The Depression in Sweden and the United States. A Comparison of Causes and Policies

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The Depression in Sweden and the United States

A Comparison of causes and policies

The depression of the 1930s was a worldwide phenomenon. The economic activity of practically every country was strongly influenced by the depression. This was the case for a small open economy like the Swedish one as well as for a large and fairly closed economy like the American. The character of the depression, however - particularly its duration and its severity - differed significantly from one country to another. Generally, countries that had left the gold standard at an early stage of the depression experienced a less pronounced decline in prices and output than those that remained on gold.

There has been considerable discussion among American economists about the causal interpretation of the American depression. Two general classes of alternative explanations have been proposed. The first one, the money hypothesis, stems in its modern version from the work of Friedman and Schwartz (1963) and suggests that monetary developments played a key role during the depression. The second one, the spending hypothesis, which has recently been advocated by Peter Temin (1976), states that changes in autonomous spending caused the contraction. The present discussion about the causes of the depression is to a large extent based on the work of these economists, although both classes of explanations have been advanced earlier within as well as outside of the United States.[1]

The purpose of this paper is to compare the depression of the 1930s in Sweden and in the United States by focusing on (1) the causes of the start and development of the depression and (2) the impact of macroeconomic policies in the two countries. The aim of this comparative analysis is to discriminate between the money hypothesis and the spending hypothesis on the basis of the evidence from Sweden. When examining the 1930s, American economists have generally regarded the American record as the bench-mark case. Instead, the Swedish record

[1] Temin's study has been the subject of several critical comments; see Gandolfi and Lothian (1977), Mayer (1978), and Meltzer (1976).

will be adopted here as the basis for comparison. For the following reasons Sweden provides an interesting comparison with the United States, one that is highly suitable for examining the American depression:

1. Monetary and fiscal policies were applied in Sweden in a countercyclical manner. Two unique experiments in economic policy were carried out. First, a monetary program of price stabilization based on Knut Wicksell's recommendations was adopted after Sweden had left the gold standard in 1931. Second, and better known of less actual impact, a deliberate countercyclical fiscal policy - inspired by the work of Gunnar Myrdal, Bertil Ohlin, and others - was initiated in 1933. In the United States neither fiscal nor monetary policy was applied on any significant scale to counteract the contractionary forces. Rather, the behavior of the Federal Reserve System has been assigned a crucial role in the explanation of the development of the American depression.
2. In Sweden, a small open economy, the depression was primarily "imported" through the foreign sector, while the depression in the United States generally is regarded as having been generated domestically.
3. In Sweden the economic profession exerted a significant influence on the framing of economic policy. Economists often had direct contact with the Swedish central bank, the *Riksbank*, and the Department of Finance throughout the 1930s.
4. Reliable data on monetary and real developments are available from both countries. The minutes from the board meetings of the *Riksbank* in the 1930s have also been made available recently, allowing for an inside examination of its policy.

This article is organized in the following way. First, the statistical picture is presented, displaying the behavior of several economic variables such as income, output, prices, and various monetary aggregates. Second, the Swedish experience of the 1930s is considered. Here the policy of the *Riksbank* is assigned great importance, for two reasons: (1) there are significant differences in the behavior of monetary aggregates and in the policy of the *Riksbank* and the Federal Reserve System; and (2) fiscal policy had a relatively minor impact in both countries. Third, the American record is discussed from the viewpoint of the money hypothesis and the spending hypothesis. A number of comparisons are made with the Swedish

experience in order to examine the explanatory power of these two hypotheses. Fourth, the role of the economic profession is examined. Finally, the discussion is summarized.[2]

THE STATISTICAL PICTURE

This section traces and compares the behavior of several key economic aggregates in Sweden and the United States. The year 1929 has been adopted as the basis for comparison as this was a year of fairly high economic activity and a low rate of unemployment in both countries.

Income and production

The depression started earlier, became deeper, and lasted longer in the United States than in Sweden. This is seen from the behavior of real income shown in figure 1 and table 1. Between 1929 and 1933, U.S. real income declined for four consecutive years by roughly one-third. In the same period Swedish real income was reduced by 10 percent. (It actually increased by 3 percent in 1929-30). Generally, 1929 is regarded as the beginning of the American depression. In Sweden, 1930, or more precisely the second half of 1930, is commonly designated as the start of the downturn. The recovery began at roughly the same time in the two countries, that is, in 1932-33, but it proceeded at a faster rate in the United States. Nonetheless, the index of Swedish real income in 1937 was one-fifth larger than the American. Real income in the United States had not reached the level of 1929 by 1937. In Sweden the level of 1929 had already been surpassed by 1934.

Data on industrial production reveal roughly the same pattern as those on real income. Figure 1 and table 1 show the reduction in industrial production to be of a larger magnitude in the United States, where it declined by 46 percent between 1929 and 1932, than in Sweden, where it fell by 21 percent in the same time span. Total employment dropped in both countries, albeit more markedly in the United States (table 1). The rate of unemployment reached considerable levels. There are, however, no suitable data available for comparison.

[2]This chapter deals primarily with the contraction phase of the depression, that is, with the years 1929-33. The recovery phase has not attracted as much interest as the downturn in economic activity.

The American rate of unemployment reached a high of 25 percent in 1933; in Sweden unemployment peaked in 1933, when 23 percent of the members of the labor unions were out of work. In both countries, unemployment was widespread throughout the 1930s until War II changed this picture.

The depression had different effects on the output of various sectors of the American and Swedish economies. American domestic investments had practically disappeared by 1932, commanding only 2 percent of the gross domestic product in that year, while it held 18 percent in 1929 (table 2). In Sweden the corresponding share of the gross domestic product displayed a considerably smaller reduction, nowhere near the size of the American decline. In the United States the share of consumption increased markedly as a consequence of the decline of investments.

Table 2 reveals an important difference between the two economies. Exports and imports commanded about one-fifth of the Swedish domestic product prior to the depression, while the corresponding shares were much smaller for the United States - about 4 to 5 percent. The depression had an extremely strong impact on Swedish exports and imports. Exports declined in current prices from 2.7 billion kronor in 1929 to 1.2 billion in 1932 (Johansson 1968, pp. 151-52). The share of exports in gross domestic product fell from 20 percent in 1929 to 13 percent in 1932 (table 2). In less than three years the demand for exports was practically halved - in some branches the decline was much stronger. The fall in exports was accompanied by a reduction in imports of roughly the same size.

The depression reduced the relative size of the Swedish export-import sector. Industries producing for the domestic market remained less affected than the export industries by the decline in the world economy (table 3). The production of the export industries fell by one-third from 1929 to 1932. Industries selling products for domestic use experienced a 13 percent drop in these three years. Furthermore, the consumption goods industries fared better than industries producing investment goods.

Prices

The world price level had fallen secularly since the first half of the 1920s. This decline was accentuated during the depression. Those countries that left the gold standard early in the

1930s, however, were as a rule able to reduce the rate of deflation compared to the experience of those countries that remained on gold. Sweden went off gold almost at the same time as Great Britain in September 1931. After this step the Swedish consumer price index remained practically constant until the rise in world prices around 1937 (figure 2). This is one of the longest periods of price stability in Swedish history according to available statistics. The development of consumer prices fro 1931 to 1936 should be regarded primarily as the result of the monetary program of 1931, which aimed at stabilizing the domestic purchasing power of the Swedish krona. American consumer prices, however, continued to fall until the dollar went off gold in 1933. By then, U.S. consumer prices were 25 percent below the level of 1929, while the corresponding figure for Sweden is only 8 percent (table 4).

