Deutschemarks in the foreign exchange market. This action kept excess supplies of dollars off the market, but it also added Deutschemarks to the German money supply. The increase in the German money supply eventually helped to fuel unwanted inflationary pressures there. The conflict became acute in the summer of 1971. At that time the U.S. balance of payments was worsening, suggesting a need for economic austerity to preserve the exchange value of the dollar. However, the nation's economy was recovering slowly from the mild recession of 1970, and the administration wanted to take stimulative measures, in part because the presidential election year of 1972 was rapidly approaching.

The Breakup of Bretton Woods. A combination of policies announced on August 15, 1971, resolved the policy dilemma. Domestically, the Nixon administration took stimulative actions combined with wage and price controls in an attempt to reduce inflation. In the international sphere, the administration imposed a temporary 10 percent surcharge (tax) on imports to pressure other countries into agreeing on a devaluation of the dollar, designed to improve the balance of payments. At the same time, the "gold window"

was closed, meaning that the United States repudiated its commitment to convert dollars into gold for foreign central banks; this action preempted any threat that foreign central banks might buy up all the U.S. gold stockpile with their dollar reserves, but it also eliminated the only constraint on U.S. monetary policy imposed by the Bretton Woods system.

During the next several months the United States and the other major industrialized countries negotiated feverishly. Foreign governments were anxious to have the United States abolish the special import surcharge, while the United States wanted the foreign governments to realign exchange rate parities to devalue the dollar. Agreement on both issues was reached in December 1971, during a meeting at the Smithsonian in Washington, D.C. As a result, the dollar was devalued an average of about 10 percent versus other major currencies; the devaluation was larger vis-a-vis the Japanese yen and the Deutschemark, smaller versus the British pound, the French franc, and the Italian lire. As part of the agreement, and largely at the insistence of France, the official price of gold was raised from $35 to $38 per ounce; however, the gold window remained closed. In addition, the United States agreed to abolish the import surcharge.[4]

Despite the agreement at the Smithsonian, foreign exchange markets continued to be turbulent. Even at the time of the agreement, some estimates implied that a larger devaluation was needed if the U.S. external deficit was going to be corrected (see Robert Solomon 1977, 210). Moreover, considerable skepticism continued among market participants about whether the United States or many other governments were prepared to take unpopular measures to defend the new parities. Just six months after the Smithsonian agreement, the British pound came under pressure, and the British government responded by abandoning its fixed parity and allowing it to float downward.

The Bretton Woods system came to a definitive end in early 1973, when various key governments (notably West Germany) gave up trying to keep their exchange rates with the dollar pegged in the face of massive capital flows. At the time some hope remained that the system could soon be brought back to life in a modified form, but other economic events—notably the oil price shock of late 1973 and the ensuing recession throughout the industrialized world—quickly grabbed the attention of policymakers and pushed reform of the exchange rate system to the back burner, where it has remained. As a result, the years since 1973 constitute the longest period of generalized floating exchange rates in modern history.

The Recent Experience with Flexible Exchange Rates

In assessing the pros and cons of flexible exchange rates, it is useful to compare flexible exchange rates' actual performance since they took hold in 1973 with their advocates' expectations during the last years of the Bretton Woods system.[5] Flexible rates were expected to have several important advantages over fixed rates. Governments would have greater freedom to use monetary and fiscal policy to pursue domestic objectives, proponents maintained, without having to worry about international consequences or balance of payments problems. With the exchange rate adjusting automatically to achieve equilibrium in the external payments flows, governments would no longer be tempted to impose "temporary" import limitations, controls on capital outflows, or other such policies to stave off currency changes.

Flexible exchange rates were also expected to insulate each national economy from shocks originating elsewhere. For example, many Europeans complained that when inflationary pressures in the United States rose in the late 1960s because of the Vietnam War, part of the inflation was exported to Europe through the workings of fixed exchange rates. If exchange rates had been flexible, it was argued, Europe could have remained unaffected by the inflation in the United States.

Advocates of flexible exchange rates criticized the Bretton Woods system because in their view its pegged exchange rates en-

abled economies to delay adjusting to changing international circumstances until a disequilibrium had reached crisis proportions. Only then could an exchange rate be changed, often by a large and economically disruptive amount. By contrast, they expected that under a system of flexible exchange rates, crises would be rare because exchange rates would move gradually up or down in response to changes in underlying economic conditions or government policies, thereby producing the economic adjustments needed to preserve balance of payments equilibrium.

Those who advocated flexible exchange rates prior to the breakdown of Bretton Woods did so largely on the theoretical grounds discussed above because at the time they had little historical experience on which to draw. A brief period of flexible exchange rates had occurred during the early 1920s—a time of considerable economic and monetary disorder, including the famous German hyperinflation, as Europe began to rebuild after World War I. Observers at that time believed exchange markets to be disorderly and subject to speculative frenzies, but with hindsight it is easy to argue that the exchange markets merely reflected the period's chaotic economic and political conditions. Moreover, it seems likely that the wide gap between the market's estimate of equilibrium exchange rates consistent with postwar economic conditions and governmental announcements that prewar exchange rates would sooner or later be restored disrupted the exchange markets even more.

Advocates of flexible exchange rates preferred to emphasize the experience of Canada, which allowed its exchange rate to float from 1950 to 1962 while other industrialized countries were pegged under the Bretton Woods system. Canada's experience was fairly tranquil; its exchange rate never moved dramatically, and its economy showed no signs of the disastrous consequences foreseen by opponents of flexible exchange rates. Those who favored flexible exchange rates believed that if the Bretton Woods system were abolished, exchange rates between the major currencies would behave much like Canada's.[6]

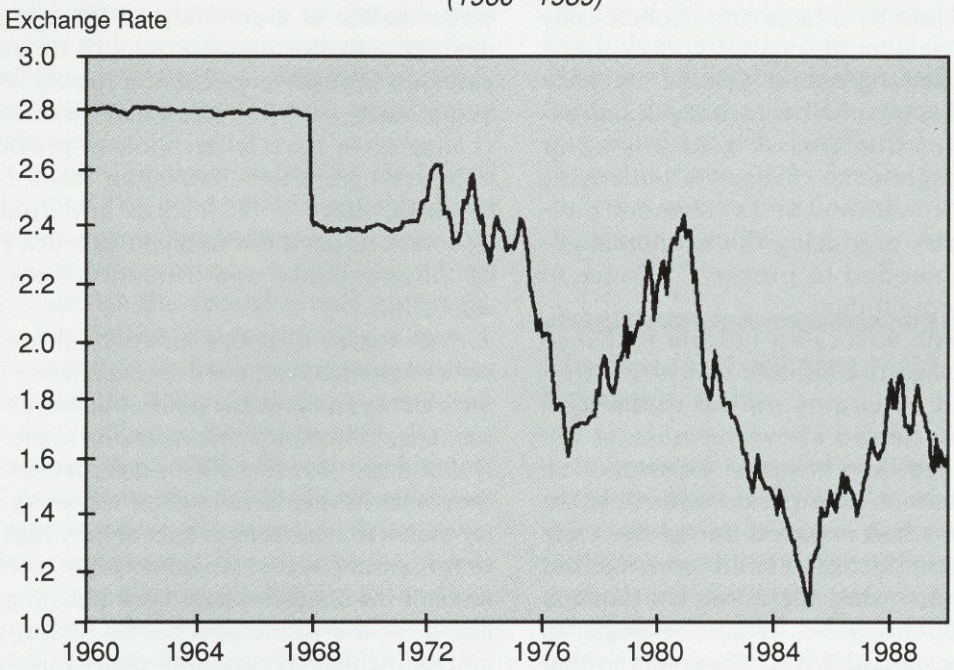
Now that the modern system of generalized floating exchange rates has been in operation for more than a decade and a half, it is possible to compare the actual performance of a generalized flexible rate system with the expectations of its advocates. In several respects, the record of the years since 1973 indicates that flexible exchange rates have fallen short in providing expected benefits. Exchange rates have been far more volatile than anticipated, and nations have not enjoyed as much policy independence and insulation from foreign shocks.

With regard to policy independence, governments have continued to experience conflicts between domestic policy objectives and exchange rate policy. For example, in the early and mid-1980s Europeans complained that they were having to run tighter monetary policy than was desirable in light of very high unemployment rates, because high interest rates in the United States were boosting demand for the dollar and causing its appreciation, which in turn was contributing to inflationary pressures in Europe. Since oil was priced in dollars, this problem was sometimes described as a second oil price shock. Importing countries such as France and West Germany experienced one inflationary shock when the price of oil soared in the 1979-80 period and then another when dollar appreciation sent the franc- or Deutschemark-denominated price even higher during the next several years.

In addition, flexible exchange rates have clearly not succeeded in eliminating political pressure for trade restraints to protect particular industries. Indeed, as the U.S. trade deficit soared in the mid-1980s, the United States experienced its worst bout of protectionist fever in years. Import quotas, "voluntary" export restraints, or other restraints on imports of a variety of products, including autos, steel, motorcycles, textiles, and apparel, were maintained or tightened.

Perhaps the most discussed feature of flexible exchange rates has been their volatility. Chart 1 shows the exchange rate for the British pound relative to the U.S. dollar since 1960. Clearly the 1960s experienced very little volatility; the only major jump was

Chart 1.
The Dollar–Pound Exchange Rate
(1960 –1989)



Source: Computed by the Federal Reserve Bank of Atlanta using data from the International Monetary Fund.

associated with the pound's 15 percent devaluation in 1967.[7] Those who advocated flexible exchange rates during the Bretton Woods years suggested that under flexible exchange rates day-to-day volatility might increase somewhat but large movements would be smoothed by the actions of private speculators; under flexible exchange rates the large adjustment that occurred overnight in 1967 might have occurred gradually over a period of several years, if not more.[8]

In early 1973 the Bretton Woods system of pegged exchange rates collapsed, and since then the rates between the United States and other major industrialized countries have been flexible. A glance at Chart 1 shows that in contrast to expectations, during the flexible rate period rates have been volatile, with far more major moves than under the Bretton Woods system. Other major exchange rates show similar patterns. Admittedly, no day-to-day moves by the pound have been as large as 1967's 15 percent devaluation; however, numerous large moves do occur over fairly short periods of time.

Table 1 gives the dates and sizes of large moves—defined as exceeding 10 percent over a period of six months—in the pound–dollar exchange rate since the breakup of Bretton Woods. The choice of size and the six-month time interval is somewhat arbitrary. The goal was to delineate relatively short periods during which the flexible exchange rate moved by an amount sufficient to create export and import adjustment problems comparable to those associated with the pound's 1967 devaluation.[9] When overlapping six-month periods showed more than one large change, only the largest was chosen for the table to avoid double-counting. To leave out all data for the Bretton Woods period, the earliest period considered for the table is June to December 1973. The last period considered is June to December 1989, resulting in a total of sixteen years of coverage.

As the table indicates, during the years since the breakdown of Bretton Woods the dollar–pound rate has moved more than 15

Table 1.
Large* Six-Month Percentage Changes in the Pound–Dollar Exchange Rate since the Breakup of Bretton Woods, Ranked by Size of Change

Ending Date	Size of Change** (Percent)
July 1981	25.1
August 1985	–25.0
February 1985	18.4
September 1975	16.6
May 1989	16.0
December 1987	–15.1
October 1976	13.8
March 1983	13.5
July 1979	–13.4
October 1978	–13.2
May 1987	–12.4
January 1978	–11.6
September 1988	10.9
December 1973	10.6

** Defined as exceeding 10 percent.*

*** Positive values indicate depreciation of the pound; negative values indicate appreciation. End-of-month exchange rate data were used. Percentage changes were measured using logarithmic differences.*

Source: Calculated by the Federal Reserve Bank of Atlanta using data from the International Monetary Fund's IFS tapes.

percent in a six-month period six times. In the two biggest moves, the rate changed 25 percent. Moreover, in eight other episodes the rate changed by more than 10 percent. By contrast, under Bretton Woods the pound–dollar rate had experienced only the one large change of slightly more than 15 percent during the decades of the 1950s and 1960s.

Large exchange rate movements have also occurred for other currencies during the period of flexible exchange rates. Tables 2 and 3 give information on large movements in the Deutschemark–dollar and yen–dollar exchange rates, respectively, since the breakdown of Bretton Woods.[10] In some respects, these rates have shown even more volatility than the pound–dollar rate. Although none of the Deutschemark realignments were quite as large as the 25.1 percent move by the pound–dollar rate, the Deutschemark did have eight separate episodes of movement greater than 15 percent in six months, compared to four for the pound; in addition, the mark had eight other periods when it moved by more than 10 percent. The yen–dollar rate had even more episodes—eleven—during which the rate moved more than 15 percent, and in three other cases it moved more than 10 percent.

In contrast, the Deutschemark and the yen showed even less movement during the 1950s and 1960s than the British pound. The Deutschemark had two noticeable changes—revaluations of 4.88 percent in 1961 and 8.88 percent in 1969; the yen was virtually unchanged during these two decades. Clearly, exchange rate volatility has been much greater under flexible rates than under Bretton Woods. Large exchange rate changes, rare under Bretton Woods—occurring less than once a decade on average—became common, even ordinary, under flexible rates. Indeed, since 1973 it has been rare to have a year that did not contain a major exchange rate move comparable in size to the 1967 devaluation of the pound.

Explaining the Volatility. Why have exchange rates bounced around so much in recent years? Since the early years of floating, researchers have attempted to model exchange rate behavior in terms of changes in variables that theory suggests might be important, such as money supplies, interest rates, real (inflation-adjusted) GNP growth, and current account balances. However, these models have performed poorly in explaining exchange rate movements of the flexible rate period. Moreover, Richard A. Meese and Kenneth Rogoff (1983) show that a simple random-walk model of the exchange rate, which always predicts that the future exchange rate will equal today's prevailing rate, outperforms more complex models that include other variables in forecasting exchange rates. Accordingly, convincingly attributing the observed movements of exchange rates to any particular combination of variables has thus far been impossible.

Table 2.
Large* Six-Month Percentage Changes in the Deutschemark–Dollar Exchange Rate since the Breakup of Bretton Woods, Ranked by Size of Change

Ending Date	Size of Change** (Percent)
February 1986	–22.6
June 1981	19.9
August 1985	–17.8
October 1978	–17.4
January 1974	16.8
November 1986	–15.7
September 1984	15.5
February 1975	–15.4
December 1987	–14.6
June 1988	14.1
December 1989	–14.0
May 1989	13.5
March 1978	–13.2
September 1975	12.7
August 1983	11.2
March 1980	10.8

* *Defined as exceeding 10 percent.*

** *Positive values indicate depreciation of the Deutschemark; negative values indicate appreciation. End-of-month exchange rate data were used. Percentage changes were measured using logarithmic differences.*

Source: See Table 1.

In this vacuum, various explanations of the large movements of exchange rates have arisen. One possibility is that the large movements are rational and appropriate responses to an unstable environment characterized by frequent changes in government policy as well as shocks to technology and oil prices. In this view, a flexible exchange rate is an asset price that responds instantaneously to new information, much like prices in the stock market. Jacob A. Frenkel and Michael L. Mussa (1980) question whether exchange rate fluctuations of the 1970s were in fact excessive, noting that by various measures exchange rates fluctuated less than stock markets during this period. They conclude that governments can best reduce turbulence in the exchange markets by reducing high and variable rates of monetary expansion and generally reducing uncertainty about future economic policies.

