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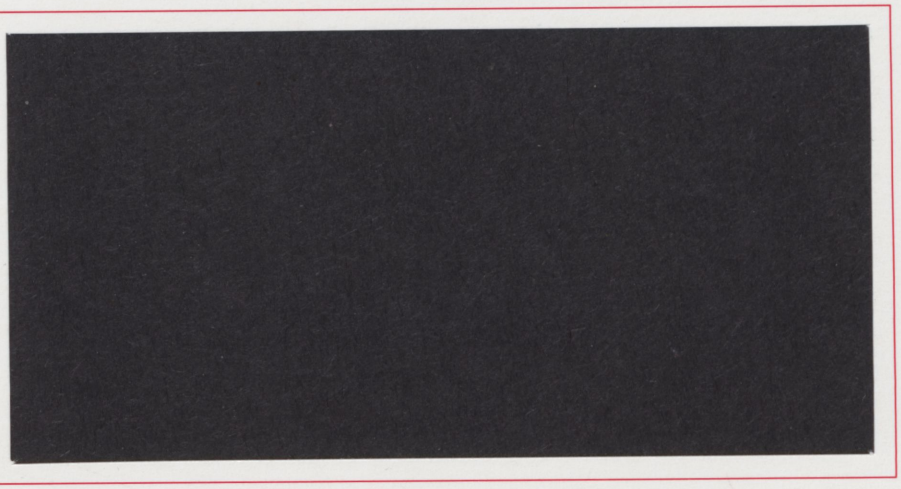

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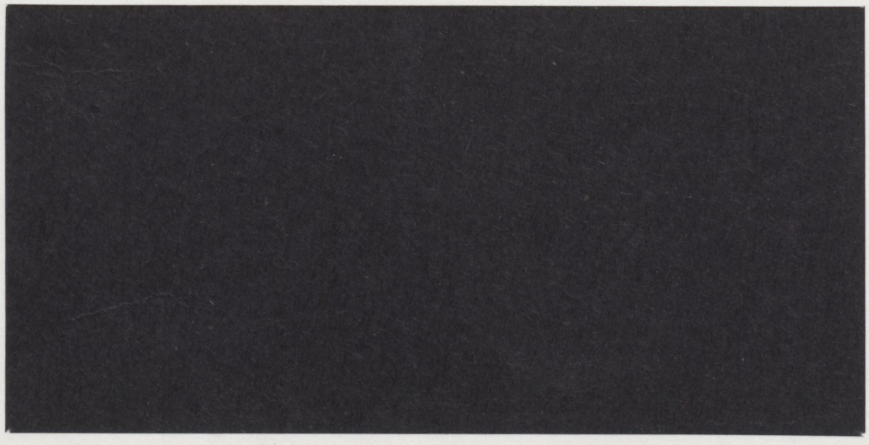

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LESSONS FROM THE UNITED STATES ECONOMY IN THE 1980s AND THEIR APPLICABILITY TO EUROPE

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Abstract -- Whether one calls it a revolution, an experiment, or merely an episode, the economic program of Ronald Reagan, both as proposed and implemented, presents a challenge and opportunity to the rest of the world. Since economic, political, demographic and social circumstances differ widely among nations, some parts of the Reagan program that were sensible and successful in the United States may not be immediately applicable elsewhere. However, many others are not only applicable to other economies but are likely to be even more successful in their circumstances.

The purpose of this paper is to outline what I believe to be four major lessons from the U.S. economy in the 1980s and to discuss their applicability to other countries, particularly those in Western Europe. The lessons one could attempt to derive from the U.S. economic experience and policy experiments in the 1980s are many. I focus on these four because I believe they are the most important and most closely associated with either the Reagan Program or the U.S. and world economic episodes in the 1980s.

Before turning to a discussion of these four lessons, Section I discusses the relative performance of the U.S. economy and the policies that were proposed and adopted: monetary, fiscal, spending, tax structure, etc. I believe several surprises will emerge from a careful analysis of the data. For example, taxes were not cut in the Reagan era, they were merely stabilized at the same share of Gross National Product (GNP) as in 1979 and 1980, and at a somewhat higher level than had existed in the previous two decades. While the United States has made some remarkable advances in the structure of taxation, particularly the lower marginal tax rates on personal income, care should be taken in comparing individual income tax rates across countries without analyzing the balance of the fiscal system and the degree of fiscal federalism. The United States economy has made a remarkable turnaround in the 1980s. As this paper is written, the United States is in the 67th month of the longest peacetime postwar expansion; productivity growth has rebounded halfway from its depressed levels in the 1970s; inflation has been reduced substantially and unemployment has been falling and is now quite modest by the standards of the last two decades. Further, contrary to popular media descriptions, it appears that minorities and women have made strong relative gains in this period.

Section II discusses four lessons that were learned from the U.S. experience in the 1980s. First, it was possible to disinflate the economy from double-digit inflation rates to much more moderate rates at substantially lower costs than had been predicted. The United States did undergo a recession in 1981-2, and by some measures (unemployment), it was severe, whereas by others (reduced output), it was less so. In any event, the lost output was substantially less than had been predicted by most Keynesian Phillips-Curve augmented macroeconometric models, whose predictions of a much more severe downturn caused many economists and politicians to propose incomes policies on the one hand, or indexing everything and learning to live with inflation, on the other. I believe part of the credit for the lower cost than had been predicted fits well with a partial acceptance of the rational expectations/credibility point of view on the effects of changes of monetary policy regimes. The tremendous collapse in velocity was less kind to a mechanical form of monetarism. It was hardcore Keynesians who took the point estimates of their macroeconomic models seriously who look worst on this score. On the other hand, there were surely some Keynesian (Neo-Keynesian?) features of both the disinflation and the robustness of the subsequent recovery when the third year of the tax cut and defense buildup came on line in 1983.

The federal budget deficit grew to unprecedented shares of GNP and of private saving during prosperous peacetime, and this has provided the second lesson. That lesson concerns the impact of budget deficits on national saving. If we take the path of government spending as having been decided upon, and focus on the shift from taxes to deficits in financing a given spending program (a non-trivial assumption, but one many appear willing to make), then the Ricardian equivalence proposition of Barro (1974) took a beating in the 1980s. Budget deficits grew substantially and national

saving moved in the opposite direction. The notion that tax reductions would be saved in anticipation of tax increases later, leaving private consumption unaffected, was clearly not consistent with the U.S. experience in the 1980s. On the other hand, it is fair to question whether there really was a "pure" experiment on Ricardian equivalence.