Wholesale prices fell more than consumer prices, particularly in Sweden (table 4). The decline was of almost the same size and had nearly the same timing in the two countries. This pattern was due to the world deflation, which affected prices of internationally traded raw materials more strongly than those of domestically produced and consumed goods. (The wholesale price indices included a larger fraction of the first-mentioned type of goods than did the consumer price indices). The sharper fall of U.S. prices is also seen in the behavior of the implicit deflator of the American gross domestic product. It declined by one-fourth from 1929 to 1933 (table 4). The deflator of the Swedish domestic product exhibited a reduction of 16 percent within the same period.

Monetary aggregates

There are significant differences between the Swedish and American monetary experiences. The contrast between the sharp reduction in the American money stock and the constancy of the Swedish volume of money in the period 1929-33 is a striking feature of table 5 (see also figure 1). The American money stock *(M_2)* declined by about one-third while the Swedish (M_2) actually increased by a few percentage points in these years. The absolute level of the American money stock fell successively between February 1929 and April 1933, shown in table 6. The growth rate of the Swedish money stock was negative between July 1930 and January 1932 - a much shorter period than in the United States. The contraction phase prior to the trough of 1931 in the specific growth cycle of the money stock was considerably longer in the United States than in Sweden (col. [1] in table 6). The expansion phases of the two countries, however, were of roughly the same length.

A breakdown of the growth rate of the money stock with the purpose of discerning the contributions of its proximate determinants - the monetary base, the currency-money ratio and the reserve-deposit ratio - reveals the following pattern. The U.S. currency ratio accounted for a larger average absolute contribution to the growth of the money stock than its Swedish counterpart. This may be seen from column (4) in table 6. The rise in the American currency ratio from a level of 8.2 percent in 1930 to 16.3 percent in 1933 contributed negatively to the growth rate of the money stock. This rise was closely associated with a number of banking panics, when the American public tried on a massive scale to convert deposits into cash. These runs on the American banking system are clearly represented in the cycle stages covering June 1930 to April 1933 in table 6. After this turbulent period the U.S. currency ratio declined in size.

The constancy and thus the small contribution of the Swedish currency ratio to the growth in the Swedish money stock are primarily explained by a strong public confidence in the solvency of the Swedish commercial banking system, effectively preventing any runs on banks similar to the events in the United States. No banks defaulted or suspended payments in Sweden in the 1930s. This picture provides a stark contrast to the American record.[3] The Swedish currency ratio started to rise in 1933, but this development, which continued until the 1950s, is explained by factors other than those directly associated with the monetary chaos of the early 1930s.

Tables 5 and 6 show that the Swedish reserve-deposit ratio exhibited larger fluctuations than the American ratio. The rise in 1931–32 was due to the uncertainty created by the depression concerning, in part, the outflow of capital from Sweden and the international economic situation and to the fear of domestic bank runs in connection with the Kreuger crash in the spring of 1932. Commercial banks responded then by borrowing substantially from the *Riksbank*. The 1933-37 increase in the reserve ratio was caused by (1) a large inflow of capital following the boom for the export industries and (2) the disappearance of the

[3] The number of commercial bank offices was reduced in Sweden in the 1930s, but this was part of a trend that started in the early 1920s.

international capital market in the 1930s, inducing a shift from foreign into domestic assets.[4] The U.S. reserve ratio also increased in the 1930s. Runs and bank failures, forcing banks still in existence to increase their holdings of reserves, were a major factor behind this change. The continuous rise of this ratio after 1933 has been regarded as the result of a buildup of desired reserves in response to the bank runs and the inadequate support provided by the Federal Reserve System during the panics.

In both countries the monetary base expanded during the years 1930-36 - that is, even during the trough of 1931. This pattern is explained to a large extent by a sharp rise in the demand for cash in the form of notes. The liquidity crises occurring in several countries took the form of massive conversions of bank deposits to notes. In both Sweden and the United States the expansion of the total amount of base money after 1933 was closely linked to the rise in the volume of base-money reserves held by the commercial banking systems.

The annual percentage fluctuations of the income velocity of money (M_2) in Sweden and the United States during the depression were as a rule of the same sign as the changes in the money stock - that is, movements in velocity were not offsetting fluctuations in the money stock. Velocity declined markedly during the first years of the 1930s - in Sweden, between 1930 and 1933, and in the United States, between 1930 and 1932. The annual percentage changes in velocity were considerably larger than the movements in the money stock for several of the depression years.

Summary

The depression of the 1930s had an immense impact on the Swedish and American economies. In both countries real income, industrial production, employment, and prices declined sharply. There are considerable differences in the patterns of economic change. The depression was deeper and longer-lasting in the United States. The American monetary sector was the subject of greater disturbances, judging from the decline in the American money stock, the sharp increases in the currency ratio, and the spread of banking panics and

[4] The Swedish krona was depreciated when Sweden left the gold standard in 1931. The prices of foreign assets were then regarded as attractive, since a return to the parity rates of the gold standard was expected by many in the first half of the 1930s.

bank failures. In Sweden the foreign sector was affected more strongly than other sectors of the economy.

Americans have termed the early years of the 1930s in their history Great Depression - no previous downturn in American economic activity has been as extensive. In Sweden, however, these years have not acquired a name of similar connotations. Actually, the postwar depression in the early 1920s was more severe than the recession of the 1930s as measured by the decline in real income, employment, prices, and the money stock[5]. The depression of 1920-23 was primarily caused by the policy of restoring the prewar gold parity of the Swedish currency after the monetary expansion and inflation of World War I. A strong deflation, produced by a contractionary monetary policy, accomplished a return to gold at the old parity of the krona. Thus, the Swedish depression at that time was basically the outcome of political decisions and generated by domestic policy measures - as opposed to the downtown of 1931-33, which was strongly influenced by foreign developments.

[5] The Swedish money stock was reduced by 29 percent and the implicit deflator of the gross domestic product by 35 percent between 1920 and 1925.

THE CASE OF SWEDEN

The causes of the depression

The Swedish recession was caused by foreign developments, that is, by the worldwide depression of the international economy, transmitted to Sweden through the foreign sector - specifically, by the large reduction in the demand for Swedish exports. The world depression did not influence the Swedish economy to any noticeable extent until the summer and fall of 1931. Domestic economic activity remained at a fairly stable level during 1930 compared to the experience of the United States (figure 1). The world recession and world deflation eventually had an impact, however. Swedish exports fell rapidly between 1931 and 1933, reducing aggregate demand and causing rising unemployment and falling industrial production. As a consequence of the international recovery, exports started to rise in 1933-34 and kept on expanding until the international recession of 1937-38.

