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**Abstract:**

In the United States, 48 million adults smoke 3.5-5 x 10<sup>11</sup> cigarettes/year. Many cigarettes are smoked in private residences, causing regular environmental tobacco smoke (ETS) exposure to roughly 31 million nonsmokers (11% of the US population), including 16 million juveniles. (Upper bound estimates are 53 million exposed nonsmokers including 28 million juveniles.) ETS contains many chemical species whose industrial emissions are regulated by the US federal government as hazardous air pollutants (HAPs). In this paper, average daily residential exposures to and intakes of 16 HAPs in ETS are estimated for US nonsmokers who live with smokers. The evaluation is based on material-balance modeling; utilizes published data on smoking habits, demographics, and housing; and incorporates newly reported exposure-relevant emission factors. The ratio of estimated average exposure concentrations to reference concentrations is close to or greater than one for acrolein, acetaldehyde, 1,3-butadiene, and formaldehyde, indicating potential for concern regarding noncancer health effects from chronic exposures. In addition, lifetime cancer risks from residential ETS exposure are estimated to be substantial (similar to 2-500 per million) for each of five known or probable human carcinogens: acetaldehyde, formaldehyde, benzene, acrylonitrile, and 1,3-butadiene. Cumulative population intakes from residential ETS are compared for six key compounds against ambient sources of exposure. ETS is found to be a dominant source of environmental inhalation intake for acrylonitrile and 1,3-butadiene. It is an important cause of intake for acetaldehyde, acrolein, and formaldehyde, and a significant contributor to intake for benzene.

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**The U.S. and the World Economy  
in Transition**

**Laura Tyson**

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## Introduction

According to most cyclical indicators, the U.S. economy is enjoying its fourth consecutive year of recovery and the future looks bright. Inflation has been curbed, interest rates are way down, the federal deficit has begun to decline as a share of GNP, and the dollar has fallen, improving the competitive position of U.S. producers on world markets. The stock market has responded to all this good news by staging dramatic gains during the last several months, leading to a tremendous gain in wealth. The signs for the future appear bright.

Behind these good omens, however, are some significant trends that worry a number of policymakers and academic economists. To see these trends, one must look beyond the domestic economic situation to the world economy and the U.S. position in it. From such an international perspective, the future seems fraught with potential pitfalls, both for the U.S. and for the rest of the world. These pitfalls are rooted in a series of profound changes and growing imbalances that have rocked the world trading and financial systems in recent years. Therefore, to understand the economic problems of the future, it is necessary to study the international economic developments of the recent past and the changing position of the U.S. in the world economy.

### I. Changes in the World Economic Environment

The last decade and one half have witnessed dramatic changes in the world economy with profound consequences for individual nations. Some of these changes, such as technological developments in production, transportation and communications and their integrating effects on product and capital markets,

are permanent and are not directly tied to the policy choices of any nation or group of nations. Others, such as unprecedented volatility in exchange rates and related changes in the magnitude and direction of global capital flows, can be traced to policies of individual nations or groups of nations in which the U.S. has played a major role because of its dominant economic and political power. Although there have been a host of permanent and policy-induced changes, five stand out as central determinants of recent economic history and future economic performance: dramatic changes in the terms of trade between commodities and manufactured goods; major changes in world credit market conditions including dramatic swings in real interest rates; a major increase in global capital flows, and major shifts in the direction of such flows; a dramatic increase in the volatility of exchange rates and in the influence of capital market forces as opposed to goods market forces on exchange rate determination; the rise of the developmental states and the growth of protectionist pressures in world trade; and the growing mobility of productive capital, information, and technology across national borders.

Led by oil prices, overall commodity prices rose sharply relative to manufactured goods prices in the early to mid 1970s. By 1977, however, the collapse of non-oil commodity prices had already begun, joined after 1980 by the gradual and then spectacular collapse of oil prices. According to Drucker (1986), by 1986 raw material prices were at their lowest level in recorded history in relation to the prices of manufactured goods and services -- in general as low as the levels realized in the Great Depression and even lower for some commodities. No one who looks carefully at the experience of the last twenty years can ignore the pivotal role of oil prices in international

economic developments and in the economic performance of individual nations. Oil price increases encouraged a reallocation of resources to energy development, resulted in major changes in the profitability of different industries, producers, and countries, fueled the inflationary surge of the 1970s, generated stagflationary conditions in the developed economies, and produced the oil surpluses that financed the ill-fated growth of commercial bank lending to developing countries.

The second surge of oil prices in 1978-79 triggered the imposition of contractionary demand policies throughout the developed world. These policies caused the deepest and most prolonged recession in world growth and trade since the Great Depression. The heads of state of most of the developed economies lost power to new leaders as part of this general policy shift. In the U.S. and in several European countries, a new era of economic conservatism dawned in which the struggle against inflation was accorded priority over the traditional liberal goals of full employment and greater distributional equity. Between 1980 and 1986, substantial progress in the war against inflation was achieved, to an important extent because of the slowdown and reversal of oil and other commodity prices -- and in the U.S. because of the dollar appreciation -- but not without significant losses in output and unemployment rates that were higher than at any time since the Great Depression. In part as a result of the 1981-83 recession and in part as a result of the Reagan budget revolution, the percentage of the population living below the poverty level increased and the distribution of family incomes became more unequal in the U.S.