Lesson three concerns the efficacy of so-called supply-side tax incentives, such as special features of the tax laws designed to encourage investment and/or private saving. I believe these incentives were partially successful, but that popular discussion and criticism of them oversold their potential contribution and failed to appreciate how many other factors would influence investment and saving and, therefore, make it difficult to argue that any or all of these features would lead to an increase in investment or saving. Indeed, the political dialogue surrounding these programs was so intense that the proper questions were often not even asked. Usually, the argument centered around why the universal availability of Individual Retirement Accounts (IRAs) in 1981 did not lead to an increase in private saving. That is an entirely different question from what would the saving rate have been had we not introduced universal IRAs, or put another way, how much net new saving did the IRAs produce? The first question, of course, fails to net out the effects of all the other policies and events which affected private saving, and which as we will see below, swamped the modest increase in saving due to IRAs.

Lesson four concerns the relationship between domestic saving and investment. Prior to 1980, the United States had never imported more than $15 billion of capital from the rest of the world in a single year. By the late 1980s, the U.S. was importing ten times that amount annually and had a large and growing external debt. Clearly, at least in the short-run,

international capital flows break the link between domestic saving and investment. Despite the very high correlation in earlier periods between the levels of domestic saving and investment, and reasons to believe that investment is ultimately constrained in the long-run by the available supply of domestic saving, one lesson we have learned is that international capital flows can be important over a substantial length of time and be large enough to have a major impact on an economy as large as the United States.

Section III discusses the applicability of some of these lessons to European economies. I conclude that despite substantial differences between many of the major economies of Europe and that of the United States, these lessons convey important information for Europe. In particular, to the extent that supply-side tax cuts expand employment at all, the much higher marginal tax rates in Europe and much higher social welfare benefits suggest that major improvements in the tax structure and in economic performance can be had without much, if any, sacrifice in revenue. To the extent that tax cuts stimulate the economy, shifting people out of relatively much higher social welfare benefits into employment, the earnings of which are taxed more heavily, they are much less likely to lead to a permanently large structural budget deficit. I do add an important word of caution: The United States finances its Social Security and most of its Medicare with an earmarked payroll tax, not out of general revenue; it is also much more fiscally federal than most European economies. Therefore, while I applaud the move, however cautious, to emulate the reduced marginal income tax rates in the United States, one must be careful that appropriate comparisons are being made, not just comparisons of one particular feature of the fiscal picture in the United States with the corresponding partial feature in a European economy.

I. U.S. ECONOMIC PERFORMANCE AND POLICIES IN THE 1980s

To appreciate the context in which U.S. economic policy was made in the 1980s, it is important to understand what had happened to the U.S. and world economies in the 1970s. In my opinion, the United States suffered economic problems relatively more severe in this period than at any time since the Great Depression. Inflation was high and fluctuating, reaching 13% in 1979 and 12% in 1980. A long-term productivity slowdown begun in the late 1960s, although it is usual to date it from 1973. Productivity growth--the foundation of real growth per worker--fell from modest levels sufficient to provide each generation with a standard of living almost twice that of its predecessor to virtually nil in the 1970s. Taxes as a share of GNP increased at the federal, state and local levels, and perhaps more importantly, the fraction of American families subject to a high <u>marginal</u> tax rate on additional earnings or investment quadrupled between 1965 and 1980 for a variety of reasons, the most important being the combination of high inflation and "bracket-creep", taxpayers being driven into higher tax brackets by purely inflationary income gains.

Defense spending as a share of GNP fell rapidly in the late 1970s, although President Carter did commit the United States to a substantial defense buildup before he left office. Non-defense government spending rose substantially. By the mid-1970s (late by European standards), the federal government of the United States spent more on transfer payments to people than it did on purchases of goods and services. Twenty years before only one dollar in seven of a much smaller absolute and relative size of federal outlays in the economy was on transfer payments. While President Carter initiated some economic deregulation, the pace of new social regulation had accelerated in the 1970s. The short-run cost of dealing with this

regulation was estimated at a hundred billion dollars or more--although obviously with a large standard error. Worse yet, an environment with very high and wildly fluctuating inflation rates and an accelerating rate of regulation which might change the rules of the game in the midst of an investment project did not augur well for long-term investment planning or for research and development (R&D) and other investment necessary to raise the productivity growth rate.

While employment had grown rapidly in the U.S. in the 1970s, this was primarily the result of demographic changes as the postwar baby-boom generation moved into the labor force and as the share of second-earners in families skyrocketed. After a severe recession following the Arab oil embargo in 1974, the economy recovered until a sharp, but brief, recession in 1980.

In short, it seemed to many, myself included, that a major part of the problem with the U.S. economy lay in the shift (partly intended, partly inadvertent) in economic policy toward redistributing income and wealth, rather than in creating an environment conducive to producing both of these in the first place. I do not mean to trivialize the tremendous complexities in analyzing an economy's performance in any dimension, let alone in the many upon which we judge it. I do believe that the policies proposed and implemented in the Reagan years had as their fundamental precept to redress this imbalance by restoring the production of income and wealth as the first priority while preserving the safety net but otherwise getting economic policy out of the business of redistributing income on a massive scale.

This kind of goal was supported by the consensus of economists and politicians circa 1980, even though they differed on how to go about it. Economists had come increasingly to agree on the following conclusions:

1. Reviving incentives to produce wealth would require reductions in

marginal tax rates, especially on investment, accompanied by slower government spending growth and disinflation;

2. Active demand management should be abandoned except when the economy is in extreme difficulty;
3. Inflation is far more costly than previously thought, eroding incentives to produce wealth through its interaction with an unindexed tax system and through increasing uncertainty;
4. Gradual disinflation may not be necessary if economic policies of the Federal Reserve Board (FED) and the fiscal authorities are credible.

How rapidly the disinflation could occur, exactly how large the loss in output and unemployment would be, how long it would take to restore productivity growth, let alone any substantial fraction of the revenues lost by a general tax cut--these questions were (and still are) subject to much debate. By 1980, however, even the most traditional Keynesians were coming to agree qualitatively with these points. Disinflation was necessary; a smaller public sector would be necessary; the tax structure would have to be changed, focusing on reduction of marginal tax rates, especially on new investment; this would lay the foundation for an economy with a better chance for relatively stable growth.