According to this account, the Swedish depression and recovery were caused, *not* by domestic developments, but by international changes. Some domestic events, however, aggravated the recession. In March 1932 Ivar Kreuger, a well-known industrialist, committed suicide in Paris. The news of his death and the disclosures concerning his business dealings were a severe shock to the Swedish public. The bankruptcy of his enterprises caused heavy financial burdens and spread public distrust about the future of the Swedish economy. Labor strikes, especially the long strike of the construction workers from April 1933 to February 1934, were also a source of domestic disturbances, hampering implementation of the new fiscal policy. These two events had a minor impact, however, compared to the effects of international developments.[7]

The conduct of monetary policy

The Swedish economy was fairly unaffected by the depression prior to the summer of 1930. The *Riksbank* lowered the discount rate in 1930 in four steps, in order to follow the changes

[7] What follows builds upon and summarizes the analysis of Swedish monetary and fiscal policy in the 1930s in Jonung (1979b).

of the Bank of England. In spite of a rapidly growing trade deficit, the *Riksbank*'s foreign reserves remained high in the first half of 1931, due partly to a large inflow of capital from abroad. Sweden was at this time considered a financially and politically stable country. As a result of the financial crisis in continental Europe, however, the foreign reserves of the *Riksbank* started to decline in June 1931. When the Bank of England left the gold standard in September, Swedish authorities were initially optimistic, believing that the krona would be able to remain on gold. One week later, however, on September 27, the government and the *Riksbank* were forced to let the krona leave the gold standard and to adopt a paper standard, as practically all foreign reserves, with the exception of the holdings of gold were depleted.[8]

At the same time as Sweden left the gold standard, the authorities declared that the aim of the policy of the *Riksbank* should be to "preserve the domestic purchasing power of the krona using all available means". The new paper standard was thus to be based on a norm of price stabilization. This is the first time that price stability was made the official goal of a central bank. The monetary program of 1931 remained the official basis for Swedish monetary policy in the 1930s.

The management of the bank lacked knowledge about the conduct of monetary policy aimed at price stability. It turned in October to Sweden's most renowned monetary economists at that time - Gustav Cassel, David Davidson, and Eli Heckscher - with a questionnaire dealing with a large number of the monetary issues of the day. Among other things, the bank inquired about the choice of price index to adopt as the guide for its policy-should consumer prices, wholesale prices, or some other index of prices be used? It also wanted to know at which level prices should be stabilized - a level prior to the depression or the level of September 1931 - and which norm to adopt - Wicksell's norm of constant prices or Davidson's norm of a price level falling in proportion to the rise in productivity.

In reply to the questionnaire, the three economists gave the bank a considerable number of recommendations. They advised the bank to construct a consumer price index and to stabilize this index at the level of September 1931, that is, to adopt Wicksell's norm, and not to

[8] The *Riksbank* tried to obtain loans from New York and Paris in order to stay on the gold standard but was denied financial support. Thus, Sweden was forced off gold fairly rapidly and in this way avoided a prolonged period of deflation compared with those countries that remained on gold.

attempt to inflate or deflate the Swedish economy to reach any other level of prices before the stabilization program was started.[9] The bank constructed a consumer price index under the auspices of Erik Lindahl. This index was made available on a weekly basis, and it became an important part of the framing of monetary policy in the ensuing years.

When Sweden left the gold standard in September 1931, the krona was effectively depreciated in terms of the currencies remaining on gold. The exchange rate between the dollar and the krona rose from the gold standard parity of 3:74 to above 5 kronor in December 1931. This depreciation had favorable effects on the Swedish economy by isolating it from the world deflation. The fall in wholesale prices and consumer prices was arrested (figure 2 and table 4).

The *Riksbank* actually expected and feared rising prices after Sweden left gold, and raised the rate of discount from 6 to 8 percent in September 1931. At the end of 1931 and at the beginning of 1932, the authorities started to view falling prices as the major problem, and the rate of discount was lowered. The policy of the bank, though, remained fairly passive prior to the Kreuger crash in March 1932, except for allowing a large volume of rediscounting[10] The Swedish commercial banks had been indebted to the *Riksbank* during the 1920s. As the depression began to affect the Swedish economy, borrowing from the *Riksbank* by the commercial banks increased rapidly. The management of the *Riksbank* generally provided the banks with funds with no apparent hesitation. Actually, the *Riksbank* became heavily involved in the lending to the *Skandinaviska Kreditaktiebolag*, at that time Sweden's second-largest commercial bank and the bank most closely associated with the Kreuger enterprises.
The death of Kreuger caused a sharp decline in the foreign value of the Swedish currency. The pound rate rose from around the gold parity of 18:15 to close to 20 kronor. The financial position of the *Skandinaviska Kreditaktiebolag* became precarious. The government and the

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[9] Jonung (1979a) gives a detailed presentation of the reports of Cassel, Davidson, and Heckscher. Their reports until recently have remained classified documents kept in the archives of the *Riksbank*.

[10] In his report to the *Riksbank* in 1931, Gustav Cassel urged the bank to rediscount and lend to the commercial banking system on liberal terms. He also advised the bank to supply as many notes as demanded by the public and to announce that any increase in the demand for notes would be satisfied. See Jonung (1979a).

parliament took quick action and arranged for a large loan to the bank. This loan, combined with other forms of lending to the banking system, contributed to financial stability and to a reduction of the impact of the Kreuger crash on the Swedish economy. Actually, the depreciation of the krona following Kreuger's death counteracted the deflationary forces. Once the demand for foreign reserves by the Kreuger enterprises disappeared, the *Riksbank* was free to carry out a more expansionary policy than it had previously.

In the spring of 1932, as the depression became more severe in Sweden, the parliament requested a more expansionary monetary policy. The *Riksbank* was asked to induce a rise in the level of wholesale prices - without significantly raising consumer prices. In the summer of 1932 the *Riksbank* made large purchases of foreign assets, holding the pound and dollar rates well above parity. Consumer prices as well as wholesale prices were kept constant, checking the deflationary tendency. In the fall and winter of 1932, however, the bank depressed the exchange rate of the pound and also of the dollar by selling foreign assets. This policy - which was clearly not in the spirit of the monetary program - contributed to a decline in wholesale prices by about 4 percent and in consumer prices by 1 percent between October 1932 and March 1933. After this event the *Riksbank* again started to make large purchases of foreign assets in 1933 and 1934. This policy expanded the monetary base and raised the reserve ratio of the commercial banking system.

In the summer of 1933 the *Riksbank* decided on its own initiative to peg the krona to the pound at the rate of 19:40, representing a depreciation relative to the gold parity of 18:15. The bank maintained this rate for the rest of the 1930s. The recovery from the depression was well under way when the pound rate was pegged. The volume of Swedish exports rose steadily, and the surpluses in the balance of payments gave rise to a huge inflow of reserves. The minutes of the board of the *Riksbank* of the mid-1930s reveal that the major problem for the bank was to find suitable investments for its foreign reserves.

The effects of the policy of the *Riksbank*

The policy of the *Riksbank* after the introduction of the paper standard in the fall of 1931 kept the Swedish money stock on practically the same level for five years until the boom of 1937 (figure 2). The monetary program of price stabilization was followed in the sense that the consumer price index of the bank was kept stable in these years. The monetary program was

an effective restriction on the actions of the bank, preventing the bank from carrying out a deflationary policy aimed at tying the krona to the pound or to gold at the parity rate. Attempts in this direction were actually made (Jonung 1979b). The policy of the bank held the money stock constant through various measures - first of all, by leaving the gold standard and depreciating the krona in 1931; second, by liberal lending and support to the commercial banking system; third, by large purchases of foreign assets from the Swedish public, representing a form of expansionary open-market operations. The monetary program of 1931 and the subsequent declarations of the government and the parliament about the aim of monetary policy maintained public trust and confidence in the banking system. The determined actions to support the *Skandinaviska Kreditaktiebolag* prevented speculations and expectations concerning impending financial turmoil. To sum up, the conduct of monetary policy counteracted the contractionary impulses and created public confidence in the Swedish financial system.