However, McKinnon (1988) argues that turbulence is inherent in the flexible exchange rate system because flexible exchange rates are highly sensitive to small changes in expected monetary policies or asset preferences, which are extremely uncertain in the current policy environment. To reduce the uncertainty, he advocates that the Federal Reserve, the Bank of Japan, and the German Bundesbank agree to peg the dollar–yen and dollar–Deutschemark exchange rates and to adjust their domestic monetary policies to maintain similar inflation rates for prices of internationally traded goods.

An alternative interpretation is that flexible exchange rates are excessively volatile because of destabilizing speculation.[11] For instance, suppose monetary policy changes in a way that justifies a modest appreciation of the dollar but market participants are uncertain about how much appreciation is justified. As the dollar begins to appreciate, a speculative bandwagon may develop if speculators react by shifting capital into dollar-denominated assets, thereby tending to appreciate the dollar further. In principle, such behavior could at least temporarily drive the dollar far above its long-run equilibrium.

Paul R. Krugman (1985, 1989) and Jeffrey A. Frankel and Kenneth Froot (1988) argue that part of the huge dollar appreciation of the early 1980s, especially the surge in the second half of 1984 and the first few weeks of 1985, took the dollar far above any reasonable estimate of its long-run equilibrium; the lack of a large interest differential favoring the dollar at that time leads them to conclude that the market was irrationally failing to forecast a sharp dollar decline of the sort that occurred subsequently.[12] Krugman (1989) concludes that an eventual return to fixed exchange rates is desirable to prevent such speculative bubbles. Supporters of flexible exchange rates counter with Milton Friedman's (1953) argument that destabiliz-

Table 3.
Large* Six-Month Percentage Changes in the Yen–Dollar Exchange Rate since the Breakup of Bretton Woods, Ranked by Size of Change

Ending Date	Size of Change** (Percent)
February 1986	–27.8
October 1978	–23.6
April 1979	21.6
March 1978	–17.7
December 1987	–17.4
October 1982	16.5
September 1980	–16.3
May 1989	15.9
April 1983	–15.7
July 1981	15.7
September 1986	–15.6
April 1987	–14.6
January 1974	12.7
February 1980	12.7

* *Defined as exceeding 10 percent.*

** *Positive values indicate depreciation of the yen; negative values indicate appreciation. End-of-month exchange rate data were used. Percentage changes were measured using logarithmic differences.*

Source: See Table 1.

ing speculators would sooner or later lose money and be driven out of business.

Even if observed exchange rate changes are rational and appropriate responses to policy instability, Williamson (1983) argues that greater fixity of exchange rates is also desirable as a way of constraining governments from pursuing destabilizing policies, which probably explain in part the large exchange rate movements of recent years. Under fixed exchange rates, a single government's policy options would be constrained by either the need to maintain the exchange rate peg or to obtain the approval of other governments if an exchange rate change were necessary. Williamson's preferred option is not fixed exchange rates but a system of target zones that would allow some exchange rate flexibility, within limits substantially broader than the very narrow ones the Bretton Woods agreement allowed.

Finally, Wallace (1979) argues that when fiat currencies are in use—that is, currencies not backed by gold or any other commodity—as has been the case since at least 1971, foreign exchange rates have no fundamental equilibrium in the absence of government intervention or certain types of legal restrictions. Supporters of flexible rates argue that, left alone, market forces can set exchange rates at appropriate levels and that governments should renounce exchange market intervention and controls on capital flows or asset holdings; however, Wallace claims that it is impossible for governments to do both. In his interpretation exchange rate movements since 1973 reflect to a considerable degree market responses to actual or anticipated government intervention. Market participants are constantly trying to guess what governments are going to do, but the governments rarely make their intervention strategies public. In his view, volatility would be reduced if governments would cooperatively set publicly revealed exchange rate target zones of some kind and defend them with intervention.

In contrast, supporters of flexible rates argue that given the differences in attitudes toward inflation and recession in the major countries, fixed exchange rates or even target zones are not feasible; as soon as they began to constrain government policy significantly, the exchange rate target would be abandoned. For instance, Rudiger Dornbusch (1988) claims that Europe and Japan are much more opposed to inflation than the United States is; in his view, they are willing to tolerate recession or depression to keep inflation low, whereas the United States is not. Greater fixity of exchange rates would sometimes conflict with these preferences, forcing either the United States to tolerate more unemployment or Europe and Japan to tolerate more inflation than they would want.

Are Fixed Exchange Rates Feasible Today? Are there any examples of successful limits on exchange rate movements in recent

years? Rolnick and Weber (1990) point to the United States under the Federal Reserve System, which ensures that a fixed, one-to-one exchange rate prevails between dollars in each of the twelve Federal Reserve districts. Indeed, this system has become so stable that it is taken for granted, although earlier in U.S. history, currency from one region was treated as "foreign" money in other regions; that is, if you took an Atlanta dollar to Chicago and tried to exchange it for local Chicago money, you would get not a full dollar back, but perhaps 97 cents.[13] However, the example of the Federal Reserve is not entirely applicable to the group of major industrialized countries because, while all regions of the United States have the same national government and individual states gave up the power to print money decades ago, each industrialized country is still a sovereign nation.

The European Monetary System (EMS) is a better example, in the sense that the way it operates probably more closely approximates what a new system of fixed or quasi-fixed exchange rates would look like than does the U.S. Federal Reserve System. Under the EMS, various European governments agreed to keep their bilateral exchange rates within narrow target zones while continuing to have flexible rates with outside currencies, such as the U.S. dollar, Japanese yen, and British pound. Accordingly, movements of the French franc–Deutschemark rate have been limited, while movements of the Deutschemark–dollar and franc–dollar rates have remained flexible.[14]

The EMS was established in December 1978 by the members of the European Economic Community (EEC), which at that time consisted of West Germany, France, Italy, the United Kingdom, Belgium, the Netherlands, Luxembourg, Denmark, and Ireland. The heart of the system is the Exchange Rate Mechanism, which was intended to keep bilateral exchange rates of member countries within narrow bands. Exchange rate targets (or parities) were set, and governments were obligated to intervene in the foreign exchange markets to prevent market rates from moving more than 2.25 percent above or below the parity rates.

Although it was a member of the EEC in 1978, the United Kingdom chose not to join the Exchange Rate Mechanism; hence it continued to have floating exchange rates for the pound.[15] Italy insisted on somewhat greater flexibility for its exchange rate than the other countries wanted; the band for the lira allowed it to move as much as 6 percent above or below its target rate.

Although the objectives of the EMS have always been somewhat vague, it is fairly clear that the main goal was to reduce the volatility of exchange rates within Europe to promote the EEC's economic integration and to provide a stable unit of account for EEC-wide programs like the Common Agricultural Policy (see Georg Rich 1990). The system was not intended to be completely rigid; the width of the target bands provided some flexibility, and in addition changing economic circumstances were expected to lead to occasional realignments in which the member governments would agree to alter the parity rates.[16]

The impetus for establishing the EMS came largely from political leaders, especially Chancellor Helmut Schmidt of West Germany and President Valérie Giscard d'Estaing of France. Most economists were cool to the idea, thinking that the system would soon collapse because of differences between low-inflation West Germany and high-inflation France and Italy.[17] The German Bundesbank was so negative on the EMS that an unprecedented visit by Chancellor Schmidt to the Bundesbank Council was necessary to overcome the opposition (see Michele Fratianni and Juergen von Hagen 1990). The Bundesbank's position is ironic, considering that various observers recently have described the EMS as having become a system by which the Bundesbank controls monetary policy in the other member countries.[18]

Despite the skepticism, the EMS has now survived for more than a decade. How have exchange rates between member countries behaved? Computations of six-month percentage changes as were done for Tables 1-3 show that the franc–Deutschemark exchange rate had three episodes during the 1970s when it moved more than 10 percent but none since the EMS was established. Indeed,

since the major realignment of EMS currencies in 1982, the franc–Deutschemark rate has rarely moved more than 6 percent in six months.[19] Clearly, its volatility has been much less in recent years than the pound–dollar's, Deutschemark–dollar's, or yen–dollar's, and it is reasonable to attribute that lower volatility at least partially to the effectiveness of the EMS.

Critics of the EMS emphasize the disruptions caused by realignments of the EMS currencies, as well as the costs of capital controls that France and Italy have employed to help maintain their currencies within the EMS target zones. In addition, Fratianni and von Hagen (1990) argue that while the EMS has made significant progress in reducing exchange rate uncertainty among member currencies, it may have increased uncertainty about rates between members and nonmembers, such as the Deutschemark–U.S. dollar rate. Even so, the costs are apparently not too great—the original members have chosen to remain members, and additional countries have joined as well.

Could the United States, Japan, and Europe work together to form an EMS-style exchange rate system for the entire group? Skeptics like Dornbusch (1986) and Stanley Fischer (1986) think not, arguing that the differences in policy preferences are too great, and that in any event the U.S. government would never accept the constraints on its fiscal policy that would be necessary to make the system work. However, similar skepticism about whether the EMS could survive given the differences in policy preferences among France, West Germany, and Italy was expressed in the early days of the EMS, yet it seems to be thriving after more than a decade of existence.

Conclusion

As the problems of the Bretton Woods system mounted in the 1960s and early 1970s, a move to flexible exchange rates was widely touted as a simple and elegant solution to those problems. The experience with flexible rates since 1973 indicates, however, that the present system has its own problems, including high volatility of exchange rates, little insulation from foreign shocks, and little pressure on governments to pursue sound long-term policies. As a result, there is renewed interest in proposals to impose limits on exchange rate movements. The European Monetary System's experience indicates that limits on exchange rate movements are feasible in principle but that such limits imply that participating governments give up some of their autonomy with respect to economic policy. Whether the governments of the United States, Japan, and the major nations of Europe would be willing to accept such limits on their freedom of action in order to reduce exchange rate volatility remains an open question.

Notes

[1]For a more extensive discussion of changes in the international monetary system from the gold standard of the late nineteenth century to the Bretton Woods system of the 1950s and 1960s, see Yeager (1966).

[2]The huge literature on purchasing power parity is reviewed in Officer (1976).

[3]A useful contemporary discussion of the problems of the Bretton Woods system is contained in Mundell and Swoboda (1969).

[4]The international monetary crisis of 1971 is discussed in Johnson (1972, 353-61) and Solomon (1977, 176-215).

[5]Advocates of flexible rates included Friedman (1953), Sohmen (1969), Haberler (1970), and Johnson (1972, 198-222).

[6]The advocates of flexible exchange rates recognized that a small and narrowly specialized economy would probably find it advantageous to peg its currency to that of a large country, such as its main trading partner, thereby stabilizing the purchasing power of the small country's currency in terms of the wide array of goods, services, and assets available in the large country. See Johnson (1972, 206).

[7]The size of the devaluation is measured using the change in the natural logarithm of the dollar–pound rate.

[8]Prior to the change in 1967, the dollar–pound exchange rate had been essentially unchanged since 1949.

[9]For example, British importers who had signed contracts denominated in dollars suffered an unexpected loss when Britain devalued because the cost of the imports in terms of British pounds suddenly went up as a consequence of the devaluation, even though the price

in dollars was unchanged. As a result, some deals expected to be profitable suddenly became unprofitable. At the same time, British exporters who had signed contracts denominated in dollars experienced windfall gains.

[10]The dates and sizes of large changes in the Deutschemark–dollar and yen–dollar exchange rates were found using the same procedures that were used in analyzing the pound–dollar rate for Table 1.

[11]This argument was prevalent at the time of the Bretton Woods agreement; see Nurkse (1945). It has recently been revived by Williamson (1983), Marris (1985), and Krugman (1985, 1989).

[12]By contrast, Mussa (1985) argues that under plausible assumptions the dollar's value in 1985 was not at a level that implied market irrationality.

[13]Such discounts on nonlocal dollar bills were common during the free banking era prior to the Civil War; see Rockoff (1975). There were discounts or premiums on nonlocal funds during the national banking era as well. The size of the discount or premium could become large during financial crises such as the Panic of 1907; see National Monetary Commission (1911, 209-28).

[14]Fratianni and von Hagen (1990) review the first decade of operations by the EMS.

[15]After years of debate the British government brought the pound sterling into the EMS but with wide, 6 percent bands, on October 8, 1990.

[16]According to Fratianni and von Hagen (1990), there were eleven realignments during the first decade of the EMS; the dates were September 24, 1979; November 30, 1979; March 23, 1981; October 5, 1981; February 22, 1982; June 14, 1982; March 21, 1983; July 22, 1985; April 7, 1986; August 4, 1986; and January 12, 1987. In addition, there was a mini-realignment that involved a devaluation of the Italian lira's parity rate against the Deutschemark on January 5, 1990.

[17]See the comments by Bryant, Cohen, and Fellner in Trezise (1979), as well as Korteweg (1980) and Vaubel (1980).

[18]See, for example, Dornbusch (1986) and Fischer (1987).

[19]Actually, there were two realignments during the first half of 1982; as a result, during the six-month period ending in August 1982 the franc–Deutschemark rate moved about 9.8 percent, the largest six-month change since the EMS was established.

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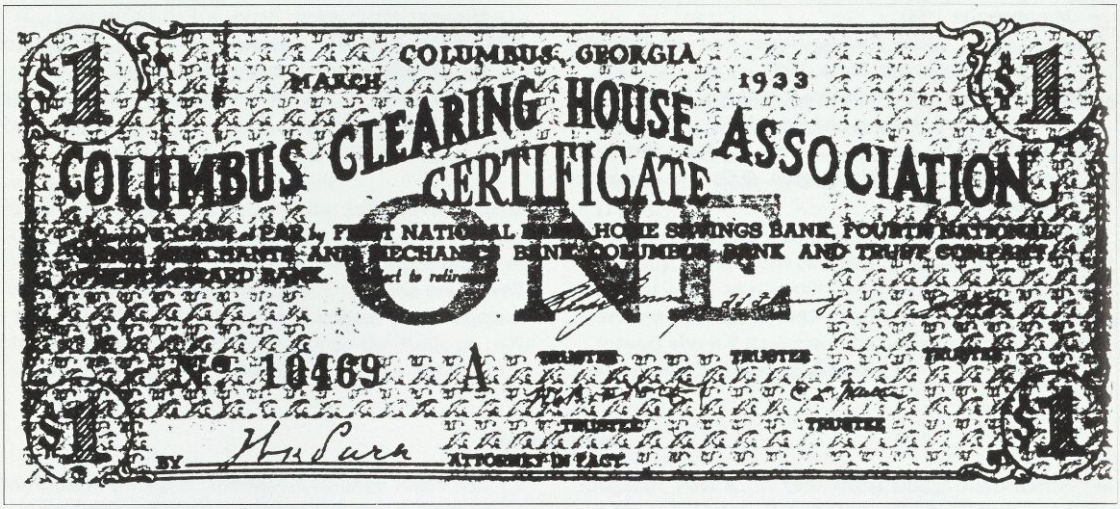
Lenders of the Next-to-Last Resort: Scrip Issue in Georgia during the Great Depression



The most recent scrip issue in the United States occurred during the 1930s, after the establishment of the Federal Reserve System, which technically was the lender of last resort. The author reports on his ongoing project to describe scrip issues in Georgia during the Great Depression. His account provides a detailed look at a transitional period in the country's financial history with possible implications for private moneylike instruments in today's economy.

William Roberds

Today, the term *cash money* means exactly one thing to residents of the United States: Federal Reserve notes. These notes constitute a type of currency known as fiat money, the dominant if not sole type of currency circulating in the world today. One reasonable definition describes fiat money as "a form of credit where the issuing party is the state and the recourse of an individual creditor is negligible against the state, but by the law of the state the fiat money must be accepted in payment to extinguish other debts" (John Eatwell, Murray Milgate, and Peter Newman 1987, 317). In short, fiat money is money because a sovereign government deems it so.