Overall, recent economic history confirms the existence of a painful tradeoff between inflation and output in market economies. Clearly, the

extent of the tradeoff is sensitive to inflationary expectations and to supply-side shocks for such critical commodities as oil. After a prolonged period of economic slack, short-run progress in reducing inflationary expectations has been achieved, but it is not certain how long-lived such progress will be. Except for what may turn out to be an ephemeral change in inflationary expectations, virtually nothing has been done to improve the tradeoff between inflation and output over the long run. In particular, there have been no institutional innovations in labor or product markets, such as a movement away from wage to income-sharing contracts, the introduction of tax-based income policies, or the strengthening of labor adjustment programs that might have weakened the links between demand growth and upward pressure on wages and prices in the future.

The switch to anti-inflationary monetary policies in the developed market economies along with the decline in the surpluses of the oil-exporting countries pushed real interest rates up sharply. Borrowing decisions that had seemed prudent given high inflation, low interest rates and high oil prices suddenly became disastrous. In the U.S., the consequences of such decisions showed up in a record number of bankruptcies, bank failures and bailouts, and growing economic difficulties in regions dependent on oil, agriculture and other natural resources.

Higher real interest rates and weak demand in developed country markets together fostered growing debt repayment difficulties throughout the developing world. For oil rich countries, like Mexico, Nigeria and Venezuela, the fall in oil prices added an extra blow. Whereas during the 1970-80 period, total net real financial flows to the developing countries grew by 9.1% a year, they fell by nearly 10% between 1980 and 1984. Confronted with

the need to finance a net transfer to their creditors, most indebted developing countries were forced into austerity and even then sometimes found themselves unable to service their debt.

Meanwhile, as the developing countries of the world found themselves increasingly starved of capital, one of the richest countries in the world began to attract huge capital inflows. The result was a dramatic shift in the direction of international capital flows along with continued growth in their size. Although capital flight from indebted developing countries played some role in the flow of capital to the U.S., much more significant was the rise in relative real interest rates and other real rates of return in the U.S. The elimination or liberalization of capital controls in the developed economies, extending even to Japan by 1982-83, along with advances in telecommunications and innovations in banking, provided the institutional framework within which investors could move huge amounts of funds across national borders to chase higher returns. The resulting capital flows dwarfed trade flows by comparison. By 1985, the annual value of transactions on the London Eurodollar market reached \$15 trillion, at least 25 times the value of world trade. Capital mobility, as expected, created strong links between interest rates around the world. Thus the upward thrust of interest rates in the U.S. exerted upward pressure on interest rates in Europe and Japan, thus restricting the ability of individual countries to pursue independent interest-rate targets.

A third area of change in the world economy -- and one that is clearly related to greater capital mobility -- is the behavior of exchange rates. Short-term volatility of exchange rates, both in real and in nominal terms, has been one of the most striking features of the flexible exchange rate

system. This volatility in turn has resulted from the growing influence of capital-market conditions as opposed to goods-market conditions on exchange rate determination. While short-run changes in real exchange rates caused by changing capital market conditions introduce short-run volatility into real exchange rates, existing empirical evidence suggests that such volatility poses no threat to the international trading system because forward exchange trading allows importers and exporters to hedge the risks of such volatility (Kenen and Rodrik, in Obstfeld). What does pose a severe threat, however, are long-term misalignments of exchange rates from purchasing power parity levels caused by capital market conditions. With flexible exchange rates, the frequency of real exchange rate cycles has increased as has the frequency with which the real economic costs of misalignment have been incurred.

The dramatic real appreciation of the dollar vis-a-vis the European and Japanese currencies between 1980 and mid-1985 is a stunning example of such misalignment. There is widespread agreement that the dollar has been "overvalued" relative to levels that reflect underlying competitive conditions in U.S. and foreign goods markets for at least six years. There is also widespread agreement that this overvaluation relative to purchasing power parity has resulted from the bidding up of the dollar's value on world capital markets. The strength and longevity of the dollar's real appreciation has had profound real economic effects both in the U.S. economy and around the world. In the parlance of economists, a "shock" in assets markets has produced a severe "shock" in product markets. But whereas asset markets can adjust quickly to disturbances in goods markets, the situation does not apply in the reverse. Jobs lost, factories shut down, production located abroad and trade patterns changed in response to the higher dollar have imposed substantial



manufactured goods protected by non-tariff restrictions increased from 20% in 1980 to 35% in 1983.

The growing importance of non-tariff trade barriers has also resulted from the growing share of world trade accounted for by the developmental states of East Asia, particularly Japan, Korea, and Taiwan. A critical feature of these states is the conscious use of a variety of domestic tax, credit, regulatory, and spending policies to promote exports and to limit domestic market access to foreign producers. Austerity programs have strengthened similar policies in indebted developing countries in other parts of the world.

The fifth and arguably most fundamental set of changes in the world economy stems from underlying changes in production and communications technologies. The new technologies permit not only the increasing integration of world capital markets but also much greater decentralization of production and distribution facilities across national boundaries. Jobs that previously had to be located close to one another can now be widely scattered throughout the world. Thus the new technologies have hastened the automation of labor-intensive jobs within the developed countries and the migration of many low-wage, low-skill jobs from these countries to the developing world.