The role of fiscal policy

Stabilization policy was synonymous with monetary policy in Sweden prior to the depression of the 1930s. In the early 1930s, however, Swedish economists like Gunnar Myrdal, Erik Lindahl, and Bertil Ohlin developed a theory for a countercyclical fiscal policy based on the Wicksellian heritage. The non socialist government that ruled Sweden in the early 1930s founded its economic policy on monetary measures and was critical of fiscal actions that could cause budget deficits. Still, government expenditures were held at a roughly unchanged level during these years in spite of a decline in government revenues. Considerable deficits in the budget were the result. The Social Democrats came to power in 1933, after the election of 1932, by forming a coalition government with the Farmers' party. The new government initiated a fiscal policy that was openly based on budget deficits to be financed through government borrowing. The fiscal authorities publicly declared that the budget should be underbalanced. The new fiscal policy - called the "crisis policy" in Sweden - met with strong opposition from the old generation of economists, while the young generation supported the policy. Some of them, 1ike Bertil Ohlin, had worked in favor of an "active employment policy".

The effects of the fiscal program launched in 1933 were only minor. There are two major arguments for this conclusion. First, the "crisis policy" was carried out for a fairly short time, that is, between 1933 and 1935. Second, the fiscal measures actually implemented were of a comparatively small magnitude. They had hardly any noticeable effects on the trend of government expenditures in the 1930s. The long strike of the construction workers in 1933-34 was also detrimental to the fiscal program. It is thus safe to conclude that the new economic policy had an insignificant impact on the business cycle. In political discussion within Sweden, however, the experience of the 1930s has frequently been used as an argument for the use of fiscal policy, although there is little empirical support for such an argument. Specifically, a comparison of the behavior of exports and imports with the pattern of government expenditures clearly indicates that changes in the foreign sector were the major source of economic fluctuations in the 1930s. On the other hand, the steady level of the expenditures of the government sector was a source of stability in the 1930s.[11]

Summary of the Swedish record

The depression in Sweden was caused by foreign developments. Swedish exports declined sharply in size between 1929 and 1933. This represented a substantial fall in autonomous spending. Swedish authorities adopted a host of monetary measures to counteract this reduction in aggregate demand. The devaluation of 1931, when Sweden left the gold standard, isolated Sweden the world deflation. The authorities managed to stabilize domestic prices by maintaining a stable money stock. The countercyclical fiscal policy launched in 1933 did not have any prominent effects, although it had a far-reaching impact on the theoretical discussion among Swedish economists and on the framing of Swedish stabilization policy in the postwar period.

[11] Swedish economists commonly agree that the "crisis policy" had minor effects on the recovery of the Swedish economy (Jonung 1979b).

THE CASE OF THE UNITED STATES

Explanations of the American depression

Most observers agree that the Great Depression was generated primarily within the United States, although there is no agreement over which domestic developments actually caused the depression to become as deep and as long lasting as it turned out to be. It is difficult to argue that the U.S. recession was caused by foreign factors - as was the case - for Sweden - for a number of reasons. First, the American foreign sector commanded a fairly small share of U.S. national income in these years (table 2). Changes in exports could not, per se, produce a major recession. Second, American monetary authorities had considerable autonomy in the framing of monetary policy. The gold-standard system of the 1920s did not restrict the actions of the Federal Reserve System as much as it did for the central bank of a small open economy such as Sweden's.[12]

Third, the downturn in economic activity was considerably stronger in the United States than in most European countries in 1930-31, suggesting that the depression started in the American economy and spread to the rest of the world. Foreign developments exerted a contractionary influence on the American economy, in particular when the depression outside of the United States grew in strength. This influence, however, cannot be regarded as the main cause of the American contraction in the same way as the Swedish depression is explained by the decline in the demand for Swedish exports.

Several explanations of the American depression have been proposed. The differences between them generally concern the weights assigned to monetary and non monetary factors in the causal interpretation. The recent American discussion has focused on two competing hypotheses, "the money hypothesis" and "the spending hypothesis", following the terminology proposed by Peter Temin (1976, p. 7). The money hypothesis ascribes a central policy role to monetary policy and monetary events. The spending hypothesis attaches great

[12] Davidson argued in his report to the *Riksbank* that the American monetary system was based on a paper standard in the 1920s and that the *Riksbank* could learn from the behavior of the Federal Reserve System how to manage a paper standard (Jonung 1979a).

weight to an exogenous shift in autonomous expenditures. Both of these explanations suggest that the Great Depression was generated by forces essentially working within the U.S. economy, implying that the depression spread from America to the rest of the world.

The basic elements of the two hypotheses can be expressed in the following way. The money hypothesis states, asserting the relative stability of the money-demand function, that a reduction in the supply of money caused the decline in real income and prices; that is, changes in the growth rate of the supply of money were a driving force behind the depression. An expansionary monetary policy, increasing the money supply, could thus have prevented the depression from becoming as deep as it did. The spending hypothesis in its various versions postulates that a decline in some component of national income, such as investment or consumption, through a multiplier process caused a reduction in national income; that is, changes in autonomous expenditures were the main force behind the depression. A fall in the demand for money, due to the reduction in autonomous spending and income, occurred along a stable money-supply function. An expansionary monetary policy would not have counteracted the depression effectively, according to this hypothesis, because any increases in the money supply would have been offset by changes in the demand for money.

Thus, the spending hypothesis suggests basically the opposite causal relations of those implied by the money hypothesis. The essential discrepancy concerns the analysis of the behavior of the monetary sector and monetary policy. An attempt will be made here to discriminate between these rather simplified versions of the two opposing hypotheses by comparing the Swedish and American records. Such a comparison will bring out the basic issues involved in the present American debate about the character of the contraction of the American economy in the 1930s.

The money hypothesis

The money hypothesis is intimately connected with the work of Friedman and Schwartz, specifically, with *A Monetary History of the United States (1963).* There are two main arguments in their analysis of the American 1930s. First, the basic reason why the recession of 1929-30 turned into the Great Depression was that the policy of the Federal Reserve System contributed significantly to a reduction of the American money supply by more than one-third in the period 1929-33. They do not rule out influences from non monetary

developments (pp. 300-01). These, however, could not have accounted for the severity and duration of the depression, in their opinion. Second, an alternative expansionary monetary policy could have reduced the contraction in economic activity and made the depression milder and shorter.

Chapter 7 in *A Monetary History* describes in detail a number of developments that caused the reduction in the U.S. money stock from the onset of the stock market crash in October 1929 to the final banking panic of 1933 that paralyzed the financial system and left the United States without a working central banking system. According to Friedman and Schwartz, two factors interacted to bring about the decline in the money stock: first, four waves of banking panics, the first one starting in the fall of 1930, the second in March 1931, the third in September 1931, and the fourth in January 1933, which led to the collapse of the Federal Reserve System in March 1933; and second, the inability of the Federal Reserve System to prevent the panics from spreading by applying a more expansionary monetary policy. The banking panics reduced the money stock by raising the currency ratio and the reserve ratio and by forcing a large number of banks to close for business (table 5).