Throughout most of our nation's history other forms of cash have circulated either in place of or alongside fiat currency. Until 1933 the United States was (more or less) on a gold standard, meaning that the value of the U.S. dollar was legally defined as a certain weight in gold.[1] While the gold standard was in effect, both gold and silver coins circulated as means of cash payment. In addition to coinage, bank notes, which promised to pay a specified amount in coin on demand, were widely used as money during the gold standard era. To guard against overissue of such notes, their issuance was generally restricted by law to banks chartered by the federal or various state governments. Notes were also issued by the federal government itself.

During much of the gold standard era, money for everyday transactions was often in short supply. This shortage was particularly acute in the rural South and West. Studies by Richard H. Timberlake (1978, 1981) attribute the currency shortage to a number of factors, among these the natural scarcity of gold and

the official valuation of monetary silver below its market price. But the most important factor contributing to the money shortage was the stringency of legal restrictions on the issue of paper money. A congressional act of 1865 imposed a prohibitive 10 percent tax on bank notes by state-chartered banks and practically ended their issue (A.T. Huntington and Robert J. Mawhinney 1910, 362). The same act required that national banks maintain strict reserve and collateral requirements against their note issue. Congressional acts of 1873 and 1875 extended the 10 percent tax on circulating notes to those issued by nonbank entities.[2] The most onerous restrictions were reserved for small-denomination currency, reflecting the curious nineteenth-century view that strict control over the issue of notes in small denominations was necessary for a sound currency. Unfortunately, small-denomination currency was sorely needed in a country where per capita annual income was well below $1,000.

Ironically, the very stringency of these restrictions on private money created a powerful incentive to disobey them. The chronic shortage of circulating cash offered a tremendous profit opportunity to anyone who could convince others to take his own manufactured currency in return for goods and services. In the nineteenth century, such issue of unauthorized currency by private firms, towns, and, in some cases, even states was a common practice. These unauthorized notes, often known as "scrip" or "shinplasters," took the form of tokens, railroad tickets, "tax redemption certificates," and so forth.[3]

Historical evidence suggests that the use of scrip declined as both coin and official paper money became more widely available toward the end of the nineteenth century. During the 1907 panic, there was a brief but important resurgence of scrip issue, particularly in the form of "clearinghouse loan certificates." At that time, federal banking law allowed clearinghouse associations of banks in a given city to issue such certificates for purposes of interbank settlements or settlements between a clearinghouse association and a given bank. During the 1907 crisis, however, a large number of these certificates were printed in smaller denominations and circulated generally as a form of emergency currency. In Georgia alone, the 1908 report of the U.S. Comptroller of the Currency estimated that roughly $2.5 million in certificates was issued by clearinghouse associations in Atlanta, Augusta, Macon, and Savannah and noted that many of these certificates were given general circulation.

The last major occasion of scrip issue in the United States occurred during the Great Depression of the 1930s. This period presents one of the most unusual episodes of scrip issue in our nation's monetary history, particularly because it took place after the founding of the Federal Reserve System. In its role as a lender of last resort the Fed could have, given congressional approval, theoretically met all emergency needs for currency (and did eventually meet most such needs). Nonetheless, numerous issues of "depression scrip" circulated locally as money, especially during the 1932-35 period.

These scrip issues merit serious study for at least three reasons. The first is that the depression scrip represented a form of privately issued money that received relatively wide use. In this sense, many forms of depression scrip resemble more modern forms of money such as money market mutual funds. The second reason is that the depression issues represent the most recent examples of scrip in the United States. Depression scrip does not seem as remote from the modern world as nineteenth-century issues or those associated with the 1907 panic. The third reason for studying the depression scrip issues is that little detailed information is available concerning scrip issues during this period. Scrip issues during the Great Depression tended to be very localized and short-term in nature

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and were often found in rural areas. For various reasons, these issues were until recently seen as something of an embarrassment for everyone involved. It is rare to find any mention of depression scrip in local chamber of commerce-type histories, and monetary histories of the Great Depression generally mention scrip only briefly if at all. A fortunate exception is Joel W. Harper's (1948) nationwide survey of depression scrip. More recently, an excellent numismatic survey has been conducted by Ralph A. Mitchell and Neil Shafer (1984).

With the goal of augmenting knowledge of the depression scrip episode, this author has undertaken a project to identify and describe scrip issues in Georgia during the Great Depression. In the case of each scrip issue, the research begins with identifying a particular issue, the total amount of its circulation, and its duration. The second step is to ascertain the "moneyness" of the issue by considering historical evidence on market valuation of the scrip relative to its face value, the general acceptability of the scrip as a transactions medium, and the velocity or rate of the scrip's turnover. The third and final step is to relate each scrip issue's "moneyness" to the circumstances associated with its issue. The present article is a progress report on this ongoing research project. It contains a brief history of the scrip issues that have been studied thus far and a summary of the conclusions that might be drawn from the depression scrip episode applicable to present-day or future monetary institutions.

The Banking Holiday of 1933 and the Issuance of Clearinghouse Scrip

One of the most important causes of scrip issue in Georgia during the early 1930s was the sequence of events leading up to the nationwide banking holiday of March 1933. In fact, the period from the stock market crash of 1929 through the first half of 1933 was the most turbulent in the nation's banking history. The number of banks nationwide dropped from about 24,500 at midyear 1929 to roughly 15,000 by midyear 1934. During the same period deposits fell from $58 billion to $46.5 billion (Board of Governors of the Federal Reserve System 1943, 24-25). The banking situation in Georgia mirrored the nation's, as the number of banks operating in the state fell from 420 in 1929 to 322 in 1934 and deposits fell from $342 million to $300 million (Board of Governors of the Federal Reserve System 1943, 26-27).

As emphasized in Susan E. Kennedy's (1973) study, the banking crisis of 1933 was a complex sequence of events that cannot be unambiguously attributed to a single cause. What is clear, however, is that the culmination of the crisis was the national banking holiday of March 6-12. President Franklin D. Roosevelt ordered this one-week closing of all banks on Monday, March 6, under the doubtful authority of the Trading with the Enemy Act, a wartime emergency measure dating from the First World War. Roosevelt's first term had begun only two days earlier, and the closing of the banks was his administration's first significant act. Such an extreme measure was necessitated by a banking crisis that had begun to take on the character of a nationwide bank run.

A chain reaction of statewide banking moratoriums had been set in motion when, on February 14, the governor of Michigan declared a statewide banking holiday to prevent the total collapse of the state's largest banks.[4] This moratorium set off more statewide banking holidays as depositors, anticipating the spread of the bank closings, frantically tried to withdraw their deposits at banks that were still open. By Friday, March 3, more than 5,000 banks had closed their doors and thirty-six states had declared at least partial restrictions on bank withdrawals (Kennedy 1973, 147). In Georgia bank holidays in neighboring states forced newly elected Governor Eugene Talmadge to declare a bank holiday on March 3.[5]

Roosevelt's closing of the banks was a bold and well-conceived gesture that did much to break the panic that had gripped the nation's banking system. However, in his proclamation declaring the bank holiday Roosevelt did not propose any detailed plan for ending the crisis and reopening the banks—apparently because no detailed plan existed at the time of

the announcement (Helen M. Burns 1974, 42-49; Kennedy 1973, 173-75). Instead, the bank holiday declaration touched off a furious debate among the new administration's members about how to best deal with the crisis. Amazingly, one of the proposals Roosevelt considered called for instantaneous monetization of all U.S. government bonds then outstanding, in the amount of $21 billion. Fortunately for the nation, this plan raised as many eyebrows then as a similar plan might now, and the president was persuaded to abandon it (Kennedy 1973, 173-74).

Another plan, generally favored by the larger city banks, called for the issuance of clearinghouse scrip on a nationwide basis.[6] The plan finally agreed on was historically significant in that it gave broad powers to the Federal Reserve banks to advance cash to member banks on virtually any collateral and allowed cash advances to any individual, partnership, or corporation against collateral of U.S. government securities. This plan was written into law by the passage of the Emergency Banking Act on March 9, 1933, and banks furnished with new infusions of Federal Reserve notes began to reopen in the twelve Federal Reserve cities, including Atlanta, on Monday, March 13 (Kennedy 1973, 180).[7]

For many Georgians, however, the reopening of the banks under the Emergency Banking Act came too late. Cash had been scarce to nonexistent in most communities since the imposition of the statewide banking moratorium on March 3. The imposition of the nationwide moratorium and the subsequent delay in the reopening of the banks meant that even the reserve city of Atlanta was virtually without cash for ten days, and towns in the southern part of the state went without cash for two weeks or longer.

The economic hardship caused by the loss of paper currency was much greater than might result from a similar event today. Georgia in 1933 was a poor state by both modern and contemporary standards. Per capita personal income in Georgia in 1929 has been estimated at about $350, equal to about half the U.S. average at the time and about ten times that amount in 1990 dollars.[8] Although checks did circulate during the bank holiday, checking accounts were much less common than today. Particularly hard hit by the cash shortage were workers in the cotton mills and other blue-collar workers in urban centers, who were accustomed to receiving their weekly pay in the form of cash.

One factor that mitigated the economic impact of the bank closings in Georgia was that a significant portion of the state economy was accustomed to operating without cash, even in 1933. In rural areas, tenant farming for store credit was a common practice if not the norm (see, for example, Michael S. Holmes 1974). And according to oral accounts recorded by Clifford M. Kuhn, Harlon E. Joye, and E. Bernard West (1990), it was still not uncommon for mill workers to be paid in company scrip, store credit, or commodities. In these sectors of the economy, it seems doubtful that the bank holiday would have caused any significant disruption of normal activity.

In 1990 it would be difficult for most of us to imagine a financial crisis such as occurred in early 1933 not being met with immediate federal government intervention. In 1933 the equally common presumption appears to have been that the cash shortage would be dealt with by issuance of clearinghouse scrip. As mentioned in the introduction, Georgia had a strong tradition of scrip issue during the latter half of the nineteenth century, a tradition reinforced by the widespread use of clearinghouse scrip during the 1907 panic. The prospect of clearinghouse scrip issue during the 1933 bank holiday was generally seen as a retreat by banks to a conservative, time-tested solution to the money shortage.[9] At the onset of the bank holiday, even federal and state officials seemed resigned to the likelihood of scrip issue. The presidential proclamation establishing the bank holiday empowered the secretary of the treasury to "permit issuance of clearing house certificates or other evidences of claims against assets of banking institutions."[10] In Atlanta, Federal Reserve Bank Governor Eugene R. Black declared that the bank holiday was "a fine and constructive measure and will help to bring about normal business conditions through the issuance of scrip."[11] One of the most enthusiastic proponents of scrip issue was Georgia's Governor Talmadge, who viewed scrip issue as a useful means of increasing the

circulation of funds. On March 14, Talmadge vetoed an emergency banking measure hastily passed by the Georgia legislature at least partly because, in his words, it "would annul [scrip] issues already made in the state."[12]

Clearinghouse associations in Atlanta, Augusta, Columbus, Macon, and Savannah began preparations for scrip issues almost as soon as the national bank holiday was announced. In Atlanta, an unprecedented $20 million issue of clearinghouse certificates was planned by the Atlanta Clearing House Association. Some idea of the magnitude of this issue can be obtained by noting that total January 1933 deposits of Atlanta Clearing House banks amounted to only $104 million.[13] Upon receiving authorization from the secretary of the treasury, the association began stockpiling the scrip for use by its member banks. At least $3 million in $1 notes had been printed and delivered by the time the plan was called off on March 9.[14] The reopening of the Atlanta Clearing House banks on March 13, and the subsequent reopening of other "licensed" banks, seems to have eliminated the need for clearinghouse scrip in Atlanta and in nearby communities in northern Georgia.[15] However, clearinghouse scrip did find its way into circulation in the southern part of the state. Below are specific instances of clearinghouse scrip issue and the scrip's impact on the communities in which it circulated.

Clearinghouse Scrip Issue during the National Bank Holiday, by City

Augusta. As soon as President Roosevelt ordered the national bank holiday, the Augusta Clearing House Association (January 1933 deposits of $9 million) announced plans to print and circulate clearinghouse certificates.[16] Interestingly, the story in the *Augusta Chronicle* carrying the announcement of the scrip issue also pointed out that in the opinion of one local banker, the scrip notes were subject to a 10 percent federal tax. This mention of the bank note tax is the only one (that this author is aware of) in contemporary accounts of clearinghouse scrip issue.

By March 10, a $5 million scrip issue had been authorized and delivered to the clearinghouse banks. On March 11, roughly $200,000 of scrip was paid out by the clearinghouse banks, much of it for the purpose of allowing manufacturers to meet their weekly payrolls. This scrip constituted the only circulating money in the city until the banks were reopened on March 14. Newspaper reports suggest that the scrip generally circulated at par and was accepted by almost all retail merchants other than national chain stores. The par valuation of the scrip was no doubt encouraged by threats from the city solicitor to prosecute any persons found to be discounting the scrip.[17]

The Augusta Clearing House scrip issue was short-lived. By March 16, two days after normal banking activity resumed in the city, Augusta banks were recalling the scrip. Of the $5 million in scrip printed, less than $300,000 ever circulated.[18] Still, the arrival of even this small amount of scrip came at a timely moment in the banking crisis. The circulation of scrip on March 11 meant that manufacturers' employees, who had already missed one week's pay because of the banking holiday, could receive their weekly wages and that local merchants could carry out business on something resembling normal terms.

Columbus. The issue of clearinghouse scrip in Columbus in many respects paralleled the Augusta issue. Shortly following the announcement of the national bank holiday, the Columbus Clearing House Association (January 1933 deposits of $11 million) sought and received permission for a $1 million scrip issue. "Over $100,000" of the scrip was paid out on March 10 to meet manufacturers' payrolls, and, according to Mitchell and Shafer (1984, 64), the entire $1 million issue was eventually circulated. As was the case with Augusta, scrip apparently was the only money circulating in the city until March 14. Welcomed by most merchants, the scrip generally circulated at par. There is even one report of a merchant offering a premium for the clearinghouse scrip.[19]

Two unusual aspects of the Columbus scrip experience bear mention. The first is that the scrip apparently continued to circulate for some time after the banking crisis had

passed, although exactly how long is not clear. In the weeks immediately following the bank holiday, the banks in the Columbus Clearing House Association did not publish any notice that the scrip was being withdrawn from circulation. Mitchell and Shafer (1984, 64) put the duration of the scrip issue at twenty-seven days, but the memoirs of an employee of the clearinghouse, W. Roy Luttrell, Sr., suggest that the scrip continued to circulate locally for a period of about three months.[20] The second unusual feature of the Columbus scrip was that it circulated concurrently with another type of scrip, that is, scrip printed and circulated by Phenix City, Alabama. The Phenix City scrip and other municipal scrip issues will be discussed in a later section.

