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CORNELL
AGRICULTURAL ECONOMICS
STAFF PAPER

**OUR INTERDEPENDENT WORLD ECONOMY
AND AGRICULTURAL TRADE**

by

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December 1986

No. 86-31

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OUR INTERDEPENDENT WORLD ECONOMY AND AGRICULTURAL TRADE*

David Blandford**

I am sure that most of you here today are well aware of how important international trade has become for U.S. agriculture. In 1970, farm exports represented just over 14 percent of the value of farm marketings. By 1981, the proportion had reached 30 percent. I am also sure that most of you are painfully aware of how the changing economic environment for trade has affected U.S. agriculture during the 1980s. Following a period of rapid growth from 1973-81 during which farm exports increased by \$2 billion per year (1985 dollars), exports have declined by an average of \$1.6 billion per year since 1981 (Rossmiller). The period of strong demand, favorable prices, and financial strength for U.S. agriculture has been replaced by one of weak demand, depressed prices, and financial stress.

The basic history of the last fifteen years or so is probably fairly familiar to most of you. What may be less familiar is the role that changes in the world economy have played in the changing fortunes of U.S. agriculture. This morning I would like to review some of these changes and their implications, both for the past and of more importance for the future.

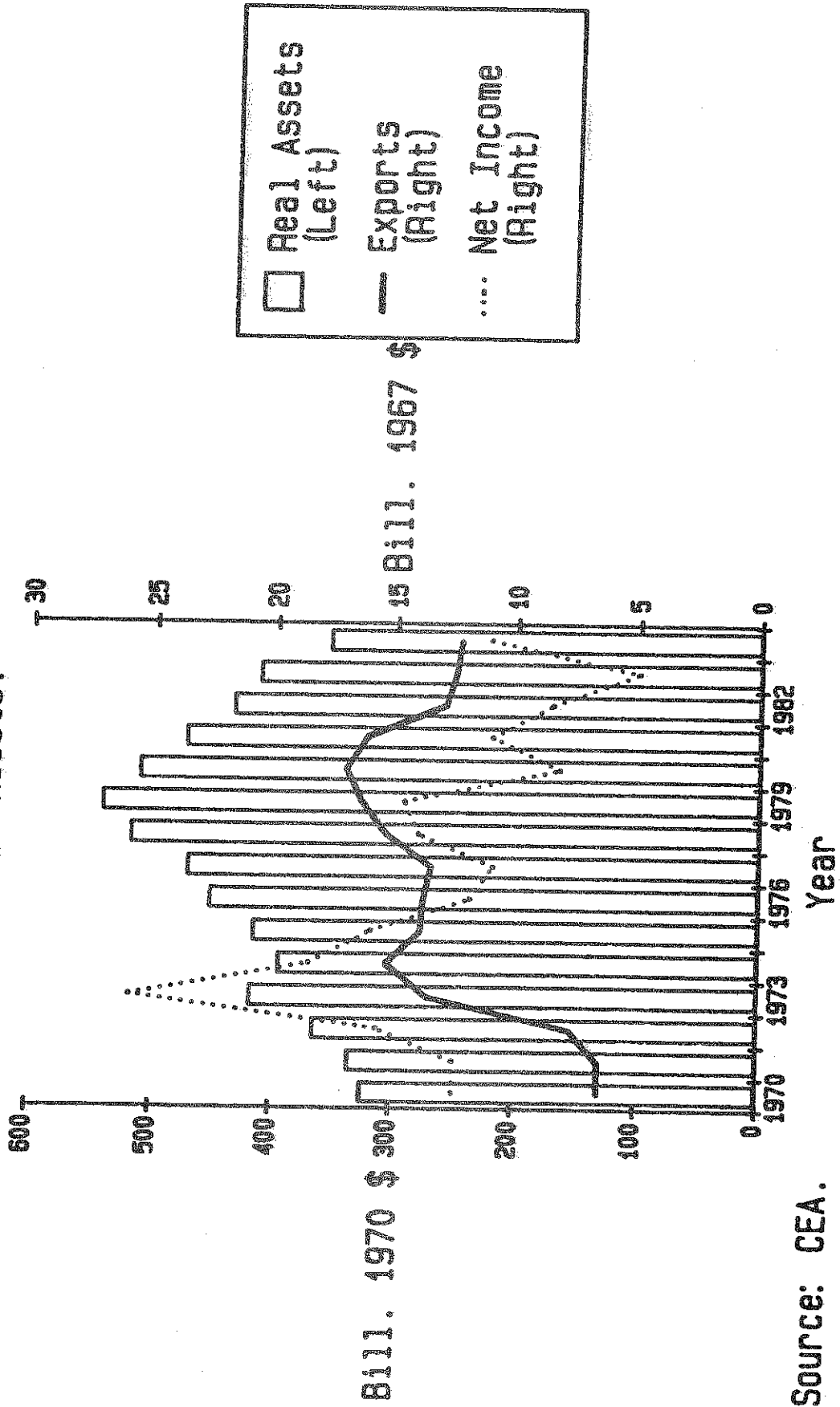
Changes in U.S. Agricultural Exports

As I mentioned earlier, U.S. agricultural exports grew extremely rapidly in the 1970s (figure 1). The value of exports after adjusting for inflation grew at an annual rate of 10 percent during the 1970s, or a total

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Figure 1. U.S. Farm Sector: Exports, Net Income and Value of Assets.



Source: CEA.