The Federal Reserve System did not effectively check the fall in the money stock; rather, the actions of the system contributed to the decline in the money stock. According to Friedman and Schwartz there are several reasons for this passive and contractionary policy. The attitude of the Federal Reserve System was one of inactivity and lack of understanding of the problems facing the American commercial banking system. The Federal Reserve System also had and had an aversion to lending to commercial banks. Many members of the board regarded the defaults "as regrettable consequences of bad management"' and had "no feelings of responsibility for non-member banks" (pp. 357-59). The Federal Reserve System had simply not developed the proper analysis necessary for a successful conduct of central bank policy. The views of many of the officials were more aptly those of commercial bankers than those of central bankers. The inactivity is also attributed by Friedman and Schwartz to the size of the Federal Reserve Board. The large number of governors made it difficult to reach decisions on specific actions, thus creating a bias toward a policy of inaction. Furthermore, Friedman and Schwartz point to the lack of an informed public opinion that could exert influence on the framing of monetary policy. (Pp. 407-11)

Friedman and Schwartz argue strongly that the Great Depression was not an inevitable consequence of the workings of economic forces. A more expansionary monetary policy could have eliminated the decline in the money stock, checking the fall in nominal income and making the depression shorter. An alternative monetary policy could thus have prevented the recession of 1929-30 from turning into the Great Depression. In their own words:

> *Prevention or moderation of the decline in the stock of money, let alone the substitution of monetary expansion, would have reduced the contraction's severity and almost as certainly its duration. The contraction might still have been relatively severe. But it is hardly conceivable that money income could have declined by over one-half and prices by over one-third in the course of four years if there had been no decline in the stock of money*. (P. 301)

They have no direct evidence for this view. To support their contention, Friedman and Schwartz point to the effects of open-market operations in 1932. The Swedish record, however, provides a case of a country that actually carried out a policy that has much in common with the alternative proposed by them. Thus, a comparison with the Swedish experience may shed light upon their argument that a different monetary policy would have reduced the effects of the depression in the United States.

The Swedish money stock was held at roughly a constant level after Sweden had left the gold standard and depreciated its currency. The monetary program of domestic price stability forced the central bank to maintain a policy of a stable money stock. This policy undoubtedly was the major factor explaining why the depression in Sweden was shorter and milder than in the United States. During the 1920s, when the decline in the Swedish money stock was stronger than in the 1930s, domestic prices and economic activity fell more than in the 1930s. Consequently, the Swedish case supports the view that an alternative monetary policy would have reduced the decline in US nominal income.

Swedish monetary policy was more expansionary than its American counterpart in the early 1930s, judging from the growth pattern money stock (figure 1). Still, Swedish monetary policy could have been more expansionary in these years - as some economists also requested - allowing for a more rapid monetary growth. Conceivably, such a policy would have been more effective in checking the Swedish contraction. Furthermore, Swedish

monetary policy affected primarily the domestic price level and the output of domestic goods and services. Industries producing for domestic market fared better than the export industries (table 3). As the American economy was more closed than the Swedish economy, an expansionary monetary policy would have influenced a larger share of the economy in the United States than in Sweden. The Swedish monetary authorities were faced with the task of offsetting the disappearance of the foreign demand for the export industries. This was less of a problem in the United States.

There is a major difference between the behavior of the Swedish and American central banks in the 1930s. Swedish central bank policy aimed at creating, and did create, monetary stability and public confidence, while the actions of the Federal Reserve produced the opposite result. The Swedish central bank had no aversion to lending to the commercial banks. The *Riksbank* had fully accepted the role of being the lender of last resort supporting the commercial banks. The Federal Reserve System, however, did not operate as the lender of last resort and denied assistance to the U.S. commercial banking system. The public declaration of the goal of monetary policy and the construction of the price index by the *Riksbank* in 1931 reduced uncertainty about the future, increasing the predictability and stability of the future. As time passed and the public gradually discovered that the consumer price level had been stabilized, public trust in the conduct of monetary policy was also strengthened. In the United States, however, the successive banking panics eventually eroded public confidence in the solvency and stability of the banking system. These differences in the conduct and effects of monetary policy strengthen the criticism by Friedman and Schwartz and others of the behavior of the Federal Reserve System in the early 1930s.

The spending hypothesis

There are several versions of the spending hypothesis, depending on which type of autonomous expenditure is postulated to have initiated the decline in aggregate demand. In the present discussion, Peter Temin's argument (1976) that a large and unexplained fall in U.S. consumption in 1930 caused the depression has attracted much debate.[13] According to

[13] Temin's conclusion is based on a number of econometric tests of consumption functions for the United States in the interwar period. Mayer (1978) reports econometric results that are critical of Temin's arguments.

him, the reduction in consumption set off a multiplier process, reducing aggregated demand and national income. Essentially, the contraction of the succeeding years appears to be the result of the behavior of autonomous spending in 1930. In the analysis of the monetary sector, Temin suggests that the decline in income produced a downward shift in the demand-for-money schedule and thus an excess supply of money. The banking panics during the early stages of the depression are assigned a minor role:

> *There is no evidence that the banking panic of 1930 had a deflationary effect on the economy. Instead, the data are consistent with the hypothesis that the demand for money was falling more rapidly than the supply during 1930 and the first three-quarters of 1931. They are consistent with the spending hypothesis, not the money hypothesis about the causes of the Depression*. (p. 137)

Temin is consequently arguing that the American supply of money adjusted to a falling demand for money. With respect to the effects of monetary policy, this reasoning implies that an expansionary monetary policy would not have been able to counteract the contraction of the American economy.

The Swedish experience can be used to examine this line of argument. The world depression was transmitted to Sweden by a sharp decline in autonomous expenditures, that is, by a fall in Swedish exports. The spending hypothesis applied to the Swedish record postulates that the Swedish demand for money would shift downward in the succeeding years along a stable supply-of-money schedule. Monetary policy would not have been able to maintain a constant money stock under these circumstances and thus not been able to check the contractionary multiplier effects stemming from the reduction in exports. The Swedish record, however, does not lend support to this interpretation of the spending hypothesis. The sharp decline in autonomous spending in Sweden did not cause a downward shift in the demand for money that reduced the Swedish money stock. The policy of the *Riksbank* maintained roughly a constant money stock during the depression years. Consequently, this chain of events is inconsistent with the spending hypothesis as interpreted here.

The reduction in expenditures at the early stages of the Swedish depression was of the same relative magnitude as that of the United States. The years 1930-31 roughly represent the beginning of the recession in Sweden in the same way as the period 1929–30 marks the beginning of the American depression. From 1930 to 1931 the Swedish gross domestic

product declined by 13 percent in current prices and by 8 percent in constant prices. The corresponding numbers for the United States between 1929 and 1930 are 13 percent and 9 percent. Swedish exports fell by 27 per-cent and consumption by 10 percent. The corresponding figures for the American economy are 26 and 10 percent, respectively. Thus, the initial declines in aggregate spending in the two countries were of approximately the same size. The initial recessionary impact, however, was transformed into a much deeper contraction in the United States than in Sweden, primarily because of differences in the framing of monetary policy.

When Temin studies the impact of macroeconomic policy in the 1930s, he draws the following conclusion:

> *What can we say about the role of macroeconomic policy in this story? It is clear from the fact that the Depression occurred that effective countermeasures were not used. Those countermeasures that were tried clearly were ineffective; the Depression took place. To show that a macroeconomic policy can be effective, a historian is forced into the uncomfortable position of attempting to prove that it was not used. If it was used, it did not work. Only if it was not used can it emerge from the debacle of the 1930s unscathed*. (p. 173)

This represents a rather skeptical view of the possibilities of evaluating the effects of monetary and fiscal measures during the depression. This paper, however, builds upon a cross-country comparison of two different records of stabilization policy. This method of evaluation, not explicitly considered by Temin, suggests in the case of Sweden and the United States that monetary policy deserves to emerge from "the debacle," if not unscathed, then at least regarded as an effective policy alternative.

THE INFLUENCE OF THE SWEDISH ECONOMISTS

A major difference between the Swedish and the American depression is to be found in the conduct of monetary policy. Why, then, was the policy of the *Riksbank* more expansionary than the policy of the Federal Reserve System? Differences in the level of knowledge of economic matters as well as in the influence of the economic profession on the framing of monetary policy is part of the answer to this question. Friedman and Schwartz argue that one reason for U.S. monetary policy being "so inept" was the lack of a proper economic analysis to account for what was happening in the American economy. Consequently, good policy advice was not forthcoming.