In the new technological environment, the production location decisions of large multinational companies that account for a large share of world trade flows are increasingly driven by considerations of labor costs and government policies in different countries. From a national perspective, with physical capital and the technology embodied in it more mobile across national boundaries, competitiveness in world markets depends increasingly on the price, productivity and skills of labor and on government policies that affect

the relative attractiveness of locating production facilities in a particular country. In this new global environment, the scope for potential conflicts between the profit objectives of multinational companies and the production, employment and trade objectives of national governments becomes even greater than it has been in the past.

The greater international mobility of capital and technology and the decentralization of production it entails requires a rethinking of the forces underlying national trading patterns. In a world where labor is the only immobile factor of production, standard theories of comparative advantage may not be relevant. In a world where the newest process or product technology diffuses rapidly across national borders, often as a result of the global production strategies of multinational firms, the standard product-cycle theory of trade must also be re-examined. In such a world, the ability of an innovator to capture the returns to a new product or process depends not simply on being the first to market but on remaining competitive in international markets as the innovation diffuses to other producers and locations throughout the world. At a national level, the implications of these trends are clear: maintaining or strengthening a competitive advantage based on technological innovation will be an insufficient foundation for continued growth in national income and for maintaining an external trade balance. Without a "complementary" competitive advantage in related manufacturing capabilities (Teece, 1985), innovating countries stand to lose a large share of the commercial returns to their research efforts to other countries with superior manufacturing performance.

Finally, the growing importance of high technology products in total world trade, particularly among the advanced industrial countries and between

them and the newly industrializing countries, calls into question the presumption that a policy of free trade is always welfare-improving at the national level. As the new trade theories developed by Helpmann and Krugman (1984) and others indicate, under conditions of imperfect competition or externalities -- conditions that are characteristic of high tech trade -- a temporary government policy of import protection or export promotion can generate a long-term gain in national welfare. A recent study of Japanese policy toward the semiconductor industry provides a telling example that illustrates this theoretical proposition (Borrus, Tyson and Zysman, 1985).

Overall, recent technological developments have begun to change the pattern of trade flows among countries and will continue to do so even more significantly in the future. This is not surprising once one recognizes that what is at work is not simply a series of small technological adjustments but a fundamental technological revolution (Cohen and Zysman, 1986). (More on implications for patterns of competition, or need for institutional innovation.)

## II. The Changing Position of the U.S. in the World Economy

Looking at the position of the U.S. in the changing global economy during the last six years, two basic features emerge. First, the long-term decline in U.S. international competitiveness that began in the late 1960s has continued, obscured in part by the strength of the short-term cyclical recovery in 1984-85. Second, as in the past but with potentially more dangerous long-term results, U.S. policymakers have continued to exhibit a "serene irresponsibility" to the effects of domestic policy choice on the U.S. competitive position in the world economy, on economic conditions in the rest

of the world, and on the stability of the international trading and financial system (Garten, 1985; Schmidt, 1984). The insensitivity of the Reagan administration and Congress to these effects is all the more dramatic when contrasted with the clear lessons of growing global interdependence that emerged from the experience of the 1970s. Instead of fashioning policies of greater international coordination and negotiation to cope with the costs and reap the potential benefits of such interdependence, the U.S. under Reagan's leadership set out to reassert U.S. autonomy in economic as well as in military affairs, unmindful of the constraints posed by growing economic interdependence.

The most dramatic evidence that U.S. policy choices during the last six years were not consistent with its competitiveness and its international responsibilities over the longer run is the dramatic increase in the U.S. trade deficit and in U.S. borrowing from the rest of the world. During the 1980-85 period, there was a massive deterioration in the U.S. trade deficit. By 1983, the trade deficit was double the level that had prevailed during the previous five years and was nearly double the largest trade deficit ever run by the United States or by any other country. Between 1983 and 1985, the U.S. trade deficit nearly doubled in size again, reaching a record \$124 billion by the year's end. The deterioration in the U.S. trade position was broad based, occurring in most major products, even those such as high technology products in which the U.S. has traditionally run a surplus, and with all major trading partners, even those such as the European economies with which the U.S. has traditionally run a surplus.

Massive trade deficits were matched by increasing inflows of foreign capital that covered the difference between the value of what the U.S. sold to

the rest of the world as exports and the value of what it purchased from the rest of the world as imports. By 1984, the rate of U.S. net national borrowing as a percentage of GNP exceeded that of Brazil and financed over one-third of U.S. net national investment. As a result of huge capital inflows, U.S. liabilities vis-a-vis the rest of the world increased sharply, and by mid-1985 they exceeded U.S. assets in the rest of the world, thus making the U.S. a net debtor for the first time since 1917. In a few short years, the U.S. had squandered the accumulated foreign assets of 70 years as net creditor, to become the largest debtor nation in the world.

During the period of mounting trade deficits and massive capital inflows, the openness of the U.S. economy continued to grow. Trade as a share of GNP increased to about 11% by 1985, up from only 5% two decades ago. By 1986, an estimated 70% of U.S. manufacturing output was subject to international competition, and nearly 40% of U.S. agricultural sales went to foreign markets. For purposes of both analysis and policy making the U.S. economy could no longer be treated as a large economy for which trade was relatively unimportant.