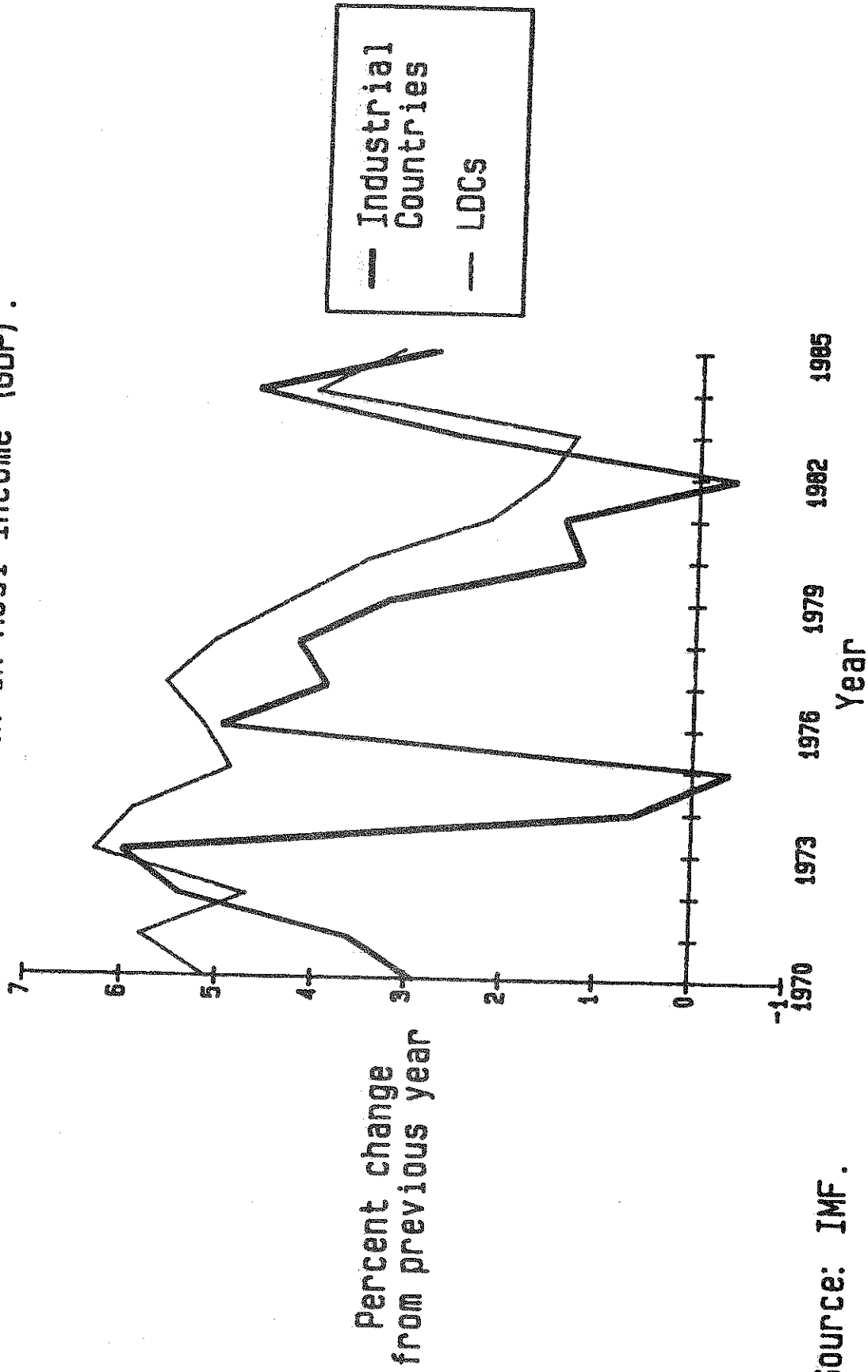
increase of 180 percent between 1970 and 1980. Net farm income rose sharply, particularly during the export boom of the early seventies (figure 1). Real net farm income in agriculture doubled between 1971 and 1973, and despite a subsequent decline was still roughly 17 percent above the level of the early 1970s by the end of the decade. Given the favorable financial position in agriculture and the general attractiveness of agricultural assets (particularly land) in an environment of relatively high inflation, the real value of agricultural assets rose by over 65 percent during the seventies.

This situation changed dramatically during the early 1980s. Exports peaked in real terms in 1980 and then declined by 28 percent in four years. Real net farm income declined by 66 percent between 1979 and 1983 and was only prevented from an even steeper fall by increases in government payments. Real agricultural assets declined by roughly 35 percent between 1979 and 1984. Agriculture's debt-to-equity ratio, which had remained at less than 20 percent throughout the seventies, climbed sharply and was well over 30 percent by 1985.