The structure of the Reagan program was quite closely tied to these views. Its specific implementation as amended was much less so. The primary components of the Reagan policies were:

1. Support <u>disinflation</u> (although there was much harping about the variability of money supply growth). President Reagan was the first president to back the disinflation despite the cost of a downturn. Recall that President Nixon imposed wage and price

controls, President Ford had economic summits and "Whip Inflation Now" buttons, and President Carter had a five point program, one point of which was the hope that the FED, the central monetary authority of the United States, would keep interest rates down!

2. Tax reduction, heavily focused on reduction of marginal tax rates. In 1981, personal income tax rates were reduced on a three-year phased-in basis by 25%. Further, the top marginal tax rate on investment income was immediately reduced from 70% to 50%. Depreciation was accelerated for corporate tax purposes and the investment tax credit was extended. Private saving was encouraged with universal IRAs.

3. Non-defense spending was to be cut. This succeeded with regard to means-tested entitlement programs, grants-in-aid to state and local governments, and some minor other programs. The bulk of non-defense spending, however, grew rapidly: social security, Medicare and other health programs, agricultural subsidies, and, of course, net interest.

4. A still larger defense buildup than called for by President Carter was begun, and some attempt was made to slow the growth of non-defense spending. This succeeded only partially, primarily in tightening eligibility standards for means-tested income maintenance programs and in reducing (and consolidating) grants-in-aid to state and local governments.

5. Related to the fiscal and monetary policies were attempts to slow the pace of regulation. Vice President Bush headed a deregulation task force which succeeded in slowing the pace of non-economic regulation. A new anti-trust policy was developed in which bigness per se was no longer deemed undesirable.

It would take a paper much longer than this to discuss the evolution of fiscal and monetary policies, as well as structural tax policies, in the last seven years. Among the highlights were the change of the Federal Reserve from targeting money to targeting reserves after a period of "paying attention to everything," a shift to international coordination in macroeconomic policy and its implication for the dollar, the 1986 Tax Reform Act which reversed the investment incentives in the 1981-2 Tax Acts, but also lowered marginal tax rates (both corporate and personal) still further as well as accomplishing other desirable goals. Before proceeding to discuss the performance of the U.S. economy in recent years and to compare it with other countries and its past history, one should understand that many discussions of economic policy are dominated by the unfortunate tendency to correlate contemporaneous policies and performance. The truth is that policies often work with long lags and economic effects are often the result of policies covering many years. Further, there is an unfortunate temptation to set perfect economic performance as the goal. By this standard no economic policy has been or ever will be successful. No economy has ever achieved all of the goals of full employment, stable prices, rapid economic growth, efficient resource allocation, and humane but cost effective redistribution to the poor simultaneously over any length of time, nor can any economic policy guarantee to deliver anything near that kind of performance. While the appropriate counterfactual benchmark against which to compare U.S. economic policies in the 1980s is by no means obvious, I believe two useful standards are comparisons to other advanced economies at the same time and comparison to recent past history.

The Economy at Present

The U.S. economy is in the 67th month of the longest postwar peacetime expansion. Real GNP grew at an annualized rate of almost 4% in the first quarter of 1988, a robust performance. From 1980 to 1987, real GNP grew by 20% (see Table 1). The unemployment rate, which averaged 6.2% in 1987, is now hovering around 5.5%, a level we have not averaged for a whole year since 1974. Consumer prices are up 4% from a year ago; in 1979, they rose 13%, and in 1980, 12%. The average inflation rate for President Carter's four years, 1977-80, was 10%. For the seven years, 1981-87, it has been 4%. These are impressive achievements relative to the other advanced economies (see Figure 1).

A former Chairman of President Johnson's Council of Economic Advisors, the late Arthur Okun, coined the phrase "Misery Index," the sum of the inflation and unemployment rates. The "Misery Index" is now at a 20-year low.

Federal taxes as a share of GNP are a little over 19%, almost exactly what they were in 1979-80, and a little higher than the average for the 1970s. The tax policies of the 1980s did not cut federal taxes as a share of GNP; rather they prevented large increases from occurring in the share of taxes in GNP. Had the pre-1981 policies continued in effect, federal taxes would have soared to 23% of GNP by 1985 (see Table 2).

The U.S. economy has continued its impressive job creation. Employment has grown by about 14 million since 1980 at a time when there has been absolutely no new net job creation in the advanced economies of Western Europe (see Figure 2). The reduction in inflation, the lengthy recovery, the tremendous growth in employment, and the low unemployment have been accompanied by a continuation of private wealth creation (see Table 3). As

of this writing, the Dow Jones Industrial average was around 2100, about 20% higher than two years ago, although down about 10% from the elevated levels of last year. Despite the fall in the stock market in late 1987, its level now is almost triple what it was in 1982.

Simultaneously, interest rates have fallen substantially. Those on new FHA-financed home mortgages fell from about 13% in 1980 and 15% in 1981 to just over 9% in 1987. Real interest rates have also fallen but are still quite high by historical standards (see Figure 3). In my view, this is partly due to uncertainty over future monetary and fiscal policies.

As of mid-June, the strong rebound of the manufacturing sector and of exports are a continued source of strength to the U.S. economy. These sectors were heavily damaged in the early 1980s by the overvalued dollar (see Figure 4), but have now made a tremendous turnaround. Exports are up 29% from a year ago, and in 1987, the U.S. regained its role as the world's largest exporter. Over the last year, steel production is up 17%, auto and truck production up 13%, coal production up 19%, lumber production up 15%, and paper production up 8%.

Productivity growth has rebounded halfway from the depressed levels of the 1970s (see Table 4), and real GNP growth has revived.

What does all this mean for the typical American family? Median family income, the income earned by the family exactly in the middle (half the families have incomes above this amount and half below), adjusted for inflation, increased by 9%, or about $2,500, from 1981-86 (and has since risen further). From 1977-80, it fell by 3 1/2%, or a little over $1,000. Thus, if the 1977-80 trend had continued, instead of increasing $2,500, median family income would have fallen $2,000-$3,000.