Domestic economic policy choices were the major cause of the mounting U.S. trade deficits of the last six years. Under the guise of supply-side economics, the fiscal policy concocted by the Reagan administration, with the conscious or unconscious help of Congress led to budget deficits of unprecedented levels. By 1985, the budget deficit reached 5.5% of gross national product. The interaction of the deficit with U.S. monetary conditions became the major influence on the world economy and on the U.S. position in it.

Domestic fiscal and monetary conditions were the single most important determinant of the trade deficit in the short run. Fiscal stimulus to the economy from tax cuts and increases in government spending fueled a Keynesian demand expansion that propelled the U.S. recovery beginning in 1983. The expansion in U.S. incomes and spending predictably spilled over into growth in U.S. imports. At the same time, continued stagnant or recessionary conditions throughout Europe and Japan restrained demand for U.S. exports. The restraint was even greater in several developing countries, including Brazil, Mexico, Argentina and Chile, where debt repayment difficulties required major cutbacks in imports, a large fraction of which came from the U.S. The largest debtor developing countries, including Korea also mounted major export drives to the United States -- one of their main export markets -- in order to earn the foreign exchange required to service their debt. Nearly 85% of the increase in exports from Latin American debtor countries during the 1981-84 period went to the U.S. According to estimates made by the Council of Economic Advisors, perhaps as much as one-quarter of the deterioration in the U.S. trade deficit in 1984 may have been the result of the debt crisis in Latin America and its effects on U.S. imports and exports.

Domestic monetary and fiscal policies were also a major impetus behind the dollar's appreciation which is credited by many economists as responsible for at least one-half and perhaps as much as two-thirds of the increase in the trade deficit between 1980 and 1985. Growing fiscal deficits forced the federal government to become a major borrower on U.S. credit markets, while monetary policy followed a restrictive or at least cautiously expansionary course that kept credit market conditions tight and limited the availability of funds. Tight supply conditions on domestic credit markets, combined with

rapidly growing credit demand fueled by the federal deficit, drove real interest rates up, and higher real interest rates in turn acted as a magnet for foreign capital. Deregulation, changes in tax policy, and the strong U.S. recovery after 1982 also made U.S. financial instruments more attractive to foreigners. Foreign demand for U.S. debt and equity investments was the principal force behind the appreciation of the dollar.

The links between the government deficit, the trade deficit and foreign capital inflows are also apparent in national accounting identities. The excess of domestic investment over domestic private and government saving (or dissaving in the case of a deficit) must equal the amount of borrowing from the rest of the world or the current account deficit. During the 1980-85 period, U.S. reliance on such borrowing increased because the excess of domestic investment over domestic private and government saving increased, and foreign capital was attracted to cover the gap. The rise in real interest rates was the magnet drawing foreign capital. The main reason for the gap was the increase in the government deficit or government "dissaving." Given huge government borrowing needs and the gradual recovery of private investment to 1978-79 levels, after a steep plummet between 1980 and 1983, domestic saving, although rising as a share of GNP, was insufficient to cover domestic financing requirements. From this macroeconomic perspective, the fundamental cause of the huge trade and current account deficits realized in the U.S. after 1982 was the macroeconomic imbalance created by the unprecedented size of the federal government deficit.

From this perspective, it is also interesting to contrast the behavior of Japan and the United States. In Japan during the 1980-84 period, continued decline in the private investment rate and the government deficit, combined

with continued high private saving, resulted in a growing excess of domestic saving over domestic financing requirements. This excess was reflected in a growing current account surplus and growing capital outflow to the rest of the world. During this period, Japan rapidly became the biggest national exporter of capital and the U.S., reflecting its growing national financing requirements, became the biggest national importer of capital.

Until late 1985, the effects of the U.S. macro imbalance on the dollar exchange rate and the trade deficit were either not understood or widely disregarded by the Administration and most members of Congress. To paraphrase Nixon's famous quote on the lira, the architects of U.S. fiscal policy acted as if they did not "give a damn about the value of the dollar." Yet the dollar appreciation, hailed by some as a sign of strength of the U.S. economy, weakened the already precarious competitive position of U.S. producers in world markets. The appreciation made U.S. exports significantly more expensive relative to foreign competition in world markets and made foreign products significantly less expensive relative to domestic goods in U.S. markets. One recent study suggests that prices of manufactured goods produced in the U.S. rose by nearly 36% compared to prices of manufactured goods produced by the major trading partners of the U.S. over the 1980-84 period (Dornbusch, 1985). A relative price increase of this magnitude sharply reduced the price competitiveness of U.S. exports and was the major factor behind poor export performance. (In 1984, real exports were 14 percent lower than their 1980 peak; the comparable decline in manufactured goods exports was 16 percent.)