Reasons for the Change in Exports

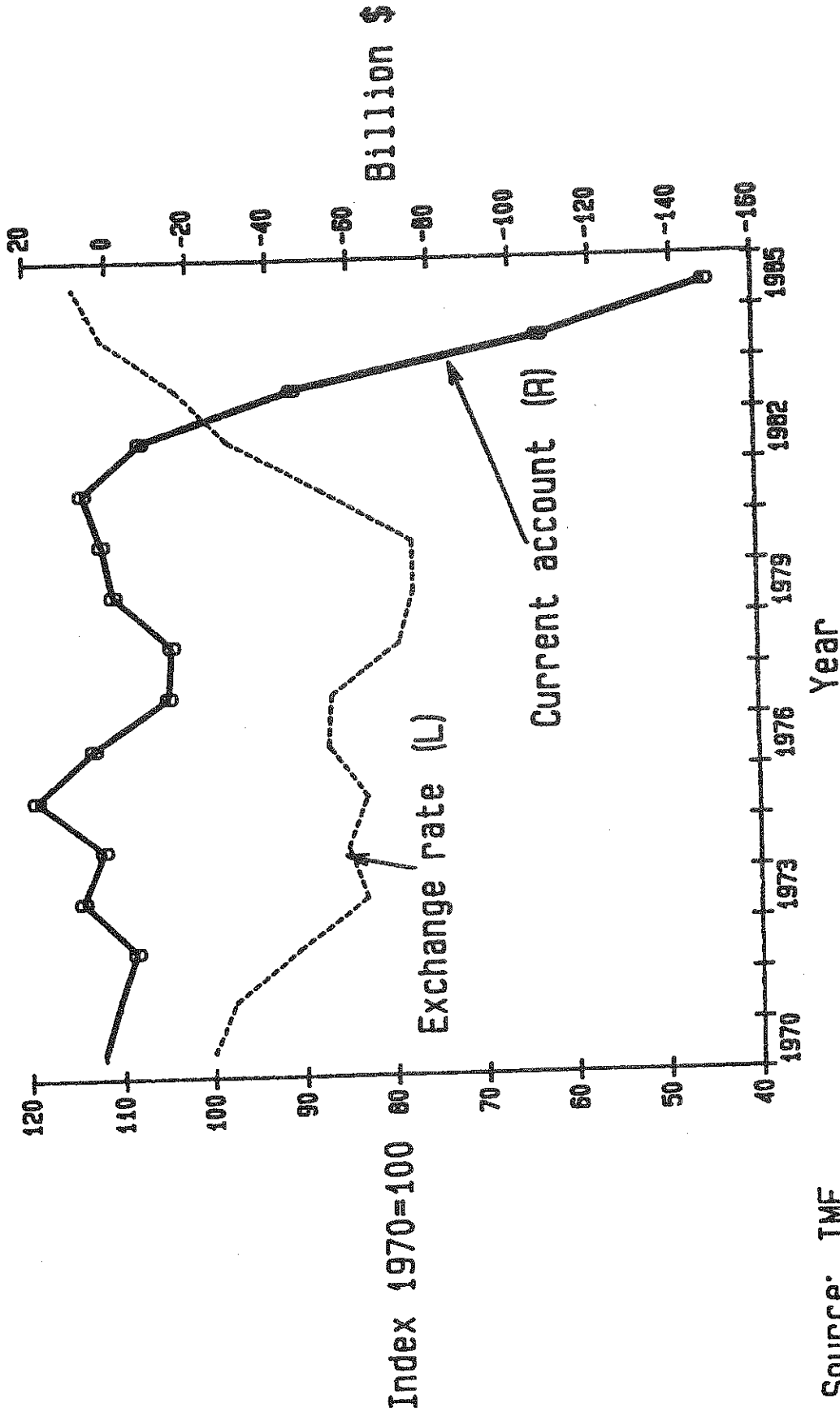
The expansion of exports and the favorable economic position of U.S. agriculture during the 1970s had much to do with the international economic environment of the period. Despite the effects of the higher oil prices created by the OPEC cartel in 1973 and 1974, world economic growth was strong during much of the decade (figure 2). With the move from fixed to floating exchange rates in the early 1970s, the value of the U.S. dollar declined, making U.S. agricultural products more competitive in world markets (figure 3).

Figure 2. Growth in Real Income (GDP) .



Source: IMF.

Figure 3. Exchange Rate of the Dollar and the U.S. Trade Deficit.

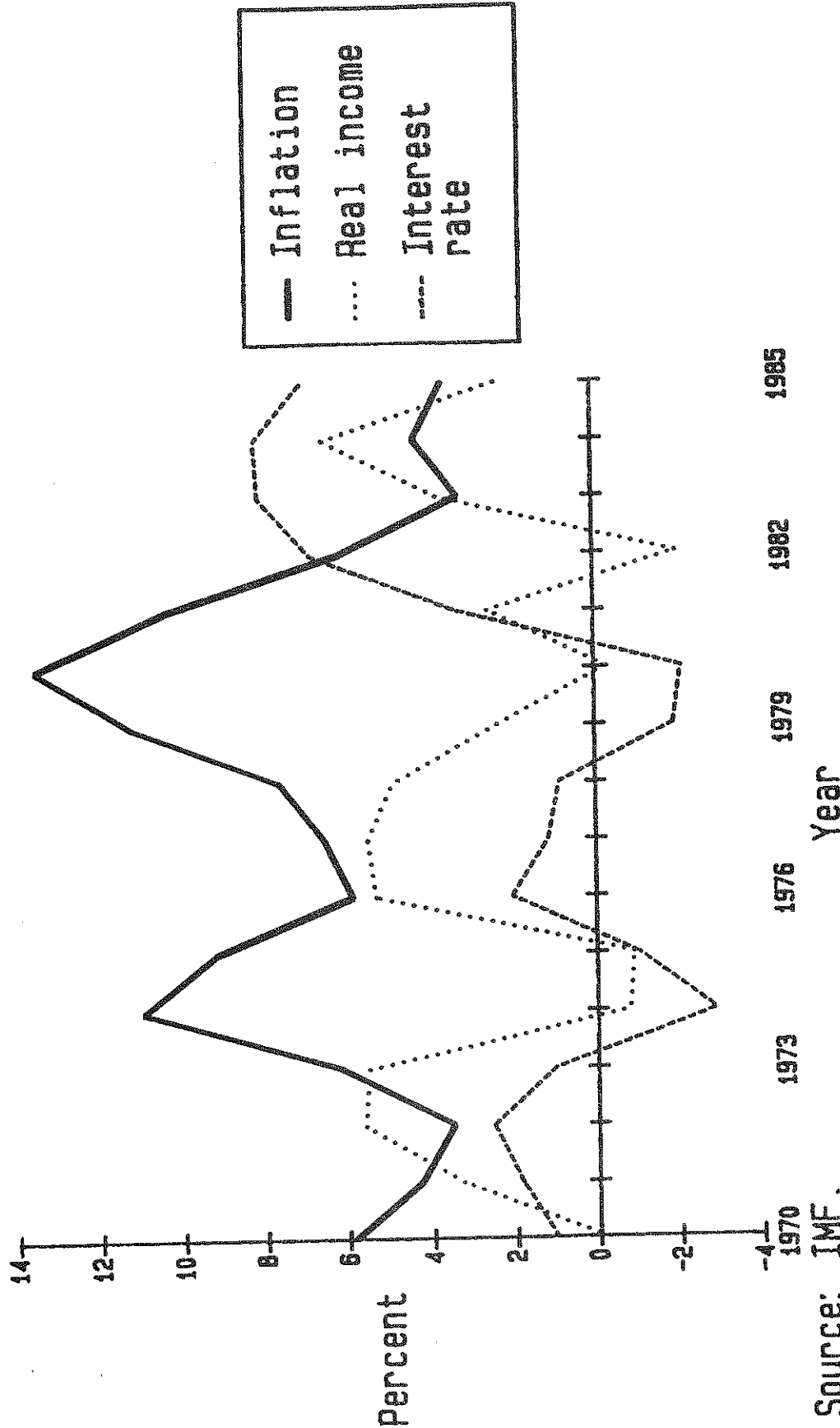


Source: IMF.

