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Monetary Factors Influencing GATT Negotiations on Agriculture

Stephen W. Hiemstra
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ABSTRACT

Large swings in interest and exchange rates have increased government intervention in trade and government support of domestic agricultural production. This situation has led to reduced import demand, global surpluses, and increased budgetary outlays. These consequences have stimulated negotiations aimed at liberalizing trade. The traditional roles of the International Monetary Fund (IMF) and the General Agreement on Tariffs and Trade (GATT) and a focus on developed country trade have discouraged a discussion of these problems in GATT negotiations. The importance of developing countries in agricultural trade, their increased participation in GATT, and the structure of their exchange markets have also complicated these negotiations.

Keywords: GATT, agricultural trade negotiations, exchange rates, agricultural policy, agricultural trade, international trade.

PREFACE

The General Agreement on Tariffs and Trade (GATT) provides a forum for nations to work together to improve trade through mutually agreed upon reductions in government interventions in international markets and to settle trade disputes. The rules and relationships which guide world trade have generally emerged from that forum. The number of participants to these discussions and the evolutionary nature of the relationships that emerge serve to keep the discussions lively and the issues provocative.

This report surveys the range of problems arising out of changes in world monetary markets which challenge GATT negotiators concerned with agricultural trade. The authors do not try to prescribe policy or to provide detailed analysis. Their objective, rather, is to define problems warranting further discussion and research.

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SUMMARY

Large swings in interest and exchange rates have increased government intervention in trade and government support of domestic agricultural production. This situation has led to reduced import demand, global surpluses, and increased budgetary outlays. These consequences have stimulated negotiations aimed at liberalizing trade. The traditional roles of the International Monetary Fund (IMF) and the General Agreement on Tariffs and Trade (GATT) and a focus on developed country trade have discouraged a discussion of these problems in GATT negotiations. The importance of developing countries in agricultural trade, their increased participation in GATT, and the structure of their exchange markets have also complicated these negotiations.

The authors examine the effects of monetary policies on agricultural trade and trade negotiations. Among the issues they address are the following: How do changes in exchange rates, subsidies, and tariffs affect trade? How do monetary policies affect the trade of developed countries? What obstacles do monetary markets pose for the trade of developing countries? What are some of the technical problems facing GATT negotiators?

Large swings in exchange rates have encouraged excessive agricultural investment. Many developed countries invested heavily in expanding their agricultural sector in the early 1980's when the value of the U.S. dollar soared to record heights. Despite the more recent fall of the dollar, overproduction continues to aggravate the surplus situation created by falling demand, particularly in the debt-encumbered developing countries. The decline in demand for imported agricultural products in the debtor countries is unlikely to be reversed quickly because repayment problems continue to require austerity measures designed to conserve foreign exchange reserves.

Governments have several policy options for dealing with agricultural trading problems stemming from wide swings in interest and exchange rates. The authors examine possibilities ranging from ignoring the problem to establishing an agricultural monetary system. They suggest that GATT member nations should monitor monetary effects on agricultural trade, study incentives for enforcing compliance with new agreements, and develop procedures for phasing in agreements.

Monetary Factors Influencing GATT Negotiations on Agriculture

Shephen W. Hiemstra
Mathew Shane*

INTRODUCTION

Liberalization of agricultural trade is at the top of the U.S. agenda for the Uruguay round of the General Agreement on Tariffs and Trade (GATT). U.S. objectives for agricultural negotiations are to reduce export subsidies, improve market access, and develop guidelines for health and sanitary regulations.

This report examines the effects of monetary policies on agricultural trade and trade negotiations. Among the issues it addresses are the following:

- o How do changes in exchange rates, subsidies, and tariffs affect trade?
- o How do monetary policies affect the trade of developed countries?
- o What obstacles do monetary markets pose for the trade of developing countries?
- o What are some of the technical problems facing GATT negotiators?

Two key problems have led to increasing agricultural protectionism in the 1980's. First, domestic agricultural policies in the industrial market economies designed primarily to support farm incomes have encouraged surplus production and low world market prices.[1] Second, the movement of assets through the international capital markets has become increasingly more important than trade in goods and services as a determinant of interest and exchange rates (Huang, 1987; Goldstein, 1980; Thomas, 1987). The problem of domestic policies, although not a subject of previous GATT discussions, is at least under the influence of agricultural policymakers. Monetary factors which have shaped the environment that produced these domestic policies have typically not been under the influence of agricultural interests despite their increasing importance in agricultural trade. Both problems have clearly distorted price signals to farmers based on the resource availabilities and productive efficiencies underlying comparative advantage.

This linkage of agricultural policy and monetary issues increases the complexity of the negotiations in the current GATT round. Outside of the usual political constraints and a history of failing to agree on agriculture, negotiators are faced with a dilemma. The two major problems motivating agricultural protectionism in the 1980's fall outside GATT's traditional jurisdiction.

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[1]Over time, this effect has been partially offset by policies of developing countries which permit subsidized food imports and, when feasible, direct consumer subsidies to lower food prices. More recently, however, developing countries faced with debt-induced foreign exchange shortages have been forced to reduce these subsidies and to withdraw from world markets.

A consensus is emerging on how to include domestic agricultural policies under the GATT following an approach set forth in the Organization for Economic Cooperation and Development (OECD) Trade Mandate Study and related work (CBO, 1987; USDA, 1987a; Miller, 1987; Roningen, Sullivan, and Wainio, 1987). GATT participants have not yet discussed the role of monetary factors in stimulating increased government intervention in international commodity markets and how these factors influence negotiations. Nor have participants discussed the effects of structural change in international capital and exchange markets on the relative competitiveness of agricultural exporters.

THE EFFECTS OF EXCHANGE RATES, GOVERNMENT INTERVENTION, AND CAPITAL MARKETS ON TRADE

Exchange rate changes, government intervention, and capital markets affect trade in similar ways. Each alters the relationship between international and domestic prices. That effect is most obvious when governments intervene in exchange markets.

Exchange Rate Effects

Exchange rate effects on trade differ with the volume of trade and the source of the currency change. These effects are normally discussed with reference to their effects on domestic and international commodity markets. Although exchange rates are determined in the long run by adjustments in commodity markets, government interventions and capital market changes are probably more important in the short run.

Figure 1 illustrates the effect of an appreciation of an importer's currency on a single commodity market under conditions of free competition.[2] The world price (P_1) is initially determined in the trade sector by the intersection of the excess supply (ES) and the excess demand (ED) curves. The appreciation decreases the importer's cost of foreign exchange (a shift from curve A to curve B in the currency market), decreasing the commodity's price in the import market and increasing the quantity demanded. This increase is illustrated in the trade sector as a clockwise rotation of the excess demand curve (from ED to ED_1). This increase in demand raises world prices, translating into higher domestic prices in the exporting country and inducing exporters to increase the quantity supplied to the world market. In equilibrium, the world price stabilizes at P_2, the intersection of the new excess demand curve (ED_1) and the excess supply curve (ES).

Several adjustments permit generalizations of this example. First, the extent of the shift in the excess demand curve (world demand) declines as the market share of the importer declines and as the magnitude of the appreciation declines. Second, a currency depreciation shifts the "B curve" in the currency market to the right instead of to the left and the excess demand curve to the left instead of to the right. World demand and prices accordingly decline as importers face higher foreign exchange costs. Third, analogous changes in the exporter's currency rotate the excess supply curve instead of the excess demand curve in the trade sector. The excess supply curve rotates to the right instead of to the left with depreciation of an exporter's currency, however, because importers find their currency buys more. Fourth, the extent of the shift in the excess supply (world supply) declines as the market share of the exporter and the magnitude of the currency change decline.

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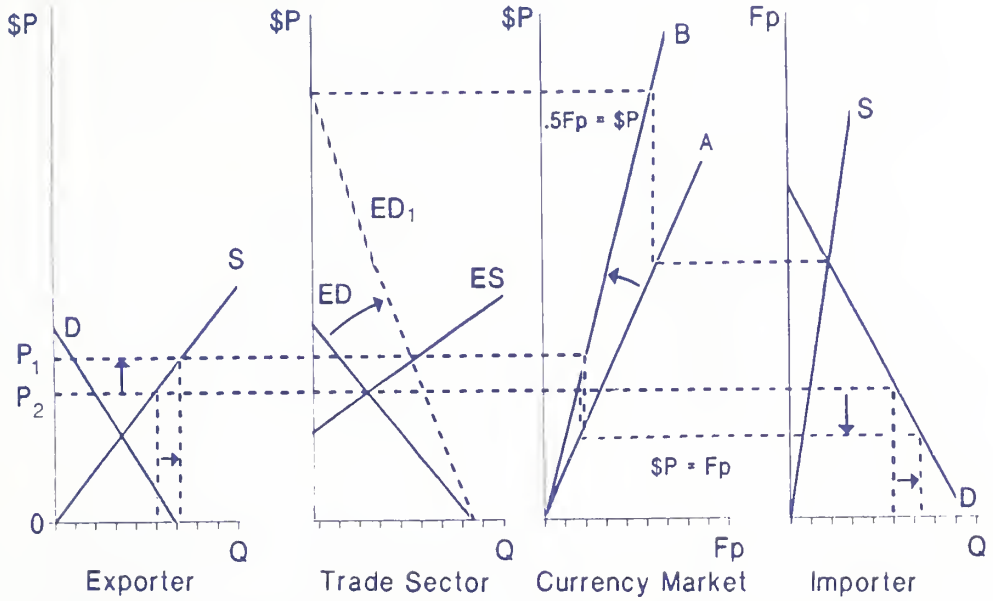
[2]Figure 1 illustrates both the general case of appreciation of an importer's currency and the special case of a U.S. dollar depreciation. Because the U.S. dollar serves as a reserve currency in world markets, the United States cannot, for all practical purposes, devalue the dollar to gain a competitive advantage. Under such circumstances, the United States must convince its trading partners to allow their currencies to appreciate in order to feel the effect of a dollar depreciation on trade.

Figure 1

The effect on trade of appreciation of an importer's currency



D = Demand ES = Excess supply Fp = Foreign price S = Supply
ED = Excess demand Q = Quantity $P = Price in U.S. dollars
Source: Bredahl and Gallager, 1977.

Effects of Government Intervention

Many forms of government trade intervention have effects similar to the effect of changes in exchange rates. Most interventions, however, disrupt the link between domestic and international commodity prices normally provided by exchange rates, thus preventing commodity price equalization in the two markets. Two examples of such interventions in the international trade sector are ad valorem import or export taxes and subsidies. An import tax can take the form of a tariff on imports or a tax on foreign exchange, as in the case of Argentina (Mielke, 1984; Dornbusch, 1986). An export subsidy can also take many forms. Regardless of the form, an ad valorem import tax raises commodity costs in a manner much like a currency depreciation in the context of an individual commodity market.

The chief difference between an import tax and a depreciation is that a tax is applied to a single commodity market while a depreciation applies to all markets. When a tax is uniformly applied to all markets or currency values differ by market, this distinction disappears.

The effect of government intervention is to insulate domestic supply and demand from changes in the international market. Because trade and currency interventions can be used interchangeably, both should be measured to get a clear picture of government involvement in world markets. Commodity-specific and general government interventions both alter the extent of price transmission from international to domestic markets and vice versa, and both should be studied.[3]

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[3]A study of the international wheat and rice markets found that government intervention reduced import demand price responsiveness (Roe, Shane, and Vo, 1986). This finding implies a lower import price elasticity of demand and forces a clockwise rotation of the import demand curve illustrated in figure 1. The government chooses a desired level of commodity imports, imports the desired quantity at world prices, and sells as much as can be absorbed domestically at local prices. Thus, large changes in international prices, including exchange rates, are required to clear markets. Also see Edwards (1987).

Capital Market Effects

Changes in the capital market can affect trade in commodities through changes in the balance of payments. A nation's balance of payments is a record of all trade (trade account) and financial (capital account) transactions with foreigners. Payments received must equal payments paid because the balance of payments is essentially a double-entry ledger. A deficit in the capital account, consequently, must equal a surplus in the trade account and vice versa (Denbaly and Torgerson, 1987). Interest rate changes alter capital flows, and exchange rate changes alter trade flows.

Governments can normally intervene to fix either interest or exchange rates, but not both, because the effect of fixing one is to force all adjustments on the other. The deregulation of national equity markets has added a third possibility: a government can now balance its payments through purchases or sales of national assets, such as common stock. This possibility has been most widely discussed in the context of debt-for-equity swaps in debt-encumbered developing countries. Its implications for developed countries are, however, more important because it implies that government intervention in interest and exchange markets can now influence stock market performance directly rather than indirectly through investor expectations, as has more usually been assumed.

The substitutability of monetary and trade restrictions is recognized in GATT provisions which exempt developing countries from adherence to agreements when they suffer balance of payments difficulties. The justification for these exemptions has basically been eliminated for countries employing a flexible exchange rate system (Anjaria, 1987). GATT negotiators should, however, consider the wider consequences of this substitutability as part of the trade liberalization talks.

MONETARY EFFECTS ON AGRICULTURAL TRADE

The rapid rise of the U.S. dollar during 1979-85 and of interest rates during 1979-82 has precipitated much of the increase in government intervention in world markets in this decade (figs. 2 and 3). The high value of the dollar precipitated a restructuring of the U.S. farm price support policies in 1985 and aggravated the situation created by high interest rates among the debt-encumbered developing countries. Rapid, significant changes in international exchange and capital markets can interact with otherwise reasonable domestic policies to bring about a crisis.

Structural Surpluses Result from Exchange Rate Swings

Large swings in the value of the U.S. dollar have been a major problem for world agriculture in the 1980's. The real U.S. exchange rate, measured on a total-trade-weighted basis, went up almost 60 percent between the low in 1979 and the high in February 1985.[4] Since February 1985, this index has declined 38 percent.[5]

World agriculture experienced numerous problems because of the dollar's appreciation. In the United States, the high value of the dollar raised the exchange value of the loan rate significantly above market-clearing levels. Export demand declined, the domestic price of grain dropped to the loan rate, and a substantial portion of domestic production that might otherwise have been exported was purchased by the Commodity Credit Corporation (CCC) to support the

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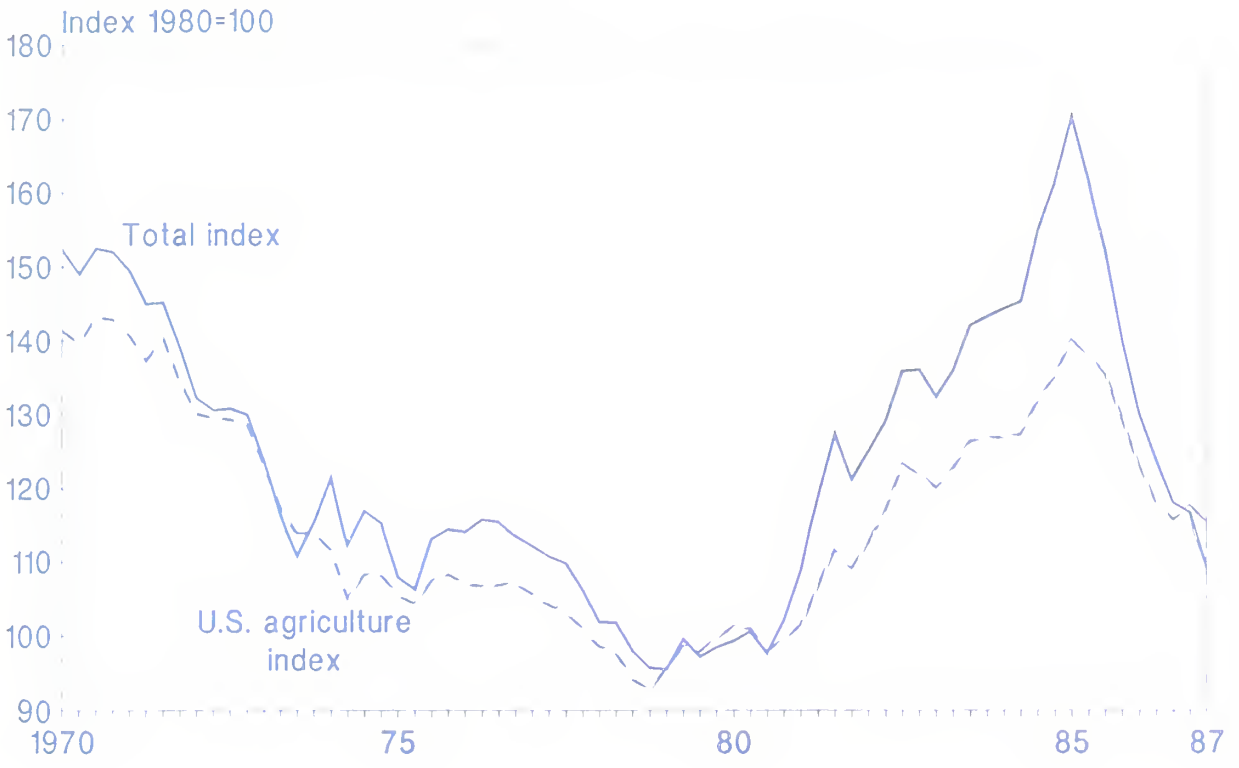
[4]Indexes of total-trade- and agricultural-trade-weighted real exchange rates attempt to show the effect of exchange values on the global competitiveness of the country in question. Bilateral exchange values are weighted by total or agricultural trade in computing these indexes to get a summary measure, an index, of the effect of these values on the type of trade being examined.