On the import side, the relative increase in the prices of domestic goods encouraged a major surge in imports, as domestic consumers switched to



relatively cheaper foreign products. (1984 imports were 31 percent greater than their 1980 level in real terms: the comparable figure for manufactured goods imports was 67 percent.) It is important to note, however, that the effects of the dollar appreciation on import prices varied among product types and were not always as great as a simple look at exchange rate changes would have indicated. For example, at an aggregate level during the 1980-84 period, the dollar appreciated in real terms by approximately 52% against the currencies of the other industrial countries. During the same period, the aggregate import price index for a fixed basket of goods imported into the United States decreased by less than 2%. This evidence indicates that the dizzying rise of the dollar did not translate into anything remotely like a comparable reduction of prices for many imports. Indeed, recent evidence indicates that import prices of finished manufactured goods increased on average between 1980 and 1984, with declines in import prices occurring in food, raw materials and semi-manufactured product categories (Dornbusch, 1985).

This evidence is disturbing for two reasons. First, it implies that exporters to the U.S. actively adjusted their prices to competitive conditions on U.S. markets rather than passively allowing them to fall in response to the dollar's appreciation. The consequence was that U.S. consumers did not benefit fully from the lower prices that the appreciation by itself might have produced. Instead, some of the potential price benefits of the appreciation went into higher profit margins for foreign producers and for assorted middlemen, importers and retailers. Second, the rapid growth in imports of manufactured goods occurred despite relatively small price reductions, or for many products actual price increases, suggesting that for manufactured goods,

the appreciation of the dollar may not have been as important a factor as generally thought behind the growing import penetration of U.S. markets. For many manufactured products, especially high technology products or those with a high degree of product differentiation, in which price competition is relatively less important than non-price competition on the basis of quality, reliability and other product characteristics, continued gains in import shares during this period cannot be simply explained away by reference to the appreciation of the dollar. To understand this development, the factors underlying a longer-term decline in the competitive position of the U.S. economy must be brought into the picture.

There is a heated debate among economists about the existence of a long-term competitiveness problem in the U.S. economy. The dominant view is that given the "correct exchange rate, U.S. firms would be able to compete successfully in world markets and the U.S. merchandise trade balance would decline dramatically. To economists and policymakers who are worried about a competitiveness problem, this view, while logically correct, misses the crucial point. Competitiveness is not simply a measure of a nation's ability to sell abroad and to maintain a sustainable trade position. The very poorest nations in the world are often able to do that quite well by exchange rate adjustments. If their productivity lags behind that of their trading partners, they accept a gradual decline in the value of their currency, their relative wages and their relative standard of living.

If national competitiveness is defined in the broader sense as the ability to compete effectively in world markets while simultaneously raising real incomes, then there are several indicators that there has been a secular decline in the U.S. competitive position beginning in the mid-1960s. For

example, the U.S. merchandise trade balance, which was positive from 1893 to 1970, turned negative in 1971, and except for 1973 and 1975, continued a downward trend through 1980 despite a major real dollar depreciation between 1977 and 1979. The depreciation did improve the manufactured goods trade balance in 1979 and 1980, but did not restore the U.S. share of world exports of manufactured goods. This share continued its long-term decline, as did the U.S. share of world exports of high technology goods, products in which the U.S. is presumed to have a strong comparative advantage. Significantly, for those who argue that these declines reflect a shift in the U.S. competitive position toward service exports, the U.S. share of world exports of productive services, as opposed to trade representing earnings on overseas investment, also declined during the 1970s.

Perhaps the most telling evidence of a long-term competitiveness problem comes from an examination of U.S. productivity performance. In the decade and one-half before 1983, there was a pervasive and substantial decline in productivity growth rates throughout most sectors of the American economy. Moreover, for at least that length of time, productivity grew far less rapidly in the United States than it did in its major trading partners. U.S. productivity growth turned up in 1983 and 1984 in response to the economic recovery, but the improvement was no better than in previous economic recoveries and did not indicate that the disappointing longer-term trend in productivity had been reversed (Baumol, 1985).

As a result of two decades of relatively poor productivity growth, the substantial advantage in productivity levels enjoyed by U.S. producers has all but disappeared. In several sectors, such as steel, autos and semiconductors, productivity levels in other advanced economies equal or exceed U.S. levels.

If faster productivity growth persists abroad, as is currently the case, then what has previously been a gradual catch-up of foreign productivity levels to U.S. levels will become a gradual fallback in U.S. productivity levels relative to those abroad.

Ironically, seen from a long-term perspective on U.S. competitiveness, the dollar appreciation between 1980 and 1985 far from being a sign of the strength of the U.S. economy was an indication of its weakness. By 1985, the appreciation had brought the dollar back roughly to its 1970 level in real terms. Yet a real exchange rate that was associated with a current account surplus in 1970 was associated with a massive and unsustainable current account deficit in 1985 (Krugman, BPEA, #2, 1985). Over the long run, as purchasing-power-parity forces gain in strength relative to capital-market forces, this evidence indicates that there will have to be a substantial real depreciation of the dollar to reflect the long-term erosion of the U.S. competitive position in world markets. In the words of the 1984 Economic Report of the President, "to believe otherwise would be to believe that U.S. producers can continue to be priced out of world markets and that the U.S. can continue to run 12-digit trade deficits indefinitely." (CEA, 1984, p. 53).