> *Contemporary economic comment was hardly distinguished by the correctness or profundity of understanding of the economic forces at work in the contraction, though of course there were notable exceptions. Many professional economists as well as others viewed the depression as a desirable and necessary economic development required to eliminate inefficiency and weakness, took for granted that the appropriate cure was belt tightening by both private individuals and the government, and interpreted monetary changes as an incidental result rather than a contributing cause.* (Pp. 408 -09)

It is tempting to conclude that exactly the opposite situation prevailed in Sweden. The Swedish economists presented policymakers and public opinion with a thorough and, ex post, surprisingly correct analysis as well as reasonable policy recommendations. The political parties, the government, and the Riksbank bank were also ready to listen to the advice of the economists.

In order to understand the strong influence exercised by the economists as a professional group in the 1930s, one has to go back to the economic events in Sweden during and after World War I. In these years monetary matters were the subject of an extremely lively discussion in Sweden. Almost all the economists active at that time, such as Cassel, Davidson, Heckscher, Ohlin, and Wicksell, participated. The debate is documented in a large number of articles in *Ekonomisk Tidskrift*, in newspapers and various journals, in books, in reports of government committees, and in the proceedings of the Swedish Economic Society.

Representatives from industry, commercial banking, the *Riksbank*, and the political parties also took part in the exchange of ideas.[14]

The opinions of the economists and their recommendations became well known to the general public. Wicksell's norm of price stabilization was in these years proposed as a serious policy alternative. After the war most economists, however, advocated a return to the prewar gold parity of the krona. This return required a strong deflation. The economists at that time generally did not expect the social consequences of the deflationary policy, measured in terms of unemployment and social unrest, to be as large as they turned out. The deflation of the 1920s made the profession critical toward any monetary policy involving a falling price level.

When Sweden left the gold standard in 1931, Gustav Cassel apparently drafted the monetary program of price stabilization. Economists were as a rule favorable toward this program in 1931. The *Riksbank* turned to Cassel, Heckscher, and Davidson for advice about the conduct of Swedish monetary policy. The three economists presented the bank with a document rich in policy recommendations, particularly urging the bank to stabilize the domestic price level, to avoid deflation, to lend liberally to commercial banks, and to establish public confidence in the policy of the *Riksbank*. These recommendations represent a level of knowledge in monetary questions considerably above that reflected by the opinions of American economists in the early 1930s.

In the 1930s economists were active in the public discussion in the same manner as during World War I and in the 1920s writing in newspapers and magazines, preparing committee reports on macroeconomic policies, and advising the policymakers. Cassel, Heckscher, and Ohlin were associated with various newspapers and contributed columns regularly. Ohlin was the most prolific writer of them all. In 1932, for example, he published about 60 articles in the *Stockholms Tidning*, dealing with various domestic and foreign economic issues. After Sweden had left the gold standard in 1931, Cassel and Heckscher remained strong proponents of the program of price stabilization. They advocated, in part, an appreciation of the Swedish krona in 1937 in order to stabilize Swedish prices when the world price level was rising. They acted as "watchdogs" over the policy of the *Riksbank* through their articles in the newspapers. The younger generation of economists, however, came gradually to focus their interest on

[14] See Jonung (1979b) for a presentation of this debate.

fiscal measures and to propose employment stabilization - instead of price stabilization - much to the dismay of Cassel and Heckscher. This new generation came to inspire the framing of fiscal policy. This policy, however, had only a minor impact on the Swedish business cycle in the 1930s compared to the monetary measures. To sum up, the Swedish economic profession exerted a considerable influence directly as well as indirectly on the conduct of Swedish stabilization policies in the 1930s. This influence is an important part of the explanation of why Swedish monetary policy was based on Wicksell's norm of price stabilization and was more expansionary than the policy of the Federal Reserve System during the depression.

CONCLUSIONS

This chapter has compared the economic record of the depression of the 1930s for Sweden and the United States. The depression in Sweden was shorter and less severe than in the United States. This difference is explained primarily by the conduct of monetary policy in the two countries. Swedish policy aimed at stabilizing the domestic price level and thus the money stock, while American policy contributed to a sharply reduced money stock. The difference in the framing of monetary policy is to a considerable extent due to the influence of Swedish economists on the policy of the *Riksbank*.

In economic research it is generally impossible to study experiments similar to controlled testing in a laboratory, but the experience of Sweden and of the United States in the 1930s may be regarded as two interesting test cases. One was the case of an economy where the money stock was kept constant, the other the case of an economy with a falling money stock. When the money stock was held at stable level, domestic prices remained constant and the downturn in industrial production was smaller and of shorter duration than in the economy with a sharply falling supply of money.

The comparative analysis provides conclusions concerning the money hypothesis and the spending hypothesis considered in American debate. The comparison of Sweden and the United States makes a strong case for assigning great importance to monetary developments in the depression of the 1930s in Sweden as well as in the United States.

Appendix: Gustav Cassel on the American depression

Gustav Cassel was the most prominent Swedish economist after the death of Wicksell. He was probably also the most renowned economist in the world from the early 1920s until the publication of Keynes's *General Theory*. He played a leading role in various committees of the League of Nations; he traveled extensively and published a large number of articles on world monetary issues. Cassel was a strong proponent of a monetary interpretation of macroeconomic events, specifically, of the world depression. He presented a good summary of his views in an article published in October 1932, that is, in the middle of the crisis, called "A Contribution to Characterization of the Crisis." This article is interesting to look at more closely because Cassel discusses from a Swedish viewpoint various hypotheses concerning the causes the U.S. depression.

Cassel states initially that the crisis was a crisis of the world's monetary system. He summarizes the "chain of causes" behind it in the following way:

> *The principal links in this chain are the unnatural demands for the payment of reparations and war debts; the reluctance of the recipient countries to take payment of reparations and war debts in the form of goods and services; the lopsided distribution of gold in the world, greatly aggravating the effects of the existing shortage in the supply of gold; the sharp fall of prices; the general insolvency and loss of confidence; the paralysis of enterprise; the increasing trade barriers and the collapse of the world economy*

In this chain of events the policy of the United States played the central role, according to Cassel.

Then Cassel examines various explanations of the U.S depression, like (1) underconsumption, (2) excessive consumption, (3) overproduction, and (4) stock speculation. He dismisses all these hypotheses, arguing that it is

> *Perfectly clear that the course of economic events in the United States is essentially a pure process of deflation, quite distinct from ordinary economic movements, a process which began on a small scale as far back as 1929, and which has afterwards developed with such momentum that it is grinding to pieces the entire national economy.*

This process of deflation was started by the Federal Reserve System in the spring of 1928, when, fearing stock-exchange speculation, it introduced restrictions on credits. The restrictive policy caused a pronounced fall in commodity prices in the United States. They had fallen from 95 by June 1929 to 64 by June 1932. "This very marked and continuous fall of prices cannot possibly be interpreted as a result of preceding economic, non monetary disturbances." The fall in prices triggered a chain of events that aggravated the crisis. Various institutional developments contributed to this. The "prevalent views that the member banks ought not to be indebted to the Federal Reserve banks" prevented the Federal Reserve System from a policy of liberal lending that would have counteracted the deflationary process. Due to the absence of big banks with many branch offices, small banks were left on their own to face bank runs with no resort to central support from large banks. Big banks, on the other hand, tried to improve their reserve positions. They cut down their loans and contributed further to deflation.