[5]The real U.S. exchange rate, measured on an agricultural-trade-weighted basis, went up only 38 percent and has subsequently fallen only 23 percent through the first quarter of 1987. The usual measures of exchange rate changes based on total trade, thus, probably overstate the effect on agricultural trade (fig. 4).

Figure 2

U.S. real exchange rate



loan rate (Schuh, 1983; Longmire and Morey, 1983).[6] Government expenditures and stocks accordingly rose to record levels during this period.

During the period of the high dollar, U.S. farmers earned the lowest incomes they had seen since the 1930's, but farmers abroad earned record-high incomes. World grain prices, for example, fell to within 5 percent of the European Community's (EC) domestic support price in 1985, an unprecedented event which substantially reduced the normally high cost of the EC agricultural policy.[7] The sharp decline in the dollar after 1985 reversed this process in the EC and caused great hardship in countries, like Australia, which invested heavily in expanding agricultural production during this upswing and then found the market flooded with surpluses when the downswing came (Miller, 1987).[8]

The rise and fall of major currencies over a period of several years--the large swing problem--signals to farmers and policymakers that large changes in agricultural investment are desirable even thought these investments lead to surpluses over a longer time horizon. Because these resources remain in use even after prices decline, the rise and fall of currencies permanently increases world agricultural output.[9] The rapid advance of agricultural technology in the 1980's

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[6]Farm loan rates for wheat, for example, increased from $2.50 a bushel in 1979/80 to $3.65 in 1983/84 before declining to $2.40 in 1986/87 (USDA, 1987b).

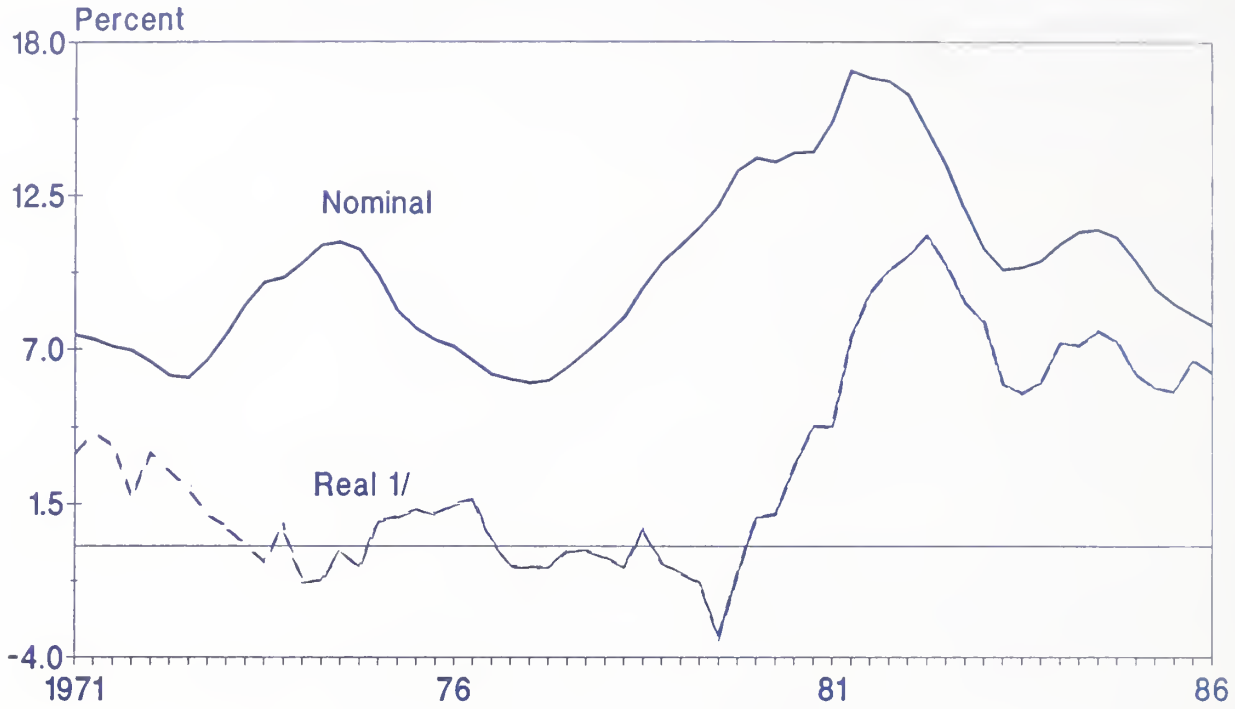
[7]This event set off a major effort by the European Commission to implement reforms which it has promoted for many years (European Commission, 1985). The European Council, by contrast, saw the event as an opportunity to continue existing levels of income support longer than would otherwise have been financially possible. The reduced budgetary cost did not reduce the level of EC intervention in agricultural markets.

[8]The Food Security Act of 1985, with its lower loan rates, has magnified this effect and placed substantial pressure on the budgets of competing exporters, particularly the EC.

[9]Johnson and Quance (1972) argue that agricultural assets have almost no alternative use outside the sector (in other words, they have low salvage prices). Thus, producers are motivated to retain their assets in use long after output prices begin to decline and production should be cut back.

Figure 3

U.S. dollar 6-month interest rate



1/ Euro-dollar interest rates. Real rates adjusted by changes in CPI.

has compounded this effect. World agricultural supplies have accordingly increased faster than world demand. This oversupply has led to an accumulation of stocks which may continue to depress international commodity prices for years to come (fig. 4).

The 1980's Debt Crisis

The second major problem for world agriculture in the 1980's began with the contractionary monetary policy adopted by the major industrial countries following the second oil shock in 1979-80. Following this contraction, international interest rates rose to record levels. Between 1979 and 1981, for example, the real 6-month London Interbank Offered Rate (LIBOR) on U.S. dollars rose from -4 percent to 11 percent and remained highly positive through 1985 (Shane and Stallings, 1987). These high rates severely constrained foreign exchange reserves in many developing countries.

For highly indebted developing countries, these rising interest rates increased the cost of debt service at a time when falling commodity prices were reducing export earnings. If that were not enough, these loans were denominated in dollars and the value of the dollar was also rising. Thus, the countries could no longer service their debts, and they had to cut their demand for imports, including agricultural imports, further exacerbating the problem of low international commodity prices (Shane and Stallings, 1984b; Abbott, 1984a).

The demand for imported food grew rapidly in the 1970's, largely because of sales to developing countries. The withdrawal of those countries from the market substantially reduced the growth in agricultural trade (Mackie, Hiemstra, and Sayre, 1987). Because these countries still face substantial debt servicing problems, their imports continue to lag despite the large decline in the U.S. dollar and the dramatic fall in U.S. export prices induced by the implementation of the Food Security Act of 1985.

Effect on U.S. Agricultural Exports

The effect of the U.S. dollar's appreciation in the 1980's on U.S. agricultural trade is apparent from an analysis of trade-weighted exchange rates (table 1). A trade-weighted exchange rate measures the extent of appreciation or depreciation against the specific bilateral exchange rates which dominate trade in a particular commodity (Pauls, 1987). The dollar was stronger in relation to countries importing agricultural products in the 1980's than those importing all goods, reversing the trend established in the 1970's. These observations confirm that currency changes measured with major bilateral rates may not reflect the effects of currency changes on commodity market trade (Wilson, 1986; Henneberry, Drabenstott, and Henneberry, 1987).

Despite the effects on individual commodity markets, U.S. agriculture has been severely disadvantaged by changes in the world market. U.S. agricultural exports have fallen from a high of $43 billion in fiscal year 1981 to $26 billion in fiscal year 1987 and dropped as a portion of total U.S. exports from 19 percent to 13 percent (USDA, 1987c).

The Changing World Financial Environment

The monetary problem in agricultural trade has its roots in the changes which have taken place in the organization of international capital markets in the postwar period. After World War II, international capital markets did not function well. Financial flows between countries were on a government-to-government basis, often in the form of aid. These circumstances changed, however, in the 1960's with the emergence of the Eurodollar market and in the 1970's with the growth of European and Asian currency markets in response to the influx of petrodollars from the oil exporters into offshore banking centers.

The establishment of the flexible exchange rate system was an early consequence of these developments.[10] The flexible exchange rate system shifted more of the burden of monetary adjustments from capital to commodity markets.[11] This shift penalizes low-cost firms which have specialized in production of exportable commodities by making them bear more of the burden of monetary adjustments. In other words, monetary changes lead to changes in the prices of traded commodities not justified by commodity market supply and demand conditions (Kitchen and Denbaly, 1987). This increased risk may discourage specialization in traded commodities based on comparative advantage. The risk may, however, cost less than the penalties imposed by exchange rationing.

The shortrun volatility of exchange rates is a relatively minor problem for large firms and developed countries because of the existence of forward exchange markets and the opportunity to hedge transactions. Hedging is not an option, however, when currency swings last for more than a few months and when no forward exchange market exists, a problem facing most developing countries (IMF, 1984; Quirk and others, 1987).

Another consequence of these developments has been the increase in the importance of capital flows in relation to trade flows between countries. In 1985, world capital flows amounted to $84 trillion, but world trade flows were only $2 trillion (Schuh, 1985). The private flows of capital are of such a magnitude that even governments cannot control their exchange rates over an extended length of time without seriously disrupting domestic savings and investment. These financial flows rather than trade flows now determine shortrun interest and exchange rates.

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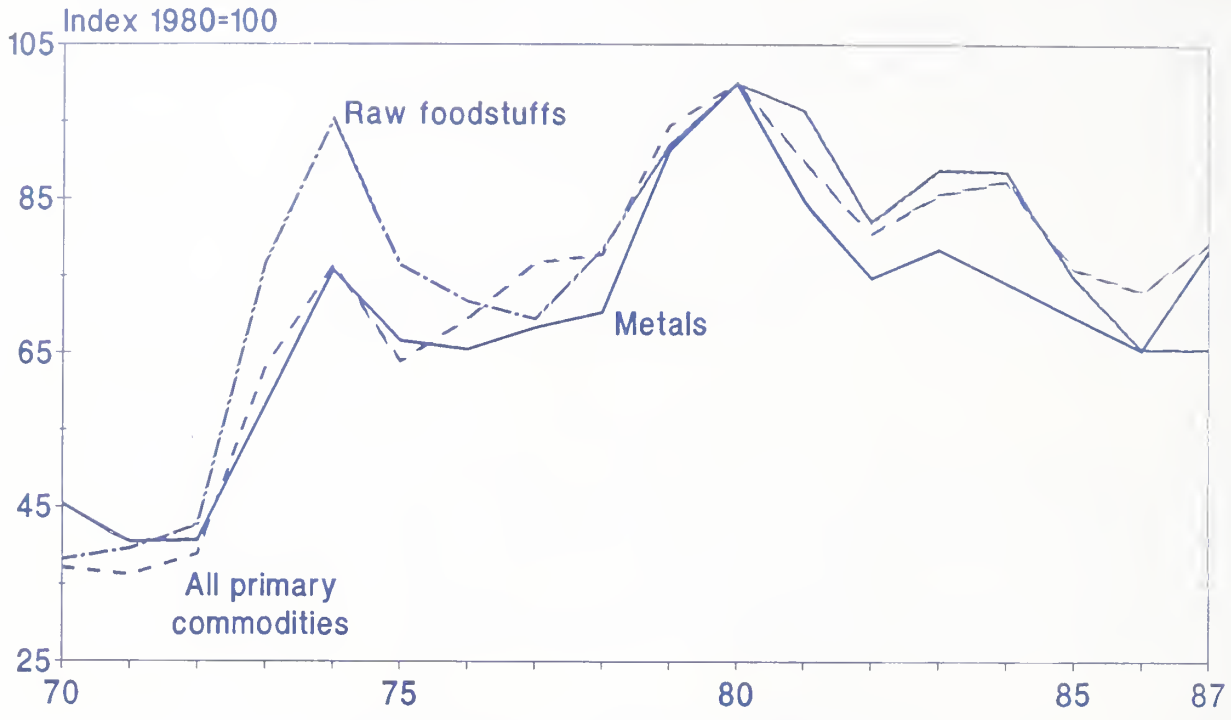
[10]Trade is strongly correlated with growth in national output. The elasticity of trade growth with respect to real income growth is estimated to be quite high, above 3 (IMF, 1984). Also, see Batten and Belongia (1984).

[11]For some countries, the need to service foreign debt has the same effect. Low rates of return on capital investment (expressed in foreign currency earnings) compel disinvestment which takes the form of continuous commodity outflows in the absence of a highly liquid domestic capital market.

Figure 4

Commodity price indexes



The experience of the past several decades under fixed and flexible exchange rate systems suggests that stable exchange values depend more on the coordination and stability of national macroeconomic policies than on the exchange system employed (Goldstein, 1980).

Developing Country Issues[12]

The growing importance of developing countries in world trade in the 1970's made their participation a requirement for a meaningful GATT agreement. Developing countries are major participants as importers or exporters in virtually every world commodity market. The share of U.S. exports bound for developing countries grew from 35 percent in 1970 to roughly 48 percent in 1986 (Lee and Shane, 1987) (figs. 5 and 6). The inclusion of developing countries in GATT agricultural trade talks, however, vastly complicates the discussion because the structure of their currency and commodity markets exhibits numerous peculiarities and because these countries have not been full GATT partners in the past. Developing countries often specialize in slow-growth markets, have currencies which are administratively determined or only occasionally traded, use currency overvaluation as a means of taxation, employ countertrade, and have frequently followed a "free rider" strategy in relation to past agreements.

The Slow-Growth-Market Specialization Problem

Market peculiarities arise when a high proportion of a nation's exports consists of basic commodities: foods, fibers, basic metals, and other raw materials. Because tradable, storable, undifferentiated commodities are a close substitute for money, their prices may rise and fall in the business cycle together. For nations with export earnings closely linked to these commodities, currency depreciations may provide a countercyclical advantage.

[12]Valdes (1987) has summarized developing country trade issues for the GATT discussions.

Table 1--Trade-weighted real exchange rate indexes for the U.S. dollar for agricultural and related exports

Year	Total exports	Agricultural exports	Wheat exports	Corn exports
		1980 = 100 1/		
1970	151	142	134	145
1971	145	138	131	141
1972	131	129	125	131
1973	117	117	114	118
1974	116	108	104	108
1975	110	106	104	107
1976	115	107	104	108
1977	110	103	99	104
1978	99	86	94	93
1979	98	98	98	97
1980	100	100	100	100
1981	119	107	104	104
1982	131	119	112	119
1983	138	124	119	123
1984	154	130	125	127
1985	156	136	132	131
1986	122	119	123	110
1987 2/	109	115	127	105

1/ An increase in this index implies an appreciation of the U.S. dollar. 2/ Preliminary.

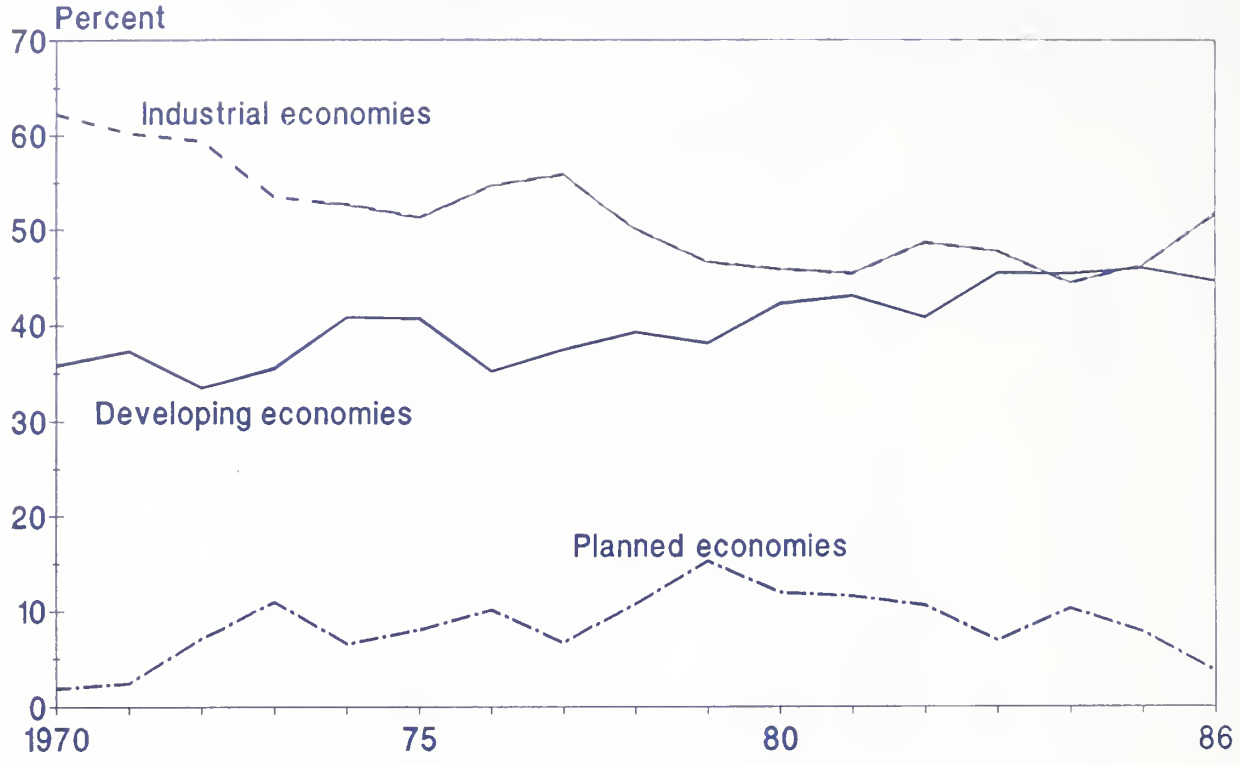
all other things equal, in relation to countries with a more diversified export mix.[13] Attempts to improve the competitive stance of a country with a strong currency in relation to a country with a weak currency, therefore, fail because export success on the part of the country with the strong currency contributes to another round of depreciation in the country with a weak currency. The terms of trade for developing countries may, therefore, show less variation than has traditionally been assumed (Jabara, 1980).