Another commonly used measure for an average or typical family is real

disposable income per capita--income after taxes, adjusted for inflation, per person. In 1977-80, it increased at about 1% per year. For the 1981-87 period, it rose 1.8% per year, 80% more rapidly than in the Carter years. If the 1977-80 trends had continued, the typical American family of four would have a $2,000-$3,000 lower annual income. For the nation as a whole, real disposable income would be hundreds of billions of dollars less than it is today.

So much for the average family. What about the poor, minorities, and women? In 1987, the unemployment rate for adult females was 5.4%, the same as for adult males. Prior to the Reagan-Bush era, the female unemployment rate exceeded the male unemployment rate every year except one--1958-- when they were the same. The 1980s are the first period of sustained increases in the wages of women relative to men in the last half century. In 1986, the overall poverty rate was 10.9% versus the 11.2% when Ronald Reagan assumed office in 1981. The rate rose under President Carter (I do not mean to infer that it was all his fault) from 9.3% in 1977 to 11.2% by 1981. In the 1981-86 period (since then further improvements have occurred), the poverty rate for blacks (which is much higher than for whites) fell by 2.8 percentage points, while it fell by 0.2 percentage points for whites. From the recession of 1982 to the end of 1987, the average annual percentage increase in employment has been 2.7% for all workers, 3.3% for females, 4.7% for blacks, and 6.8% for hispanics. Although minorities still lag behind, this is substantial testimony that a robust expanding economy is the best way to assist low income and minority workers and families.

What about inflation? Cumulative consumer price inflation for the four years 1977-80 was almost 42%, averaging 10.4% per year. For the seven years 1981-87, it totaled 30%, averaging 4.3% per year with little variation for several years, although it is up slightly in 1988. Of course, if inflation

had continued at the higher rate since 1981, wages might have kept up with this higher inflation rate, but even if that had occurred, the average family would have paid substantially more in taxes, given the tax system in place in 1980 was "not indexed" for inflation, unless offsetting statutory adjustments had been made. (Indexation of the individual income tax schedule took effect at the initiative of the Reagan Administration in 1985.)

So much for the good news. The bad news has been that our federal budget deficits soared to unprecedented levels during a period of peacetime prosperity, with the national debt more than doubling and external debt growing. What caused the budget deficits? As noted above, federal taxes are now 19% of GNP, precisely what they were in 1979-80, the last two years of the Carter Administration. Government spending, however, has risen to 22-23% of GNP, causing deficits of $150 billion per year.

Trends in Revenues, Rates, Deficits, and Tax Structure

The U.S. has undergone a series of remarkable tax/budget policy initiatives in the last decade: two major and several minor tax reforms; dramatic changes in priorities, processes and outcomes; and large, but finally shrinking, budget deficits during prosperous peacetime.

While it has often been claimed that there were large tax cuts, revenues have been stabilized not cut (see Table 2). Given the policies in effect on January 1, 1981, tax revenues were scheduled to rise several percentage points as a share of GNP (Table 2). Thus, a proper reading of tax history would conclude that the tax changes of the 1980s prevented large tax increases from occurring.

Some have argued that the tax cuts caused the deficits, and had there been no statutory changes in the 1980s, we now would have a balanced budget.

As Table 5, adapted from the (U.S.) Office of Management and Budget (1988, p. 4-4), demonstrates, the cumulative effect of all of the tax and budget policy changes on revenues for 1988 was to reduce them by $133 billion. Although this is almost 90% of the federal deficit, it is incorrect to argue that had we not enacted all this legislation that we would now have a balanced budget. Clearly, the economy would not have been so robust, and some of the extra revenue would have been spent. Not only would we still have had a substantial budget deficit even if the policies had not been enacted, but a large tax increase under current economic conditions would not balance the budget because it would slow the economy's growth and lead to some expenditure increase. We have ample evidence from recent and past political history to indicate that constraints on revenue eventually do impose some contraints on spending, and tax increases generally slow economic growth.

The fraction of American families subject to very high marginal tax rates quadrupled between 1965 and 1980. A remarkable achievement of the 1980s is that without reducing the average tax rate, i.e., the share of federal taxes in GNP, the weighted average marginal tax rate has been reduced substantially. This occurred because of the 1981-83 tax rate reductions, the indexing of the tax brackets beginning in January 1985, and the further reductions in the marginal rates in the 1986 Tax Reform Act.

Although the policies of 1980s prevented a sharp increase in taxes as a share of GNP, corporate taxes have risen relative to what they are estimated to have been in the absence of these policy changes (see lower panel, Table 5).

Spending was on an upward trajectory, and has only just started to fall as a share of GNP. Thus, we have had large budget deficits as a share of

GNP (Table 2, last column). We need to continue the gradual reduction of the budget deficit as a share of GNP in order to redress the tremendous shortfall of national saving relative to our modest private investment. Investment must be financed either from the saving of households, retained business earnings, the state and local government surplus, or a federal surplus. When the federal government borrows, it drains away the private saving available for financing investment. Our low rate of national saving is one of the major reasons why we have been a net capital importer in the last few years. The saving/investment imbalance and the degree to which it is mirrored in the trade imbalance are shown in Table 6. There are many reasons why foreigners wish to invest in the United States: it is safe, the economy is growing relative to Western Europe and the Third World, etc. Further, deregulation of financial markets in other countries has made it easy for foreigners to make portfolio investments in the United States. There is uncertainty among economists and in the financial community as to how much longer we can borrow about 3% of GNP from the rest of the world. That may be possible for several years, many years, or only with an increase in real interest rates relative to those in other countries in the next couple of years. To believe anyone can know precisely would be foolhardy in this area.

How the deficit is reduced is important for the saving/investment imbalance. While I personally favor reducing the deficit exclusively or at least primarily by gradually reducing government spending growth, note that the important imbalance is between national saving--private saving less government borrowing--and domestic investment. An increase in revenues which reduced private saving could be a purely cosmetic trade of less government borrowing for less private saving, leaving us in the same position.

II. LESSONS FROM THE U.S. ECONOMY IN THE 1980s

Many important lessons were learned concerning the efficacy of monetary and fiscal policies and structural tax policy in the United States in the 1980s. Of the many lessons, I discuss four that I believe to be extremely important:

1. The disinflation was accomplished at substantially lower costs than had been predicted;
2. Substantial increases in budget deficits did not lead to an increase in private saving, but rather to a sharp reduction in national saving;
3. Structural tax incentives did produce a small response in personal (although the personal saving rate fell for other reasons) and a substantial impact on private investment in the United States;
4. International capital flows can modify the link between domestic saving and investment much more and much longer than most economists had predicted; whether they will do so in the long-run remains to be seen, but I am dubious.