Macon. The experience with clearinghouse scrip in Macon was also very similar to the Augusta episode, although less detailed information concerning the scrip issue is available in contemporary newspaper accounts. Scrip issued by the Macon Clearing House Association (January 1933 deposits of $7 million) began circulating in the city on March 10. Approximately $100,000 in scrip was issued on March 10 and 11 to meet manufacturing payrolls. The clearinghouse banks reopened their doors for normal operations on March 14, and much of the scrip was immediately withdrawn from circulation. Newspaper accounts indicate that the scrip was welcomed by city merchants and largely circulated at par.[21]

Savannah and Valdosta. Savannah, the second largest banking center in the state, did not escape having to use clearinghouse scrip during the bank holiday. Contemporary newspaper accounts indicate that the Savannah Clearing House Association (January 1933 deposits of $66 million) printed at least $1.5 million in scrip, though probably only a fraction of this amount actually circulated. Mitchell and Shafer (1984, 65) put the total amount of the issue at $1 million, of which only $535,000 is supposed to have circulated. The scrip began circulating on March 10 and apparently circulated at par. Local banks began reopening on March 14, and the public was urged by the president of the clearinghouse association to redeem the scrip promptly.[22]

An unusual feature of the Savannah scrip issue is that some of the scrip printed by the Savannah clearinghouse also circulated in Valdosta. Although Valdosta had its own clearinghouse association at the time, the small size of its banking market (January 1933 deposits of $1.9 million) made it more convenient to use the Savannah scrip than to print a separate issue. Issue of the Savannah scrip in Valdosta was no doubt facilitated by the presence of branches of the Citizens and Southern National Bank (headquartered in Atlanta) in both cities. The Savannah scrip was first issued in Valdosta on March 11 and apparently circulated until at least March 29, when a general announcement withdrawing the scrip was published. As was the case with the Columbus scrip issue, the clearinghouse scrip apparently continued to circulate after the Valdosta banks' reopening on March 14 and also circulated alongside scrip issued by the city of Valdosta. Research has uncovered no mention of the clearinghouse scrip's being circulated at par in Valdosta, though the lack of evidence to the contrary and the par valuation of the same scrip in Savannah suggest that it did circulate at face value.[23]

Other Cities. In addition to the cities listed above, a number of others in Georgia had clearinghouse associations in 1933. The Rand McNally *Bankers Directory* for 1933 lists clearinghouse associations at Albany, Brunswick, Elberton, Griffin, Newnan, and Rome. Reflecting the population of the communities they served, these associations were relatively small in size, each having combined deposits of its member banks totaling less than $4 million. Of these associations, only Brunswick's has been investigated at this point; the possibility of scrip issue by the other associations remains to be investigated.

Contemporary newspaper accounts indicate that clearinghouse scrip circulated in Brunswick beginning on March 11, 1933. The exact amount of the scrip issue is not mentioned. Numerous accounts report the scrip circulating at par and, in one case, even at a 10 percent premium, suggesting that the Brunswick clearinghouse scrip was as readily accepted as were similar issues in the cities listed above. A general call for redemption of the scrip was published on March 23.[24]

On the whole, contemporary accounts indicate that the March 1933 clearinghouse scrip issues in Georgia were highly successful as emergency local currency. Apparently these issues enjoyed the full support of the local business establishments (perhaps in part because of the reluctance of chain stores to accept the scrip) and were by most accounts circulated at or above par. Two important factors reinforced the success of the clearinghouse scrip issues. The first of these was the virtual certainty, thanks to the Emergency Banking Act passed on March 9, of being able to exchange the scrip for Federal Reserve notes in the near future. The second was the positive experience with clearinghouse scrip issues following the Panic of 1907. Any positive assessment of these scrip issues must be tempered, however, by the fact that most contemporary accounts reflect the opinions of community leaders and not the mill workers and small merchants who were the most likely recipients of the scrip.

Scrip Issues by Local Governments

Clearinghouse associations by no means had a monopoly on scrip issue during the Great Depression. In nationwide surveys of depression scrip, Harper (1948) and Mitchell and Shafer (1984) list issues made by private businesses, self-help groups, business groups, and local governments. To the author's knowledge, in Georgia only the last type of scrip was issued in significant amounts. Harper's survey lists seven issues of depression scrip by local governments in Georgia. Since the scrip issued by the city of Valdosta (see below) is not listed by Harper, it seems safe to conclude that this list is not complete. Mitchell and Shafer's survey only lists issues by the city of Atlanta.

One factor that makes the municipal scrip issues difficult to identify is that the reasons for issuing the scrip tended to vary from community to community rather than being tied to a single national event such as the national banking holiday. The most common reason for issuing scrip, according to Harper, seems to have been a combination of revenue shortfalls and the inability of the local governments to obtain financing by more conventional means. But other motives did influence the decision by municipalities to issue scrip. The general shortage of circulating cash during the early depression years led many community leaders to feel that issuing scrip would provide their communities with a much-needed circulating currency. As shown in Timberlake (1981), the widespread use of municipal scrip in the nineteenth century provided ample precedent for this sentiment. At least one scrip issue in the state was made for the explicit purpose of putting the unemployed back to work. Below are described the experiences of a number of Georgia communities with scrip issued by local governments during the 1932-35 period.

Local Government Scrip Issues, by City or County

City of Atlanta. The most prolific issuer of depression scrip in the state appears to have been the city of Atlanta. Although no exact estimate is currently available, the total amount of scrip issued by the city from 1930 through 1936 can be placed at more than $2.5 million, only a fraction of which circulated as money. A total of fourteen issues were planned, and at least eight of them were distributed to municipal employees. What is currently known about these issues is summarized in Table 1.

The cause of the Atlanta scrip issues can be traced directly to the city's rapid population growth during the 1920s. Between 1920 and 1930 the population of Atlanta grew from about 212,000 to roughly 270,000, and the city's school population grew from 33,000 to 65,000.[25] By 1930 municipal finances were severely pressured by the obligation to provide city services, particularly schooling, to the swelling population and by the loss of tax revenue caused by a faltering economy. Finding itself short of funds for December 1930 salaries, the city entered into an agreement with Rich's department store to issue scrip to city schoolteachers in lieu of December salaries. The scrip could

Table 1.
City of Atlanta Scrip, 1930-36

Date of Resolution	Interest Rate	Date of Issue	Amount of Issue	Corporate Sponsorship	Date of Redemption
?	?	12-18-30	$200-238K	Rich's	01-01-31?
12-15-32	6%	12-20-32	$380-400K	Rich's[a]	01-27-33[b]
02-07-33	6%	02-15-33	$280-300K	Rich's	05-20-33
04-03-33	4%	?	?	?	"During 1933"
04-19-33	4%	*	*	*	"During 1933"
11-20-33	6%	?	$260K	?	05-01-34
01-12-33	2%	?	$500K	Coca-Cola	05-19-34
11-05-34	4%	12-05-34	$200K	Rich's	05-01-35
12-07-34	?	?	$400K	Coca-Cola	?
02-04-35	4%	?	?	?	?
11-04-35	4%	?	$800K	Trust Co.	05-13-35[b]
01-20-36	3%	?	?	?	"During 1936"
05-04-36	3%	?	?	Trust Co.?	10-30-36?[b]
11-02-36	?	?	?	?	?

[a] *Rich's offered to give half cash and half store credit for the notes of this issue. See text, page 25.*

[b] *Actual payment dates from Mitchell and Shafer (1984).*

* *Probably not issued because of early payment of property taxes by Atlanta Clearing House banks. See* Atlanta Constitution, *May 22, 1933, or Atlanta Clearing House Association (1950, 60).*

Source: Resolution dates and interest rates are from Atlanta City Council Minutes. Dates of issue, amounts, and corporate sponsors are from reports in the Atlanta newspapers or Mitchell and Shafer (1984). Redemption dates are either the dates cited in the enabling resolutions (scrip was callable before the indicated dates) or actual payment dates from Mitchell and Shafer.

then be redeemed at Rich's for its full face value.[26] A 1934 newspaper account reported that Rich's absorbed a total of $238,000 in scrip.[27]

Although little, if any, of the December 1930 issue circulated as money, it is nonetheless of interest because it set the pattern for subsequent issues. As a means of borrowing money the issue of scrip seems unnecessarily costly and elaborate. An unresolved question is why the city did not borrow the money directly from Rich's or other firms in Atlanta's business community. Perhaps Rich's and other corporate "sponsors" of the city's scrip issues preferred the issue of scrip as a means of increasing public awareness of their role in shoring up the city's finances. Another possible explanation is that the city charter's restrictions may have led local leaders to prefer the issue of scrip. Chapter 12 of the 1924 Atlanta City Charter did not allow the "annual expense of the City . . . to exceed the annual income." Given the longstanding use of scrip as an emergency currency in the South, its issue may have seemed less in contradiction to that clause than a direct loan. A third possibility is that the issue of scrip may have served as a means of effectively signaling to the business community that the city indeed lacked the means to pay its employees.

The city's fiscal situation continued to deteriorate in 1931 and 1932. The assessed value of the city's property tax rate rose by a scant 2 percent in 1931 and fell by more than 10 percent in 1932.[28] By February 1932 Mayor James L. Key and the city council had imposed stringent economizing measures in an effort to bring the city's finances under control. Municipal employees other than teachers were given pay cuts of 10 percent and ordered to take payless vacations. The labor union representing many Atlanta teachers, the Atlanta Public School Teachers Association, voted to accept even deeper pay cuts, ranging up to 16 percent on a sliding scale. In spite of these measures, by November 1932 the city found itself short of funds to meet its payroll. Negotiations between the city and local banks to obtain emergency loans were broken off when the two parties could not agree on the size of the city's 1933 budget (Melvin W. Ecke 1972, 236-37).

In 1932 the issue of scrip to cover the city's payroll seemed to be the natural, though reluctantly applied, solution to this dilemma. City employees did in fact receive their pay for November and December in the form of scrip. The November payroll amounted to some $400,000, and scrip in this amount was issued on December 20, 1932. The scrip promised to pay to the bearer interest equivalent to 6 percent per annum upon redemption on or before March 1, 1933. The December 1932 payroll amounted to $300,000 and was not issued until February 15, 1933. The smaller size of the latter issue was made possible by imposing two-week payless vacations on city teachers and thus halving the size of the school system's payroll for that month. The February 1933 scrip issue was redeemable on May 20, 1933, and again promised to pay 6 percent annualized interest upon redemption.[29]

"The [City of Atlanta] issue of scrip may have served as a means of effectively signaling to the business community that the city indeed lacked the means to pay its employees."

In contrast to the clearinghouse scrip issues described above, the Atlanta city issue did not always circulate at par, despite its rather generous interest rate. The city did not and could not legally require that the scrip be accepted at par. Nor is there any evidence to suggest that Atlanta's banks (which had their own set of problems at the time) were willing to cash either the December 1932 or February 1933 city scrip issues. Although contemporary newspaper accounts do not mention any explicit discounting of the city scrip, newspaper statements by prominent Atlanta retailers suggest that par valuation of the scrip was far from universal. For example, the Atlanta Retail Merchants' Association initially recommended to its members that no more

than 25 percent of the scrip's face value be given in change for any purchase made with scrip.[30] Apparently Rich's department store, which had offered to cash the 1930 scrip, was not in a position to absorb the entire December 1932 issue. It did offer more generous terms than most merchants and promised to exchange the scrip for half cash and half store credit. Rich's also offered to cash the February 1933 issue outright.[31]

Oral history accounts recorded by Kuhn, Joye, and West (1990, 144-45, 201) confirmed discounting of the Atlanta city scrip. One Atlanta teacher recalled that "most of the stores, they wanted a percentage for it, for cashing that scrip." Some idea of the prevailing rate of discount is provided in the (unpublished) recollections of a city fireman whose large savings allowed him to carry out a small business in cashing scrip at 95 percent of face value. This rate of discount would have put the annualized yield on the scrip at close to an unheard of rate of 27 percent, giving an idea of the public's lack of confidence in the city's finances. Even higher rates of discount and downright nonacceptance of the scrip were also common, according to the oral history accounts. An Atlanta policeman curtly summarized the situation in one sentence: "Nobody wanted that scrip."[32]

"Some idea of the prevailing rate of discount is provided in the (unpublished) recollections of a city fireman whose large savings allowed him to carry out a small business in cashing scrip at 95 percent of face value."

Fortunately for Atlanta municipal employees, the statement was not literally true. The city itself was willing to take the scrip at par for payment of taxes and utility bills but refused to give any change for payments in scrip.[33] In oral history accounts, Rich's offers to redeem the scrip were recalled as crucial to the scrip issues' success. One Atlanta teacher recalled, "You could go to Rich's and just put the scrip up on the counter and say, 'I'd like to get this scrip cashed.' You didn't have to spend anything." In the opinion of another teacher, Rich's acceptance of the scrip "saved our lives. It saved the public school system." A school administrator noted that because of its ready acceptance of scrip, Rich's was heavily patronized by the city's grateful teachers for years afterward (Kuhn, Joye, and West 1990, 144-45, 201).

Atlanta's fiscal crisis of late 1932 was to be repeated, to a somewhat lesser degree, in 1933, 1934, and 1935. The city's tax base fell by about 12 percent in 1933 from an already depressed 1932 level, and it changed relatively little from 1933 to 1936 (see Douglas L. Fleming 1984, 203). Because the generally improved financial condition of Atlanta's corporate community somewhat offset the effects of the reduced tax base, it was easier for the city to find sponsors for its scrip issues than it had been in 1932.

In November 1933 the city found itself again unable to meet its payroll, and $260,000 in scrip bearing 6 percent interest was printed. The November 1933 scrip apparently was not backed by any corporate sponsor and may not have been issued.[34] The remainder of the city's financing needs for 1933 was covered by a subsequent $500,000 scrip issue. However, the latter issue probably did not circulate since it was redeemable, at par, at several of the larger Atlanta banks who in turn resold the scrip to the Coca-Cola Company under an agreement with the city. This scrip issue bore a much-reduced interest rate of 2 percent.

In November 1934 the city tried to negotiate a loan for its year-end cash needs from a group consisting of the city's banks and Coca-Cola. When these negotiations broke off, the city planned scrip issues to meet payrolls for the last half of November and all of December. City employees were paid the issue for the last half of November 1934, amounting to $200,000, on December 5. Rich's immediately offered to redeem all the scrip in cash, and presumably most of this issue ended up with Rich's and did not circulate as money. An agreement between the city and the Coca-Cola Company was announced December 7,

whereby Coca-Cola agreed to absorb the $400,000 scrip issue needed to meet the city's December payrolls. As in 1933, the scrip was still paid out to city employees, who were able to cash the scrip at various local banks. Because of the sponsorship of the 1934 issues by Rich's and Coca-Cola, it is doubtful that much, if any, of these issues circulated as cash.

According to City of Atlanta records, and to Mitchell and Shafer (1984), five more scrip issues were authorized and printed in 1935 and 1936. At the present time it is unclear how many of these actually circulated. Contemporary newspaper accounts indicate that Trust Company Bank of Georgia was willing to cash the entire $800,000 amount of the November 1935 issue.[35] A photograph of a canceled May 1936 scrip note in Mitchell and Shafer (1984, 64) also bears the Trust Company Bank logo, implying that the issue was absorbed by that bank.

Atlanta's experience with municipal scrip issue suggests that such issues worked better as vehicles for emergency municipal financing than they did as circulating money. The inability of Atlanta's government to obtain emergency financing for its cash needs did little to enhance the fungibility of its scrip. Individuals or firms who had accepted the scrip also had an incentive to hold on to the scrip to receive the promised interest payment. Little in the historical evidence suggests that the Atlanta city scrip was widely used for any more than a single transaction.

Still, the scrip did prove useful in avoiding a complete shutdown of city services during the fiscal crises brought on by the Great Depression. The fact that the Atlanta scrip was often discounted suggests that the interest rate paid by the city was probably lower than what the city would have paid for financing through more traditional channels. In this sense, the scrip issue may have served as a politically acceptable method of imposing a temporary pay cut on municipal employees; it forced them to absorb the difference between the nominal (that is, face) and market valuation of the scrip issue.