Argentina's situation illustrates this mechanism. In 1984, agricultural exports made up 75 percent of Argentina's total exports, with cereal and preparations exports alone making up 28 percent of the total (FAO, 1986). If a decline in the export price of cereals leads to a proportional decline in the value of cereal exports and the export price declines 10 percent, then the austral, Argentina's new currency unit, should decline 2.8 percent in a trade-driven exchange market. Declining international commodity prices, therefore, will place downward pressure on the austral's value, all other things equal, which should enhance the competitiveness of Argentina's exports. Because the government depends on an export tax for a good portion of its total tax receipts, there is strong motivation to allow the austral to depreciate when export prices decline (Mielke, 1984; IMF, 1987a).

[13]Many developing countries have only recently adopted a flexible exchange rate system. This argument must be extended to include effects on foreign exchange reserves and on the adjustment of exchange rates as reserves are exhausted.

Figure 5

U.S. agricultural export shares, 1970-86



A related phenomenon may occur in some developed countries if their export mix is heavily weighted by basic commodities and manufactured goods with low price and income elasticities of demand. Under such conditions, these countries may suffer the same cyclical currency depreciations. This phenomenon may help explain why the U.S. dollar has depreciated in relation to major agricultural importers and yet appreciated against competing agricultural exporters to the detriment of U.S. agricultural exports.

The Thin-Market Problem

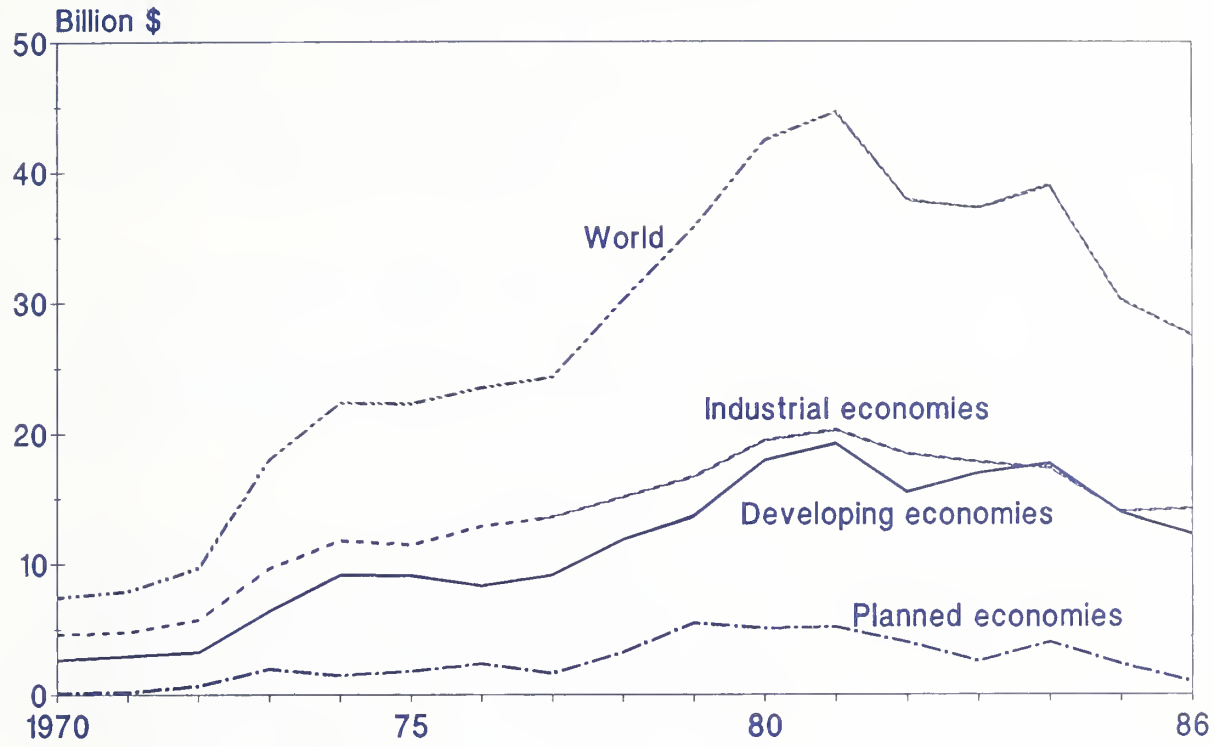
Because import taxes and export subsidies are partial substitutes for currency changes, as the number of traded commodities declines, the distinction between the two policies disappears. An island economy exporting only sugar, for example, essentially uses sugar as its monetary unit. A change in the sugar price and a change in the country's exchange rate have similar effects. Thus, developing countries with liquidity problems commonly use commercial and monetary policies interchangeably. Centrally planned economies with overvalued exchange rates employ similar policies. When thin markets or administered prices create illiquidity problems, the market for foreign exchange is dominated by commodity flows and provides only a thin veil over barter exchange (OECD, 1985).

The Overvaluation Problem

If developed countries tend to subsidize and protect their agricultural sectors, developing countries tend to tax agriculture to finance industrial development under an import substitution development policy. Multiple exchange rate systems which tax export transactions have been the primary instrument for doing this. Schuh (1987) argues that, as debt-encumbered developing countries turn increasingly to export-promotion strategies, undervaluation of exchange rates will become the dominant developing country policy instrument.

Figure 6

U.S. agricultural exports, 1970-86



The Countertrade Problem

Problems of currency illiquidity and balance of payments difficulties have frequently motivated developing countries to use countertrade in international transactions. Countertrade can take the form of barter arrangements, buy-back schemes, long-term contract agreements, or linked sales. Argentina, for example, permits countertrade by importers who are willing to accept in-kind payment of commodities on its export promotion list (IMF, 1987a). Payments-in-kind have in recent years been associated with petroleum exports during periods of weak oil prices, such as an exchange of oil for military equipment. These transactions are generally discouraged because they undermine a multilateral system of trade and payments (IMF, 1987a; OECD, 1985).

The Free-Rider Problem

Another set of currency issues arises when a developing country ties its currency to that of a developed country. The effect of this arrangement on the terms of trade changes through time if the arrangement is accompanied by privileged market access through the generalized system of preferences and if the developing country has the ability and willingness to take advantage of the opportunities opened up. South Korea and, before 1985, the Dominican Republic provide extreme examples of the potential outcomes of this arrangement because of their currency ties to the U.S. dollar. The tie to the U.S. dollar appears to have resulted in an undervaluation of South Korean exports and an overvaluation of Dominican exports.[14] Advantages of this tie for

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[14]South Korea has used its balance of payments surplus to repay its foreign debt, 80 percent of which is dollar-denominated. This strategy has tended to strengthen the U.S. dollar and the international banking system (Seth and McCauley, 1987).

"In the Dominican Republic, the depreciation of the currency which preceded floating (in 1985) has stimulated primarily nontraditional exports and tourism, owing in part to the retention until recently of a surcharge on traditional exports" (Quirk and others, 1987).

the developing country include simplifying accounting for the firms doing business in both countries and reducing the level of uncertainty in trade. Advantages to the developed country include expanded trade and opportunities for investment. The chief disadvantage for the developed country is that it loses the competitive effect of currency depreciations on exports to, and in competition with, the developing country (Henneberry, Drabenstott, and Henneberry, 1987).

The sensitivity of this problem was illustrated recently when the United States "graduated" four Asian newly industrialized countries--South Korea, Taiwan, Singapore, and Hong Kong--by removing their status under the generalized system of preferences. This action was taken, in part, to motivate these nations to decouple their currencies from the U.S. dollar.

ISSUES PERTINENT TO GATT AGRICULTURAL NEGOTIATIONS

The substitutability of trade and monetary interventions poses both procedural and analytical problems for GATT agricultural negotiations. These problems can be resolved, but progress will probably be slow. For progress to begin, GATT negotiators will need to consider all forms of intervention.

The IMF/GATT Dichotomy

An important jurisdictional impediment to linking trade and monetary discussions exists because the two issues were institutionally separated following World War II with the founding of the International Monetary Fund (IMF) and the GATT. Founding signatory nations gave the IMF jurisdiction over exchange restrictions while giving the GATT jurisdiction over trade restrictions.

Exceptions to this division of responsibilities are found in articles XIV and XV of the GATT convention. Article XIV permits developing countries experiencing balance of payments difficulties to impose quantitative trade restrictions, such as quotas and voluntary export restraints, which are otherwise forbidden. Article XV forbids currency restrictions designed to frustrate the intent of the GATT and trade restrictions designed to frustrate the intent of the IMF Articles of Agreement (Dam, 1977).

The problems posed by large swings in monetary variables for agricultural trade appear to fall between the jurisdiction of the IMF and the GATT. Special exchange arrangements designed to facilitate trade liberalization solely in the agricultural sector are contrary to article VIII of the IMF Articles of Agreement. Arrangements, such as the EC's Common Agricultural Policy (CAP), have been set up with IMF approval. The IMF normally approves such multiple exchange rate systems only when the countries have prepared and agreed to a well-conceived plan for their eventual removal (IMF, 1987a).

GATT's success in binding tariff levels in past rounds has prompted members to use other instruments, including nontariff barriers, subsidies, and monetary interventions, to protect domestic industries. The greater mobility of capital and increased use of flexible exchange rate systems has further changed the character of the balance of payments problems facing the developing countries and lessened the need for exemption from GATT provisions. Finally, improved statistical reporting and a greater understanding of economic problems have produced a greater willingness to use macroeconomic policy instruments to deal with external difficulties. In the absence of better coordination of GATT and IMF activities, jurisdictional conflicts and ambiguities will probably render GATT agreements on agriculture difficult to monitor and enforce (Anjaria, 1987).

The EC Experience with Agricultural Trade Liberalization

The EC experience provides an instructive precedent in attempts to reduce agricultural protectionism. Belgium, Germany, France, Italy, Luxembourg, and The Netherlands established the EC in 1957 with the signing of the Treaty of Rome. The Treaty's agricultural provisions

were first implemented in 1962, and tariffs were eliminated for grain and other commodities in trade among member states in 1967.

The EC's common agricultural market broke down in 1969 with the devaluation of the U.S. dollar. The EC responded by announcing the intention of establishing set exchange rates for EC currencies against the dollar (Dam, 1983) and, later, instituting an artificial currency known as the unit of account (u.a.) which was used to define agricultural support prices and to ensure trade among member states in a common currency. Variable taxes and subsidies, known as monetary compensatory amounts (MCA's), were levied on agricultural products being traded within the EC. These MCA's were revised whenever currencies deviated from par u.a. values.

As new nations joined the EC and other changes occurred, this agricultural monetary system became more comprehensive and complex. The u.a., which was defined in gold, was replaced by the European currency unit, which was defined as an index of EC member states' currencies. As currency movements among the member states were increasingly coordinated through adjustments in monetary and fiscal policy, the need for variable taxes and subsidies decreased. The European Monetary System (EMS), established in 1979, made MCA's entirely redundant (Ungerer and others, 1986).

The EC has been relatively successful in eliminating tariff barriers among the member states, but only by establishing other EC instruments having similar effects. The MCA's originally established to compensate for currency movements gradually evolved into an instrument of price support as member states gained increasing insight into their effects and control over their implementation. Price competition between agricultural producers has been limited by national boundaries and the willingness of the national governments to accommodate structural change. The MCA's have not been an effective substitute for a true common currency and the efficiencies it would create.

Despite the EC framework and a high level of political cooperation, however, only modest progress has been made in eliminating nontariff barriers to agricultural trade. The removal of the German Beer Purity law is an outstanding example. Despite 25 years of economic integration, the European Court did not strike down this law until 1986.

In summary, the EC experience provides a mechanism for dealing with currency changes, but progress in liberalizing agricultural trade has been modest and time consuming.

Technical Issues in Negotiations

If large swings in monetary variables are a major cause of increasing agricultural protectionism in the 1980's, then clearly some method for dealing with the monetary issue needs to be found. One approach is to treat the monetary issue as simply a valuation problem that can be solved through use of technical conventions. These conventions would serve as the ground rules for negotiations and facilitate measuring the level of government intervention in support of producer and consumer groups.

The first technical problem confronting negotiations is how to measure changes in exchange valuations in a multilateral context. Recent literature on measuring exchange influences on commodity markets has focused on trade-weighted bilateral and multilateral exchange values (Pauls, 1987; Hervey and Strauss, 1987). These indicators do a better job of measuring competitiveness than of measuring the relative value of currencies. An accounting indicator to measure relative currency values, or "numeraire," is needed which does not favor individual participants. Possible candidates include an index of currencies, the price of gold, or the value of the IMF's "special drawing rights" (SDR's). The commodity price index proposed by the U.S. Treasury Secretary would also fulfill this function (Culpeper, 1987).

The choice of a base year for negotiations poses a second problem. In view of the large swings in currency values during the past few years, a multiyear average is probably appropriate. The

question of equilibrium exchange values, however, remains an analytical problem (Roe and Greene, 1986; Stockman, 1987).

A third problem arises if countries persist in employing agricultural policies tied to prices or the level of production. If no mechanism is found to lock in these concessions, then a strong incentive to back out of concessions will arise the next time currency values change. The concessions reached in negotiations need, therefore, to be insulated from further currency changes. To avoid having concessions become permanent, however, an orderly mechanism for adjusting to new exchange values needs to be established at the same time as these negotiations take place.

Fourth, negotiating transition arrangements for currency values as well as for trade concessions may be necessary. Presuming that a set of base-year currency values are agreed upon for negotiation purposes, GATT participants will need to establish a mechanism for moving from market rates to the negotiated values. The trade concessions could, alternatively, be adjusted to account for currency adjustments. If large currency adjustments are required, then a gradual implementation of the negotiated currency values may be as important as a gradual implementation of trade concessions.

POLICY ALTERNATIVES

Free trade is generally accepted by economists to be the ideal trading system and is the objective of trade liberalization talks. Disputes among economists over trade liberalization and the objective of free trade generally arise out of recognition that individual countries liberalizing their trade may, in fact, be disadvantaged if other countries do not follow suit and that a totally free trading system may not be possible. There is then a need to consider alternative monetary arrangements which could serve either as an intermediate step in liberalizing trade or as a substitute for trade liberalization in a less-than-perfect world. Most of these alternatives should accordingly be viewed as second-best solutions.

The options cited below address the question of how to cope with the problems posed by monetary effects on agricultural trade.[15]

Ignore Monetary Effects

The participants in GATT agricultural talks could ignore monetary effects on trade and proceed with negotiations under traditional arrangements. This policy is consistent with the GATT tradition of separating monetary and trade questions and has led to modest successes following the offer-and-acceptance approach to negotiations. It is less likely to yield substantive results given a rules or formula approach in negotiations. Because the problems associated with rapid, large swings in monetary variables are relatively new phenomena, negotiators have not had a strong incentive to consider monetary effects in past GATT rounds.

GATT negotiators will probably not ignore the monetary effects in the next round of talks. It is more likely that they will consider them either in parallel negotiations or treat exchange rate adjustments as a problem solved implicitly in the indicators used to measure government intervention. This approach will allow the traditional separation of monetary and trade issues and further progress on both fronts.

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[15]Edouard Balladur (1988), the French Minister of Finance, has outlined three basic alteratives for reforming the world monetary system: international cooperation based on an extension of the Lourve accord, inauguration of an EMS-type system of fixed exchange rates, and adoption of a world monetary standard expanding on the convertibility of gold.

Agree to Self-Regulation

Participants in the GATT talks could agree not to compete on the basis of currency adjustments. Once this agreement had been reached, a set of economic indicators and a grievance procedure could be agreed upon to facilitate self-regulation (IMF, 1987c). To avoid unnecessary conflict, finance ministers could meet periodically to review the indicators and attempt to resolve problems informally. If no informal solution could be reached, then the parties concerned could invoke a predetermined grievance procedure.