The period 1981 to mid-1988 was marked by several developments in macroeconomic performance. A pronounced disinflation occurred in 1981-2, accompanied by a sharp recession. A rapid recovery began in 1983-4, and continues to this date, as the longest postwar peacetime economic expansion. Inflation remains relatively low. Several major changes occurred in Federal Reserve policy and in fiscal policy. Was the recession in 1981-2 necessary in order to reduce inflation from double-digit to relatively manageable levels? In 1980, a number of prominent economists argued that the cost in lost output and increased unemployment would simply be too great to offset

the benefits gained from reducing inflation. Others argued that most of the cost of disinflation could be avoided by adopting a formal incomes policy, which they believed could eliminate inflation gradually without the cost of a recession. Still others argued that inflation was not very harmful to the economy and that we ought to learn to live with it and index everything. While critics often assert that the recession was primarily due to President Reagan's budget and tax policies and his support of Federal Reserve policy, it is important to remember that the FED's disinflation policy was begun well over a year before President Reagan assumed office. International economic elements were gathering momentum to induce a world-wide recession (the appreciation of the dollar and the still tighter monetary policy in Germany and Japan than in the United States), and President Reagan's "loose" fiscal policy did not become "loose" until 1983. Even if the President wanted a much more expansionary monetary policy, it is not clear that it would have prevented a recession by the time it had been enacted.

While most of the attention surrounded extremely optimistic forecasts and the conversion of the FED to a form of monetarism in late 1979, Federal Reserve policy was tight but erratic. Combined with an even tighter monetary policy in other economies, the FED's policies produced the recession. The inflation rate plummetted much more rapidly than had been anticipated, as velocity collapsed. While the recession was bad, it did not approach the predictions of most Phillips-curve estimates from Keynesian macroeconometric models. What actually happened?

Lesson 1: <u>Disinflation was accomplished at much less lost ouput than had been predicted.</u>

Most Phillips-curve estimates had substantial ranges of error, but Cagan (1986) notes that the actual cost was at most one-half of the estimate

based on Okun's law. Extrapolating the output trend with the lower productivity growth from the early 1970s provides an even smaller cost, about 12% of a year's GNP for the six percentage point decrease in inflation by Cagan's estimate compared with estimates two to five times as large by other scholars. Recall how often we heard that the higher and longer lasting the inflation, the more costly it would be to reverse as inflationary expectations became more widespread and deeply embedded in the economy. But ever since inflation began to accelerate in the late 1960s, presidents had preferred inflation to the short-term cost of curtailing it. Presidents usually get the monetary policy they want, at least to some degree, and so with President Reagan. While the FED's policy was much more erratic than the President would have liked, the President gave the FED's disinflation policy credibility for the first time. I believe this credibility is one reason why the disinflation was much less costly than had been predicted, with the important exceptions of the rational expectations arguments of Sargent (1981) and the credibility arguments of Fellner (1981).

Many factors caused the recession, but the most important was the Federal Reserve's reduction of the rate of growth of the money supply combined with an unanticipated severe drop in velocity, and the effects of even tighter monetary policies in the rest of the world. The recession was not caused by the federal government budget deficits, as is often alleged. Those who argued that a clash between tight monetary policy and loose fiscal policy drove up interest rates and caused the recession are simply mistaken. Federal fiscal policy did not become loose until late 1982, at least as usually defined by Keynesians (although the expectation of large deficits may have affected interest rates earlier). The Reagan tax cut of 1981-2 merely offset bracket-creep and previously scheduled payroll tax increases, and the defense buildup was in its very early stages. Hence, fiscal policy

turned "expansionary" only in the third quarter of 1982, under the usual Keynesian short-term analysis of these effects, as the cyclically adjusted budget deficit rose sharply. The expansionary effect of tax cuts and spending increases was felt in late 1982 and 1983. They probably assisted the recovery along with the change in course of monetary policy but had little to do with the recession of 1981-2. A more subtle anti-deficit argument is that were it not for the prospect of these large deficits, the FED could have followed a somewhat more gradual disinflation policy. Although the FED policy turned out to be more restrictive than it intended, it is unclear that a more gradual policy would have succeeded in changing regimes sufficiently to reduce inflation substantially at the much lower cost of lost output and higher unemplomentthan had been predicted.

Lesson 2: Budget Deficits Affect National Saving

It is commonly thought that the large tax cuts instituted in the 1981 Economic Recovery and Tax Act (ERTA) and the substantial Reagan defense buildup are the primary causes of the large budget deficits. A corollary is that the President and Congress have been stymied, unable to cut defense spending or to raise taxes and have made only minor cuts in other programs, resorting to accounting gimmicks to reduce the current budget deficit. While these claims contain an element of truth, they are far from a full and accurate account. Federal taxes as a share of GNP are about 19%, about the same level as in 1979 and 1980, and substantially higher than the average for the 1960s and 1970s. While there was rapid growth in defense spending in the early Reagan years, there has been no real growth for the last two, and a principal reason the Congressional Budget Office now projects slowly declining rather than rising deficits is the assumption of zero real growth in defense as opposed to a continued defense buildup.

With these facts of fiscal history in mind, it is worth mentioning that there was nothing necessarily optimal about the level, trend, and composition of government spending circa 1980. Both political parties had attempted unsuccessfully to curtail the explosion in entitlement programs, and both agreed on the need for a defense buildup.

Thus, I believe that a fair summary of the events of the first seven years of the Reagan presidency would be that the original tax cuts, interacting with the disinflation, stabilized tax revenue as a share of GNP at historical levels, but reduced them relative to the projected increase; combined with the growth of Social Security, defense and interest payments, this created the large budget deficits. Further, as discussed by Boskin (1982) and Eisner (1986), the usual deficit data may be quite misleading for various accounting and economic reasons.

First, did the tax cuts stimulate spending or, as in the Barro (1974) intergenerational altruism model, merely call forth increased private saving to pay for the expected future tax liabilities? It is exceedingly difficult to infer from the saving behavior reported in Table 7 (even adjusting these numbers for a durables boom and for capital gains, net of losses, as measured by the FED Flow of Funds data (as represented in Tables 8 and 9), that private saving increased, let alone enough to offset the budget deficits. Some interesting calculations are presented in Poterba and Summers (1987), indicating that the long-term stimulative effects of tax cuts are perhaps twenty-five cents on the dollar.