Significantly, despite supply-side rhetoric, U.S. policy choices during the last six years failed to address the underlying sources of the long-run decline in U.S. competitiveness (see Thurow, 1983). Investment rates, while rising from cyclically depressed levels in 1981-82, remained low compared to our major competitors, and the U.S. saving rate, already low by international standards, fell to record lows in 1984-85. Civilian research and development although increasing in some areas of the economy remained a smaller fraction of GNP than in Japan or Germany, and the most rapid peace-time military

build-up in history drew scientific and engineering talent into military projects with limited commercial application for the foreseeable future (Stowsky, 1985). The quality of the U.S. labor force continued to suffer from long-term difficulties in our educational system resulting in higher illiteracy rates, poorer math and science training, and greater drop-out rates than in the other advanced economies. Reflecting our continued long-term competitive difficulties, productivity growth stagnated after mid-1984 and actually fell in the non-farm sectors of the economy in 1985 despite our economic recovery. (Tax reform issues should go here.)

When viewed against the backdrop of the growing debt-service obligations of the future, these trends are particularly disturbing. Simply put, the massive amounts borrowed from the rest of the world have been used to fuel current consumption and government spending, not to build productive capacity for the future. (Footnote on failures of defense spending from Fallows article.) Moreover, the disproportionate burden of a high dollar on the tradable goods sectors of the economy has lowered productive potential in these sectors relative to what it would have been by depressing investment and encouraging the offshoring of productive capacity. As a consequence, Americans will have to service their growing international obligations out of human and physical capital stocks whose growth paths have not been altered and whose allocation has shifted toward non-tradables. The result must be that future debt servicing will exact a larger toll on future U.S. incomes than would have been the case if foreign borrowing had been used to restore U.S. competitiveness.

### III. The Effects of U.S. Policy Choices on the Rest of the World

Just as recent U.S. policy has been shaped with cavalier disregard to its implications for U.S. competitiveness, so it has evinced a woeful lack of understanding or regard for its effects on economic conditions in the rest of the world. The U.S. remains the largest economy, accounting for 25% of world GNP, and it is the linchpin of the international trading and financial system. Thus, policy choices in the U.S. have repercussions throughout the world, and these in turn resonate back to affect the U.S. economy in a variety of ways.

U.S. macro policy had significant effects on economic conditions in Western Europe during the last several years. The appreciation of the dollar was especially dramatic against the West European currencies, and changing currency values along with the strength of the U.S. recovery strengthened demand for European exports. At the same time, however, the dollar appreciation put upward pressure on European prices and forced the European governments to pursue tighter monetary and fiscal conditions than they otherwise might have chosen. These policies in turn prevented a stronger recovery and contributed to the high unemployment rates that plague all the major European nations (Feldstein, July 1985). In addition, high real interest rates in the U.S. pulled real interest rates up in Europe, keeping European investment rates depressed. This in turn made the unemployment problem more intractable by limiting potential improvements in labor productivity stemming from a higher rate of investment in plant and equipment.

The perceived insensitivity of U.S. policymakers to the spillover effects of their choices on the European economies created a climate of ill will between the U.S. and its European allies. During the first Reagan

administration, U.S. efforts to block the Soviet pipeline deal and to prohibit the export by European or Japanese firms of technology that had been sold or licensed to them by U.S. firms further worsened the climate. Finally, the growing use of "temporary" protectionist measures by the U.S. in products of critical significance to the Europeans, including steel and autos, undermined European support for U.S. initiative for another GATT round and strengthened protectionist pressures in Europe.

The cyclical expansion in the U.S. along with the dollar appreciation also significantly worsened the structural trade imbalance between the U.S. and Japan. Indeed, according to recent estimates of Cline and Bergsten (1985), virtually the entire growth in the bilateral trade imbalance between 1980 and 1984 can be explained by the exchange rate misalignment and differences in growth rates. By 1985, the bilateral trade imbalance between the U.S. and Japan hit \$50 billion, and the U.S. absorbed about 40% of Japanese exports of manufactured goods. Also, by 1985, the Japanese held about one-half of all of the dollars owed by the U.S. to the rest of the world.

Given the extent of interdependence, the production, employment and trade patterns in each country were inextricably linked to economic conditions in the other. Given the extent of imbalance, this interdependence generated a huge amount of friction between the two countries. Protectionist pressures in the Congress and in the U.S. business community to adopt new, more far-reaching actions against Japan threatened to touch off a trade war between the two countries that could undermine the GATT system. Policy efforts to adjust the dollar-yen rate after September 1985 caused tremendous financial losses on Japanese holdings of U.S. assets and threatened export-led

together emergency refinancing programs for several countries. U.S. efforts, the IMF, the World Bank and the private international banking community to put to head off a major debt crisis. The Treasury and Federal Reserve worked with countries, the U.S. was also active in short-term, crisis-management efforts Besides providing the major industrial country market for the developing (implications footnote.)

market for the major debtor nations between 1983 and 1985. (Welfare the U.S. became a substitute for capital flows from the international capital exports from the debtor countries. To an important extent, trade flows with as noted earlier, the cyclical expansion in the U.S. provided an outlet for important export items for many developing countries. On the positive side, value contributed to the decline in the prices of commodities that were simultaneously worsening the debt service burden. The rise in the dollar's expansion in the U.S. choked off credit flows to the Third World while restrictive credit conditions in the advanced industrial countries and fiscal America. The rise in world interest rates propelled by the interaction of indebted countries of the Third World, especially U.S. neighbors in Latin Finally, U.S. policy in recent years had profound implications for the our major ally in the Pacific area.