Valdosta and Phenix City. Atlanta's experience with municipal scrip was repeated on a smaller scale in other cities in the state. The City of Valdosta issued "less than $10,000" in scrip on March 7, 1933, to meet its payroll while the banks were closed.[36] Apparently the Valdosta scrip bore no interest and was redeemable on or before July 1, 1933, at the option of the city. Newspaper accounts do not indicate whether the city's scrip circulated at par, but numerous exhortations by civic leaders to "keep the city scrip circulating" indicate that the city's scrip was less popular than the simultaneously circulating Savannah Clearing House scrip.[37]

Likewise unpopular was the municipal scrip issued by Phenix City, Alabama, which circulated in Columbus, Georgia, during the banking holiday alongside scrip issued by the Columbus Clearing House. A particularly unattractive feature of the Phenix City scrip was its "stamping" or "self-liquidating" requirement. As originally issued, the Phenix City scrip notes required with each use the cancellation of a coupon on the back of the note, each cancellation costing the note holder three cents. The scrip could not be redeemed until thirty-five cancellations had been performed or, at the latest, on March 18, 1935. The self-liquidating scheme was a common feature of depression-era scrip issues, according to Harper (1948), who traced its origins to the *Freiwirtschaft* movement of early twentieth-century Germany. Early versions of the stamping scheme required periodic cancellation of the scrip coupons, whether it had been used in a transaction or not. The basic idea behind stamping was to stimulate business activity by imposing a tax on holding money. However noble the scheme's original intentions may have been, in practice it usually amounted to little more than a backhanded way of imposing a tax on transactions. The unpopularity of the Phenix City scrip led to several attempts to weaken the stamping requirement, as well as early retirement of the scrip issue.[38] According to Harper's (1948) accounts, such experiences characterized scrip issues with the stamping requirement.

Other Cities. In addition to the cities mentioned above, Harper (1948) lists issues of depression scrip by Americus, Dublin, Macon, Sparta, and Thomasville.[39] Other than the fact that the last two cities' scrip required stamps, relatively little information is available at the current time about these scrip is-

sues. According to Mitchell and Shafer (1984), the Americus issue was authorized on February 1, 1933, in an amount not to exceed $10,000. Municipal employees received 40 percent of their pay in scrip for an unspecified period of time. William B. Williford (1975) notes that the Americus municipal scrip served as an emergency currency during the 1933 bank holiday. Nancy B. Anderson (1979) states that Macon paid its employees in scrip for a period of about one year. Though technically not a municipal issue, some scrip was issued by the Sea Island Company during the 1933 bank holiday to serve residents of the resort as an emergency currency.[40] Details concerning the amounts, duration, and valuation of these issues are being investigated.

Fulton County. Harper (1948) also lists a scrip issue by Fulton County. The scrip issue was small and of short duration, but a number of interesting circumstances surrounded the county's decision to issue scrip. The proximate cause of the issue was a demonstration at the Fulton County courthouse on June 30, 1932, in which almost one thousand people participated. Local Communists organized the demonstration in response to the Fulton County commissioners' decision to cut relief expenditures in the face of falling tax revenues (Kuhn, Joye, and West 1990, 206).[41]

On July 1 the commissioners voted to spend $6,000 on a program "to support paupers." An additional $2,000 was voted to this program on July 29, and the program was continued until September 21, 1932.[42] Contemporary newspaper accounts indicate that this relief effort largely consisted of employing jobless men to help maintain county parks. The men were paid in scrip, which was redeemable in food staples at a county commissary. Women and disabled men were given the scrip without being required to work.[43] It is not known whether any of the Fulton County scrip ever circulated. Given that the scrip was issued in bearer form, it seems reasonable to assume that some of it did. To the author's knowledge, Fulton County's was the only scrip issue in the state made for the explicit purpose of providing relief to the unemployed, although Harper (1948) lists five municipalities in other states that had similar relief programs.

Some Lessons from Georgia's Depression Scrip Experience

Monetary systems have historically consisted of a combination of private and public money, sometimes called "inside" and "outside" money. The U.S. monetary system in 1990 is no exception: outside money such as cash circulates alongside inside money such as money market mutual funds. This pattern is likely to continue, although some economists have considered the possibility of an entirely private monetary system (for example, Lawrence H. White 1989). In a quantitative sense, private or inside money has in recent years become increasingly important in our economy. The impact of deregulation and technological innovation has been to create a large new set of financial instruments that possess some degree of "moneyness."

In such an environment, the depression scrip experience in Georgia, and in the United States more generally, provides some interesting lessons as to the usefulness of certain forms of private money. The depression scrip issues essentially represented attempts to create forms of private money whose acceptability would match that of cash, at least in the community where they were issued. Given the current pace of technological change in the financial services industry, it is conceivable that private instruments of a similar nature could circulate sometime in the foreseeable future.[44]

The most obvious implication of the episodes described above is that the real bills doctrine was as applicable in 1930s Georgia as anywhere else; that is, scrip notes issued in excess of the value of their backing were likely to be deeply discounted or simply not accepted as payment for goods or services. The clearinghouse scrip issues of 1933 largely circulated at par because of the virtual certainty of being able to exchange the scrip for Federal Reserve notes, usually after a few days or weeks from the date of the scrip issue. The clearinghouse certificates were in essence backed by the provisions of the Emergency Banking Act that drastically liberalized collateral requirements for advances from the discount windows at the district

Federal Reserve banks. By contrast, the municipal issues studied thus far were often discounted or simply not accepted as payment. The public's reluctance to accept the municipal scrip reflected the fact that these issues were backed only by the uncertain flow of future property tax receipts and were redeemable only after a period of months or even years. The very issue of the municipal scrip, particularly in the case of Atlanta, signaled an unusual disruption in the flow of tax receipts. Under such circumstances, some discounting of the municipal issues would be expected to get people to bear the risk of holding scrip that might not be promptly redeemed.

A second lesson that can be gleaned from the municipal scrip issues is that their riskiness severely limited their usefulness as transactions instruments. The risk associated with the municipal issues could and often did result in a high rate of return for those who accepted the scrip at a discount and held it until the promised date of redemption. The presence of such high returns effectively divided the public into those people willing to accept the risk of holding the scrip at the going rate(s) of discount and those who were not willing to hold the scrip. Once an exchange took place between members of the two groups, further use of the scrip in transactions was unlikely.

A third implication can be drawn from the experience with stamped or self-liquidating scrip issued by Phenix City, Alabama, that was used in Columbus. The unpopularity of this issue, relative to the scrip issued by the Columbus Clearing House Association, suggests such self-liquidating instruments will not be used when alternative means of payment are available. Given that the only real backing behind such an issue was a claim to tax receipts generated by its own use, it is not surprising that the public preferred to use scrip that did not require the payment of this tax. By using the clearinghouse scrip (or cash) instead of the stamped municipal scrip, residents of Columbus were able to avoid the tax on transactions imposed by the stamped scrip as well as any uncertainty concerning redemption of the municipal issue.

Research to this point has provided only a thumbnail sketch of Georgia's experience with scrip money during the Great Depression. Many more details are needed to better evaluate the success of the scrip issues described above, and no doubt other issues have not yet been discovered. One important area that needs to be addressed is the legal status of the various scrip issues. The clearinghouse scrip issues of 1933 were issued under authority of the secretary of the treasury, but the conditions under which the issues were approved are not known. It is also not known how or why the depression scrip issues were able to avoid the restrictions imposed by federal banking law on bank note issue. Another area that needs to be addressed is the possible use of scrip issued by textile mills and other private firms during the 1933 banking holiday. Future research by the author in this area will aim to provide a more complete picture of this fascinating episode in U.S. monetary history.[45]

Notes

[1] To be meaningful, this legal standard had to be backed by the willingness of the U.S. Treasury and private banks to exchange gold for paper money. Periods when holders of either government or private banks' notes were unable to carry out this exchange were generally referred to as "suspensions of convertibility." For purposes of this survey, the various suspensions of convertibility that occurred under the gold standard have been ignored. Also, the "bimetallic" standard of the late nineteenth century has been ignored. See Friedman and Schwartz (1963) or Timberlake (1978) for an introduction to these topics.

[2] See Huntington and Mawhinney (1910, 379 and 424). Article I, section 10 of the Constitution prohibits the states themselves from issuing paper money.

[3] There were almost as many names for scrip as there were issues. Two of the author's personal favorites are "soap wrappers" and "doololly."

[4] See Kennedy (1973, chapter 4) for a detailed account of the Michigan crisis.

[5] *Atlanta Journal*, March 3, 1933.

[6] See Burns (1974, 44-45). Harper (1948, 90-92) notes that Professor Irving Fisher was among the most enthusiastic supporters of a nationwide scrip issue.

[7] See also *Atlanta Journal*, March 13, 1933.

[8] Figures for 1929 are from U.S. Bureau of the Census (1975, 243). Adjustment to 1990 dollars uses the Consumer Price Index (CPI). The estimate in 1990 dollars is probably best thought of as an upper bound because of the use of the 1929 personal income figure, which is probably above the 1933 level, and the inflation of this figure using the CPI, which tends to overstate the rate of inflation over long time periods.

[9] See, for example, "Business Quickly Restored by Atlanta Scrip in 1907," *Atlanta Journal*, March 7, 1933, or "Scrip Means Good Business," *Columbus Enquirer*, March 11, 1933.

[10] *Atlanta Constitution*, March 6, 1933.

[11] Ibid.

[12] For Talmadge's favorable view of scrip, see *Macon Telegraph*, March 13, 1933; also Lemmon (1952, 148). For Talmadge's veto of the state banking bill, see *Atlanta Constitution*, March 14, 1933.

[13] January 1933 figures on the clearinghouse associations are from Rand McNally (1933, 57-58).

[14] See Atlanta Clearing House Association (1950, 36-47). The ACHA called off the scrip issue when it became clear that congressional passage of the Emergency Banking Act would allow all cash needs to be met in Federal Reserve notes.

[15] A March 13 report in the *Atlanta Constitution* indicated that the clearinghouse banks were already open on March 10 for purposes of meeting payrolls and other such "emergencies." Judging from the experience of Georgia communities where scrip was issued, the early availability of this "emergency" currency was probably an important factor in the Atlanta banks' decision not to issue scrip.

[16] "Local Clearing House Perfects Cash Program," *Augusta Chronicle*, March 7, 1933.

[17] *Augusta Chronicle*, March 11-14, 1933. "Par" valuation of the scrip means that prices paid by holders of scrip were the same as customary cash prices.

[18] The *Augusta Chronicle*, March 16, 1933, puts the circulation at around $200,000. Mitchell and Shafer (1984) put the circulation of the Augusta issue at about $275,000.

[19] See *Columbus Enquirer*, March 7-14, 1933; also Luttrell (no date, 11).

[20] Luttrell served as secretary to the Columbus Clearing House Association for the duration of the scrip issue.

[21] *Macon Telegraph*, March 7-15, 1933.

[22] *Savannah Evening Press*, March 8-14, 1933.

[23] *Valdosta Times*, March 7-29, 1933; *Brunswick News*, March 7-23, 1933.

[24] *Brunswick News*, March 7-23, 1933.

[25] Population and school enrollment estimates are those reported in Racine (1969).

[26] *Atlanta Constitution*, December 14, 1930; *Atlanta Journal*, December 18-19, 1930.

[27] *Atlanta Constitution*, December 20, 1932; February 16, 1933; December 5, 1934.

[28] Fleming (1984, 203) presents figures that put the assessed value of the city's tax base at $418 million for 1930, $425 million for 1931, and $381 million for 1932.

[29] Atlanta City Council Minutes, December 15, 1932; December 19, 1932; January 2, 1933; February 3, 1933; February 6, 1933. See also *Atlanta Constitution*, December 13-20, 1932; January 29, 1933; February 7, 1933; February 16-20, 1933.

[30] *Atlanta Constitution*, December 16, 1932.

[31] *Atlanta Constitution*, December 20, 1932; February 16, 1933.

[32] See Kuhn et al. (1990, 144-45 and 201); also unpublished portions of an interview with Hugh McDonald, Living Atlanta Oral History Collection, Atlanta Historical Society.

[33] Almost all of the enabling resolutions in Table 1 have a clause to this effect.

[34] See Atlanta City Council Minutes, November 20, 1932, and Mitchell and Shafer (1984, 62). The *Atlanta Constitution*, November 21, 1933, mentions printing of the scrip but no report of its issue has been found.

[35] *Atlanta Constitution*, November 5, 1935; November 7, 1935.

[36] *Valdosta Times*, March 7, 1933; March 8, 1933.

[37] *Valdosta Times*, March 16, 1933; March 23, 1933; March 25, 1933.

[38] *Columbus Enquirer*, March 22, 1933; April 5, 1933. According to Mitchell and Shafer (1984, 30), the entire issue was retired by June 26, 1933.

[39] Holmes (1974, 326) mentions the use of municipal scrip in Americus and Thomasville.

[40] *Brunswick News*, March 7, 1933.

[41] See also the minutes of the Fulton County Board of Commissioners, June 25, 1932.

[42] Minutes of the Fulton County Board of Commissioners on the indicated dates.

[43] *Atlanta Constitution*, July 12-14, 1932.

[44] As noted in White (1989), the creation of par-acceptance automatic teller machine (ATM) networks constitutes a significant step in this direction. Timberlake (1978) notes that U.S. travelers checks often serve as a quasi-currency in foreign markets.

[45] The author would welcome any information concerning depression scrip issues in Georgia and nearby states from people who had personal experience with scrip. Please contact the author at: Research Department, Federal Reserve Bank of Atlanta, 104 Marietta Street, N.W., Atlanta, Georgia 30303-2713; telephone 404/521-8970.

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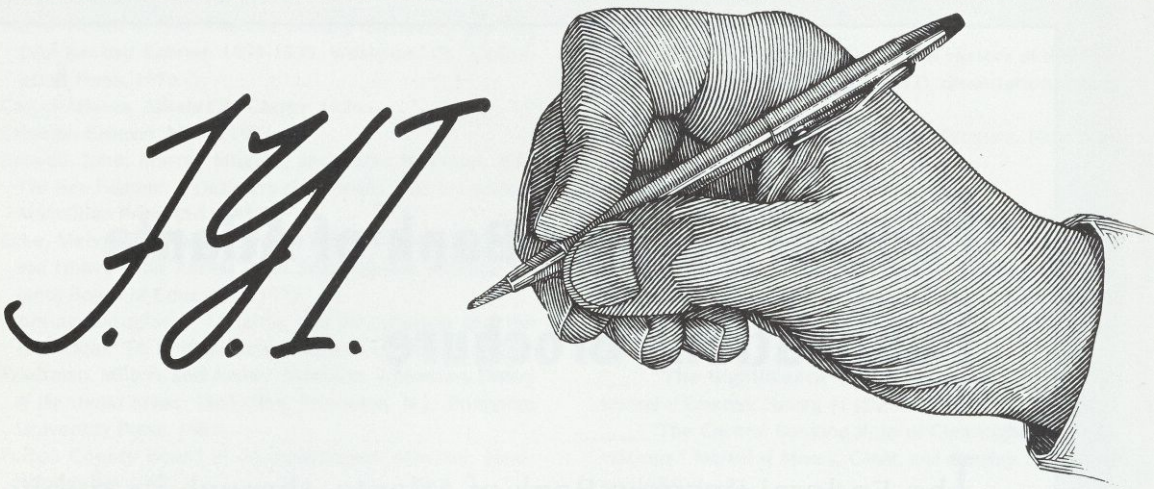

Inflation and the Dollar Index

Karen R. Hunter

In 1986 the Atlanta Fed first published its dollar index to provide an updated summary measure of the dollar's global value. Recently, a few of the eighteen countries within the Atlanta Fed trade-weighted dollar index have been experiencing inflation that is higher than the U.S. rate, prompting concern that the Atlanta Fed dollar index may have become a less accurate measure of the dollar's real value. The Atlanta Fed dollar index, as well as a host of other new and existing indexes, was specified as an aggregate measure, a summary statistic of the dollar's average value against the currencies of the world. The recent proliferation of currency indexes may be a product of the emergence of large bilateral trade imbalances since 1982.[1] Because trade imbalances are often attributed to over- or undervalued currencies, a single statistic capable of tracking the dollar's value could be helpful in exploring trade issues.