The deterioration in trade during the early 1980s was also largely due to changes in the international economy. The starting point for these changes can be traced to the second oil price hike by OPEC in 1979. As was the case for the earlier price hikes in 1973 and 1974, the increased price of oil sent the U.S. economy into a recession (figure 4) and contributed to inflationary pressures. The difference this time was that the Federal Reserve under its new chairman, Paul Volcker, decided not to react to the rise in oil prices by increasing the growth in the money supply. Rather, the Fed tightened up on monetary growth in order to control inflationary pressures. This caused borrowers to bid up the price of scarce loanable funds -- the real rate of interest rose rapidly (figure 4).

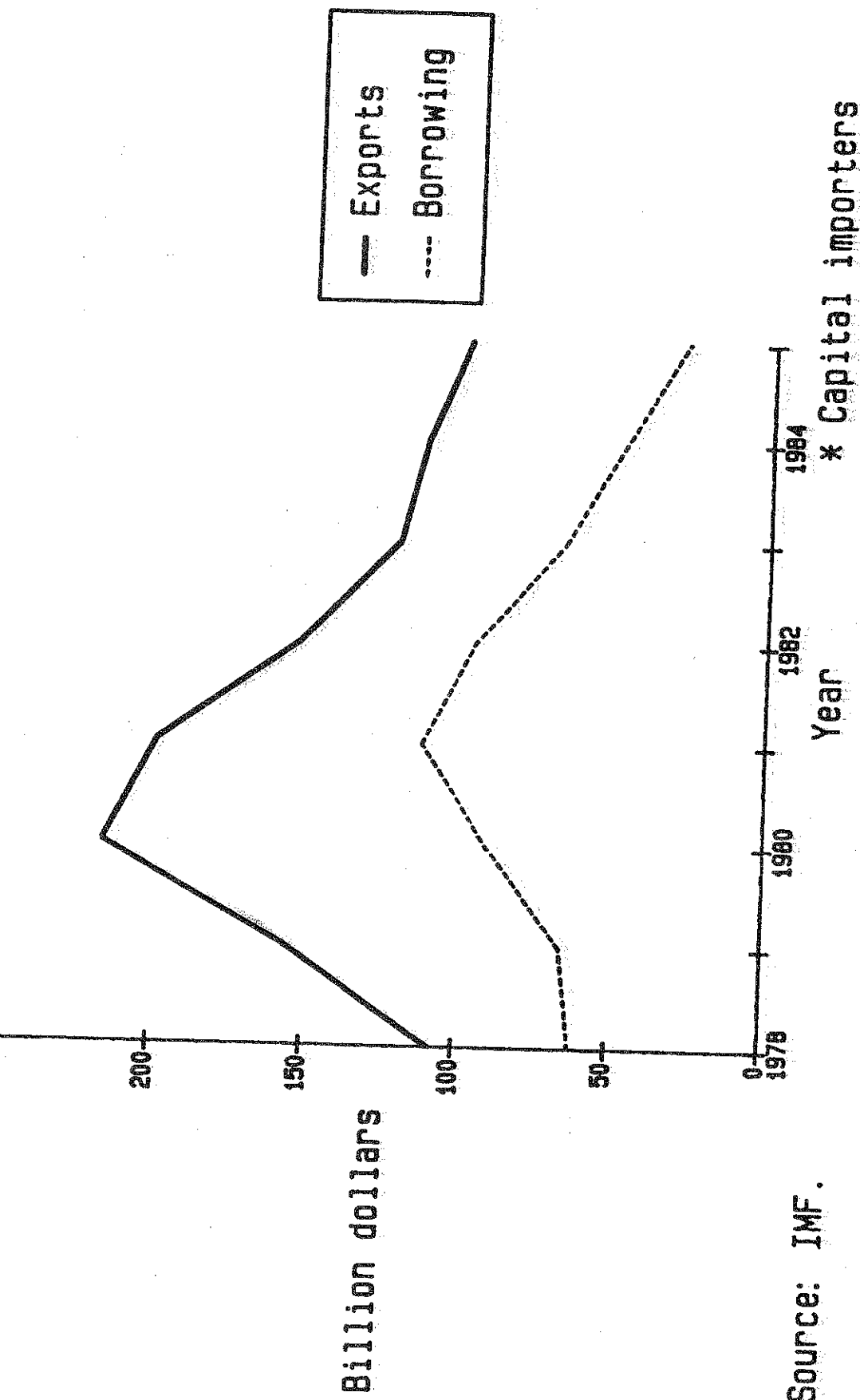
The rise in U.S. interest rates caused interest rates around the world to increase. The U.S. economy and the world economy moved into a major recession. Figure 4 shows the impact in the United States; figure 2 shows the pattern for the industrial countries as a whole and for the developing countries. The effect of U.S. policy response to the second oil shock was particularly strong for developing countries. During the first oil shock, the non-oil developing countries had been able to maintain their rate of growth by borrowing to pay for the increased cost of oil. With the second oil shock and the recession in the industrialized countries, LDC exports declined sharply (figure 5). This reduced their ability to service their debt at the same time as the cost of such debt service was rising because of the increase in world interest rates. Net borrowing by developing countries declined sharply after 1981 and the so-called "debt crisis" severely curtailed their imports of all products, including agricultural products.

Figure 4. U.S. Inflation, Growth and Real Long-Term Interest Rates.



Source: IMF.