Self-regulation is also consistent with the GATT tradition. The GATT and the IMF differ as institutions in their approach to enforcement. GATT bindings are policed by the contracting parties, while IMF agreements are enforced by the IMF organization (Dam, 1977). Self-regulation is, therefore, a basic tenet of the GATT tradition.

Treat Monetary Effects as Technical Problems

The GATT participants could agree on a set of procedures to incorporate monetary effects into the data used in negotiations and negotiate accordingly. The procedures to do this need to be established, but few changes need to be made in the format already being employed. Incorporating exchange rate changes in an aggregate measure, such as the effective rate of protection or producer subsidy equivalents, is a fairly straightforward exercise.

Set Exchange Rate Targets

GATT discussions could be postponed until agreement on a new exchange system could be put into place. Exchange rate targets, for example, provide a general solution to the problem of large swings in exchange rates and could be adopted as a substitute for the current, more flexible exchange system. The objective of this proposal is to set exchange rate targets around which rates would be allowed to vary 10-20 percent. This plan, therefore, offers some of the advantages of both the fixed and flexible exchange rate systems (Williamson, 1987).

Several variations on this proposal are also possible. For example, because import restrictions and export taxes provide a partial substitute for exchange rate changes, negotiators may be able to devise a hybrid policy response--an effective subsidy equivalent--to allow countries more flexibility in meeting negotiated targets. Another variation is to permit target ranges to vary based on a moving average of market rates.

Establish Separate Exchange Rate Provisions for Agriculture

GATT participants could agree to set up separate exchange rate provisions for agriculture. Agricultural currency and fixed exchange rates could be established along with an international agency with the prerogative to tax and subsidize agricultural trade as the national currencies deviate from par values. These interventions would be costly in aggregate to the extent that the exchange rates and agricultural prices chosen were out of equilibrium. The net intervention cost could be funded by a tax on the national participants.

Establish an International Barter Exchange

GATT participants could agree to create an international barter exchange for countries experiencing an illiquidity problem. This exchange would be based on a computer-assisted communication network and on the requirement that users treat the exchange as a free trade area. Buyers and sellers would be linked by computer in transaction chains. Intermediaries in the transaction chains would consist either of buyers and sellers of other commodities also seeking trades or brokers willing to assist in arranging transactions for a payment-in-kind.

Discussion

Several problems need to be addressed regardless of which alternative is adopted. First, a procedure for monitoring exchange rate effects on trade for purposes of GATT negotiations needs to be established. This procedure should take the form of an official numeraire against which each country's currency value can be evaluated. Negotiations should proceed more rapidly if the uncertainty regarding currency values is reduced.

Second, before selecting an alternative for dealing with currency disruptions in negotiations, participants should study the incentives for complying with the chosen alternative (Runge, von Witzke, and Thompson, 1987). In view of the increasing importance of developing countries in agricultural trade, they should be given every incentive to abide by the agreements reached in the negotiations.

Finally, negotiators should provide a mechanism for implementing the agreements reached. Trade liberalization will necessarily involve costs to some domestic groups as government interventions in the market are reduced or eliminated. Efforts to reduce or eliminate the benefits provided by those interventions can be expected to meet political resistance. An effective strategy for implementing trade liberalization should accordingly include a strategy for coping with groups benefiting from interventions and their country representatives. Possible strategies include providing partial compensation to injured parties and outlining a transition period to allow gradual adjustment to the policy option that is selected.

BIBLIOGRAPHY

Abbott, Philip C. 1984. Foreign Exchange Constraints to Trade and Development. FAER-209. U.S. Dept. Agr., Econ. Res. Serv.

Anjaria, Shailendra J. 1987. "Balance of Payments and Related Issues in the Uruguay Round of Trade Negotiations," World Bank Economic Review, Sept., pp. 669-88.

Balladur, Edouard. 1988. "Rebuilding an International Monetary System: Three Possible Approaches," The Wall Street Journal, Feb. 23.

Batten, Dallas S., and Michael T. Belongia. 1984. "The Recent Decline in Agricultural Exports: Is the Exchange Rate the Culprit?" Economic Report of the Federal Reserve Bank of St. Louis, Oct., pp. 5-14.

Bredahl, Maury E., and Paul Gallagher. 1977. "Comment on 'Effects of an Exchange Rate Change on Agricultural Trade,'" Agricultural Economics Research, Vol. 29, No. 2 (Apr.), pp. 45-48.

Congress of the United States, Congressional Budget Office (CBO). 1987. The GATT Negotiations and U.S. Trade Policy.

Culpeper, Roy. 1987. "Secretary Baker's Other Bad Idea," The Wall Street Journal, Oct. 26.

Dam, Kenneth W. 1977. The GATT: Law and the International Economic Organization. Chicago: Univ. of Chicago Press.

_____. 1983. The Rules of the Game: Reform and Evolution in the International Monetary System. Chicago: Univ. of Chicago Press.

Denbaly, Mark, and David Torgerson. 1987. "The Balance of Payments and Agriculture," Agricultural Outlook, Oct., pp. 29-33.

Dornbusch, Rudiger. 1986. "Special Exchange Rates for Capital Account Transactions," World Bank Economic Review, Sept., pp. 3-33.

Edwards, Clark. 1987. "The Exchange Rate and U.S. Agricultural Exports," Agricultural Economics Research, Vol. 39, No. 1 (Winter), pp. 1-12.

European Commission. 1985. Perspektiven fuer die Gemeinsame Agrarpolitik (Perspectives on the Common Agricultural Policy). Green paper. Brussels, Belgium.

Food and Agriculture Organization of the United Nations (FAO). 1986. 1985 FAO Trade Yearbook. Vol. 39. Rome, Italy.

Goldstein, Morris. 1980. The Exchange Rate System: Lessons of the Past and Options for the Future. Occasional Paper 30. Washington, DC: International Monetary Fund.

Haley, Stephen L., and Barry Krissoff. 1987. "U.S. Grain Exports and the Value of the Dollar," Journal of Agricultural Economics Research, Vol. 39, No. 2 (Spring), pp. 12-21.

Hanrahan, Charles E., Penelope Cate, and Donna U. Vogt. 1984. Agriculture in the GATT: Toward the Next Round of Multilateral Trade Negotiations. Report No. 84-169 ENR. Library of Congress, Congressional Research Service.

Henneberry, David, Mark Drabenstott, and Shida Henneberry. 1987. "A Weaker Dollar and U.S. Farm Exports: Coming Rebound or Empty Promise?" Economic Report of the Federal Reserve Bank of Kansas City, May, pp. 22-36.

Hervey, Jack L., and William A. Strauss. 1987. "The New Dollar Indexes Are No Different from the Old Ones," Economic Perspectives, Federal Reserve Bank of Chicago, July/Aug., pp. 3-23.

Huang, Roger D. 1987. "Expectations of Exchange Rates and Differential Inflation Rates: Further Evidence on Purchasing Power Parity in Efficiency Markets," Journal of Finance, Mar., pp. 69-79.

International Monetary Fund (IMF). 1984. Exchange Rate Volatility and World Trade. Occasional paper 28. Washington, DC.

_____. 1987a. Exchange Arrangements and Exchange Restrictions: Annual Report 1987. Washington, DC.

_____. 1987b. International Financial Statistics. Washington, DC, and other issues.

_____. 1987c. "Venice Summit Strengthens Policy Coordination, Backs More Stable Exchange Rates, Enhanced SAF," IMF Survey, June 15, pp. 177, 188, and 189.

Jabara, Cathy L. 1980. Terms of Trade for Developing Countries. FAER-161. U.S. Dept. Agr., Econ. Res. Serv.

Johnson, Glenn L., and C. Leroy Quance, ed. 1972. The Overproduction Trap in U.S. Agriculture. Baltimore: Johns Hopkins Univ. Press.

Kitchen, John, and Mark Denbaly. 1987. "Commodity Prices, Money Surprises, and Fed Credibility," Journal of Money, Credit, and Banking, May, pp. 246-51.

Lee, John, Jr., and Mathew Shane. 1987. "U.S. Agricultural Interests and Growth in the Developing Economies: The Critical Linkage," U.S. Agriculture and Third World Economic Development: Critical Interdependency. Washington, DC: National Planning Association, pp. 52-78.

Longmire, Jim, and Art Morey. 1983. Strong Dollar Dampens Demand for U.S. Farm Exports. FAER-193. U.S. Dept. Agr., Econ. Res. Serv.

Mackie, Arthur B., Stephen W. Hiemstra, and Stacey L. Rosen. 1985. World Food Grain Trade, 1962-83: Wheat, Rice, and Wheat Flour. SB-734. U.S. Dept. Agr., Econ. Res. Serv.

Mackie, Arthur B., Stephen W. Hiemstra, and Janet E. Sayre. 1987. World Feed Grain Trade, 1962-85: Barley, Corn, Rye, Oats, and Other Cereals. SB-755. U.S. Dept. Agr., Econ. Res. Serv.

Mielke, Myles. 1984. Argentine Agricultural Policies in the Grain and Oilseed Sectors. FAER-206. U.S. Dept. Agr., Econ. Res. Serv.

Miller, Geoff. 1987. The Political Economy of International Agricultural Policy Reform. Canberra, Australia: Dept. Primary Industry.

Organization for Economic Cooperation and Development (OECD). 1985. Countertrade: Developing Country Practices. Paris.

Oyejide, T. Ademola. 1986. The Effects of Trade and Exchange Rate Policies on Agriculture in Nigeria. Res. Rpt. 55. Washington, DC: International Food Policy Research Institute.

Pauls, B. Dianne. 1987. "Measuring the Foreign Exchange Value of the Dollar," Federal Reserve Bulletin, June, pp. 411-22.

Quirk, Peter J., and others. 1987. Floating Exchange Rates in Developing Countries: Experience with Auction and Interbank Markets. Occasional paper 53. Washington, DC: International Monetary Fund.

Roe, Terry, and Duty Greene. 1986. The Estimation of a Shadow Equilibrium Exchange Rate: A Direct Method. Staff paper P86-4. Univ. of Minnesota, Dept. Agr. and Applied Econ.

Roe, Terry, Mathew Shane, and De Huu Vo. 1986. Price Responsiveness of World Grain Markets: The Influence of Government Intervention on Import Price Elasticity. TB-1720. U.S. Dept. Agr., Econ. Res. Serv.

Roningen, Vernon, John Sullivan, and John Wainio. 1987. "The Impact of the Removal of Support to Agriculture in Developed Countries." Paper presented at a conference of the American Agricultural Economics Association, East Lansing, MI.

Runge, Ford C., Harald von Witzke, and Shelley Thompson. 1987. Liberal Agricultural Trade as a Public Good: Free Trade Versus Free Riding under GATT. Staff paper P87-11. Univ. of Minnesota, Dept. Agr. and Applied Econ.

Schuh, G. Edward. 1983. "U.S. Agriculture in the World Economy." Paper presented at Farm and Food Policy Symposium: Critical Issues for Southern Agriculture, Clemson Univ.

_____. 1985. "Strategic Issues in International Agriculture." Unpublished manuscript. Washington, DC: The World Bank. April.

_____. 1987. "Some Issues Involving Agriculture in the Coming MTN." Paper presented in a seminar sponsored by the World Bank, Geneva, Switzerland, Feb. 6.

Seth, Rama, and Robert N. McCauley. 1987. "Financial Consequences of New Asian Surpluses," Quarterly Review of the Federal Reserve Bank of New York, Summer, pp. 32-44.

Shane, Mathew D., and David Stallings. 1984a. Trade and Growth of Developing Countries under Financial Constraint. Staff Report No. AGES840519. U.S. Dept. Agr., Econ. Res. Serv.

_____. 1984b. Financial Constraints to Trade and Growth: The World Debt Problem and Its Aftermath. FAER-211. U.S. Dept. Agr., Econ. Res. Serv.

_____. 1987. The World Debt Problem and Its Resolution. FAER-231. U.S. Dept. Agr., Econ. Res. Serv.

Stockman, Alan C. 1987. "The Equilibrium Approach to Exchange Rates," Economic Review of the Federal Reserve of Richmond, Mar./Apr., pp. 13-30.

Thomas, Charles P. 1987. "U.S. International Transactions in 1986," Federal Reserve Bulletin, May, pp. 321-29.

Ungerer, Horst, and others. 1986. The European Monetary System: Recent Developments. Occasional paper 48. Washington, DC: International Monetary Fund.

U.S. Department of Agriculture (USDA), Economic Research Service. 1987a. Government Intervention in Agriculture: Measurement, Evaluation, and Implications for Trade Liberalization. FAER-229.

_____. 1987b. Wheat: Situation and Outlook Yearbook. WS-277.

_____. 1987c. Foreign Agricultural Trade of the United States: Fiscal Year 1986 Supplement. Mar.

_____. 1987d. World Grain: Situation and Outlook. FG-7-87.

Valdes, Alberto. 1987. "Agriculture in the Uruguay Round: Interests of Developing Countries," World Bank Economic Review, Sept., pp. 571-93.

Williamson, John. 1987. "Exchange Rate Management: The Role of Target Zones," American Economic Review (Papers and Proceedings), May, pp. 200-4.

Wilson, Edward. 1986. "In Agricultural Trade, Dollar Remains Strong," Agricultural Outlook, June, pp. 17-19.

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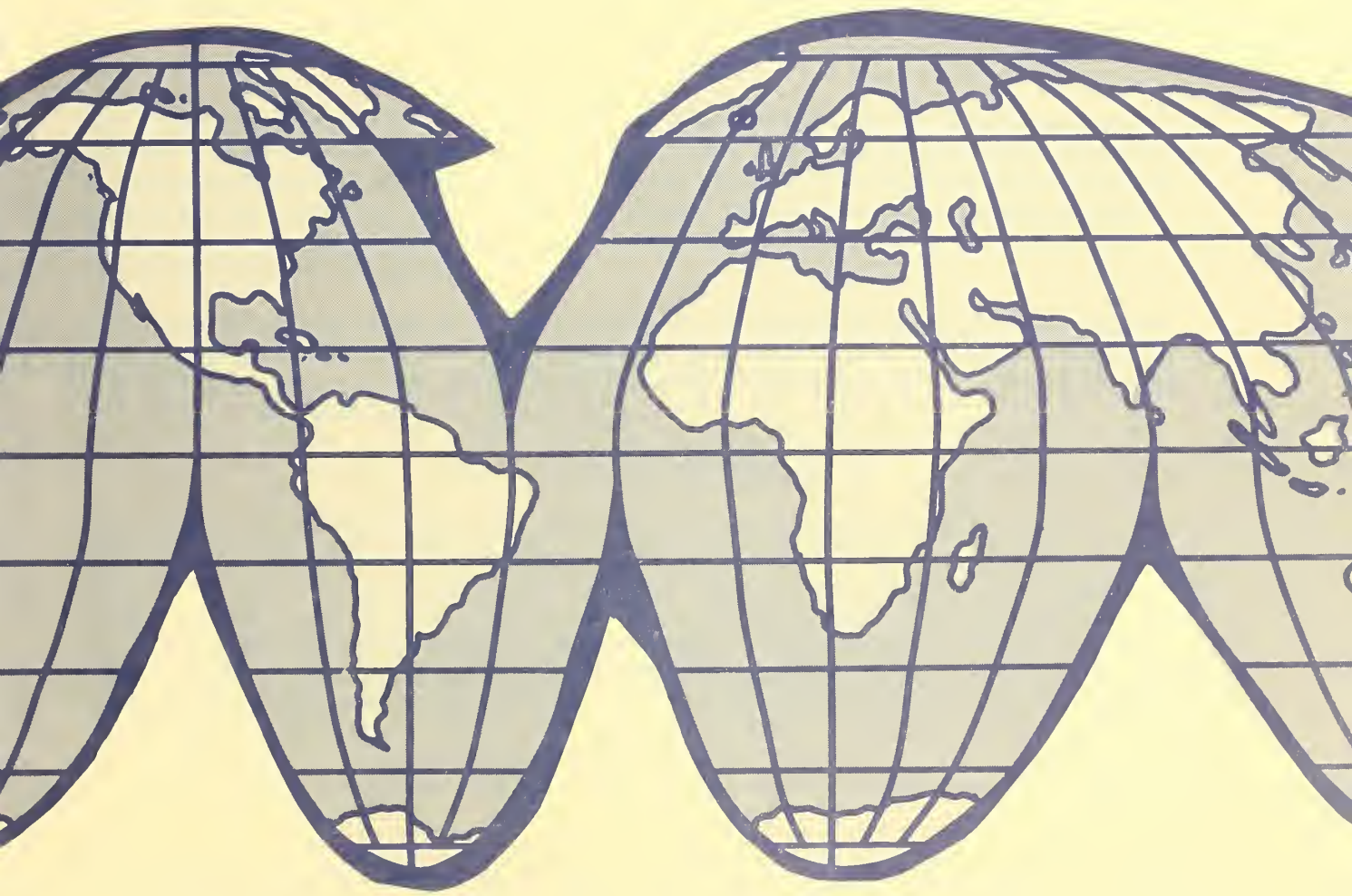
Monetary Factors Influencing GATT Negotiations on Agriculture

Stephen W. Hiemstra
Mathew Shane



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MONETARY FACTORS INFLUENCING GATT NEGOTIATIONS ON AGRICULTURE,
by Stephen W. Hiemstra and Mathew Shane, Agriculture and Rural Economy Division, Economic Research Service, U.S. Department of Agriculture. Foreign Agricultural Economic Report No. 236.