The Atlanta Fed dollar index is constructed using nominal exchange rates weighted by a country's share of U.S. trade. Because each component country's exchange rate is not adjusted for inflation, one of the important criteria when considering whether to include a country in the index is that its inflation track U.S. inflation fairly closely. Otherwise, changes in exchange rates would reflect relative price movements between countries in addition to changes in real, or inflation-adjusted, value. If all the countries in an index are nearly price-stable or are inflating at similar rates, then a nominal index such as the Atlanta Fed's index behaves like a real, or price-deflated, index. If inflation rates diverge among countries in an index, then a nominal index may be distorted or biased in its representation of changes in real value among currencies. The purpose of this article is to examine whether or not the nominal Atlanta dollar index remains a reasonable proxy

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for the dollar's average real value, given changes in the rate of price change in several countries included in the index. This study is also an examination of the impact of inflation differentials on various regional subindexes into which the Atlanta Fed index is divided.

Currency Fluctuations

Since the 1973 conversion to a floating exchange rate system, currencies have not only fluctuated widely in value but also have moved by disparate margins against the dollar. For example, the yen depreciated roughly 14.7 percent and the Deutschemark declined 43.8 percent in value versus the dollar from 1982 to 1985, while the Canadian dollar depreciated 16.1 percent against the dollar over the same period. Clearly, any one bilateral exchange rate is an unsuitable measure of the dollar's overall international value. It is, however, possible to combine, or average, bilateral exchange rates to get an idea of the dollar's average movement.

Giving each currency within this average equal weight would be imprudent since individual fluctuations in each exchange rate are not of equal importance to the U.S. economy. Within the Atlanta Fed index the currencies are weighted by their respective proportion of trade (exports plus imports) with the United States in 1984. For example, Canada, the United States' largest trading partner, has the highest weight, 0.288, of the currencies in the index. Japan, the nation's second largest trading partner, has a weight of 0.213. When the index shows that the dollar appreciated 28.8 percent against the eighteen currencies in the Atlanta Fed dollar index from 1982 to 1986, it is understood that the dollar did not rise uniformly against all currencies but that, on average, it appreciated by 28.8 percent.

The Atlanta Fed dollar index is also divided into regional subindexes since countries within a particular region may have similar trading patterns with a third country and their currencies often move together. Subindexes for Europe, Canada, Asia, and Asia excluding Japan have been defined. See Table 1 for a list of the eighteen countries, weights, and the composition of the subindexes. Charts 1-5 show the movement of the nominal Atlanta Fed index and subindexes since 1981. It should be noted that the scale of the charts is not uniform.

Inflation Rates

From the beginning, the countries included in the nominal Atlanta Fed trade-weighted index were chosen to cover the largest amount of U.S. trade possible (roughly 80.0 percent) while limiting the number of currencies according to certain criteria.[2] Although an index might ideally encompass all U.S. trading partners, inclusion of either countries with high inflation relative to that of the United States or developing countries that employ multiple exchange rates would introduce a bias.[3] A country such as Mexico, the United States' third-largest trading partner, has been excluded from the index because of its historically high inflation rates and the tiered exchange rate in effect during much of the 1980s. Creating the Atlanta Fed index so that the average inflation rate of the countries in the index approximated that of the United States generated an index that could function as a reasonable proxy for a real aggregate dollar index, with the added advantage of timeliness. Because nominal exchange rates, which are available daily and immediately, are employed in the index, it is possible to generate a daily Atlanta Fed dollar index. Timely, high-frequency price data necessary for a deflated, or real dollar, index are less available.

Several countries, primarily those included in the Asian subindex, have experienced accelerating inflation in the late 1980s. Although comparatively high, these inflation rates, with the exception of China's, have been generally in line with those found in other industrialized countries. For example, in 1989, prices increased 7.6 percent in Australia, 9.7 percent in Hong Kong, and 7.8 percent in the United Kingdom, compared with an inflation rate of around 4.5 percent for most industrialized

Table 1.
Atlanta Fed Trade-Weighted Currency Index and Subindexes*

Country	Exports	Imports	Sum	Percent of Total
Canada	46,524	66,911	113,435	28.768
Japan	23,575	60,371	83,946	21.289
United Kingdom	12,210	15,044	27,254	6.912
West Germany	9,084	17,810	26,894	6.820
Taiwan	4,775	14,772	19,547	4.957
Korea	5,983	10,027	16,010	4.060
France	6,037	8,516	14,553	3.691
Italy	4,375	8,504	12,879	3.266
Hong Kong	3,062	8,899	11,961	3.033
Netherlands	7,554	4,329	11,883	3.014
Saudi Arabia	5,564	4,009	9,573	2.428
Belgium	5,301	3,287	8,588	2.178
Singapore	3,675	4,121	7,796	1.977
Australia	4,793	2,899	7,692	1.951
China	3,004	3,381	6,385	1.619
Switzerland	2,563	3,199	5,762	1.461
Spain	2,561	2,628	5,189	1.316
Sweden	1,542	3,427	4,969	1.260
Totals	152,182	242,134	394,316	100.00
		European Subindex		
United Kingdom	12,210	15,044	27,254	23.102
West Germany	9,084	17,810	26,894	22.797
France	6,037	8,516	14,553	12.336
Italy	4,375	8,504	12,879	10.917
Netherlands	7,554	4,329	11,883	10.073
Belgium	5,301	3,287	8,588	7.280
Switzerland	2,563	3,199	5,762	4.884
Spain	2,561	2,628	5,189	4.399
Sweden	1,542	3,427	4,969	4.212
Totals	51,227	66,744	117,971	100.00

* *Trade weights reflect total trade in 1984. Each weight is defined as a country's total trade with the United States (exports plus imports) divided by total trade of the United States with the eighteen countries. Exports and imports are given in millions of U.S. dollars.*

Source: *Direction of Trade Statistics*, International Monetary Fund, 1984; Federal Reserve Bank of Atlanta.

Table 1 (continued)

Country	Exports	Imports	Sum	Percent of Total
		Asian Subindex		
Japan	23,575	60,371	83,946	54.746
Taiwan	4,775	14,772	19,547	12.748
Korea	5,983	10,027	16,010	10.441
Hong Kong	3,062	8,899	11,961	7.800
Singapore	3,675	4,121	7,796	5.084
Australia	4,793	2,899	7,692	5.016
China	3,004	3,381	6,385	4.164
Totals	48,867	104,470	153,337	100.00
		Asia-excluding-Japan Subindex		
Taiwan	4,775	14,772	19,547	28.169
Korea	5,983	10,027	16,010	23.072
Hong Kong	3,062	8,899	11,961	17.237
Singapore	3,675	4,121	7,796	11.235
Australia	4,793	2,899	7,692	11.085
China	3,004	3,381	6,385	9.201
Totals	25,292	44,099	69,391	100.00

countries. In China prices advanced 16.3 percent last year.

To measure inflation's distortion of the nominal dollar index, a real index and subindexes are constructed. More specifically, the nominal dollar index is deflated by the relative rate of consumer price increases, a calculation that generates a real dollar index.[4] The various exchange rates that constitute the trade-weighted index and subindexes are deflated by the inflation differential between the United States and the country in the bilateral comparison. These measures have produced both a nominal and real index and subindex for each period covered by the original nominal index and subindexes.

Nominal–Real Differential

The level of the real Atlanta Fed dollar index indicates what the value of the nominal index would be without the presence of inflation. A positive difference between the nominal and the real dollar index indicates that cumulative average inflation in the eighteen countries has been above U.S. inflation and that the nominal index has been pushed upward by the presence of inflation (in the countries in the index) in excess of U.S. inflation. A negative nominal–real differential means that cumulative average inflation in the eighteen countries has been below U.S. inflation and that the nominal index has

been pulled down by disparities in price pressures. Alternatively, if all the countries in the index had the same inflation rate, even if it were not zero, the nominal and real indexes would be identical and the correlation between the two measures would be 1.0.

Chart 1 shows that while the nominal and real indexes have moved together, the nominal index remained above the real index for much of the 1980s, when the weighted average of inflation for the eighteen currencies in the Atlanta Fed index exceeded that of the United States. Charts 2-5 show the experience for the subindexes, which is mixed. Since both the real and nominal dollar indexes are averages of currency movements, it is to be expected that the individual subindexes, both real and nominal, will experience more variability than the aggregated indexes (see Charts 6 and 7).

The largest differentials between the real and nominal subindexes occur in the European subindex (see Chart 2). From 1982 to 1986 the greatest regional inflation outliers were in Europe. The chief culprits were Italy and France, where inflation averaged 9.4 percent and 5.2 percent, respectively, well above that of West Germany (Economist Intelligence Unit 1989, 191). Since 1986 closer alignment of European economic policies has been reflected in the uniformly lower inflation rates in these countries, a tendency reinforced by their continued participation in the Exchange Rate Mechanism of the European Monetary System (EMS). More recently, inflation in the United Kingdom has exceeded the EMS average by margins substantial enough to skew the European index. The average inflation rate for EMS countries is currently around 4.0 percent annually.[5]

Of the four subindexes, only the real Asian subindex lies above its nominal counterpart, reflecting the large weight of Japan (roughly 55 percent of the total; see Chart 3), which has had very low inflation relative to the United States over the period. The Japanese influence on the Asian subindex

Chart 1.
Atlanta Fed Dollar Index
(1980 =100)

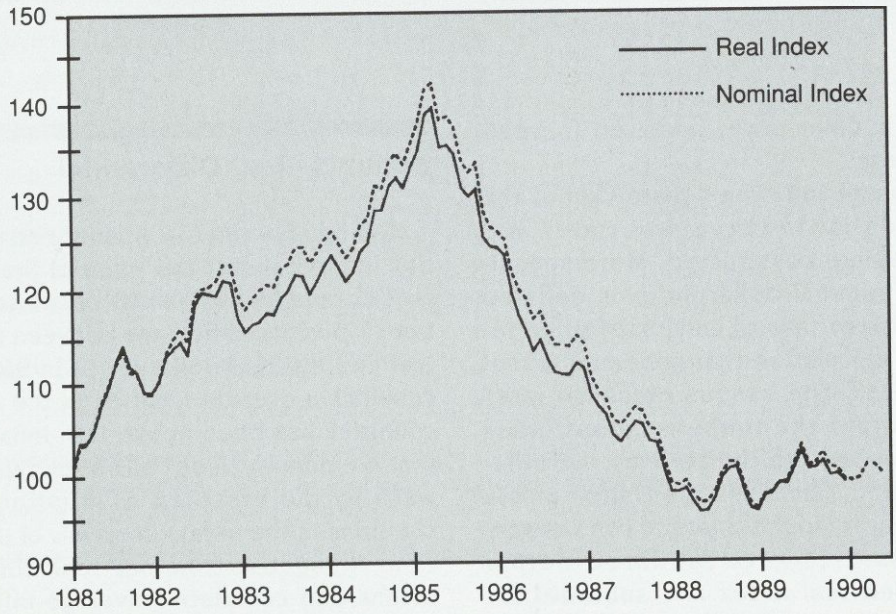


Chart 2.
Atlanta Fed Dollar European Subindex
(1980 =100)

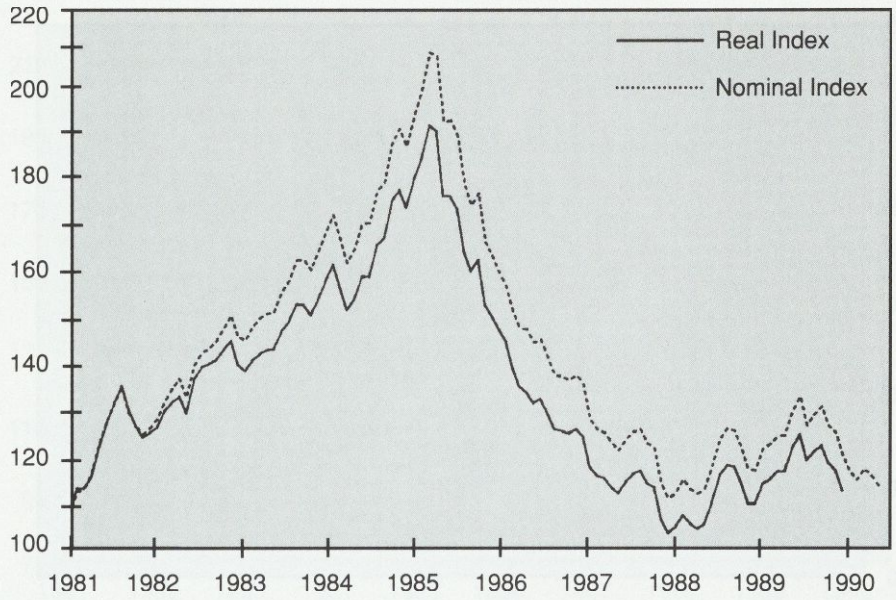


Chart 3.
Atlanta Fed Dollar Asian Subindex
(1980 =100)

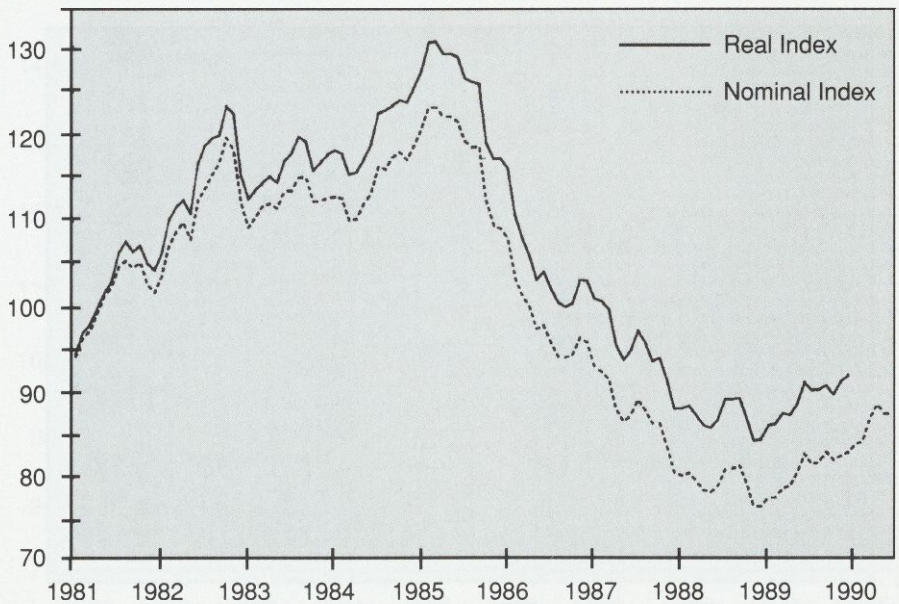


Chart 4.
Atlanta Fed Dollar Asia-excluding-Japan Subindex
(1980 =100)