encouraged an atmosphere of confrontation rather than one of cooperation with structural or competitive components of the U.S. trade deficit with Japan responsibility for the domestic policy choices that underlay the cyclical and the U.S. side, the unwillingness or inability of policymakers to accept the domestic consequences of the trade linkages between the two countries. On faces of national and local political leaders became increasingly dependent on prosperity in a large segment of Japanese industry. In both countries, the



however, were based on the mistaken notion that the debt problems of the Third World were temporary and emergency aid would be sufficient. They also reflected a basic belief, shared by the other advanced industrial countries and the international banking community, that the debt crisis was primarily the fault of the debtor countries rather than, to an important extent, the outgrowth of fundamental and unanticipated changes in the world economy. Thus, the debt rescheduling programs fashioned under U.S. leadership failed to see the debt crisis for what it really was: a long-term crisis in economic development the resolution of which had profound implications for social, economic and political conditions in both developing and developed economies.

Since the debt crisis was especially severe in Latin America, an area closely tied to U.S. political and economic interests, the failure of U.S. policymakers to recognize the longer-term implications of the debt crisis and to lead an international cooperative effort for its resolution provides a glaring example of U.S. insensitivity to economic interdependence. Short-term austerity policies that were supported by U.S. emergency rescheduling efforts in debtor nations not only worsened the U.S. trade deficit but more significantly they imposed tremendous economic pressures on fragile Latin American democracies that the U.S. was dedicated to support. While the U.S. devoted more aid to bilateral security assistance and engaged in heated domestic political battles about military assistance in Central America, economic conditions in key Latin American countries like Mexico and Peru deteriorated sharply, posing potentially greater threats to regional stability over the long run.

By late 1985, some members of the Administration recognized the long-term nature of the debt crisis and the need for policy measures to encourage

additional foreign capital flows to mitigate the economic and political costs of austerity. The Baker Plan was born out of this recognition and called for a series of actions to ease the credit drain from the Third World. The Plan urged debtor countries to adopt a series of measures designed to strengthen market forces and to make the conditions for direct foreign investment more attractive. In return, the World Bank was encouraged to provide more funds to support such measures and to supplement balance-of-payments lending from the IMF. Finally, commercial banks were asked to lend \$20 billion over 3 years to help finance the proposed reforms.

To date, the initiatives of the Baker Plan have not been implemented to any significant extent. Even if implemented, the increase in credit flows called for by the Plan is insufficient to restore positive growth in per capita incomes in the major debtor countries. On a net basis, capital continues to flow out of the debtor countries, and the debt crisis remains unresolved, masked by emergency refinancing, reserve losses, arrears, and continued austerity. Meanwhile, the political discontent touched off by the disastrous economic consequences of the crisis continues to brew.

#### IV. Future Changes in the World Economy

The last year witnessed some promising developments in the world economy. Interest rates and oil prices fell still further, providing a greater boost to economic growth in the advanced industrial countries and an easing of the debt crisis in some Third World countries, although those that depend on oil exports were badly hurt. Encouraged by the coordinated intervention of the five major industrial countries, the dollar fell substantially -- by about 21% against a weighted basket of other currencies -- between September 1985 and June 1986.

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Internationally, U.S. policy was marked by growing recognition of the need for greater negotiation and coordination with other countries to attack the major difficulties confronting the world economy. In addition to supporting coordinated intervention in foreign exchange markets and unveiling the Baker Plan for the indebted countries, the U.S. also pressed for mechanisms of macroeconomic policy coordination among the advanced countries, pushed its allies to adopt more rapid growth to help ease trade imbalances, and lobbied to begin a new round of GATT trade negotiations. Intense protectionist pressures in Congress were a major impetus behind all of these initiatives, forcing the Administration to take action to improve the U.S. trade imbalance or face the unwelcome prospect of successful protectionist legislation.

Although there have been several auspicious changes in underlying economic conditions and policy directions in the last year, the future remains fraught with difficulties. These difficulties are the legacies of the policy errors and resulting imbalances of the past several years, and they will pose major policy dilemmas for U.S. and world leaders throughout the coming decade.

In the U.S., two major problems tower above the others. First, despite the sharp decline in the dollar's value, the U.S. trade and current account deficits remain unsustainably large. The short-run danger of continued deficits at current levels is the possibility of a precipitous decline in the dollar's value if foreigners suddenly become reluctant to lend to the U.S. at current rates. If the dollar falls suddenly and sharply before there is a resolution to the budget deficit and savings gap problems at home, then the reduced foreign capital inflow would mean sharply higher interest rates and reduced investment. This fall in the dollar would also intensify inflationary pressures at home. Taken together, these developments would result in

stagflation and would strengthen already strong protectionist pressures. U.S. recession and protectionism would spill over into recessionary conditions and a worsening of the debt crisis abroad. (Inflationary alternative.)