I conclude that the stimulus to aggregate demand is insufficient to raise real incomes enough to offset the budget deficit. I also conclude that, in the United States, the increase in tax revenues for other reasons, such as increased income reporting with lower marginal tax rates, is not

sufficient to prevent the budget deficits from occurring. A careful study by Lindsey (1986) indicates that perhaps 40 percent of the revenue lost from the personal tax rate cuts in ERTA was indeed recouped--far from enough to prevent large deficits from occurring, but much larger than the zero effect commonly assumed. In economies with much more advanced welfare states, even a small stimulus may be sufficient to prevent budget deficits from occurring, because in addition to whatever extra revenue is generated because of the extra income, removing unemployed persons from much more generous unemployment benefits and placing them in work, subject to much higher tax rates, will have larger positive net impact on government revenues than in the United States. Blanchard and Summers (1987) suggest this fiscal increasing returns may be prevalent in some European countries.

Lesson 3: Supply-Side Structural Tax Incentives Did Encourage Saving and Investment

Corporate saving, which had declined in the late 1970s and remained quite low in 1981 and 1982, rebounded to more typical levels by 1984-85. As shown in Table 7, personal saving declined to postwar lows in 1985-86. Why didn't the tax cuts generate increased private saving? First, IRAs did induce some additional saving. While some of the movement of funds into IRAs at the outset was from currently taxed assets rather than from new saving, Venti and Wise (1987) estimate that about one-half was net new saving. As less fungible taxed assets remained to be switched over time, the IRAs would have had a greater impact, as the success of registered retirement accounts in Canada and postal saving accounts in Japan in contributing to higher private saving in these countries suggests. Further, the very high interest rates in the 1980s accrue disproportionately to older people in the population who, because of their natural lifecycle saving

pattern, own a disproportionate share of assets (Boskin, Kotlikoff, and Knetter 1985). Many of these people are at a time in their lives when they have stopped saving. Therefore, we would not expect an increase in real interest rates to increase their saving, and it might even accelerate their dissaving. As they planned on greater returns from their assets to finance their retirement, they could afford to consume more thus offsetting the increased saving done by the still working population. Further, both high real interest rates and increased share values led to a sharp decline in contributions to defined benefit pension plans (Bernheim and Shoven, 1986).

The big news in saving in the 1980s, of course, was federal government borrowing. Clearly, the increase in federal borrowing swamps any potential increase in private domestic saving and much of the difference is being met by borrowing from abroad. (Compare the last two columns in Table 7 with the data for 1951-70).

In analyzing the overall impact on capital formation, of course, saving and investment play a role. Investment--the demand for new capital goods --was stimulated by the structural changes in tax policy, and substantially. Saving, at least personal saving, probably was only slightly affected in the short-run by the supply-side policies.

Many studies document the impact of ERTA/TEFRA on the user cost of capital and effective tax rates on a marginal investment for the aggregate economy, separately by structures and equipment, disaggregated by type of structure, type of equipment, and by industry. Several prominent studies, including Hulten and Robertson (1984), Gravelle (1983, 1985), Auerbach (1983), and Fullerton and Henderson (1984), report substantial decreases in the user cost of capital or in effective tax rates on a marginal investment due to the investment incentives in ERTA/TEFRA. They generally conclude that while ERTA/TEFRA decreased the disparity in user costs or effective tax

rates on a marginal investment across industires, substantial variation remained.

Hulten and Robertson (1983) and Gravelle (1985) also estimate changes in desired capital stocks on the assumption that the elasticity of the desired capital stock with respect to the rate of return is unity. They tend to take this as the standard case when they make such calculations. If one does likewise, the changes in the desired capital stock are on the order of 5 percent or more. Spread over 3 to 5 years, this change would lead to a very substantial increase in investment, accounting for about 20 percent of net investment in the 1982-84 period.

The conclusion that the investment tax incentives are important is fairly robust to alternative models of business investment behavior. For example, Summers (1981) uses a q-theory approach and Feldstein and Jun (1987) use a return over cost model and conclude new business investment is substantially responsive to reductions in its taxation. Other studies attributing a powerful role to tax incentives for investment include Sahling and Akhtar (1984), Sinai and Eckstein (1983), and Makin (1984). Contrary opinions are expressed by Bosworth (1985) and Eisner and Chirinko (1983).

Of course, Lucas (1976) reminds us that standard econometric policy evaluation may be misleading. Also, many factors other than taxes influence investment. These include the price of investment goods (and the price of computing fell rapidly in this period, more than offsetting the possible slight increase in effective tax rates), interest rates, the nature and course of a recovery and expectations about future economic activity.

Thus, my best estimate is that the investment incentives in ERTA/TEFRA were responsible for at least 20 percent additional net investment in the United States in the 1982-84 period, less in 1985-86. The additional

investment, at least temporarily, raised the growth rate and permanently raised the level of potential output. They were probably a modest part of the explanation of the apparent partial productivity rebound in the 1980s.

I estimate that the Tax Reform Act of 1986 will raise the user cost of capital on new business investment by about 10 percent, with standard assumptions regarding inflation and required rates of return. The effective marginal tax rate will rise by 30 percentage points on some equipment. The lower statutory tax rates do not fully offset the elimination of the investment tax credit and the slowing of the depreciation. New capital will be taxed more heavily, whereas old capital will be taxed less heavily. If the reform remains roughly in its current form, the U.S. rate of investment will be lower than it would otherwise have been unless offset by other factors, such as lower budget deficits or a more expansionary monetary policy. This in turn could slow the short-run growth rate, and reduce the level of potential output below what it would have been under the old tax law. Given the discounting of nominal cash flows, the cost of capital for new investment is very sensitive to inflation. Some of this deleterious effect on the level of investment and potential output might be offset by more tax neutrality among types of investment.

Lesson 4: International capital flows break the link between domestic saving and investment rate, at least in the short run

Had the supply of foreign capital proved less elastic, the lack of increased saving in the face of increased demand for investment would have raised interest rates until domestic sources and uses were reconciled. The elastic supply of saving from the rest of the world allowed increases in investment (as presaged by Harberger, 1980). Note also that the distinction between the marginal rate of substitution of present for future consumption

and the marginal rate of transformation in production is likely to be much larger, at least for the short- and medium-run, from this international perspective than from that of a closed economy.