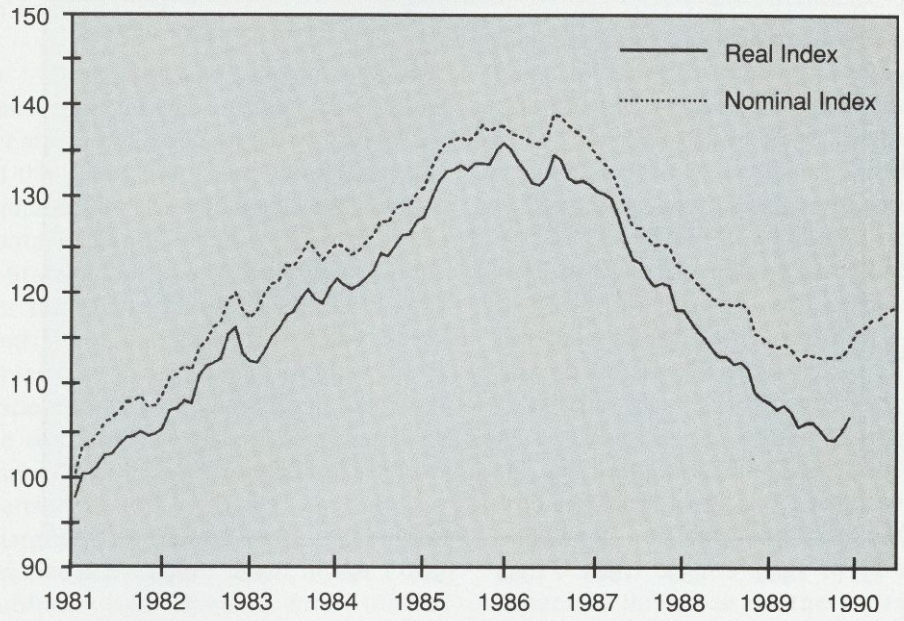


Chart 5.
Atlanta Fed Dollar Canadian Subindex
(1980 =100)

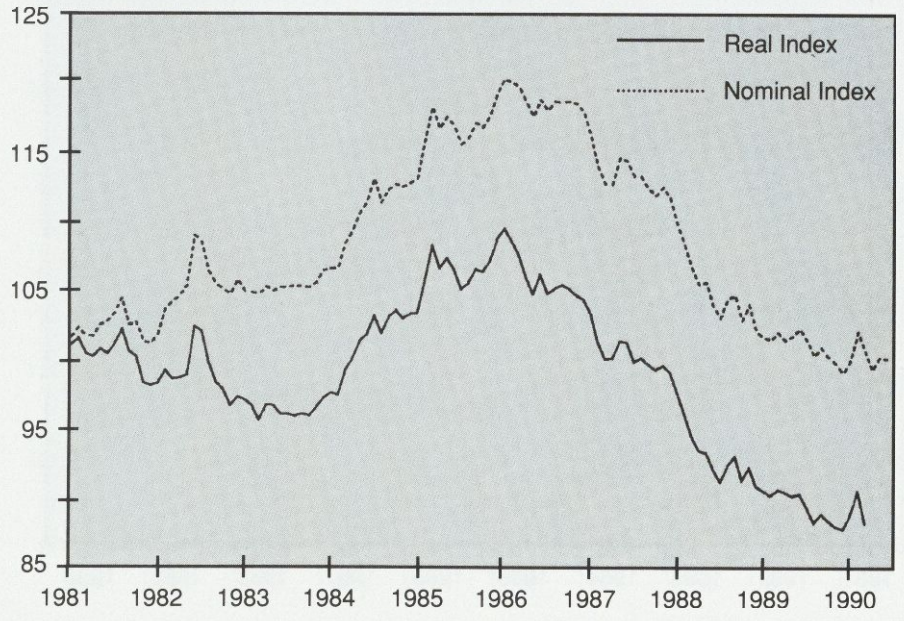


Chart 6.
Atlanta Fed Dollar Canadian and European Subindexes

(1980 =100)

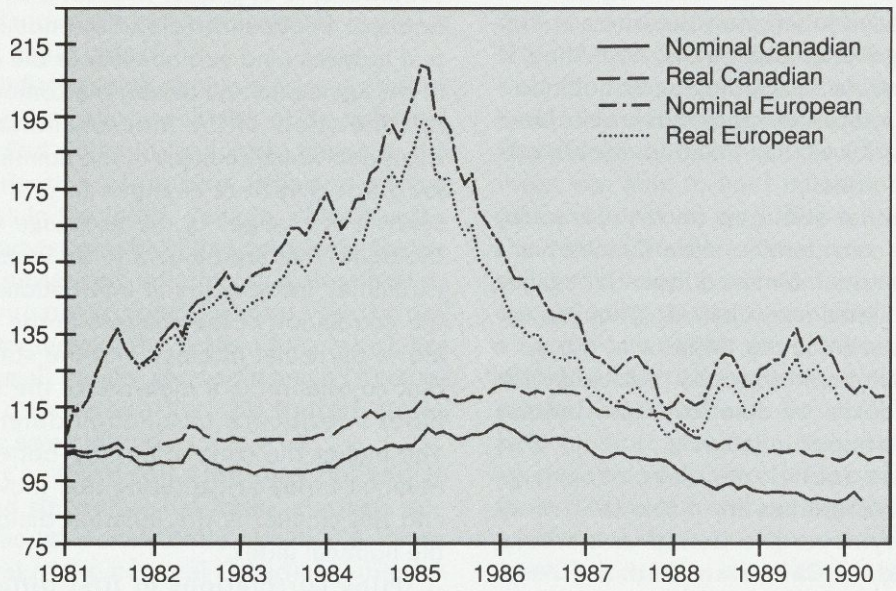
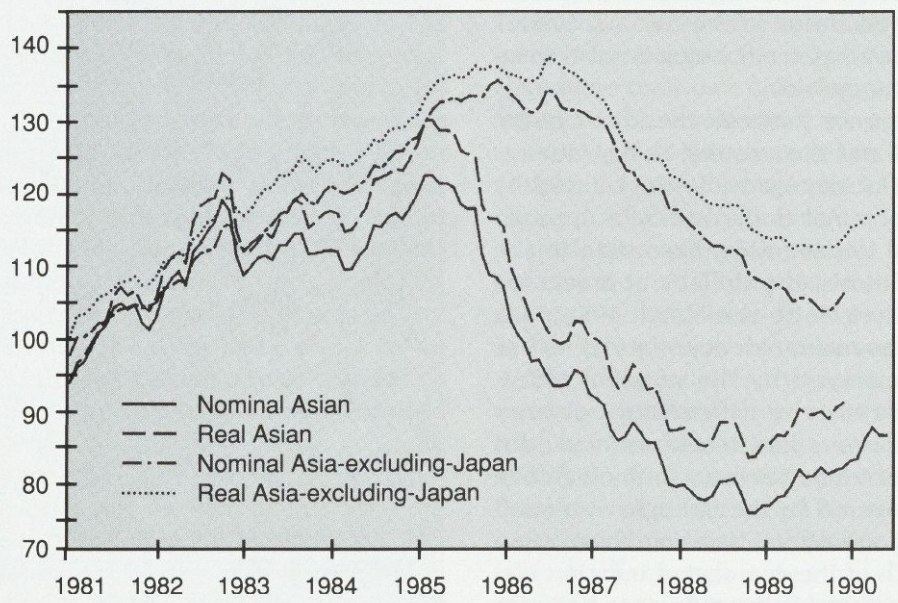


Chart 7.
Atlanta Fed Dollar Asian and Asia-excluding-Japan Subindexes

(1980 =100)



is clear when the Asia-excluding-Japan subindex is considered (see Chart 4). Unlike the Canadian and European averages in the past three years, the divergence of inflation differentials in the Asia-excluding-Japan subindex has widened, undoubtedly because of the increased inflationary pressures in Australia, Hong Kong, and China. According to the Asian and Asia-excluding-Japan subindexes, inflation rates in Japan have also been substantially lower than inflation rates in other Asian countries.

The nominal–real gap on the Canadian subindex is considerable since Canada has a large cumulative inflation differential against the United States (see Chart 5). This gap appears in part because Canada is the sole country within its subindex so that, unlike the other subindexes, no other countries balance out Canada's higher inflation.

Of the four subindexes, three show large positive divergences from the U.S. retail price history. Over the period as a whole, the European, Canadian, and the Asia-excluding-Japan prices did not always move proportionately with U.S. price developments. The cumulative divergence above the total U.S. consumer price index from 1981 to 1989 is roughly 6.5 percent for the European, 12.9 percent for the Canadian, and 7.0 percent for the Asia-excluding-Japan countries. The cumulative inflation differential for the countries in the Asian subindex was actually 9.3 percent below total U.S. inflation for the period.

The difference between the levels of the overall real and the nominal dollar index is the amount of aggregate bias introduced by using the nominal dollar index to approximate a real dollar index. According to the real dollar index, the dollar's appreciation from January 1981 to the March 1985 peak and its subsequent descent were not as large as portrayed by the nominal index. Since mid-1986 the difference between these two indexes has decreased markedly, indicating that inflation rates in the eighteen countries covered by the index have tended to converge toward U.S. rates and have eliminated much of the cumulative inflation discrepancy reflected in the difference between the indexes.

Comovement of Indexes

For the purposes of this study the comovement of the real and nominal indexes and subindexes is of greater interest than the differences between levels of the nominal and real indexes (and subindexes) or the changes in the aggregate real index. The comovement, or correlation, of the indexes indicates the degree to which changes in the nominal index (subindex) reflect changes in real values. Since it is changes in the exchange value of the dollar that are thought to be important in explaining movements in international trade, the correlation of the changes in the indexes are of particular interest, and the strength of that correlation is a measure of the nominal index's resilience to inflation differentials. The higher the correlation, the better is the nominal index at capturing real movements and the smaller is the inflation distortion of the nominal index.

Using correlations of first differences (changes) of levels shows that the nominal dollar index closely shadows the real or price-deflated dollar index. (See Table 2 for

Table 2.
Correlation Coefficients between Changes in Nominal and Real Dollar Indexes
(monthly data, January 1981 to December 1989)

Index or Subindex	Correlation Coefficient
Nominal Atlanta Index, Real Atlanta Index	0.987
Nominal European, Real European	0.996
Nominal Asian, Real Asian	0.977
Nominal Asia-excluding-Japan, Real Asia-excluding-Japan	0.923
Real Canada, Nominal Canada	0.941

correlations.) This result could be inferred from reference to Chart 1, which shows close comovement during 1981 and from mid-1987 to December 1989. The close correlation of the first differences over the entire sample period (1981-89), 0.987, indicates that the nominal index remains a reasonable proxy for the real dollar index.[6]

Two inflation outliers serve as case studies for examining the sensitivity of the nominal Atlanta Fed dollar index to exceptions to the ideal criterion of uniform inflation among countries in the index. Canada, which has the single largest weight of any country in the index, experienced inflation that was moderately but persistently above the United States' for most of the 1980s. China, which has a very small weight, showed a much larger inflation differential than the United States over the same period.

The Canadian inflation rate peaked in 1982 and since then has been relatively stable, although consistently above U.S. rates. The level of the nominal Canadian subindex diverged markedly from the level of the real Canadian subindex starting in late 1983, and the divergence persisted and grew over the next three years, peaking in late 1986 and shrinking slightly thereafter. The nominal-real subindex differential has been relatively steady since mid-1988.

Despite the large and persistent differential in the subindex levels, changes in the real Canadian dollar subindex and the nominal Canadian subindex tended to move together. The changes in these indexes are highly correlated from 1981 through 1989, at 0.941. This figure suggests that the change in the nominal index is a reasonably good measure of the change in the real index, notwithstanding the difference in their levels. In the case of Canada, a moderate but long-standing inflation differential in an important trading partner causes a widening gap between the nominal and real subindex. The nominal and real subindexes continue to move together, however, since the inflation gap does not worsen. In this way, the usefulness of the nominal index is not badly compromised by the different inflation experiences of the United States and Canada.

China is a contrasting case. Because its trade weight in the overall Atlanta Fed index in the Asian subindexes is quite small (0.0162), a very large inflation differential would be required between China and the United States to drive the nominal and real indexes and subindexes apart. The China–U.S. inflation differential has been substantial over the last several years, although high inflation is relatively new to China. During the thirty years prior to 1980, the Chinese government was able to hold inflation to about 3.0 percent per year, excluding a brief period in the 1960s.[7] Stable inflation was achieved by regulating supply and demand through quotas, rationing, and price controls.

In the late 1970s, the Chinese government decided that a slow move toward a more market-oriented economic system would help promote growth. In December 1978 China began a program of economic liberalizations that raised real national income by an annual average of 9.9 percent in the 1980s (see Cheng 1988a, b and Bank of Japan 1989). The economic reform occurred in two segments: the rural liberalizations begun in 1978 and the urban industrial liberalizations implemented in 1984. Under these reforms, farms and businesses were allowed to sell anything produced over-and-above official production quotas at "market" prices, which were generally higher than state-set prices. Production increased dramatically, but at the same time the practice of allowing firms to determine their own financing needs kindled inflation. The result was a wave of domestic borrowing that greatly increased the money supply. A by-product of reform has been increased inflationary pressures. Retail prices soared, increasing 8.8 percent in 1985, 6.0 percent in 1986, 7.3 percent in 1987, 18.5 percent in 1988, and around 16.0 percent in 1989, with even higher rates in urban centers.

The rising inflationary pressures in China were of particular concern since the exchange rate was fixed for a long period after mid-1986.[8] Unlike free-floating exchange rates, fixed exchange rates often do not reflect domestic economic and political policies. Countries fix exchange rates for a variety of reasons such as countering the effects of high domestic inflation, protecting nascent

manufacturing sectors, or discouraging imports. In a country with fixed rates, devaluation is often regarded as an indication of the government's inability to manage the economy effectively. As a result, governments frequently wait until exchange rates are grossly out of line before devaluing or revaluing, and they do so in large strokes. Thus China developed the characteristics—high inflation and use of unofficial exchange rates—that earlier had led to the exclusion of other important trading partners (Mexico, for example) from the Atlanta Fed's dollar index. The exchange rate remained unchanged at 3.341 yuan per dollar for roughly four years. This exchange rate was maintained from mid-1986 through 1989 despite accelerating price pressures, yielding an effective or "real" appreciation of the yuan. Much later, in December 1989, a 21 percent devaluation was announced.

China is an example of a clear inflation outlier. However, its very slight weight in the weighted overall dollar index minimized the effect of its large devaluation (after several years of high inflation) from having a large impact on the overall Atlanta Fed index or on the Asia and Asia-excluding-Japan subindexes. The cumulative divergence in the real and nominal indexes is not large, and the correlation between changes in the nominal and real indexes is high—0.977 for the Asian subindex and 0.923 for the Asia-excluding-Japan subindex.