Figure 5. LDC Exports and Net Borrowing. *



Source: IMF.

* Capital importers

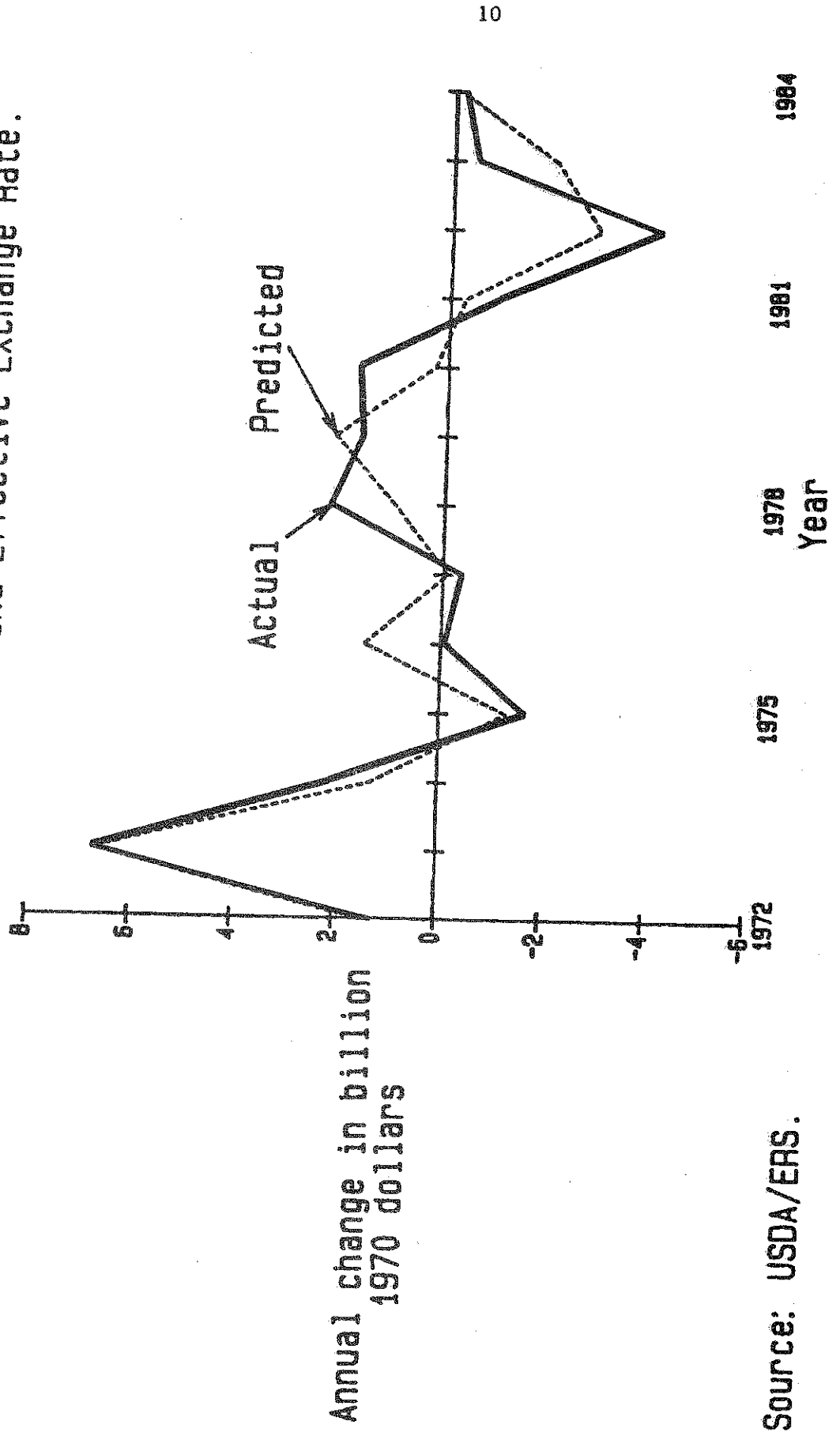
In addition to a major world recession which in itself would have reduced significantly the demand for U.S. agricultural exports, a second part of an economic vise was closing on U.S. agriculture as the value of the dollar began to rise sharply (figure 3). Both high real interest rates and the view that the United States was a safe haven for foreign capital in a period of global economic uncertainty played a part in the rise of the value of the dollar. The trade-weighted value of the dollar rose by almost 50 percent between 1980 and 1985, sending the U.S. trade deficit to record levels.

One question is why real interest rates have remained high in the United States, despite a considerable easing of monetary restraint by the Federal Reserve. The basic money supply (M1) has been growing at a fairly rapid rate of 12 percent on average between 1984 and 1986. The answer lies at least partly in the contribution of the Federal Government to the demand for loanable funds. Throughout the 1970s U.S. fiscal policy was generally expansionary. The government ran a budget deficit and this contributed to demand (and inflation) in the U.S. economy. The deficit had usually been in the range of 2-3 percent of gross national product (GNP). With the combination of tax cuts and increased domestic spending since 1981 this proportion has doubled. The competition in credit markets between business, government and households has contributed to real interest rates which remain at historically high levels.

The Importance of the Economic Environment for Agricultural Trade

The importance of the economic environment created by U.S. monetary and fiscal policies for agricultural trade can be appreciated from figure 6. This plots the actual year-to-year change in the real value of U.S. agricultural exports since the early 1970s and the values which are

Figure 6. U.S. Agricultural Exports Explained by World Income and Effective Exchange Rate.



Source: USDA/ERS.

predicted if we explain the changes in terms of the variation in world income and the value of the dollar (USDA, ERS--chapter 5). While not all of the variability in trade is captured by these two factors, they clearly explain much of what has been happening.