Whether the international capital flows break the link between investment and saving in the long-run remains to be seen; there apparently is no compelling case in economic history of an advanced economy financing long-term growth by importing capital. The pressures created by current account imbalances and large annual negative flows of net foreign investment implying future streams of interest and dividend payments to foreigners and the subsequent need for greater net exports probably create some long-run links between domestic saving and investment rates (Summers, 1986; Feldstein and Horioka, 1980). I still believe that the investment rate in advanced economies is ultimately constrained by the supply of domestic saving, and hence tax policies discouraging saving eventually will affect domestic investment. In any event, the impact of the deficits on national saving was far greater than that of the structural tax policies.

III. APPLICABILITY TO EUROPEAN ECONOMIES

Many European economies, as well as economies in many other parts of the world, have enacted or are considering "supply-side" reductions in marginal tax rates. It is accurate to say that there is something of a worldwide tax reform frenzy, stimulated by a combination of the 1986 U.S. Tax Reform Act reducing the top marginal rate in the personal income tax to 28%, which is lower than the bottom rate in some countries, and the relatively successful performance of the U.S. economy in the 1980s, particularly in generating increased employment, a severe problem for most European economies. Major tax reforms, or tax reform debates, have occurred or are under way from Australia and Japan to Sweden and Germany. In a study

I am editing, tentatively entitled World Tax Reform, a group of leading scholars from the United States and other countries analyze the pros and cons of these policy changes and proposals. Among the major themes being considered are the desirability of lower marginal tax rates on a broader base, and moving closer to consumed income as the appropriate base of direct taxation. Although there may be various detours along the way, I believe that many of the world's economies will be moving in one or both of these directions in the years ahead.

My purpose here is to discuss the potential applicability of some of the lessons discussed above for Europe. First, is it likely that European economies could have reduced inflation without the substantial unemployment that seems to be relatively entrenched and plagues most of the advanced European economies? Second, is it likely that specific tax incentives for private saving and investment, in addition to those already in place in Europe, will be successful? Third, should we expect that the rate of national saving would fall in European economies which cut taxes substantially? Fourth, is it likely that European economies--or any one of them--could run very large structural budget deficits and substantial shortfalls of domestic saving from private investment, and be able to attract the same relative inflows of foreign capital as the United States has been doing?

I believe there are many important differences in European economies that make simplistic generalizations difficult. For example, the substantially higher degree of unionization in most European economies and the substantially greater power of those unions combine with other severe impediments to labor market flexibility to suggest that a disinflation from double-digits is likely to be somewhat more costly in terms of lost output

and the size and duration of unemployment in many European economies than in the United States. Indeed, this seems to be happening in European economies, where the unemployment appears mired at almost double the U.S. level. There has been no net job creation in the 1980s in Europe as a whole. For OECD-Europe the unemployment rate is almost 10%. Undoubtedly, there are many causes for this high unemployment, but reducing inflation in an environment with much less labor force flexibility than we have in the United States suggests that more than a change in monetary regimes may be necessary; it may be necessary to accompany the change in monetary policy with various structural adjustments in labor markets and deregulation of industry.

Since most European economies have saving and investment rates much higher than the U.S., and have had correspondingly higher productivity growth rates (whether the higher investment has caused the higher productivity and/or has been a response to the high effective cost of hiring workers is a separate question), the need for structural changes in the tax laws to induce still more private saving and investment is not apparent. Of course, many European countries have tax laws which already contain numerous saving and investment incentives, ranging from alternative types of tax free saving to personal and corporate tax integration to a much greater reliance on consumption taxes (although the value-added taxes are riddled with exemptions and differential rates rather than the more sensible alternative of lower rates on a much more inclusive base along with refundable credits to deal with regressivity at the lower end of the income scale).

I believe that any systematic structural budget deficit and severe shortfall of national saving below private investment rates is much less likely in the case of most European economies to lead to the same relative influx of foreign capital. Surely, a reduction in national saving would

show up partly in the current account, but there are many reasons why the United States was particularly attractive to investors from abroad: it was and is quite stable politically; it had continued robust growth; the deregulation of financial markets in other countries generated an opportunity for private institutional investors, such as life insurance companies and pension funds, to diversify into dollar denominated assets in the United States. In addition to all these reasons why the United States can attract foreign capital more easily than most other countries, there were the severe economic and political instability of Latin America and other developing countries, fear of wealth expropriation in various countries (including some in Europe), etc.

A closely related point is whether a supply-side tax cut would be likely to generate a large budget deficit in the typical European economy. Most European economies have much higher marginal tax rates than the United States did even prior to the 1986 tax reform. Further, benefits to those not working are a much larger fraction of wages than in the United States. This suggests that to the extent that a tax cut is at all expansionary for supply-side and/or Keynesian reasons, shifting some citizens from relatively generous welfare and unemployment benefits to productive employment paying relatively high taxes is much less likely to lead to substantial budget deficits than the case in the U.S. Further, the propensity to shift income to the underground economy (unreported on tax returns) rises proportionally with marginal tax rates. Thus not only would there be the revenue effect flowing from the increased productive activity to offset at least part of the deficit, there would also be more income reported for tax purposes. I have made this argument elsewhere (Boskin, 1987), and Blanchard and Summers (1987) have argued that this fiscal increasing return is likely to be

prevalent in many European economies. These arguments remove most of the case against a fiscal stimulus focused heavily on reductions of top marginal tax rates. Indeed, in the United States, the share of taxes paid by those in the highest class actually went up following the reduction in the top marginal rate on investment income from 70% to 50% in 1981 and the 1981-83 25% across-the-board decrease in personal taxes. As documented by the U.S. Treasury's Statistics of Income, Individual Income Tax Returns 1986, the share of income taxes paid by those earning over $100,000 doubled from 15.2% to 30.6%.