The process of deflation "could have been checked only by a determined policy of anti-deflation on the part of the Federal Reserve banks" and by an active intervention extending the "effective supply of means of payment." Such a policy was not implemented because of the system's "almost superstitious dread of anything that could be stamped as inflation." Furthermore, the Federal Reserve banks were hampered in their actions by the legal framework, specifically, by the restrictions eliminated by the Glass-Steagall Bill of February 1932 and by the amendment of the Federal Reserve Act of July 1932.

To sum up, Cassel is advocating a strong monetary interpretation, stating that (1) the U.S. depression was caused by monetary factors, and (2) an expansionary monetary policy could have effectively checked the depression. It is worth noting that Cassel was writing this in the midst of the crises and that he was observing American economic events from Sweden. In his later writings he remained a staunch proponent of a monetary view of the depression. He became extremely critical of the fiscal activism of the Stockholm School and of the work of Keynes and his followers.

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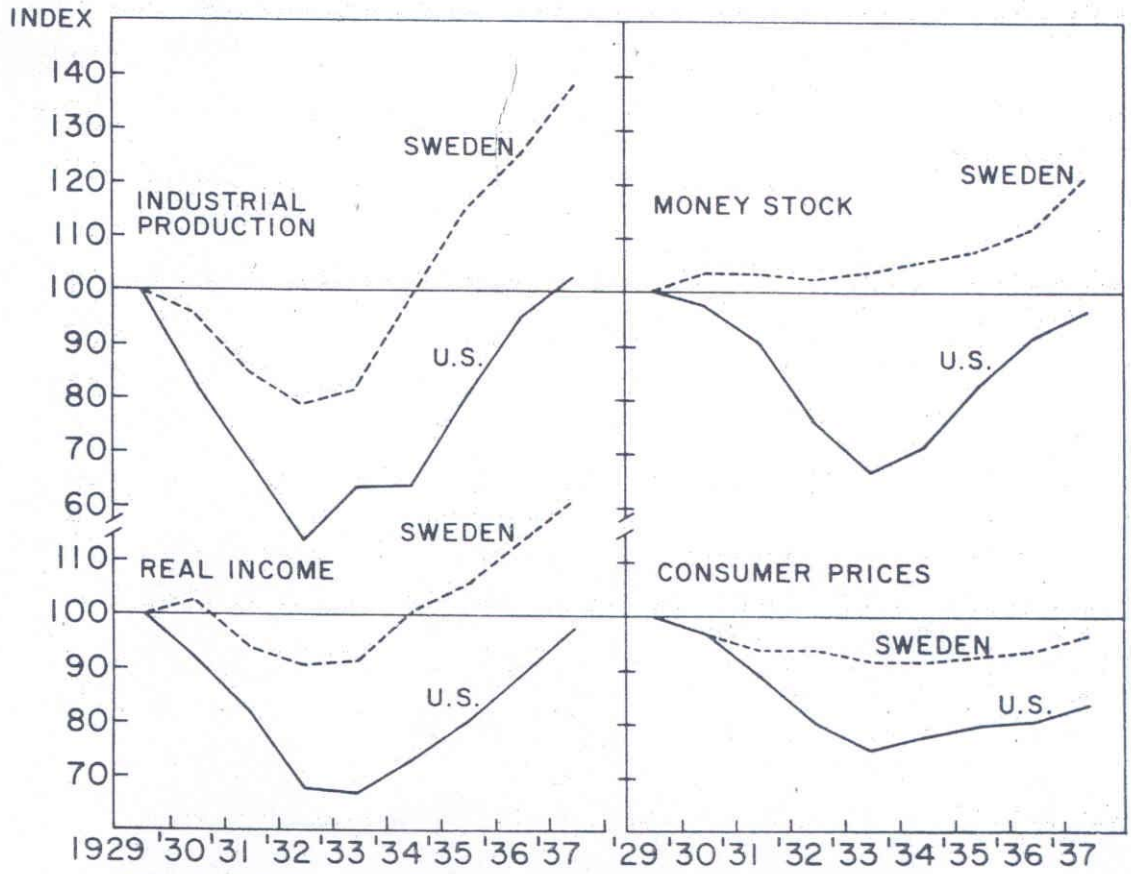

Figure 1. Real Income, Industrial Production, Consumer Prices, and Money Stock in Sweden and the United States, 1929–37 (1929 = 100 for all series)

Source: Data from tables 1, 4, and 5.

Table 1. Real Income, Industrial Production, and Employment in Sweden and the United States, 1929–37 (1929 = 100)

	Real Income		*Industrial Production*		*Employment*	
	Sweden (1)	*U.S. (2)*	*Sweden (3)*	*U.S. (4)*	*Sweden (5)*	*U.S. (6)*
1929	100	100	100	100	100	100
1930	103	92	96	83	102	96
1931	94	82	85	69	99	89
1932	91	68	79	54	97	82
1933	92	67	82	64	95	81
1934	101	73	99	64	99	86
1935	106	80	115	80	102	89
1936	114	89	125	95	105	93
1937	122	98	138	103	106	97

Sources: Col. (1): Johansson 1968, p. 153. Col. (2): U.S. Department of Commerce 1966; gross national product according to Kuznets's estimates, p. 166. Col. (3): The industrial production index of the Swedish Federation of Industries, 1929–32, linked with the revised index, starting in 1932 and in 1934; Sweden, Kommerskollegium. Col. (4): U.S. Department of Commerce 1966, p. 168. Col. (5): Johansson 1968, p. 157. Col. (6): U.S. Department of Commerce 1960, p. 70.

Table 2. Percentage of Gross Domestic Product Held by Exports, Imports, Domestic Investments, and Private Consumption in Sweden and the United States, 1929–37

	Exports		*Imports*		*Domestic Investments*		*Private Consumption*	
	Sweden (1)	*U.S. (2)*	*Sweden (3)*	*U.S. (4)*	*Sweden (5)*	*U.S. (6)*	*Sweden (7)*	*U.S. (8)*
1929	20	5	18	4	14	16	76	76
1930	18	4	17	4	16	11	76	77
1931	15	3	16	3	15	7	78	80
1932	13	3	14	3	13	2	78	84
1933	15	3	13	2	12	3	77	82
1934	16	3	14	3	14	5	75	79
1935	15	3	15	3	17	9	75	78
1936	16	3	16	3	17	10	74	76
1937	19	4	18	3	18	13	74	74

Sources: Sweden: computed from Johansson 1968. United States: U.S. Department of Commerce 1960.

Note: The volume of investments for Sweden includes both private and public investments. The data for the United States cover only private domestic investments. The volume of public investments in Sweden was, however, of a relatively small size in the 1930s.

Table 3. Industrial Production Indices for Sweden, 1929–34 (1929 = 100)

	Industries Producing for the Domestic Market (1)	*Industries Producing for Export Markets* (2)	*Industries Producing Investment Goods* (3)	*Industries Producing Consumption Goods* (4)	*Total Index* (5)
1929	100	100	100	100	100
1930	97	96	94	100	96
1931	89	78	78	95	85
1932	87	66	69	96	79
1933	88	72	73	95	82
1934	108	85	91	113	100

Source: Sweden, Kommerskollegium.

Note: The indices were constructed and collected by the Swedish Federation of Industries. Industries were grouped into four categories depending on (*a*) the main market of their output (domestic or foreign) and (*b*) the main type of goods produced (consumption goods or investment goods). Thus, every industry included in the statistics is represented in two of col. (1)–(4).