ABSTRACT

Large swings in interest and exchange rates have increased government intervention in trade and government support of domestic agricultural production. This situation has led to reduced import demand, global surpluses, and increased budgetary outlays. These consequences have stimulated negotiations aimed at liberalizing trade. The traditional roles of the International Monetary Fund (IMF) and the General Agreement on Tariffs and Trade (GATT) and a focus on developed country trade have discouraged a discussion of these problems in GATT negotiations. The importance of developing countries in agricultural trade, their increased participation in GATT, and the structure of their exchange markets have also complicated these negotiations.

Keywords: GATT, agricultural trade negotiations, exchange rates, agricultural policy, agricultural trade, international trade.

PREFACE

The General Agreement on Tariffs and Trade (GATT) provides a forum for nations to work together to improve trade through mutually agreed upon reductions in government interventions in international markets and to settle trade disputes. The rules and relationships which guide world trade have generally emerged from that forum. The number of participants to these discussions and the evolutionary nature of the relationships that emerge serve to keep the discussions lively and the issues provocative.

This report surveys the range of problems arising out of changes in world monetary markets which challenge GATT negotiators concerned with agricultural trade. The authors do not try to prescribe policy or to provide detailed analysis. Their objective, rather, is to define problems warranting further discussion and research.

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CONTENTS

SUMMARY

Large swings in interest and exchange rates have encouraged government intervention in trade and government support of domestic agricultural production. This situation has led to reduced import demand, global surpluses, and increased budgetary outlays. These consequences have stimulated negotiations aimed at liberalizing trade. The traditional roles of the International Monetary Fund (IMF) and the General Agreement on Tariffs and Trade (GATT) and a focus on developed country trade have discouraged a discussion of these problems in GATT negotiations. The importance of developing countries in agricultural trade, their increased participation in GATT, and the structure of their exchange markets have also complicated these negotiations.

The authors examine the effects of monetary policies on agricultural trade and trade negotiations. Among the issues they address are the following: How do changes in exchange rates, subsidies, and tariffs affect trade? How do monetary policies affect the trade of developed countries? What obstacles do monetary markets pose for the trade of developing countries? What are some of the technical problems facing GATT negotiators?

Large swings in exchange rates have encouraged excessive agricultural investment. Many developed countries invested heavily in expanding their agricultural sector in the early 1980's when the value of the U.S. dollar soared to record heights. Despite the more recent fall of the dollar, overproduction continues to aggravate the surplus situation created by falling demand, particularly in the debt-encumbered developing countries. The decline in demand for imported agricultural products in the debtor countries is unlikely to be reversed quickly because repayment problems continue to require austerity measures designed to conserve foreign exchange reserves.

Governments have several policy options for dealing with agricultural trading problems stemming from wide swings in interest and exchange rates. The authors examine possibilities ranging from trade-neutral interventions to self-regulation. They suggest that GATT member nations should monitor monetary effects on agricultural trade, study incentives for enforcing compliance with new agreements, and develop procedures for phasing in agreements.

Monetary Factors Influencing GATT Negotiations on Agriculture

Stephen W. Hiemstra
Mathew Shane*

INTRODUCTION

Liberalization of agricultural trade is at the top of the U.S. agenda for the Uruguay round of the General Agreement on Tariffs and Trade (GATT). U.S. objectives for agricultural negotiations are to reduce export subsidies, improve market access, and develop guidelines for health and sanitary regulations.

This report examines the effects of monetary policies on agricultural trade and trade negotiations. Among the issues it addresses are the following:

- o How do changes in exchange rates, subsidies, and tariffs affect trade?
- o How do monetary policies affect the trade of developed countries?
- o What obstacles do monetary markets pose for the trade of developing countries?
- o What are some of the technical problems facing GATT negotiators?

Two key problems have led to increasing agricultural protectionism in the 1980's. First, domestic agricultural policies in the industrial market economies designed primarily to support farm incomes have encouraged surplus production and low world market prices.[1] Second, the movement of assets through the international capital markets has become increasingly more important than trade in goods and services as a determinant of interest and exchange rates (Huang, 1987; Goldstein, 1980; Thomas, 1987). The problems induced by domestic policies, although not a subject of previous GATT discussions, are at least under the influence of agricultural policymakers. Monetary factors which have shaped the environment that produced these domestic policies have typically not been under the influence of agricultural interests despite their increasing importance in agricultural trade. Both problems have clearly distorted price signals to farmers based on the resource availabilities and productive efficiencies underlying comparative advantage.

This linkage of agricultural policy and monetary issues increases the complexity of the negotiations in the current GATT round. Outside of the usual political constraints and a history of failing to agree on agriculture, negotiators are faced with a dilemma. The two major

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[1] Over time, this effect has been partially offset by policies of developing countries which permit subsidized food imports and, when feasible, direct consumer subsidies to lower food prices. More recently, however, developing countries faced with debt-induced foreign exchange shortages have been forced to reduce these subsidies and to withdraw from world markets.

problems motivating agricultural protectionism in the 1980's fall outside GATT's traditional jurisdiction.

A consensus is emerging on how to include domestic agricultural policies under the GATT following an approach set forth in the Organization for Economic Cooperation and Development (OECD) Trade Mandate Study and related work (CBO, 1987; USDA, 1987a; Miller, 1987; Roningen, Sullivan, and Wainio, 1987). GATT participants have not yet discussed the role of monetary factors in stimulating increased government intervention in international commodity markets and how these factors influence negotiations. Nor have participants discussed the effects of structural change in international capital and exchange markets on the relative competitiveness of agricultural exporters.

THE EFFECTS OF EXCHANGE RATES, GOVERNMENT INTERVENTION, AND CAPITAL MARKETS ON TRADE

Exchange rate changes, government intervention, and capital markets affect trade in similar ways. Each alters the relationship between international and domestic prices. That effect is most obvious when governments intervene in exchange markets.

Exchange Rate Effects

Exchange rate effects on trade differ with the volume of trade and the source of the currency change. These effects are normally discussed with reference to their effects on domestic and international commodity markets. Although exchange rates are determined in the long run by adjustments in commodity markets, government interventions and international asset movements are probably more important in the short run.

Figure 1 illustrates the effect of an appreciation of an importer's currency on a single commodity market under conditions of free competition.[2] The world price (P_1) is initially determined in the trade sector by the intersection of the excess supply (ES) and the excess demand (ED) curves. The appreciation decreases the importer's cost of foreign exchange (a shift from curve A to curve B in the currency market), decreasing the commodity's price in the import market and increasing the quantity demanded. This increase is illustrated in the trade sector as a clockwise rotation of the excess demand curve (from ED to ED_1). This increase in demand raises world prices, translating into higher domestic prices in the exporting country and inducing exporters to increase the quantity supplied to the world market. In equilibrium, the world price stabilizes at P_2, the intersection of the new excess demand curve (ED_1) and the excess supply curve (ES).

Several adjustments permit generalizations of this example. First, the extent of the shift in the excess demand curve (world demand) declines as the market share of the importer declines and as the magnitude of the appreciation declines. Second, a currency depreciation shifts the "B curve" in the currency market to the right instead of to the left and the excess demand curve to the left instead of to the right. World demand and prices accordingly decline as importers face higher foreign exchange costs. Third, analogous changes in the exporter's currency rotate the excess supply curve instead of the excess demand curve in the trade sector. The excess supply curve rotates to the right instead of to the left with depreciation of an exporter's currency, however, because importers find their currency buys more. Fourth, the extent of the shift in the excess supply (world supply) declines as the market share of the exporter and the magnitude of the currency change decline.

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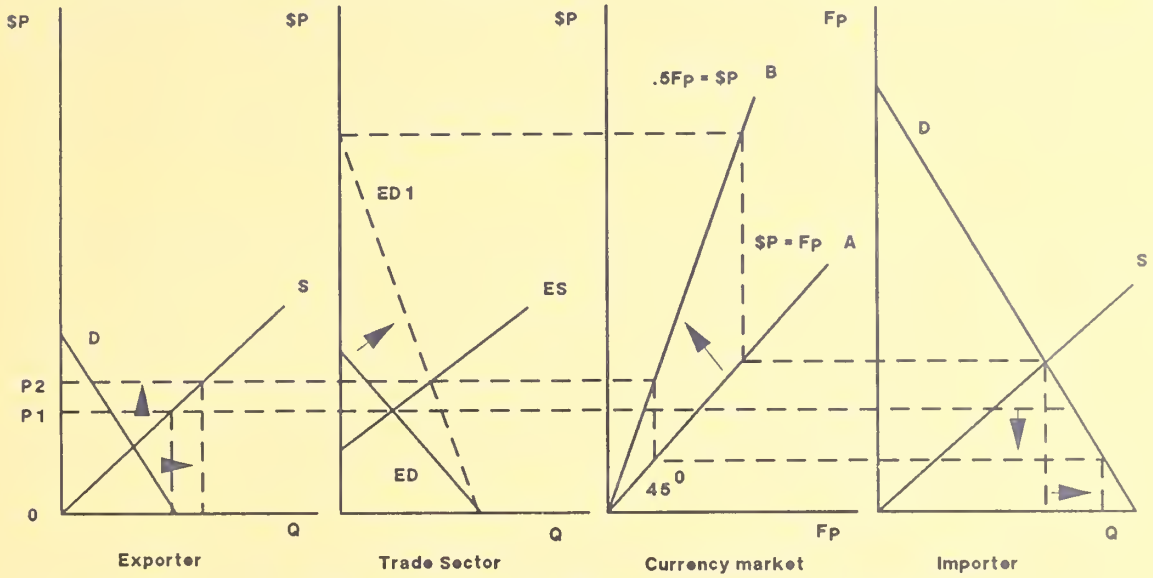
[2]Figure 1 illustrates both the general case of appreciation of an importer's currency and the special case of a U.S. dollar depreciation. Because the U.S. dollar serves as a reserve currency in world markets, the United States cannot, for all practical purposes, devalue the dollar to gain a competitive advantage. Under such circumstances, the United States must convince its trading partners to allow their currencies to appreciate in order to feel the effect of a dollar depreciation on trade.

Figure 1

The effect on trade of appreciation of an importer's currency



D = Demand
ED = Excess demand
ES = Excess supply
Q = Quantity
Fp = Foreign price
$P = Price in U.S. dollars
S = Supply

Source: Bredahl and Gallagher, 1977.

Effects of Government Intervention

Many forms of government trade intervention have effects similar to the effect of changes in exchange rates. Most interventions, however, disrupt the link between domestic and international commodity prices normally provided by exchange rates, thus preventing commodity price equalization in the two markets. Two examples of such interventions in the international trade sector are ad valorem import or export taxes and subsidies. An import tax can take the form of a tariff on imports or a tax on foreign exchange, as in the case of Argentina (Mielke, 1984; Dornbusch, 1986). An export subsidy can also take many forms. Regardless of the form, an ad valorem import tax raises commodity costs in a manner much like a currency depreciation in the context of an individual commodity market.

The chief difference between an import tax and a depreciation is that a tax is applied to a single commodity market while a depreciation applies to all markets. When a tax is uniformly applied to all markets or currency values differ by market, this distinction disappears.

The effect of government intervention is to insulate domestic supply and demand from changes in the international market. Because trade and currency interventions can be used interchangeably, both should be measured to get a clear picture of government involvement in world markets. Commodity-specific and general government interventions both alter the extent of price transmission from international to domestic markets and vice versa, and both should be studied.[3]

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[3]A study of the international wheat and rice markets found that government intervention reduced import demand price responsiveness (Roe, Shane, and Vo, 1986). This finding implies a lower import price elasticity of demand and forces a clockwise rotation of the import demand curve illustrated in figure 1. The government chooses a desired level of commodity imports, imports the desired quantity at world prices, and sells as much as can be absorbed domestically at local prices. Thus, large changes in international prices, including exchange rates, are required to clear markets. Also see Edwards (1987).

Capital Market Effects

Changes in the capital market can affect trade in commodities through changes in the balance of payments. A nation's balance of payments is a record of all trade (trade account) and financial (capital account) transactions with foreigners. Payments received must equal payments paid because the balance of payments is essentially a double-entry ledger. A deficit in the capital account, consequently, must equal a surplus in the trade account and vice versa (Denbaly and Torgerson, 1987). Interest rate changes alter capital flows, and exchange rate changes alter trade flows.

Governments can normally intervene to fix either interest or exchange rates, but not both, because the effect of fixing one is to force all adjustments on the other. The deregulation of national equity markets has added a third possibility: a government can now balance its payments through purchases or sales of national assets, such as common stock. This possibility has been most widely discussed in the context of debt-for-equity swaps in debt-encumbered developing countries. Its implications for developed countries are, however, more important because it implies that government intervention in interest and exchange markets can now influence stock market performance directly rather than indirectly through investor expectations, as has more usually been assumed.

The substitutability of monetary and trade restrictions is recognized in GATT provisions which exempt developing countries from adherence to agreements when they suffer balance of payments difficulties. The justification for these exemptions has basically been eliminated for countries employing a flexible exchange rate system (Anjaria, 1987). GATT negotiators should, however, consider the wider consequences of this substitutability as part of the trade liberalization talks.

MONETARY EFFECTS ON AGRICULTURAL TRADE

The rapid rise of the U.S. dollar during 1979-85 and of interest rates during 1979-82 has precipitated much of the increase in government intervention in world markets in this decade (figs. 2 and 3). The high value of the dollar precipitated a restructuring of the U.S. farm price support policies in 1985 and aggravated the situation created by high interest rates among the debt-encumbered developing countries. Rapid, significant changes in international exchange and capital markets can interact with otherwise reasonable domestic policies to bring about a crisis.

Structural Surpluses Result from Exchange Rate Swings

Large swings in the value of the U.S. dollar have been a major problem for world agriculture in the 1980's. The real U.S. exchange rate, measured on a total-trade-weighted basis, went up almost 60 percent between the low in 1979 and the high in February 1985.[4] Since February 1985, this index has declined 38 percent.[5]

World agriculture experienced numerous problems because of the dollar's appreciation. In the United States, the high value of the dollar raised the exchange value of the loan rate significantly above market-clearing levels. Export demand declined, the domestic price of grain dropped to the loan rate, and a substantial portion of domestic production that might otherwise have been exported was purchased by the Commodity Credit Corporation (CCC) to support the

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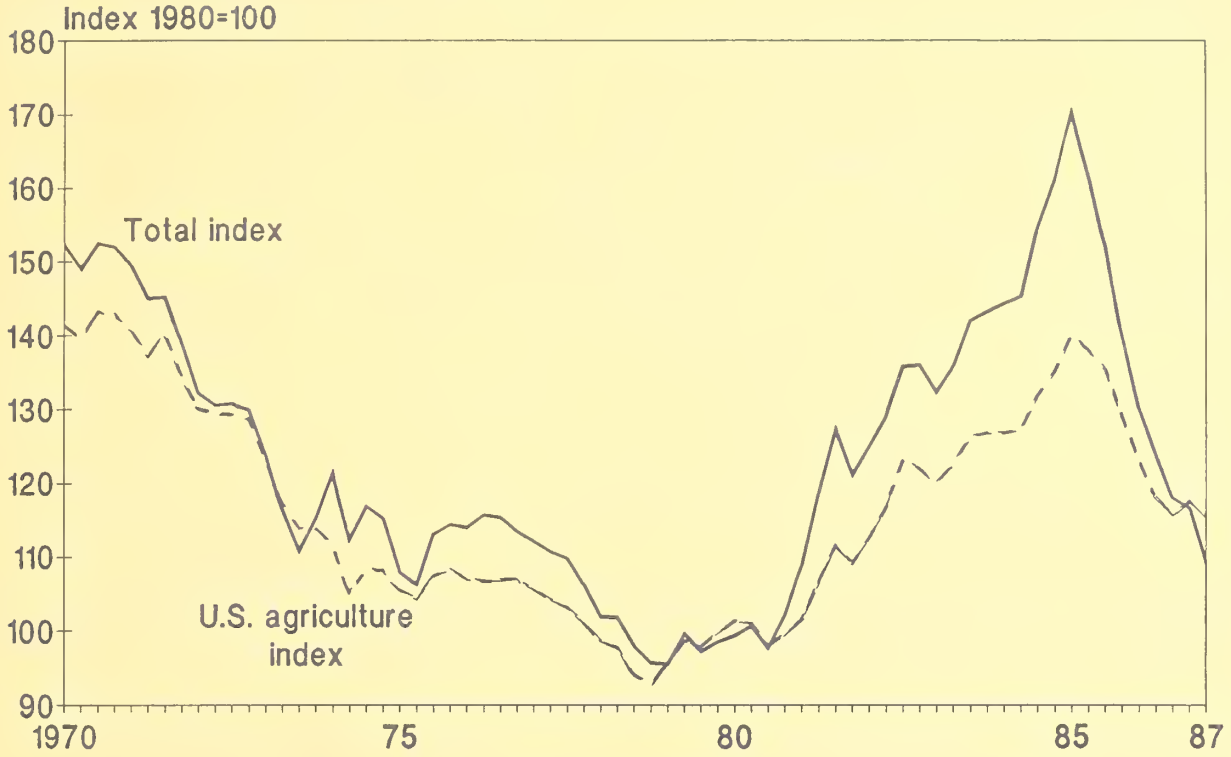
[4]Indexes of total-trade- and agricultural-trade-weighted real exchange rates attempt to show the effect of exchange values on the global competitiveness of the country in question. Bilateral exchange values are weighted by total or agricultural trade in computing these indexes to get a summary measure, an index, of the effect of these values on the type of trade being examined.