Now, of course, there were other contributory factors to the deterioration in our export position. The farm act of 1981, drafted at a time when the outlook for U.S. exports still appeared to be favorable, included high loan rates. These rates, combined with the appreciation of the dollar, made U.S. crops uncompetitive on world markets. Some of our competitors sought to expand their market shares, either through the use of subsidies, as in the case of the European Community, or through aggressive competitive selling, as in the case of Canada and Argentina. And yes, let us not forget the Russian grain embargo, which probably had some impact on our reputation as a reliable supplier but which probably had far less real impact on the volume of export sales than is popularly believed (USDA, ERS).

Just to demonstrate further how important the change in macroeconomic conditions was for our exports, I would like to share with you the results of some recent analyses that I have performed in conjunction with some of my colleagues at Iowa State University (USDA, ERS--chapter 24). We used a set of economic models of world trade in wheat, coarse grains, and soybeans to calculate what U.S. exports and prices would have been if the macroeconomic conditions of the early 1980s had been more like those of the late 1970s. Under this scenario, the dollar would not have appreciated sharply and the world would not have experienced a major recession because of the 1979 oil shock. U.S. farm programs would have been those that were actually in place, high loan rates and all.

Figure 7 summarizes the major results of this analysis. It shows how much higher the volume of U.S. exports and U.S. commodity prices would have been under these conditions. Most of the figures are in the 15-20 percent range. Corn exports would have been more than 35 percent higher. It does not take much imagination to see that the situation for U.S. agriculture would have been far different if world economic conditions had been more favorable during the early 1980s. Of course, I am not suggesting that the economic conditions of the late 1970s could have continued. However, since the Iowa models suggest that the main factor in changing the trade situation around was the difference in income growth, it is clear that higher growth in world income in the early 1980s would have had a major impact on the well-being of U.S. agriculture.

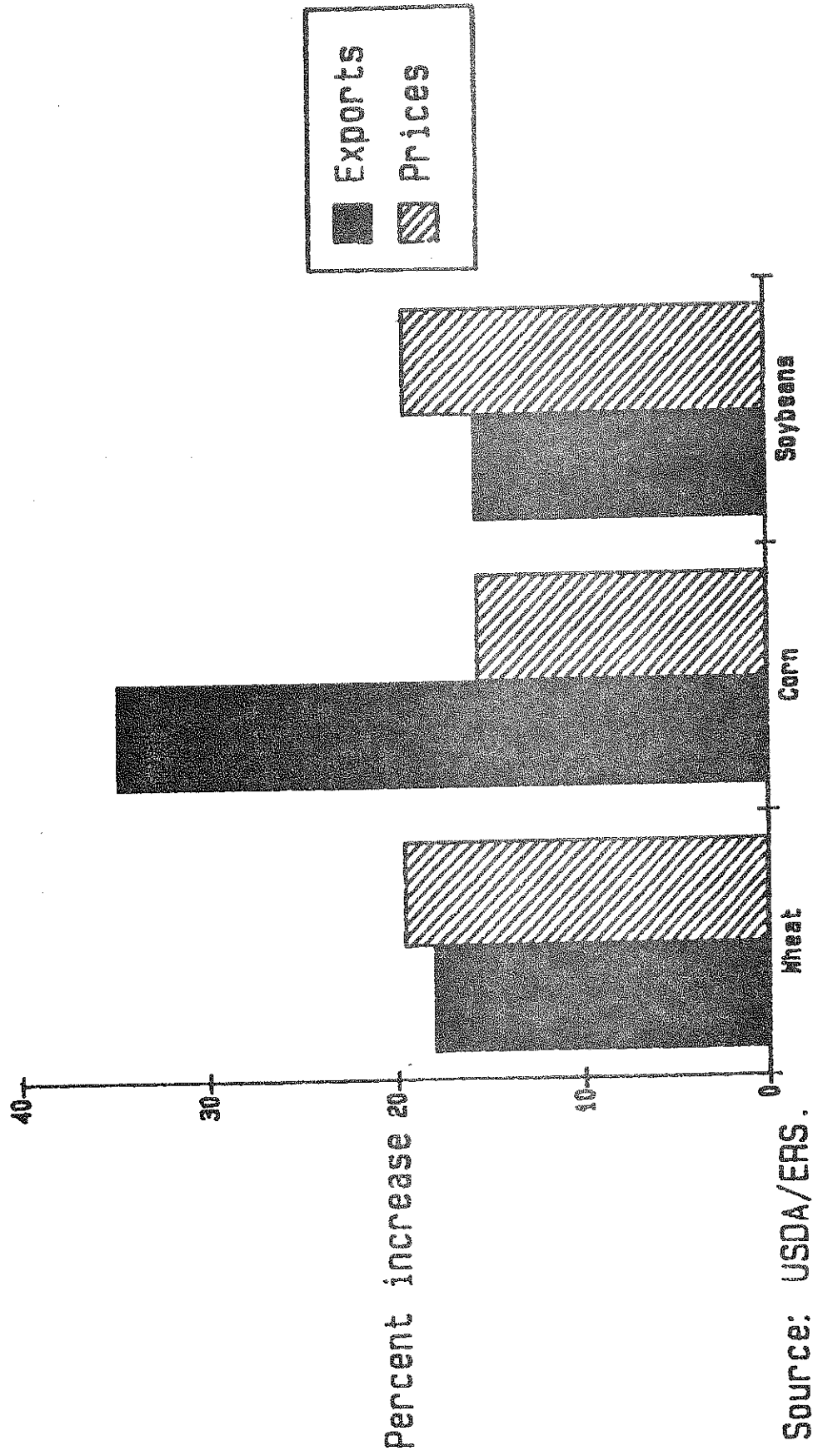
Recent Changes in Economic Conditions and the Outlook for Trade

It is interesting to look at the historical record and to ask "what if" questions. We economists seem to spend most of our time in such pursuits. However, I am sure that you are more interested in the future than in the past. The most relevant question is what is the outlook for the world economy and for U.S. agricultural trade.