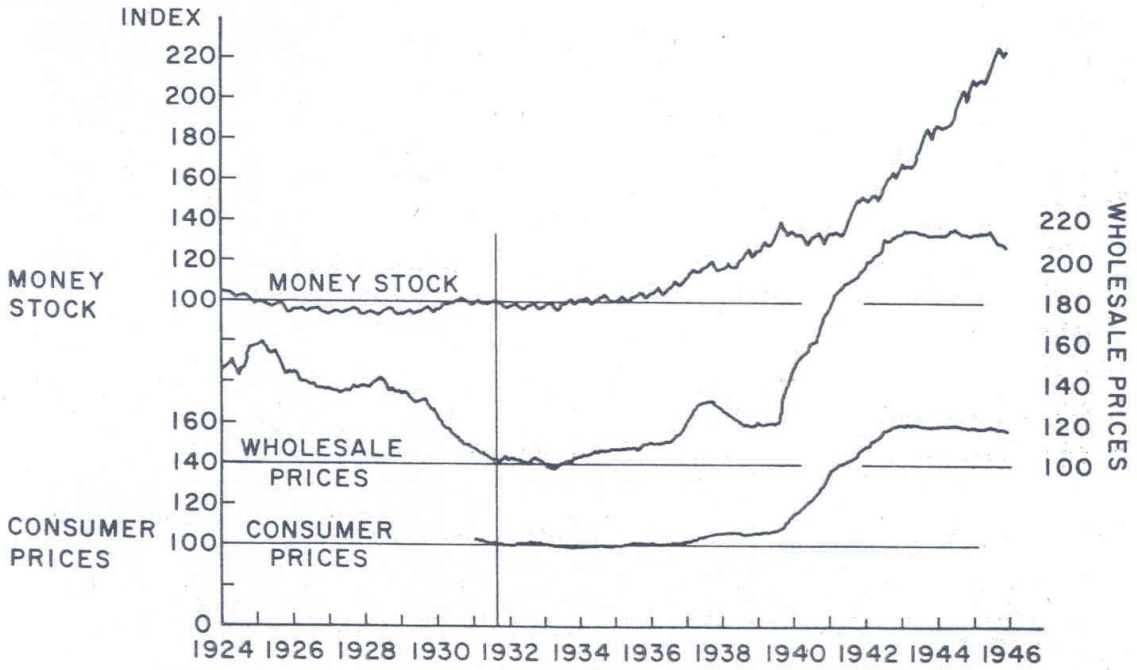

Figure 2. Consumer Price Index of the Riksbank, Wholesale Price Index, and Money Stock, 1924–45, Monthly Levels (September 1931 = 100)

Source: Data from tables 4 and 5.

Table 4. The Behavior of Prices in Sweden and the United States, 1929–37 (1929 = 100)

	Wholesale Price Index		*Consumer Price Index*		*Deflator*	
	Sweden (1)	*U.S. (2)*	*Sweden (3)*	*U.S. (4)*	*Sweden (5)*	*U.S. (6)*
1929	100	100	100	100	100	100
1930	86	91	97	97	96	96
1931	78	77	94	89	90	85
1932	75	68	94	80	87	77
1933	75	69	92	75	84	75
1934	80	79	92	78	87	80
1935	83	84	93	80	88	79
1936	87	85	94	81	90	82
1937	104	91	97	84	97	83

Sources: Col. (1): Wholesale price index of the Svensk Finanstidning. Col. (2) U.S. Department of Commerce 1960, p. 116. Col. (3): Consumption price index of the Riksbank, 1931–37, linked with the cost-of-living index of the Socialstyrelse for 1929–30. Col. (4): U.S. Department of Commerce 1960, p. 125. Col. (5): Deflator of the Swedish domestic product according to Krantz and Nilsson 1975, pp. 130–40; this is a weighted price index where agriculture, manufacturing, and personal private services represent 75 percent of the weights. Col. (6): Implicit price index of the U.S. gross national product, U.S. Department of Commerce 1960, p. 139.

Table 5. Money Stock, Currency-Money Ratio, and Reserve-Deposit Ratio in Sweden and the United States, 1929–37 (Money stock: 1929 = 100)

	Money Stock		*Currency Ratio*		*Reserve Ratio*	
	Sweden (1)	*U.S. (2)*	*Sweden (3)*	*U.S. (4)*	*Sweden (5)*	*U.S. (6)*
1929	100	100	11.8%	8.4%	1.8%	7.7%
1930	104	98	11.9	8.2	1.8	7.8
1931	104	91	11.9	9.6	1.8	8.5
1932	103	76	11.8	14.0	3.6	9.7
1933	104	67	12.0	16.3	6.7	12.2
1934	106	72	12.8	13.8	9.4	15.7
1935	108	83	14.2	12.5	8.4	5.6
1936	112	92	15.7	12.1	8.4	17.8
1937	122	97	16.0%	12.3%	16.3%	18.9%

Sources: Cols. (1), (3), and (5): Jonung 1975, tables A–1, B–1. Cols. (2), (4), and (6): Friedman and Schwartz 1963, tables A–1, B–3.

Table 6. Contributions of the Proximate Determinants of the Money Stock to Specific Cycles in the Growth Rate of the Money Stock in Sweden and the United States during the Contraction Phase prior to the Trough of 1931 and during the Following Expansion Phase

	Cycle Stage	Dates	Length (months) (1)	Change in Money Stock (2)	Contributed by: Monetary Base (3)	Currency Ratio (4)	Reserve Ratio (5)
		Sweden					
Contraction	V	Oct. 1929–Jan. 1930	3	+ 5.1	+ 5.8	+ 0.3	− 0.8
	VI	Dec. 1929–July 1930	7	+ 4.6	+ 4.1	+ 0.3	+ 0.2
	VII	July 1930–Apr. 1931	9	− 0.1	− 0.4	+ 0.0	+ 0.4
	VIII	Apr. 1931–Nov. 1931	7	− 1.8	+ 4.8	− 0.5	− 5.7
	IX I	Oct. 1931–Jan. 1932	3	− 2.1	+12.2	− 2.8	−13.0
Expansion	II	Dec. 1931–July 1933	19	+ 0.4	+16.0	+ 0.1	−15.8
	III	July 1933–Apr. 1935	21	+ 1.8	+10.5	− 5.1	− 3.7
	IV	Apr. 1935–Nov. 1936	19	+ 5.0	+17.0	− 4.8	− 7.0
	V	Oct. 1936–Jan. 1937	3	+ 9.3	+42.5	+ 0.1	−33.7
		United States					
Contraction	V	Sept. 1927–Dec. 1927	3	+ 2.8	− 0.8	+ 5.7	− 1.9
	VI	Nov. 1927–Feb. 1929	15	+ 1.3	− 0.1	+ 0.6	+ 0.7
	VII	Feb. 1929–June 1930	16	− 1.6	2.6	+ 1.0	+ 0.0
	VIII	June 1930–Sept. 1931	15	− 8.2	+ 6.8	−10.6	− 4.4
	IX I	Aug. 1931–Nov. 1931	3	−31.4	+ 4.7	−33.1	− 2.6
	II	Oct. 1931–Apr. 1933	18	−18.7	+ 4.5	−15.9	− 7.5
	III	Apr. 1933–Sept. 1934	15	+10.3	+13.3	+ 7.0	−10.2
	IV	Sept. 1934–Mar. 1936	6	+12.3	+12.7	+ 2.7	− 3.2
	V	Feb. 1936–May 1936	3	+16.5	+ 1.6	+ 4.4	+10.5

Sources: United States: Cagan 1965, table F–1. Sweden: numbers computed in the same way as Cagan's.