[5]The real U.S. exchange rate, measured on an agricultural-trade-weighted basis, went up only 38 percent and has subsequently fallen only 23 percent through the first quarter of 1987. The usual measures of exchange rate changes based on total trade, thus, probably overstate the effect on agricultural trade (fig. 4).

Figure 2

U.S. real exchange rate



loan rate (Schuh, 1983; Longmire and Morey, 1983).[6] Government expenditures and stocks accordingly rose to record levels during this period.

During the period of the high dollar, U.S. farmers earned the lowest incomes they had seen since the 1930's, but farmers abroad earned record-high incomes. World grain prices, for example, fell to within 5 percent of the European Community's (EC) domestic support price in 1985, an unprecedented event which substantially reduced the normally high cost of the EC agricultural policy.[7] The sharp decline in the dollar after 1985 reversed this process in the EC and caused great hardship in countries, like Australia, which invested heavily in expanding agricultural production during this upswing and then found the market flooded with surpluses when the downswing came (Miller, 1987).[8]

The rise or fall of major currencies over a period of several years as part of a monetary imbalance could signal to farmers and policymakers that large changes in agricultural investment are desirable even though these investments may lead to surpluses (or deficits) over a longer time horizon. Because it takes a long time to depreciate capital assets even after prices decline, the rise and fall of currencies can generate long-term misallocations of resources

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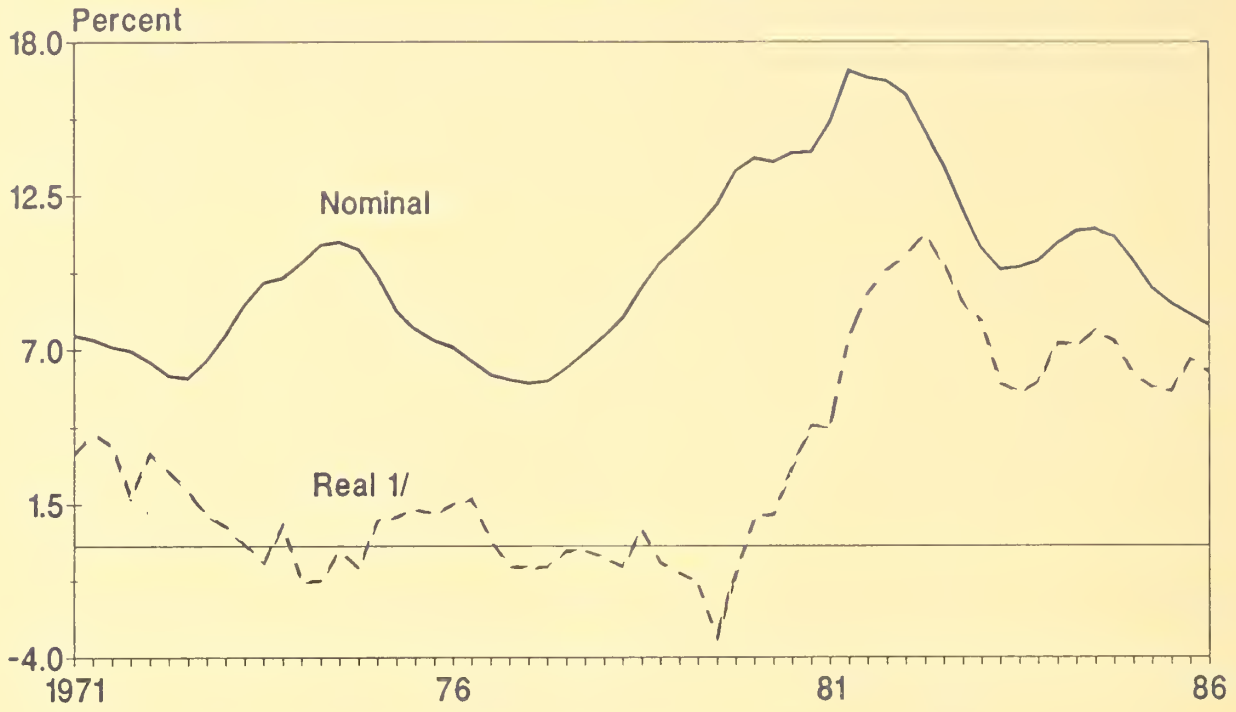
[6]Farm loan rates for wheat, for example, increased from $2.50 a bushel in 1979/80 to $3.65 in 1983/84 before declining to $2.40 in 1986/87 (USDA, 1987b).

[7]This event set off a major effort by the European Commission to implement reforms which it has promoted for many years (European Commission, 1985). The European Council, by contrast, saw the event as an opportunity to continue existing levels of income support longer than would otherwise have been financially possible. The reduced budgetary cost did not reduce the level of EC intervention in agricultural markets.

[8]The Food Security Act of 1985, with its lower loan rates, has magnified this effect and placed substantial pressure on the budgets of competing exporters, particularly the EC.

Figure 3

U.S. dollar 6-month interest rate



1/ Euro-dollar interest rates. Real rates adjusted by changes in CPI.

and prolong structural adjustment in periods of surplus (or deficit).[9] The rapid advance of agricultural technology in the 1980's has compounded this effect. World agricultural supplies have accordingly increased faster than world demand. This oversupply has led to an accumulation of stocks which may continue to depress international commodity prices for years to come (fig. 4).

The 1980's Debt Crisis

The second major problem for world agriculture in the 1980's began with the contractionary monetary policy adopted by the major industrial countries following the second oil shock in 1979-80. Following this contraction, international interest rates rose to record levels. Between 1979 and 1981, for example, the real 6-month London Interbank Offered Rate (LIBOR) on U.S. dollars rose from -4 percent to 11 percent and remained highly positive through 1985 (Shane and Stallings, 1987). These high rates severely constrained foreign exchange reserves in many developing countries.

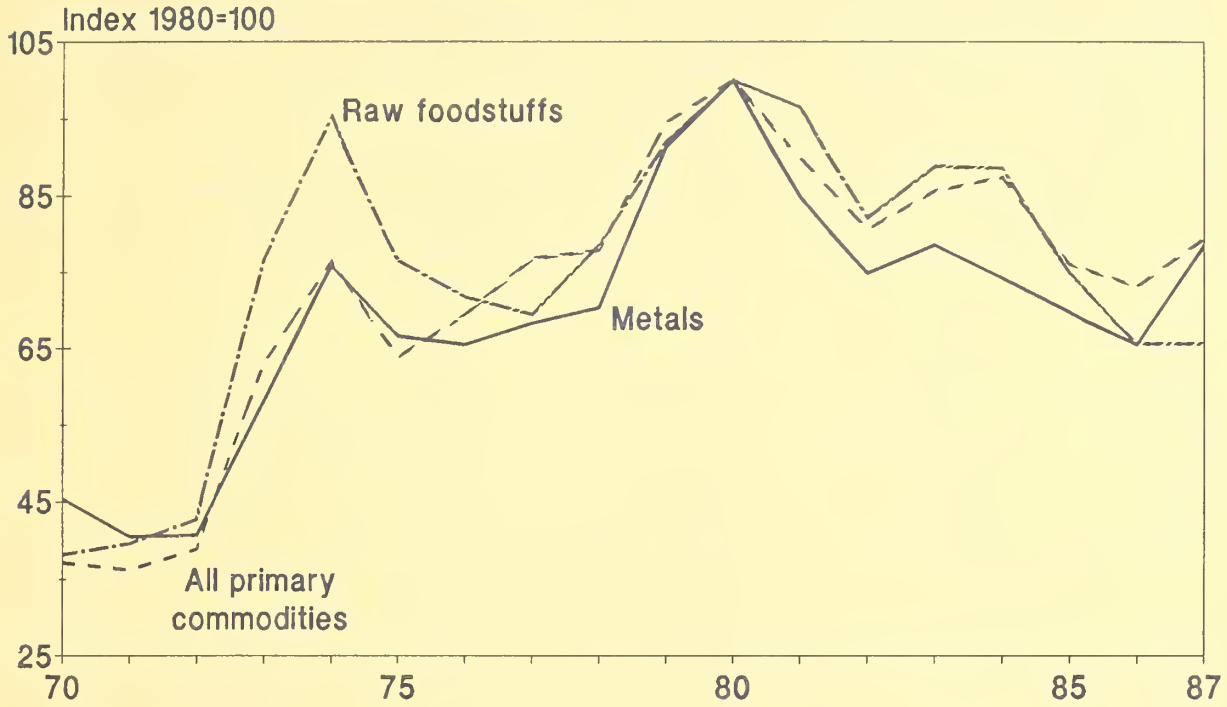
For highly indebted developing countries, these rising interest rates increased the cost of debt service at a time when falling commodity prices were reducing export earnings. If that were not enough, these loans were denominated in dollars and the value of the dollar was also rising. Thus, the countries could no longer service their debts, and they had to cut their demand for imports, including agricultural imports, further exacerbating the problem of low international commodity prices (Shane and Stallings, 1984b; Abbott, 1984a).

The demand for imported food grew rapidly in the 1970's, largely because of sales to developing countries. The withdrawal of those countries from the market substantially reduced the growth

[9]Johnson and Quance (1972) argue that agricultural assets have almost no alternative use outside the sector (in other words, they have low salvage prices). Thus, producers are motivated to retain their assets in use long after output prices begin to decline and production should be cut back.

Figure 4

Commodity price indexes



Source: Shane, 1987.

in agricultural trade (Mackie, Hiemstra, and Sayre, 1987). Because these countries still face substantial debt servicing problems, their imports continue to lag despite the large decline in the U.S. dollar and the dramatic fall in U.S. export prices induced by the implementation of the Food Security Act of 1985.

Effect on U.S. Agricultural Exports

The effect of the U.S. dollar's appreciation in the 1980's on U.S. agricultural trade is apparent from an analysis of trade-weighted exchange rates (table 1). A trade-weighted exchange rate measures the extent of appreciation or depreciation against the specific bilateral exchange rates which dominate trade in a particular commodity (Pauls, 1987). The dollar was stronger in relation to countries importing agricultural products in the 1980's than those importing all goods, reversing the trend established in the 1970's. These observations confirm that currency changes measured with major bilateral rates may not reflect the effects of currency changes on commodity market trade (Wilson, 1986; Henneberry, Drabenstott, and Henneberry, 1987).

Despite the effects on individual commodity markets, U.S. agriculture has been severely disadvantaged by changes in the world market. U.S. agricultural exports have fallen from a high of $43 billion in fiscal year 1981 to $26 billion in fiscal year 1987 and dropped as a portion of total U.S. exports from 19 percent to 13 percent (USDA, 1987c).

The Changing World Financial Environment

The monetary problem in agricultural trade has its roots in the changes which have taken place in the organization of international capital markets in the postwar period. After World War II, international capital markets did not function well. Financial flows between countries were on a government-to-government basis, often in the form of aid. These circumstances changed, however, in the 1960's with the emergence of the Eurodollar market and in the 1970's with the

Table 1--Trade-weighted real exchange rate indexes for the U.S. dollar for agricultural and related exports

Year	Total exports	Agricultural exports	Wheat exports	Corn exports
		1980 = 100 1/		
1970	151	142	134	145
1971	145	138	131	141
1972	131	129	125	131
1973	117	117	114	118
1974	116	108	104	108
1975	110	106	104	107
1976	115	107	104	108
1977	110	103	99	104
1978	99	86	94	93
1979	98	98	98	97
1980	100	100	100	100
1981	119	107	104	104
1982	131	119	112	119
1983	138	124	119	123
1984	154	130	125	127
1985	156	136	132	131
1986	122	119	123	110
1987 2/	109	115	127	105

1/ An increase in this index implies an appreciation of the U.S. dollar. 2/ Preliminary.

growth of European and Asian currency markets in response to the influx of petrodollars from the oil exporters into offshore banking centers.

The establishment of the flexible exchange rate system was an early consequence of these developments.[10] The flexible exchange rate system shifted more of the burden of monetary adjustments from capital to commodity markets.[11] This shift penalizes low-cost firms which have specialized in production of exportable commodities by making them bear more of the burden of monetary adjustments. In other words, monetary changes lead to changes in the prices of traded commodities not justified by commodity market supply and demand conditions (Kitchen and Denbaly, 1987). This increased risk may discourage specialization in traded commodities based on comparative advantage. The risk may, however, cost less than the penalties imposed by exchange rationing.

The shortrun volatility of exchange rates is a relatively minor problem for large firms and developed countries because of the existence of forward exchange markets and the opportunity to hedge transactions. Hedging is not an option, however, when currency swings last for more

[10]Trade is strongly correlated with growth in national output. The elasticity of trade growth with respect to real income growth is estimated to be above 3 (IMF, 1984). Also, see Batten and Belongia (1984).

[11]For some countries, the need to service foreign debt may also shift adjustment to the commodity market. Low rates of return on capital investment (expressed in foreign currency earnings) lead to disinvestment in the form of commodity exports as a substitute for the ability to raise liquid assets on the domestic capital market.

than a few months and when no forward exchange market exists, a problem facing most developing countries (IMF, 1984; Quirk and others, 1987).

Another consequence of these developments has been the increase in the importance of capital flows in relation to trade flows between countries. In 1985, world capital flows amounted to $84 trillion, but world trade flows were only $2 trillion (Schuh, 1985). The private flows of capital are of such a magnitude that even governments cannot control their exchange rates over an extended length of time without seriously disrupting domestic savings and investment. These financial flows rather than trade flows now determine shortrun interest and exchange rates. The experience of the past several decades under fixed and flexible exchange rate systems suggests that stable exchange values depend more on the coordination and stability of national macroeconomic policies than on the exchange system employed (Goldstein, 1980).

Developing Country Issues[12]

The growing importance of developing countries in world trade in the 1970's makes their participation an important component of a meaningful GATT agreement. Some developing countries are major participants as importers or exporters in almost every world commodity market. The share of U.S. exports bound for developing countries grew from 35 percent in 1970 to roughly 48 percent in 1986 (Lee and Shane, 1987) (figs. 5 and 6). The inclusion of developing countries in GATT agricultural trade talks, however, complicates the discussion. Developing countries often specialize in slow-growth markets, have currencies which are administratively determined or only occasionally traded, use currency overvaluation as a means of taxation, employ countertrade, and have frequently followed a "free rider" strategy in relation to past agreements. Yet, because developing countries often have a much higher percent of their resources committed to agriculture, the stakes for them in these discussions are high.

The Slow-Growth-Market Specialization Problem

When a high proportion of a nation's exports consists of basic commodities, such as foods, fibers, basic metals, and other raw materials which are tradable, storable, undifferentiated commodities and a close substitute for money, their prices may rise and fall in the business cycle together. For nations with export earnings closely linked to these commodities, currency depreciations may provide a countercyclical advantage, all other things equal, in relation to countries with a more diversified export mix.[13]

Argentina's situation illustrates this mechanism. In 1984, agricultural exports made up 75 percent of Argentina's total exports, with cereal and preparations exports alone making up 28 percent of the total (FAO, 1986). If a decline in the export price of cereals leads to a proportional decline in the value of cereal exports and the export price declines 10 percent, then the austral, Argentina's new currency unit, should decline 2.8 percent in a trade-driven exchange market. Declining international commodity prices, therefore, will place downward pressure on the austral's value, all other things equal, which should enhance the competitiveness of Argentina's exports. Because the government depends on an export tax for a good portion of its total tax receipts, there is strong motivation to allow the austral to depreciate when export prices decline (Mielke, 1984; IMF, 1987a).