The last year has seen some substantial changes in the U.S. economic situation. The most dramatic, of course, has been in the exchange rate. The value of the dollar has declined substantially from its peak levels in early 1985. On a trade-weighted basis, the decline is over 30 percent.¹ This decline has helped to improve our overall international competitiveness. Furthermore, our agricultural competitiveness has been

¹ However, the decline in the dollar's value against the currencies of some of our major agricultural competitors, e.g., Argentina and Canada, has been much less.

Figure 7. Change in U.S. Exports and Commodity Prices Under Alternative Macroeconomic Conditions, 1981-84.



Source: USDA/ERS.

improved as a result of the decline in loan rates under the 1985 Food Security Act. However, as yet these changes have had little effect upon the volume of our agricultural trade or indeed on the overall U.S. trade deficit.

The trade deficit this year, including the figure for September, has been running at an annual rate of just over \$170 billion -- far above last year's record of \$148.5 billion. However, changes in the exchange rate do have a delayed effect upon the balance of trade and generally tend to increase the deficit initially. As the currency declines, the cost of imports which we are already committed to purchase increases, and it takes time before lower export prices have an effect on our sales overseas. It now appears that imports are beginning to stabilize and will begin to fall shortly. Certain U.S. industries such as chemicals, electronics, and transportation equipment are recording increased foreign sales.

However, the situation for agricultural exports has not yet improved, and in my opinion will be slow to do so. Recently released figures show that the volume of export sales so far this year (marketing year basis) is down in all major categories except wheat, where there is a slight increase (USDA, FAS). This is despite the continued operation of export enhancement and targeted export promotion programs, which together have accounted for over 0.5 billion dollars of government subsidies. As a result of sluggish volumes and lower prices, the value of exports continues to decline.

Eventually, the volume of agricultural exports will probably begin to recover although it would take an extreme optimist to suggest that this recovery will be rapid and large. Despite the suggestions made by some agricultural economists, the response of international demand to a fall in U.S. agricultural export prices is not great, at least not over a one- to

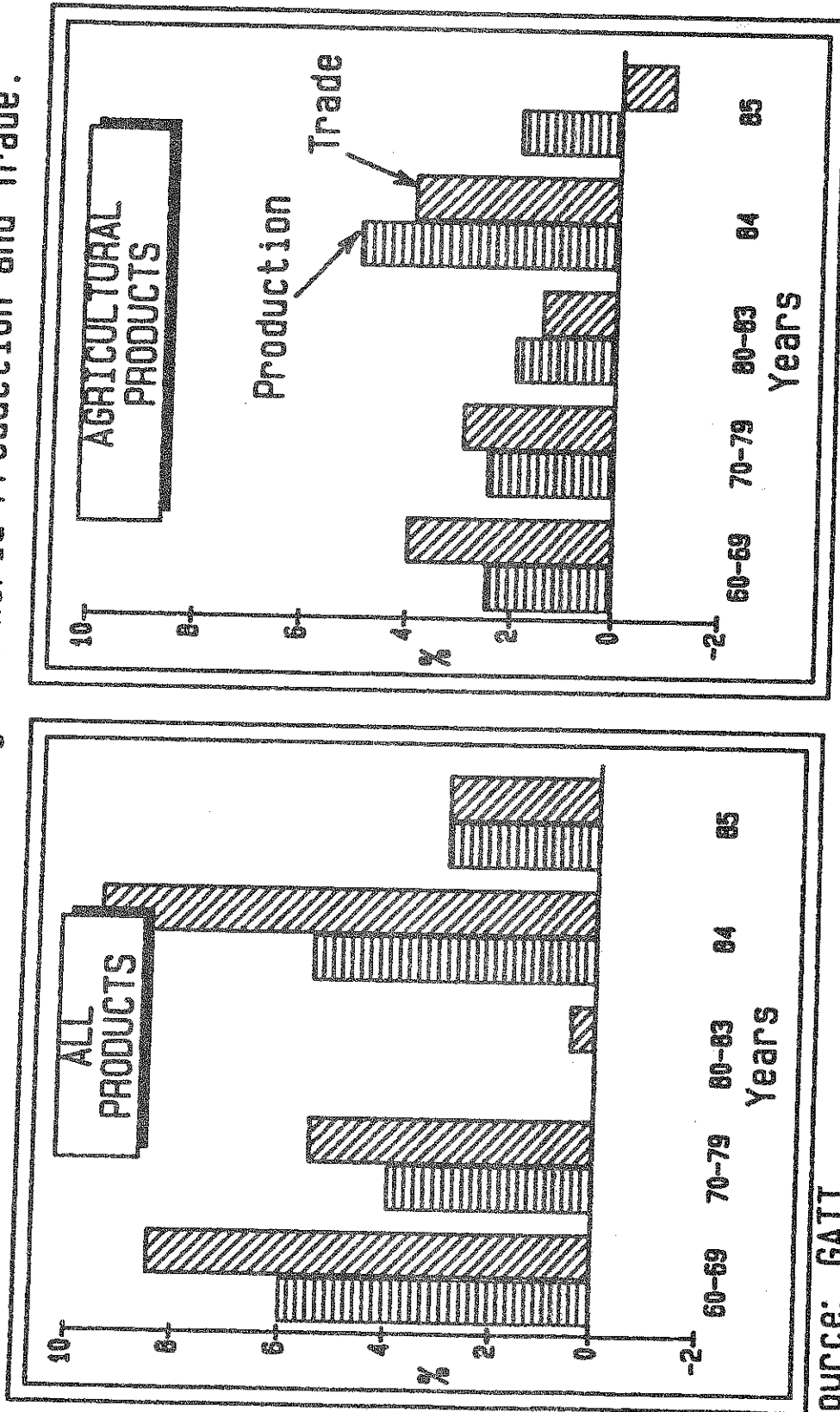
two-year period. The fall in price will take time to translate into higher sales. Furthermore, world economic growth remains sluggish, and as a result the volume of trade remains depressed. Figure 8 shows that despite a limited recovery in trade volumes in 1984, due to the stimulus provided by the rapid growth in the U.S. economy, the situation in 1985 was bleak with a decline in the real value of agricultural trade worldwide. Figure 9 shows that the growth in total imports at about 1 percent was anemic, and that there was a steep decline in imports by the developing countries.