Conclusions

Given that the average inflation rates for the eighteen countries included in the Atlanta Fed dollar index are still roughly in line with U.S. inflation rates and that the difference between the nominal and real dollar index is relatively modest, the nominal Atlanta Fed trade-weighted dollar index remains a reasonable proxy for a real or price-deflated dollar index. The incidence of substantially higher inflation in China and of a sustained moderate inflation differential in Canada, for example, has been balanced by the inclusion of low-inflation countries within the Atlanta Fed dollar index and by China's relatively small weight in the index. It should be noted, however, that there is no feature in the composition of the index which ensures that it will remain free of distortions arising from inflation disparities in these or other countries. The presence of inflation outliers naturally has a larger impact on the subindexes because of the larger weight of individual countries in the subindexes. Within the Asia-excluding-Japan subindex China has a weight of 10 percent. If a country's weight in both the total and the subindex were relatively large and it continued to inflate excessively, it would be reflected in a divergence of the real and nominal indexes and in a decline in the measures of comovement.

Notes

[1] For example, the Morgan index, the Federal Reserve Board of Governors index, and the Dallas Fed index each offer a different representation of the dollar's level and variability.

[2] The most important criterion is that the average inflation rates of the countries included approximate that of the United States, so that the index will cover the largest proportion of U.S. trade possible without skewing the index by including large inflation outliers or countries with multiple exchange rates. See Rosensweig (1987).

[3] An exchange rate is the price of one currency in terms of another currency. This relative price is determined not only by economic fundamentals—inflation, growth, and monetary policies—but also by political events and market expectations. In the case of multiple exchange rates it is difficult to choose the one most representative of a free market rate. See Rosensweig (1987) and Hervey and Strauss (1987).

[4] It has been suggested that a measure of wholesale prices rather than consumer or retail prices be used to deflate exchange rates because some nontraded goods that are included in consumer or retail price indexes may skew a real or deflated dollar index (Harberger 1986). However, consumer price indexes were used as the inflation measure because they are generally available and more closely comparable among countries. Wholesale price measures were unavailable for two of the countries within the index—Saudi Arabia and Hong Kong.

[5] Countries in the EMS but not in the dollar index are Denmark and Ireland. European countries in the dollar index but not in the EMS are the United Kingdom, Sweden, and Switzerland. Spain, which is also in the index, has only recently become an EMS member.

[6] Objective criteria for goodness of fit in this correlation have not been established. However, criteria for other economic times series suggest that correlations above 0.90 are considered strong.

[7]Low inflation is seen as one of the accomplishments of the Communist government since the hyperinflation of the late 1940s contributed to the downfall of the Nationalist government (Harding 1987, 279).

[8]After being included in the Atlanta Fed dollar index, China soon began to fix the exchange rate of the yuan, setting it at a given number to the dollar.

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Book Review

The Making of an Economist

by Arjo Klamer and David Colander.
Boulder, Colo.: Westview Press, Inc., 1990.
216 pages. $50.50 (cloth). $16.95 (paper).

The newly minted economist quickly discovers that his or her choice of profession can be a social handicap. The four-word phrase "I am an economist" will in most cases bring a punch-bowl conversation to a predictable, and often sudden, end. Those conversationalists not immediately silenced by the mention of the word "economist" are almost always reduced to such shopworn questions as "are you a Keynesian or a Monetarist?" or "just where do you think the economy is heading?" The inevitably threadbare responses are, in turn, met by sullen stares or, more likely, furtive glances in search of the next round of hors d'oeuvres. It takes no more than a few such experiences for the novice economist to realize that, in the mind of the general public, the subject of economics enjoys a murky status akin to that of alchemy or druidism.

Given this lamentable information gap, economists and noneconomists alike must welcome the publication of *The Making of an Economist*, by Arjo Klamer and David Colander. The book is a revealing snapshot of the academic segment of the economics profession in the late 1980s. This picture illustrates what the authors see as problems in their profession and provides a backdrop for their commentary on how academic economics should change.

Even though the authors are economists, *The Making of an Economist* is written in a style that should be accessible to the layperson. Perhaps more importantly, the book contains no graphs or equations. The authors do afford themselves the frills of thirteen tables and six pages of endnotes, but these could be bypassed without losing the book's message. Most of what Klamer and Colander have to say is said in the main text, in plain English.

The Making of an Economist is divided into three major sections. The first offers a brief introduction to the economics profession of the "encyclopedia-entry" type and then presents the results of a survey distributed by the authors at six leading graduate schools. The second section consists of edited transcripts of interviews with some of the graduate students who completed the survey. The last and most thought-provoking section offers an essay by each of the coauthors in which they interpret the survey results and

the interviews. Each of the book's three parts is fairly self-contained, and each has its own strengths and weaknesses.

To a noneconomist, the most informative part of the book may be the first chapter, which reports such basics as who all these economists are, how much formal education they have, where they work, and how much money they make. To update a few figures from the book, the latest statistics I can find suggest that about 165,000 people in the United States call themselves economists, about 35,000 more than reported by Klamer and Colander.[1] Of these 165,000, about 22 percent have doctorates. The majority of economists (62.5 percent) work in private industry; the remainder work primarily in academia (20.5 percent) and the federal government (7.8 percent). This year, the 800-odd new Ph.D.'s in economics will find jobs paying on average about $45,000 a year, the majority of them at colleges and universities. The focus of *The Making of an Economist* is on a small subset of these Ph.D.-economists-to-be, namely doctoral students at an elite group of universities—Chicago, MIT, Harvard, Stanford, Columbia, and Yale. Many of these students will no doubt be very influential in the academic end of the profession for years to come. They will be hired by the elite schools and will publish extensively in academic journals.

To better gauge the attitudes of these graduate students toward the economics profession and toward their graduate training, the authors circulated a survey at the schools listed above. The survey results, which were first published several years ago in a professional journal, constitute most of the book's first section. The results of the survey probably would not surprise most economists but may be of more interest to readers outside the profession. It came as no surprise to me or any of my colleagues, for example, that these doctoral students find preparation in mathematics more important in mastering economics than preparation in sociology, nor did it come as a shock that students at the University of Chicago tended to put much more credence in the paradigms of classical economics than did the other students.[2] These findings accord well with the folklore that economists hear repeated constantly over the lunch table or between presentations at professional meetings.

Nonetheless, Klamer and Colander's survey was widely discussed in the profession when its results were first reported, since it offered the first publicly available data of this type. Of course, interpretation of the results varied according to the graduate school that the reader had attended. Following tribal loyalties, former students at Chicago and allied schools pointed to various results in the survey as evidence of the insincerity of students at the Ivy League institutions, while former Ivy League students found confirmation of their suspicions that Chicago tends to produce a group of ranting "free market" ideologues.

The book's authors are also members of the economics profession and, as might be expected, have pronounced views about the results of the survey. Professors Klamer (Ph.D., Duke) and Colander (Ph.D., Columbia) do not approve of the current state of the economics profession, particularly at the University of Chicago, and much of this book is meant to support their opinions about how the profession should change. Although their arguments are not made explicit until the third chapter, the book's critical tone is set early on. Academic economics at the graduate level, in the authors' view, has become too specialized, too mathematical, too enamored of computer simulations, too removed from the real world, and too disrespectful of other social sciences. As evidence of the professional malaise induced by such overspecialization, one would expect to find considerable frustration among even the brightest graduate students, and this is what the authors are looking for.

No doubt there are many people both inside and outside the economics profession who share the authors' opinions on academic economics, and these people will find in *The Making of an Economist* a well-articulated confirmation of their views. Yet even people with differing ideas about the profession will find the book interesting reading, particularly the second section. This section presents the transcripts of interviews of graduate students conducted by the authors at four of the schools—MIT, Harvard, Columbia, and Chicago—that were surveyed. While a number of the interview questions are slanted in the di-

rection of the authors' biases ("How important is mathematics?" "Would you like to see more emphasis on policy?" and so forth), there are enough open-ended questions and answers to give verisimilitude to the students' descriptions of their graduate school experiences.

The second section of *The Making of an Economist* is reminiscent of Klamer's earlier book, *Conversations with Economists*, for which he interviewed professors rather than students. In my opinion, the interviews in *The Making of an Economist* compare very favorably with those in the earlier work. The students' views, while not articulated as fluently as their professors', are noticeably less ossified and more frankly offered. One learns, for example, that at least two students chose Harvard's economics graduate school because "they wanted to rule the world." And, I must confess, I felt more than a twinge of *Schadenfreude* upon reading that students still find my thesis advisor's lectures utterly incomprehensible.

Although such juicy tidbits abound, there is more to the book's second section than academic gossip. The interviews are lengthy enough (about twenty pages each) to allow readers to get some feel for the essence of economics graduate school, as well as for the different character of each graduate school. As was the case with the survey, the attitude of the students at Chicago is noticeably different from that of students at the other schools. Almost all of the students interviewed complain about the volume of the work load as well as the extremely technical nature of their classes. Except for those at Chicago, most of the students seem to feel that much of this technical classwork bears little relevance to the real world. The Chicago students, by contrast, appear to be very comfortable with the relevance of what they are taught, even though they complain about the difficulty of understanding the mathematics used in presenting the course material. The non-Chicago students show a generally stronger interest in policy issues and seem to regret that these issues are not discussed more in their courses and seminars. On the other hand, the Chicago students feel that too much attention to policy issues would be distracting to a serious economic theorist.

The disparities between Chicago and the other graduate programs are highlighted even more sharply in the book's third and final section. In his summarizing essay, Klamer laments the apparently widespread "cynicism" and "loss of intellectual vigor," particularly among the interviewed graduate students outside the University of Chicago. The Chicago program itself garners a mixed review. Even though Klamer feels that the methodological focus of Chicago's graduate program is inappropriate, he admires the fact that the program does not foster cynicism among its students.

Colander, however, in his summarizing essay, deprecates even this marginally admirable feature of the Chicago program. The program's underlying problem, as he sees it, is academic economics' positivist methodological foundation. This positivist orientation assumes that knowledge in the field is "advanced by empirical testing of well-specified propositions." In Colander's view, this approach has not been fruitful. Economic theorists have not proved adept at producing unambiguous hypotheses about economic behavior, nor have econometricians inspired much confidence in their ability to sort out competing hypotheses on the basis of statistical compatibility with real-world data. Colander's appraisal of the current situation in the field of economics, then, is that "one is left with a wide range of reasonable hypotheses from which one cannot select on the basis of empirical testing."

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Because of his views of academic economics' limitations, Colander is not surprised that so many of even the elite graduate students are discouraged about the profession. Their professors are in effect "telling them to do what can't be done." At Chicago, where this malaise is not prevalent, Colander sees students and faculty alike as engaging in a sort of mass delusion, in which empirical evidence unfavorable to economic theory is dealt with by a conspiracy of silence. He claims that the economics profession sorely needs a new set of methodological conventions, less wedded to mathematical constructs, more oriented toward knowledge of economic institutions, and less rigidly positivistic in its assertions about what constitutes "good" economic research.

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The criticisms and prescriptions set forth in Colander's essay constitute the most serious and ambitious part of *The Making of an Economist*, and I believe that Colander's critique needs to be taken seriously. His antipathy towards abstract constructs is easy to understand. The paradigms of economics rival those of physics in terms of abstraction, yet they are meant to apply not to subatomic particles but to patterns of behavior that most people encounter in their daily lives. Anyone who has puzzled over "indifference curves" and "the substitution effect" in an introductory economics course can testify that mastery of even the most basic economic paradigms requires an extensive capacity for suspension of one's disbelief. But I also think that Colander's critique calls for some important qualifications.

The first of these is that the focus of Colander's essay, and *The Making of an Economist* generally, is unnecessarily narrow. Although the academic elite profiled in the book command a certain respect from other economists, the exclusive focus on this segment of the profession tends to give an exaggerated notion of these academics' influence on the profession as a whole. As noted in the first chapter, the majority of economists currently working in the United States do not have doctorates and do not teach at a college or university. The work done by economists outside academia is typically nontechnical and institutional in nature. The same might be said for many academic economists outside the elite focus of this book. One cannot deny that nonmembers of the book's so-called elite such as Paul Craig Roberts, Arthur Laffer, or Paul Volcker have had a powerful influence on all subcultures of the economic profession. Still, to say that nonformalist, real-world-oriented economics is widely practiced in the United States today does not confront Colander's strong arguments that more of this type of analysis ought to find its way into the elite graduate programs. I believe that to address this argument properly one must have some idea of what role academia should play in the economics profession more generally; Colander's essay provides no clues. His failure to address this issue undermines the arguments in his essay and in the rest of the book.

For a more specific idea of this concern, one may consider this example. After working a few years for the Federal Reserve System, many economists develop a detailed knowledge of the Fed's open market operations, of the components of the various monetary aggregates, of the laws that pertain to bank holding companies, and so forth. Are these the sorts of topics these economists should have learned more about in graduate school? To require that newly degreed economists have some knowledge in these areas seems reasonable. Yet it seems doubtful that any academic training could provide a knowledge of such institutional details as complete and as current as that gleaned during a year or two on the job in a setting that demands such expertise. In addition, an

unpleasant insularity is implied by the idea of institutions outside academia being staffed by economists who have mostly studied only the past behavior of such institutions. Certainly Klamer and Colander's concern for the relevance of academic economic research is a legitimate one. However, for this research to be useful to the world outside academia, its relevance needs to be balanced by a certain degree of detachment from the day-to-day management of economic institutions. Otherwise, there may be great difficulty in distinguishing a professional viewpoint from a viewpoint motivated by financial or political gain.

This tension between the applicability and the integrity of intellectual pursuits is hardly a new concern. One of the best summaries of this issue is an essay by the historian Richard Hofstadter, in which he notes that the complexity of modern society often presses academicians into positions where they wield considerable power.[3] That is, society often calls on "experts" to assist in making complex decisions, such as those faced by corporate executives or government policymakers. At the same time, academicians' close involvement in such decision-making processes tends to undermine the independence that led to their developing an "expert knowledge."

There is an inherent conflict in any academic field between the roles of "expert" and "researcher," irrespective of the profession's methodology. Given that such conflict is virtually inevitable, it becomes difficult to evaluate the criticisms of academic economics voiced in *The Making of an Economist*. Klamer and Colander effectively make the point that economic researchers are often frustrated by the difficulty of applying their hard-won academic expertise to real-world situations. The authors fail to consider, however, that the profession may be well served by an academic elite who guard against intellectual stagnation—who are, in Hofstadter's words, "capable of stepping mentally outside their society and looking relentlessly at its assumptions, in sufficient number and with sufficient freedom to make themselves felt." But there is also a danger in too much detachment for detachment's sake. The economics profession would not benefit should its elite members degenerate into what Hofstadter describes as a group of "willfully alienated intellectuals more concerned with maintaining their sense of their own purity than with making their ideas effective." Although reaching a middle ground on this issue clearly requires a fine balance, Klamer and Colander seem to approach the task wielding a single-bladed ax.

Philosophical differences aside, I think *The Making of an Economist* provides a readable account of what academic economics is currently all about, as well as some thought-provoking ideas about what directions academic economics should be taking. Nonetheless, if the authors are planning additional books profiling the economics profession, I hope they will consider branching out beyond this book's narrow focus. If economics' academic elite are not being trained to do their jobs, then a better definition must be provided as to what their job is and how their role as academic economists should differ from that of economists outside academia.

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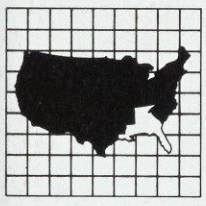
Notes

[1]U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States*, 1989, section 20.

[2]A quick glance at recent issues of any "nonmathematical" economics journal, such as *The American Economic Review*, will reveal that almost all published articles (except perhaps Nobel Prize acceptance speeches) have equations in them.

[3]See Richard Hofstadter, "The Intellectual: Alienation and Conformity," chapter 15 in *Anti-Intellectualism in American Life* (New York: Random House, 1962).



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