A related phenomenon may occur in some developed countries if their export mix is heavily weighted by basic commodities and manufactured goods with low price and income elasticities of demand. Under such conditions, these countries may suffer the same cyclical currency depreciations. This phenomenon may help explain why the U.S. dollar has depreciated in

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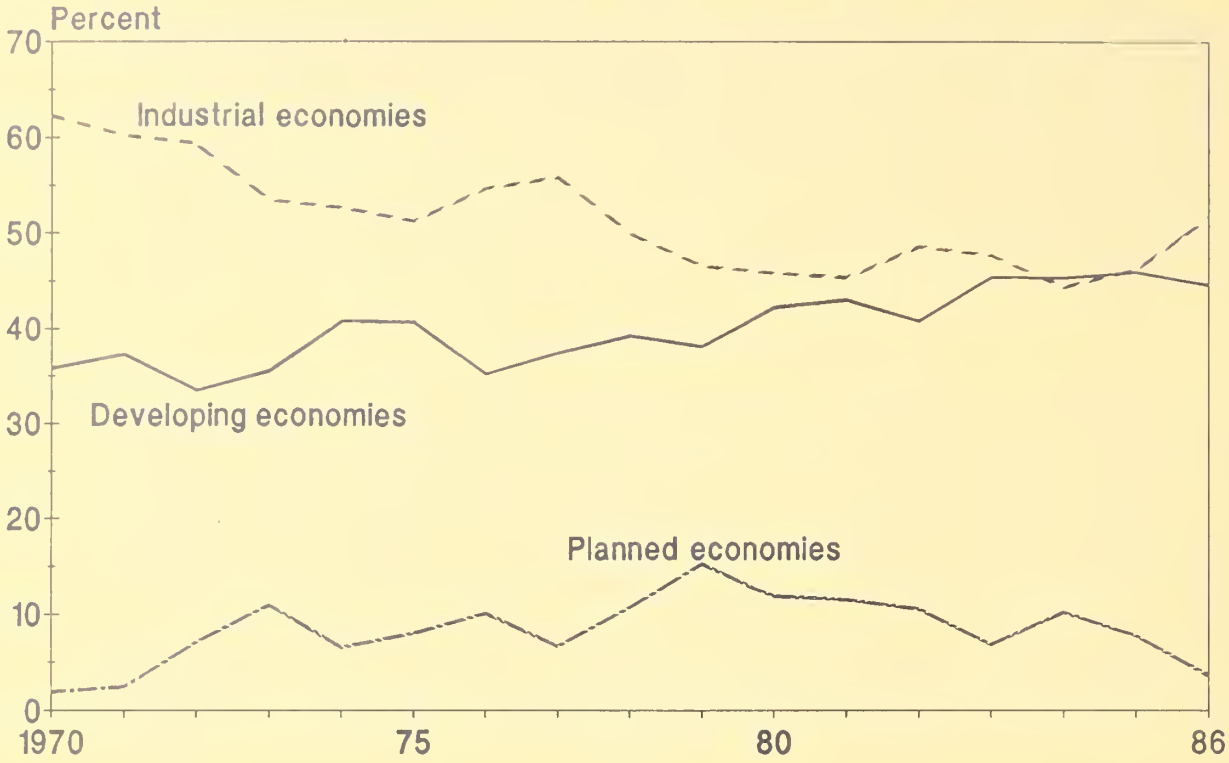
[12]Valdes (1987) has summarized developing country trade issues for the GATT discussions.

[13]Many developing countries have only recently adopted a flexible exchange rate system. This argument must be extended to include effects on foreign exchange reserves and on the adjustment of exchange rates as reserves are exhausted.

Figure 5

U.S. agricultural export shares, 1970-86



relation to major agricultural importers and yet appreciated against competing agricultural exporters to the detriment of U.S. agricultural exports.

The Thin-Market Problem

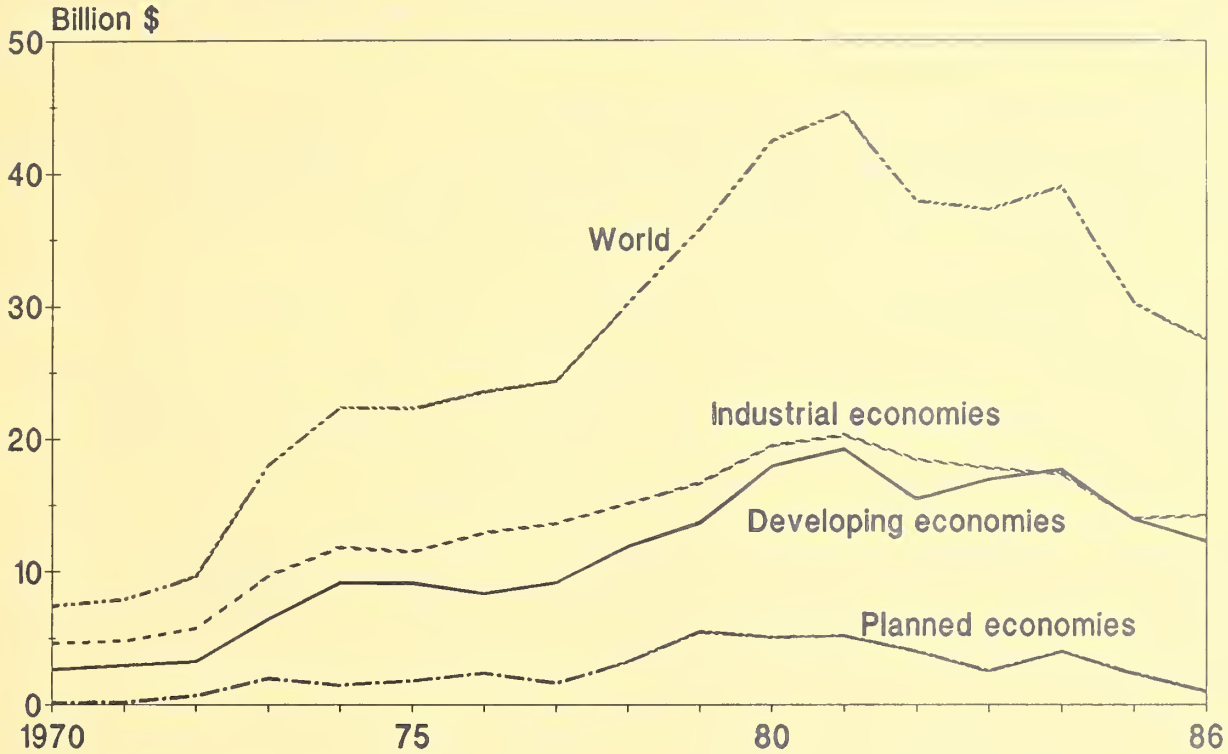
Because import taxes and export subsidies are partial substitutes for currency changes, as the number of traded commodities declines, the distinction between the two policies disappears. An island economy exporting only sugar, for example, essentially uses sugar as its monetary unit. A change in the sugar price and a change in the country's exchange rate have similar effects. Thus, developing countries with liquidity problems commonly use commercial and monetary policies interchangeably. Centrally planned economies with overvalued exchange rates employ similar policies. When thin markets or administered prices create illiquidity problems, the market for foreign exchange is dominated by commodity flows and provides only a thin veil over barter exchange (OECD, 1985). In such cases, consideration of exchange rate change in the context of trade liberalization is essential.

The Overvaluation Problem

If developed countries tend to subsidize and protect their agricultural sectors, developing countries tend to tax agriculture to finance industrial development under an import substitution development policy. Multiple exchange rate systems which tax export transactions have been the primary instrument for doing this. Schuh (1987) argues that, as debt-encumbered developing countries turn increasingly to export-promotion strategies, undervaluation of exchange rates will become the dominant developing country policy instrument. Thus, a subsidy or tax on agricultural exports can be hidden by overvalued or undervalued exchange rates.

Figure 6

U.S. agricultural exports, 1970-86



The Countertrade Problem

Problems of currency illiquidity and balance of payments difficulties have frequently motivated developing countries to use countertrade in international transactions. Countertrade can take the form of barter arrangements, buy-back schemes, long-term contract agreements, or linked sales. Argentina, for example, permits countertrade by importers who are willing to accept commodity payments-in-kind on its export promotion list (IMF, 1987a). Payments-in-kind have in recent years been associated with petroleum exports during periods of weak oil prices, such as an exchange of oil for military equipment. These transactions are generally discouraged because they undermine a multilateral system of trade and payments (IMF, 1987a; OECD, 1985). To the degree that countries use countertrade, they also complicate the determination of the subsidy/tax component of the value of tradables.

The Free-Rider Problem

Another set of currency issues arises when a developing country ties its currency to that of a developed country. The effect of this arrangement on the terms of trade changes through time if the arrangement is accompanied by privileged market access through the generalized system of preferences and if the developing country has the ability and willingness to take advantage of the opportunities opened up. South Korea and, before 1985, the Dominican Republic provide extreme examples of the potential outcomes of this arrangement because of their currency ties to the U.S. dollar. The tie to the U.S. dollar appears to have resulted in an undervaluation of South Korean exports and an overvaluation of Dominican exports.[14]

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[14]South Korea has used its balance of payments surplus to repay its foreign debt, 80 percent of which is dollar-denominated. This strategy has tended to strengthen the U.S. dollar and the international banking system (Seth and McCauley, 1987). "In the Dominican Republic, the depreciation of the currency which preceded floating (in 1985) has stimulated primarily nontraditional exports and tourism, owing in part to the retention until recently of a surcharge on traditional exports" (Quirk and others, 1987).

Advantages of this tie for the developing country include simplifying accounting for the firms doing business in both countries and reducing the level of uncertainty in trade. Advantages to the developed country include expanded trade and opportunities for investment. The chief disadvantage for the developed country is that it loses the competitive effect of currency depreciations on exports to, and in competition with, the developing country (Henneberry, Drabenstott, and Henneberry, 1987).

The sensitivity of this problem was illustrated recently when the United States "graduated" four Asian newly industrialized countries--South Korea, Taiwan, Singapore, and Hong Kong--by removing their status under the generalized system of preferences. This action was taken, in part, to motivate these nations to decouple their currencies from the U.S. dollar.

ISSUES PERTINENT TO GATT AGRICULTURAL NEGOTIATIONS

The substitutability of trade and monetary interventions poses both procedural and analytical problems for GATT agricultural negotiations. These problems can be resolved if GATT negotiators will consider all forms of intervention, not just those related to agriculture.

The IMF/GATT Dichotomy

An important jurisdictional impediment to linking trade and monetary discussions exists because the two issues were institutionally separated following World War II with the founding of the International Monetary Fund (IMF) and the GATT. Founding signatory nations gave the IMF jurisdiction over exchange restrictions while giving the GATT jurisdiction over trade restrictions.

Exceptions to this division of responsibilities are found in articles XIV and XV of the GATT convention. Article XIV permits developing countries experiencing balance of payments difficulties to impose quantitative trade restrictions, such as quotas and voluntary export restraints, which are otherwise forbidden. Article XV forbids currency restrictions designed to frustrate the intent of the GATT and trade restrictions designed to frustrate the intent of the IMF Articles of Agreement (Dam, 1977).

The problems posed by large swings in monetary variables for agricultural trade appear to fall between the jurisdiction of the IMF and the GATT. Special exchange arrangements designed to facilitate trade liberalization solely in the agricultural sector are contrary to article VIII of the IMF Articles of Agreement. Arrangements, such as the EC's Common Agricultural Policy (CAP), have been set up with IMF approval. The IMF normally approves such multiple exchange rate systems only when the countries have prepared and agreed to a well-conceived plan for their eventual removal (IMF, 1987a).

GATT's success in reducing tariff levels in past rounds has prompted members to use other instruments, including nontariff barriers, subsidies, and monetary interventions, to protect domestic industries. The greater mobility of capital and increased use of flexible exchange rate systems has further changed the character of the balance of payments problems facing the developing countries and lessened the need for exemption from GATT provisions. Finally, improved statistical reporting and a greater understanding of economic problems have produced a greater willingness to use macroeconomic policy instruments to deal with external difficulties. In the absence of better coordination of GATT and IMF activities, jurisdictional conflicts and ambiguities will probably render GATT agreements on agriculture difficult to monitor and enforce (Anjaria, 1987).

The EC Experience with Agricultural Trade Liberalization

The EC experience provides one precedent in attempts to reduce agricultural protectionism. Belgium, Germany, France, Italy, Luxembourg, and The Netherlands established the EC in 1957 with the signing of the Treaty of Rome. The Treaty's agricultural provisions were first implemented in 1962, and tariffs were eliminated for grain and other commodities in trade among member states in 1967.

The EC's common agricultural market broke down in 1969 with the devaluation of the U.S. dollar. The EC responded by announcing the intention of establishing set exchange rates for EC currencies against the dollar (Dam, 1983) and, later, instituting an artificial currency known as the unit of account (u.a.) which was used to define agricultural support prices and to ensure trade among member states in a common currency. Variable taxes and subsidies, known as monetary compensatory amounts (MCA's), were levied on agricultural products being traded within the EC. These MCA's were revised whenever currencies deviated from par u.a. values.

As new nations joined the EC and other changes occurred, this agricultural monetary system became more comprehensive and complex. The u.a., which was defined in gold, was replaced by the European currency unit, which was defined as an index of EC member states' currencies. As currency movements among the member states were increasingly coordinated through adjustments in monetary and fiscal policy, the need for variable taxes and subsidies decreased. The European Monetary System (EMS), established in 1979, made MCA's entirely redundant (Ungerer and others, 1986).

The EC has been relatively successful in eliminating tariff barriers among the member states, but only by establishing other EC instruments having similar effects. The MCA's originally established to compensate for currency movements gradually evolved into an instrument of price support as member states gained increasing insight into their effects and control over their implementation. Price competition between agricultural producers has been limited by national boundaries and the willingness of the national governments to accommodate structural change. The MCA's have not been an effective substitute for a true common currency and the efficiencies it would create.

Despite the EC framework and a high level of political cooperation, however, only modest progress has been made in eliminating nontariff barriers to agricultural trade. The removal of the German Beer Purity law is an outstanding example. Despite 25 years of economic integration, the European Court did not strike down this law until 1986.

In summary, the EC experience provides some insight into one mechanism for dealing with currency changes, but progress in liberalizing agricultural trade has been modest and time consuming even under these circumstances. Furthermore, efforts to liberalize agricultural trade within the EC have led to even more difficulties in liberalizing trade globally.

Technical Issues in Negotiations

If large swings in monetary variables are a major cause of increasing agricultural protectionism in the 1980's, then clearly some method for dealing with the monetary issue needs to be found. One approach is to treat the monetary issue as simply a valuation problem that can be solved through use of technical conventions. These conventions would serve as the ground rules for negotiations and facilitate measuring the level of government intervention in support of producer and consumer groups.

The first technical problem confronting negotiations is how to measure changes in exchange valuations in a multilateral context. Recent literature on measuring exchange influences on commodity markets has focused on trade-weighted bilateral and multilateral exchange values (Pauls, 1987; Hervey and Strauss, 1987). An accounting indicator to measure relative currency values, or "numeraire," is needed which does not favor individual participants.

Possible candidates include an index of currencies, the price of gold, or the value of the IMF's "special drawing rights" (SDR's). The commodity price index proposed by the U.S. Treasury Secretary would also fulfill this function (Culpeper, 1987).

The choice of a base year for negotiations poses a second problem. In view of the large swings in currency values during the past few years, a multiyear average is probably appropriate. The question of determining the equilibrium exchange values, however, remains an analytical problem (Roe and Greene, 1986; Stockman, 1987).

A third problem arises if countries persist in employing agricultural policies tied to prices or the level of production. If no mechanism is found to maintain movement towards liberalization, then a strong incentive to move toward increasing protection will arise the next time currency values change. The concessions reached in negotiations need, therefore, to be insulated from further currency changes. An orderly mechanism for adjusting to new exchange values needs to be established at the same time as negotiations take place about reductions in agricultural trade distorting support.

Fourth, negotiating transition arrangements for currency values as well as for trade concessions may be necessary. Presuming that a set of base-year currency values are agreed upon for negotiation purposes, GATT participants will need to establish a mechanism for moving from market rates to the negotiated values. Negotiated values could, alternatively, be adjusted to account for currency adjustments. If large currency adjustments are required, then a gradual implementation of the negotiated currency values may be as important as a gradual implementation of trade liberalization.

POLICY ALTERNATIVES

Free trade is generally accepted by economists to be the ideal trading system and is the objective of trade liberalization talks. Disputes among economists over trade liberalization and the objective of free trade generally arise out of recognition that individual countries which unilaterally liberalize their trade may, in fact, be disadvantaged if other countries do not follow suit and that a totally free trading system may not be politically possible. There is then a need to consider arrangements which could serve as an intermediate step in a full liberalizing of trade or would at least improve the trade environment in agriculture in a less-than-perfect world.

The options cited below address the question of how to cope with the problems posed by monetary effects on agricultural trade.[15]

Trade-Neutral Policies Allowed

It seems unlikely that countries will be prepared to move to a fully trade-liberalized agricultural environment. The concept of trade-neutral interventions thus becomes attractive. If it is not possible to provide support for agricultural producers in a way which leads to the same trade outcomes that would occur under full trade liberalization, then such a policy mix should be fully acceptable to the trading partners. Decoupled payments is one expression of this idea. A second alternative would be to have support payments for fixed quantities of production that are below the domestic equilibrium level. This arrangement would lead to a two price system in which marginal production decisions would be made based on a free market price. One still needs to evaluate these schemes in relation to a trade-neutral exchange rate environment because an overvalued or undervalued currency would still induce a biased trade environment.