In the absence of higher and sustained rates of economic growth outside of the United States, the outlook for agricultural trade is unlikely to improve significantly in the near future. The debt problem remains a severe constraint in most of the developing world. If you do not have the money to purchase foreign goods, even fire sale prices are not much use. Other developed countries are reluctant to inflate their economies in the presence of a continued high federal budget deficit in the United States. Despite high unemployment, the Europeans are legitimately afraid of a return to inflation if the United States continues to fail to get its own financial house in order.

Solutions to the Current Problems

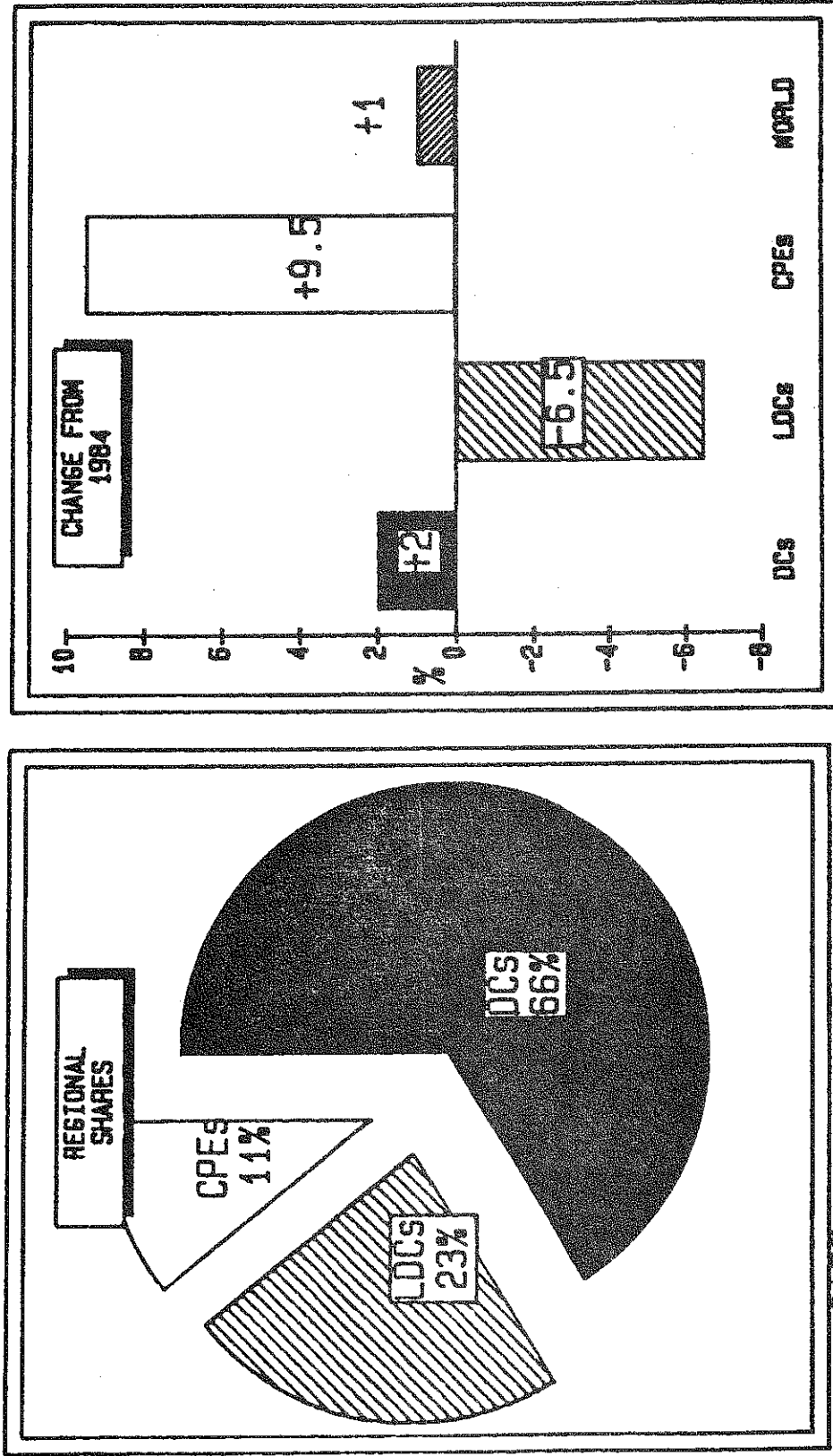
If this is the situation, what is the solution? Is the only option for U.S. agriculture to turn inwards -- to restrict production in order to increase internal prices and basically to give up on export markets? If we are prepared to scale back the size of agriculture in the United States and to forfeit our competitive position in world markets to other countries, then the answer is yes. If, on the other hand, we want to recognize that in the longer term U.S. agriculture must look to foreign markets for prosperity, then the answer is no.

Figure 8. Average Annual Change in World Production and Trade.



Source: GATT.

Figure 9. Total World Imports 1985.



Source: GATT.

It is essential to recognize that agriculture's position in today's interdependent world economy means that a viable solution to the current problems facing U.S. agriculture cannot be found in farm programs alone. Changing existing farm programs can only partly affect the position of agriculture through their effects on prices. But as I have tried to argue earlier, the difficulties facing agriculture are not due solely to price but are also due to world income problems. Such problems cannot be tackled by changing farm programs, and yet they must be resolved if long-term stability and growth is to return to world trade.

Global interdependence has created a new reality for U.S. agriculture which cannot be ignored. The more complex economic environment in which agriculture now finds itself is difficult to understand and difficult to deal with. If agriculture is not to remain a permanently depressed sector, adjustments to our economic interdependence must be made both at an individual level and at the policy level. With such adjustments, agriculture can be expected to coexist peacefully with the new economic realities and, hopefully, to profit from them.

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