Even if the U.S. avoids the 'hard-landing' of a sharp drop in the dollar and ensuing stagflation, in the long run it still faces the necessity of servicing its growing foreign debt. By the end of 1986, this debt will be greater than the foreign debts of Brazil and Mexico combined. As noted earlier, since foreign borrowing has not greatly augmented the U.S. investment rate compared to its long-run level, debt servicing will lower future real income growth. At some point in the future, at a time and at a pace determined by world credit market conditions and the willingness of the rest of the world to lend to the U.S., the U.S. population will have to pay for living beyond its means during the past six years by consuming less than it produces. In simple terms, domestic demand must fall below domestic production to free up goods and services for net exports.

This is exactly the same real economic problem that confronts the debtor countries of the Third World today. And as a comparison of debt repayment difficulties in Korea with those of Brazil or Mexico indicates, the severity of the problem depends very much on a nation's underlying competitiveness on world markets. In Korea, a strong, diversified export base has generated sufficient foreign exchange to service debt without the necessity of major real devaluations and prolonged austerity. In Brazil and Mexico, in contrast, painful inflationary devaluations and recession-induced import restrictions have been required to try to meet debt-servicing requirements.

For the U.S., the problem of future debt-servicing is therefore inextricably linked to its second major economic problem -- the continued relative decline in its economic competitiveness. Even in the absence of the

unfortunate macroeconomic circumstances of the last several years, the gap between U.S. productivity growth and productivity growth abroad meant that the U.S. had a long-run competitiveness problem, in the sense that U.S. firms could not compete on world markets without a continual decline in the value of the dollar. The buildup of debt and the burden of debt servicing in the future without any relative improvement in U.S. productivity performance simply means that the decline will have to be even more dramatic than it otherwise would have been. The implications of this for real living standards are dramatic if one focuses on the terms of trade. A devaluation pushes the price of imports up and drives the price of exports down, so that it takes a larger volume of exports to buy the same volume of imports. The larger the devaluation, the greater the deterioration in the terms of trade and in the real incomes of domestic citizens. And the less competitive a nation, the greater the devaluation required to achieve a given improvement in the trade balance.

Looking beyond the U.S. economy to the rest of the world, the major unresolved problem is the debt crisis. According to projections of the IMF and IBRD, even with an average annual growth rate of 4.5% in the OECD countries during the next several years, the developing countries will require new net inflows of capital simply to keep per capita incomes constant. For example, the 1985 World Development Report of the IBRD lays out a high-growth scenario in which developing countries grow at 5.5% a year and industrial countries grow at 4.3% a year between 1985 and 1990. This scenario assumes that total net financial flows to the developing countries grow at 3.8% a year in real terms during this period. At this point in time, there is no indication that private capital markets will generate the needed flow of resources voluntarily. And the magnitude of additional funds called for by

the Baker Plan falls far short of the mark. Particularly for both the poorest and the biggest debtor countries, further policy initiatives will be required. As a debtor nation and "dissaver" itself, the U.S. alone cannot mobilize the necessary funds; as the single largest source of saving to the rest of the world, Japan will have to play an important role in any international effort to direct more funds to the developing world.

In the absence of such an effort, the debt crisis will continue to exact its toll on the poorest populations in the rest of the world. Decades of development effort will be lost and the world will continue to witness a growing disparity between the developed and the developing countries. The long-term political consequences of these trends for individual nations and for international security are frightening to contemplate.

The most promising approach to a gradual resolution of the dangerous imbalances in the world economy stemming from the U.S. deficit and debt problems and the debt crisis in the Third World is a coordinated growth strategy of the advanced industrial countries. An acceleration of growth in these countries relative to growth in the U.S. would ease the debt crisis and would reduce the U.S. trade deficit. The greater the reliance on growth to resolve trade imbalances, the less the need to rely on competitive devaluations and competitive beggar-thy-neighbor policies to improve one nation's trading position at the expense of its competitors. As a simple matter of arithmetic, a substantial improvement in the U.S. trade deficit must be matched by a substantial deterioration elsewhere, notably in the advanced industrial countries, especially Japan and Germany, the developed countries with the largest trade surpluses. Rapid growth of production, employment and demand in these countries would make it much easier politically to accept the deterioration in their external positions that must occur, as the U.S. trade

deficit falls. In the absence of an acceleration of growth in the OECD, there is a real risk of growing, protectionism, competitive devaluations and a prolonged worldwide recession in the future. Even now, there are signs of an insufficiency of world demand reflected in falling commodity prices, unprecedented unemployment rates, excess capacity in major industries and continued austerity in much of the developing world. Because of its outstanding imbalance, the U.S. is not in a position to pull world demand along as it has in the recent past. Given the supply-side rhetoric that accompanied the demand-side revolution in the U.S. during the past several years, the irony of the future is apparent: what the U.S. needs to focus on are long-run supply issues that will determine its future competitiveness. Finally, it is important to emphasize the pivotal role of Japan in the denouement of world economic developments in the next several years. Japan's decisions about how fast to expand its domestic economy and about how to invest its huge excess of national saving will play a decisive role in how fast the world economy grows, how rapidly the U.S. is forced to reduce its trade deficit, and how the debt crisis is resolved. As a result of the longstanding success of its supply-side policies, Japan has gained a pre-eminent position in the world trading and financial systems. In the next several years, it will be confronted with the task of taking on a greater share of the collective responsibility for protecting and strengthening these systems if they are to survive and prosper into the next century.