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[15]Edouard Balladur (1988), the French Minister of Finance, has outlined three basic alternatives for reforming the world monetary system: international cooperation based on an extension of the Louvre accord, inauguration of an EMS-type system of fixed exchange rates, and adoption of a world monetary standard expanding on the convertibility of gold.

Agree to Self-Regulation

Participants in the GATT talks could agree not to compete on the basis of currency adjustments. Once this agreement had been reached, a set of economic indicators and a grievance procedure could be agreed upon to facilitate self-regulation (IMF, 1987c). To avoid unnecessary conflict, finance ministers could meet periodically to review the indicators and attempt to resolve problems informally. If no informal solution could be reached, then the parties concerned could invoke a predetermined grievance procedure. Self-regulation is also consistent with the GATT tradition. The GATT and the IMF differ as institutions in their approach to enforcement. GATT agreements are policed by the contracting parties, while IMF agreements are enforced by the IMF organization (Dam, 1977). Self-regulation is, therefore, a basic tenet of the GATT tradition.

Treat Monetary Effects as Technical Problems

The GATT participants could agree on a set of procedures to incorporate monetary effects into the data used in negotiations and negotiate accordingly. The procedures to do this need to be established, but few changes need to be made in the format already being employed. The technical problem of incorporating exchange rate changes in an aggregate measure, such as the effective rate of protection or producer subsidy equivalents, can be a fairly straightforward exercise.

Set Exchange Rate Targets

Exchange rate targets, for example, provide a general solution to the problem of large swings in exchange rates and could be adopted as a substitute for the current, more flexible exchange system. The objective of this proposal is to set exchange rate targets around which rates would be allowed to vary 10-20 percent. This plan, therefore, offers some of the advantages of both the fixed and flexible exchange rate systems (Williamson, 1987). With exchange rate targets set at or about equilibrium value, the exchange rate no longer becomes a policy instrument for distorting trade.

Several variations on this proposal are also possible. For example, because import restrictions and export taxes provide a partial substitute for exchange rate changes, negotiators may be able to devise a hybrid policy response--an effective subsidy equivalent--to allow countries more flexibility in meeting negotiated targets. Another variation is to permit target ranges to vary based on a moving average of market rates.

Discussion

Several problems need to be addressed regardless of which alternative is adopted. First, a procedure for monitoring exchange rate effects on trade for purposes of GATT negotiations needs to be established. This procedure should take the form of an official numeraire against which each country's currency value can be evaluated. Negotiations should proceed more rapidly if the uncertainty regarding currency values is reduced.

Second, each alternative for dealing with the effects of currency disruptions on trade should be evaluated in terms of the incentives provided for developing country compliance (Runge, von Witzke, and Thompson, 1987). In view of the increasing importance of developing countries in agricultural trade, they should be given every incentive to abide by the agreements reached in the negotiations.

Finally, negotiators should provide a mechanism for implementing the agreements reached. Trade liberalization will necessarily involve costs to some domestic groups as government interventions in the market are reduced or eliminated. Efforts to reduce or eliminate the benefits provided by those interventions can be expected to meet political resistance. An effective strategy for implementing trade liberalization should accordingly include a strategy for coping with groups benefiting from interventions and their country

representatives. Possible strategies include providing partial compensation to injured parties and outlining a transition period to allow gradual adjustment to the policy option that is selected.

BIBLIOGRAPHY

Abbott, Philip C. 1984. Foreign Exchange Constraints to Trade and Development. FAER-209. U.S. Dept. Agr., Econ. Res. Serv.

Anjaria, Shailendra J. 1987. "Balance of Payments and Related Issues in the Uruguay Round of Trade Negotiations," World Bank Economic Review, Sept., pp. 669-88.

Balladur, Edouard. 1988. "Rebuilding an International Monetary System: Three Possible Approaches," The Wall Street Journal, Feb. 23.

Batten, Dallas S., and Michael T. Belongia. 1984. "The Recent Decline in Agricultural Exports: Is the Exchange Rate the Culprit?" Economic Report of the Federal Reserve Bank of St. Louis, Oct., pp. 5-14.

Bredahl, Maury E., and Paul Gallagher. 1977. "Comment on 'Effects of an Exchange Rate Change on Agricultural Trade,'" Agricultural Economics Research, Vol. 29, No. 2 (Apr.), pp. 45-48.

Congress of the United States, Congressional Budget Office (CBO). 1987. The GATT Negotiations and U.S. Trade Policy.

Culpeper, Roy. 1987. "Secretary Baker's Other Bad Idea," The Wall Street Journal, Oct. 26.

Dam, Kenneth W. 1977. The GATT: Law and the International Economic Organization. Chicago: Univ. of Chicago Press.

_____. 1983. The Rules of the Game: Reform and Evolution in the International Monetary System. Chicago: Univ. of Chicago Press.

Denbaly, Mark, and David Torgerson. 1987. "The Balance of Payments and Agriculture," Agricultural Outlook, Oct., pp. 29-33.

Dornbusch, Rudiger. 1986. "Special Exchange Rates for Capital Account Transactions," The World Bank Economic Review, Sept., pp. 3-33.

Edwards, Clark. 1987. "The Exchange Rate and U.S. Agricultural Exports," Agricultural Economics Research, Vol. 39, No. 1 (Winter), pp. 1-12.

European Commission. 1985. Perspektiven fuer die Gemeinsame Agrarpolitik (Perspectives on the Common Agricultural Policy). Green paper. Brussels, Belgium.

Food and Agriculture Organization of the United Nations (FAO). 1986. 1985 FAO Trade Yearbook. Vol. 39. Rome, Italy.

Goldstein, Morris. 1980. The Exchange Rate System: Lessons of the Past and Options for the Future. Occasional Paper 30. Washington, DC: International Monetary Fund.

Haley, Stephen L., and Barry Krissoff. 1987. "U.S. Grain Exports and the Value of the Dollar," Journal of Agricultural Economics Research, Vol. 39, No. 2 (Spring), pp. 12-21.

Hanrahan, Charles E., Penelope Cate, and Donna U. Vogt. 1984. Agriculture in the GATT: Toward the Next Round of Multilateral Trade Negotiations. Report No. 84-169 ENR. Library of Congress, Congressional Research Service.

Henneberry, David, Mark Drabenstott, and Shida Henneberry. 1987. "A Weaker Dollar and U.S. Farm Exports: Coming Rebound or Empty Promise?" Economic Report of the Federal Reserve Bank of Kansas City, May, pp. 22-36.

Hervey, Jack L., and William A. Strauss. 1987. "The New Dollar Indexes Are No Different from the Old Ones," Economic Perspectives, Federal Reserve Bank of Chicago, July/Aug., pp. 3-23.

Huang, Roger D. 1987. "Expectations of Exchange Rates and Differential Inflation Rates: Further Evidence on Purchasing Power Parity in Efficiency Markets," Journal of Finance, Mar., pp. 69-79.

International Monetary Fund (IMF). 1984. Exchange Rate Volatility and World Trade. Occasional paper 28. Washington, DC.

_____. 1987a. Exchange Arrangements and Exchange Restrictions: Annual Report 1987. Washington, DC.

_____. 1987b. International Financial Statistics. Washington, DC, and other issues.

_____. 1987c. "Venice Summit Strengthens Policy Coordination, Backs More Stable Exchange Rates, Enhanced SAF," IMF Survey, June 15, pp. 177, 188, and 189.

Jabara, Cathy L. 1980. Terms of Trade for Developing Countries. FAER-161. U.S. Dept. Agr., Econ. Res. Serv.

Johnson, Glenn L., and C. Leroy Quance, ed. 1972. The Overproduction Trap in U.S. Agriculture. Baltimore: Johns Hopkins Univ. Press.

Kitchen, John, and Mark Denbaly. 1987. "Commodity Prices, Money Surprises, and Fed Credibility," Journal of Money, Credit, and Banking, May, pp. 246-51.

Lee, John, Jr., and Mathew Shane. 1987. "U.S. Agricultural Interests and Growth in the Developing Economies: The Critical Linkage," U.S. Agriculture and Third World Economic Development: Critical Interdependency. Washington, DC: National Planning Association, pp. 52-78.

Longmire, Jim, and Art Morey. 1983. Strong Dollar Dampens Demand for U.S. Farm Exports. FAER-193. U.S. Dept. Agr., Econ. Res. Serv.

Mackie, Arthur B., Stephen W. Hiemstra, and Stacey L. Rosen. 1985. World Food Grain Trade, 1962-83: Wheat, Rice, and Wheat Flour. SB-734. U.S. Dept. Agr., Econ. Res. Serv.

Mackie, Arthur B., Stephen W. Hiemstra, and Janet E. Sayre. 1987. World Feed Grain Trade, 1962-85: Barley, Corn, Rye, Oats, and Other Cereals. SB-755. U.S. Dept. Agr., Econ. Res. Serv.

Mielke, Myles. 1984. Argentine Agricultural Policies in the Grain and Oilseed Sectors. FAER-206. U.S. Dept. Agr., Econ. Res. Serv.

Miller, Geoff. 1987. The Political Economy of International Agricultural Policy Reform. Canberra, Australia: Dept. Primary Industry.

Organization for Economic Cooperation and Development (OECD). 1985. Countertrade: Developing Country Practices. Paris.

Oyejide, T. Ademola. 1986. The Effects of Trade and Exchange Rate Policies on Agriculture in Nigeria. Res. Rpt. 55. Washington, DC: International Food Policy Research Institute.

Pauls, B. Dianne. 1987. "Measuring the Foreign Exchange Value of the Dollar," Federal Reserve Bulletin, June, pp. 411-22.

Quirk, Peter J., Benedicte Vibe Christensen, Kyung-Mo Huh, and Toshihiko Sasaki. 1987. Floating Exchange Rates in Developing Countries: Experience with Auction and Interbank Markets. Occasional paper 53. Washington, DC: International Monetary Fund.

Roe, Terry, and Duty Greene. 1986. The Estimation of a Shadow Equilibrium Exchange Rate: A Direct Method. Staff paper P86-4. Univ. of Minnesota, Dept. Agr. and Applied Econ.

Roe, Terry, Mathew Shane, and De Huu Vo. 1986. Price Responsiveness of World Grain Markets: The Influence of Government Intervention on Import Price Elasticity. TB-1720. U.S. Dept. Agr., Econ. Res. Serv.

Roningen, Vernon, John Sullivan, and John Wainio. 1987. "The Impact of the Removal of Support to Agriculture in Developed Countries." Paper presented at a conference of the American Agricultural Economics Association, East Lansing, MI.

Runge, Ford C., Harald von Witzke, and Shelley Thompson. 1987. Liberal Agricultural Trade as a Public Good: Free Trade Versus Free Riding under GATT. Staff paper P87-11. Univ. of Minnesota, Dept. Agr. and Applied Econ.

Schuh, G. Edward. 1983. "U.S. Agriculture in the World Economy." Paper presented at Farm and Food Policy Symposium: Critical Issues for Southern Agriculture, Clemson Univ.

_____. 1985. "Strategic Issues in International Agriculture." Unpublished manuscript. Washington, DC: The World Bank. April.

_____. 1987. "Some Issues Involving Agriculture in the Coming MTN." Paper presented in a seminar sponsored by the World Bank, Geneva, Switzerland, Feb. 6.

Seth, Rama, and Robert N. McCauley. 1987. "Financial Consequences of New Asian Surpluses," Quarterly Review of the Federal Reserve Bank of New York, Summer, pp. 32-44.

Shane, Mathew D., and David Stallings. 1984a. Trade and Growth of Developing Countries under Financial Constraint. Staff Report No. AGES840519. U.S. Dept. Agr., Econ. Res. Serv.

_____. 1984b. Financial Constraints to Trade and Growth: The World Debt Problem and Its Aftermath. FAER-211. U.S. Dept. Agr., Econ. Res. Serv.

_____. 1987. The World Debt Problem and Its Resolution. FAER-231. U.S. Dept. Agr., Econ. Res. Serv.

Stockman, Alan C. 1987. "The Equilibrium Approach to Exchange Rates," Economic Review of the Federal Reserve of Richmond, Mar./Apr., pp. 13-30.

Thomas, Charles P. 1987. "U.S. International Transactions in 1986," Federal Reserve Bulletin, May, pp. 321-29.

Ungerer, Horst, Owen Evans, Thomas Mayer, and Philip Young. 1986. The European Monetary System: Recent Developments. Occasional paper 48. Washington, DC: International Monetary Fund.

U.S. Department of Agriculture (USDA), Economic Research Service. 1987a. Government Intervention in Agriculture: Measurement, Evaluation, and Implications for Trade Liberalization. FAER-229.

_____. 1987b. Wheat: Situation and Outlook Yearbook. WS-277.

_____. 1987c. Foreign Agricultural Trade of the United States: Fiscal Year 1986 Supplement. Mar.

_____. 1987d. World Grain: Situation and Outlook. FG-7-87.

Valdes, Alberto. 1987. "Agriculture in the Uruguay Round: Interests of Developing Countries," World Bank Economic Review, Sept., pp. 571-93.

Williamson, John. 1987. "Exchange Rate Management: The Role of Target Zones," American Economic Review (Papers and Proceedings), May, pp. 200-4.

Wilson, Edward. 1986. "In Agricultural Trade, Dollar Remains Strong," Agricultural Outlook, June, pp. 17-19.

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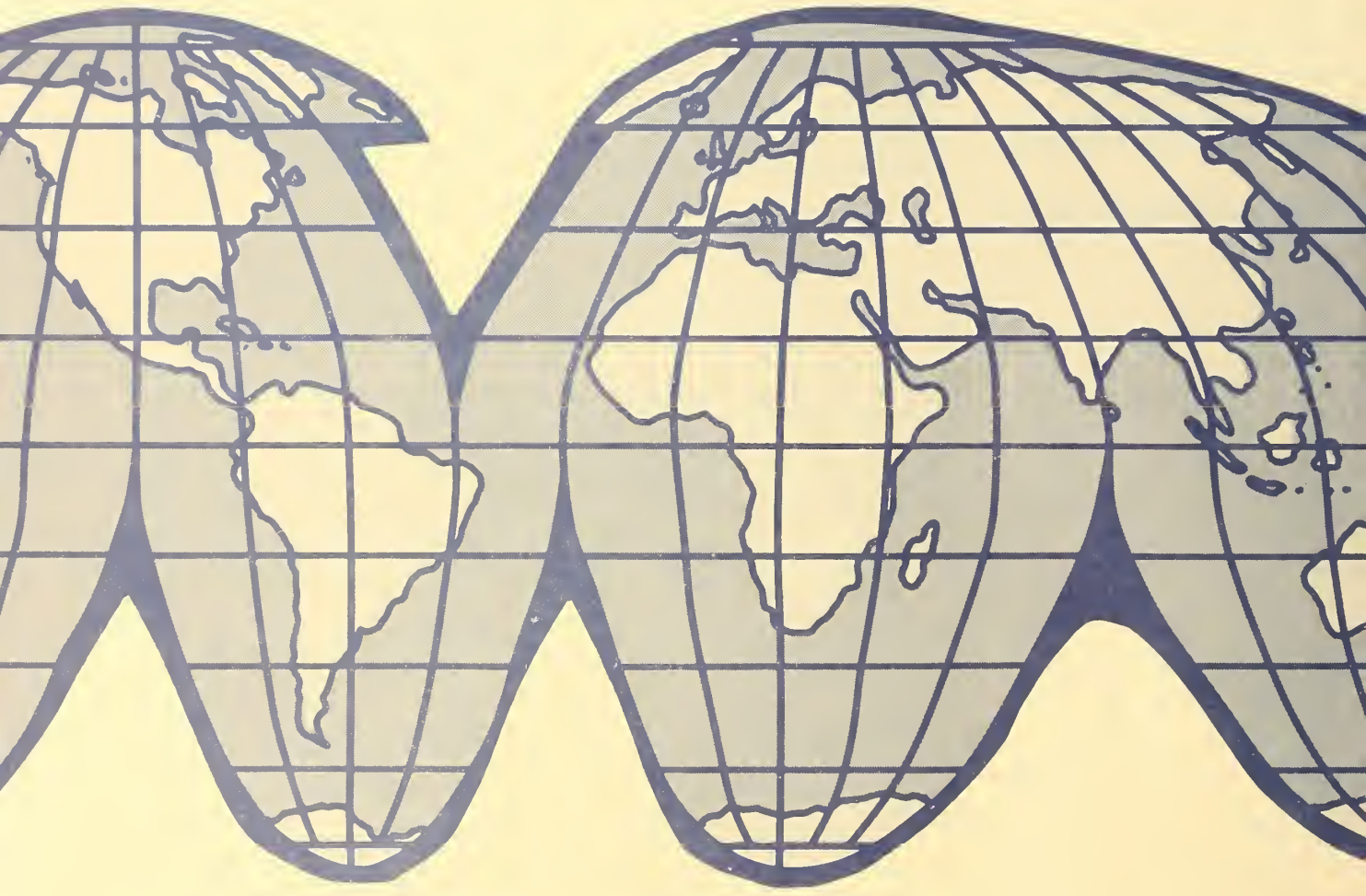

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