There are several major aspects in which some European economies differ from the United States, and it is worth repeating these differences to clarify the appropriateness of comparisons of European income taxes with those in the United States. Many European countries finance part or all of their Social Security from general revenue. In the United States, Social Security and the Hospital Insurance part of Medicare--together, they rival defense as the largest spending item--are financed by a separate earmarked payroll tax, nominally split evenly between employers and employees. Of course, many economists believe that a good first approximation is that both parts of the tax are paid by employees in the form of lower wages and/or benefits than they would otherwise have had. The U.S. payroll tax has a marginal tax rate on the first $45,000 of earnings (there are no exemptions or deductions in the U.S. payroll tax, although there is an earned income credit refunding payroll taxes through the income tax to the poor) of about 15%, the combined employer and employee rates. Beyond, the "ceiling" which rises with nominal wages in the economy, the marginal tax rate is zero. Some have argued that the Social Security "contribution" should be thought of as forced saving. In the United States, except for the last two years, there has been more or less strict pay-as-you-go finance by which current

benefits are financed by current taxes. I have elsewhere (Boskin, Kotlikoff, Shoven and Puffert, 1987) argued that there is no close tie at the margin between taxes paid and the expected present value of benefits received under Social Security, and that Social Security does levy a tax at the margin, not an incremental implicit claim on future generations' tax payments. Thus, for a majority of American workers, the effective marginal tax rate includes payroll tax, as well as the personal income tax.

A closely related issue is that the U.S. is much more fiscally federal than most European economies. Most state and even some local governments also levy income taxes, and the rates rise to double-digits in some cases (although they are deductible against federal income taxes). Thus, a comparison of European personal income tax rate structures with the U.S. personal rate structure might present a seriously misleading picture if one does not account for payroll taxes (except for well-off workers, who have a purely infra-marginal tax) and state and local income taxes.

With all these provisos and caveats, it is difficult from a U.S. perspective to conclude that European, especially German tax and subsidy policy, have been responsible. Reforms announced so far have been timid and unable to focus on the restoration of efficient incentives as a major goal. There is a consensus among a wide political spectrum of public finance economists and macroeconomists that tax cuts heavily focused on top marginal tax rates would be good for European output and employment, have little downside risk in generating substantial structural budget deficits, and would, of course, benefit the entire world, especially developing countries.

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Figure 1.

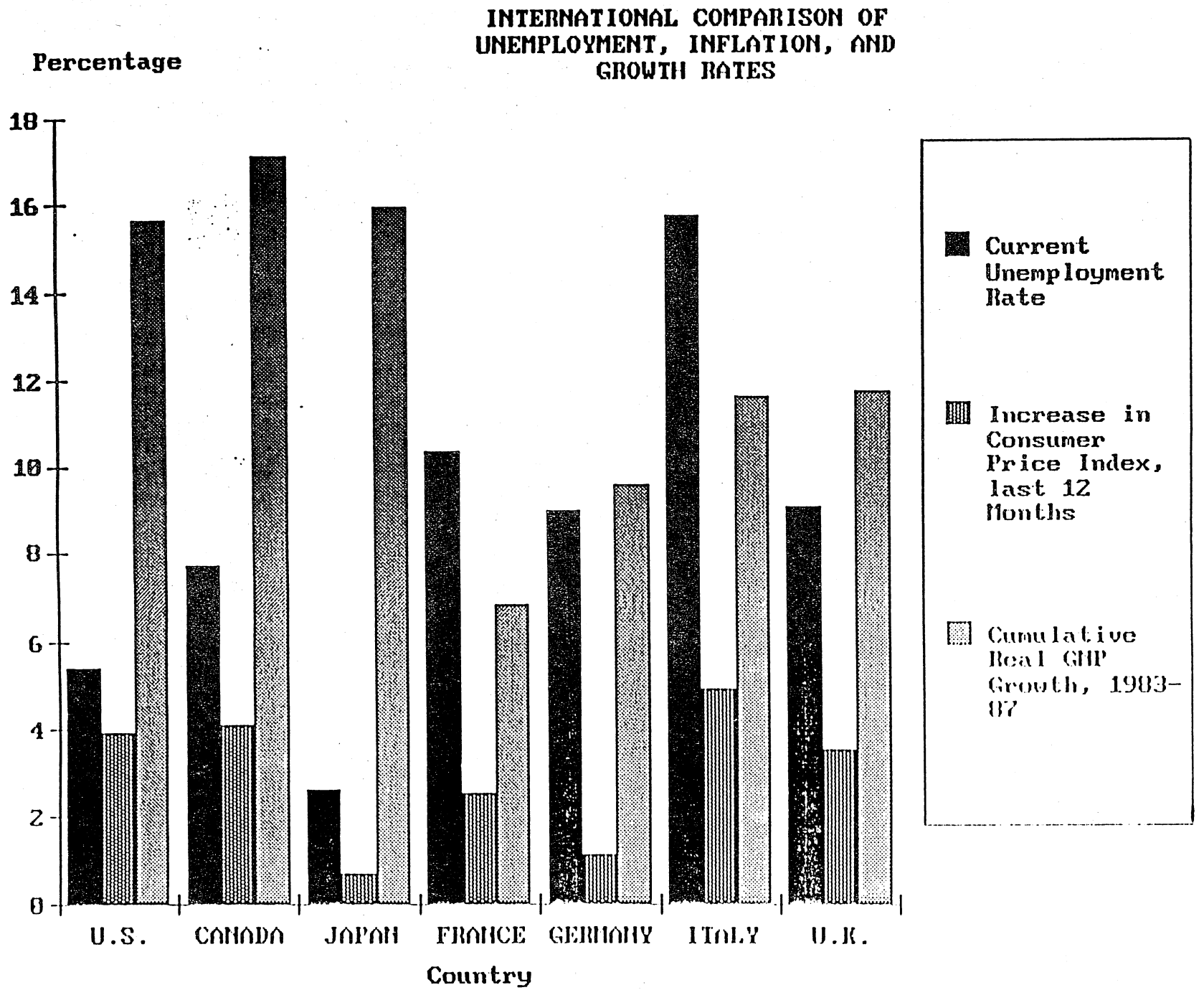
INTERNATIONAL COMPARISON OF UNEMPLOYMENT, INFLATION, AND GROWTH RATES
Percentage
18
16
14
12
10
8
6
4
2
0
U.S.
CANADA
JAPAN
FRANCE
GERMANY
ITALY
U.K.
Country
Current Unemployment Rate
Increase in Consumer Price Index, last 12 Months
Cumulative Real GNP Growth, 1983-87

Figure 2.

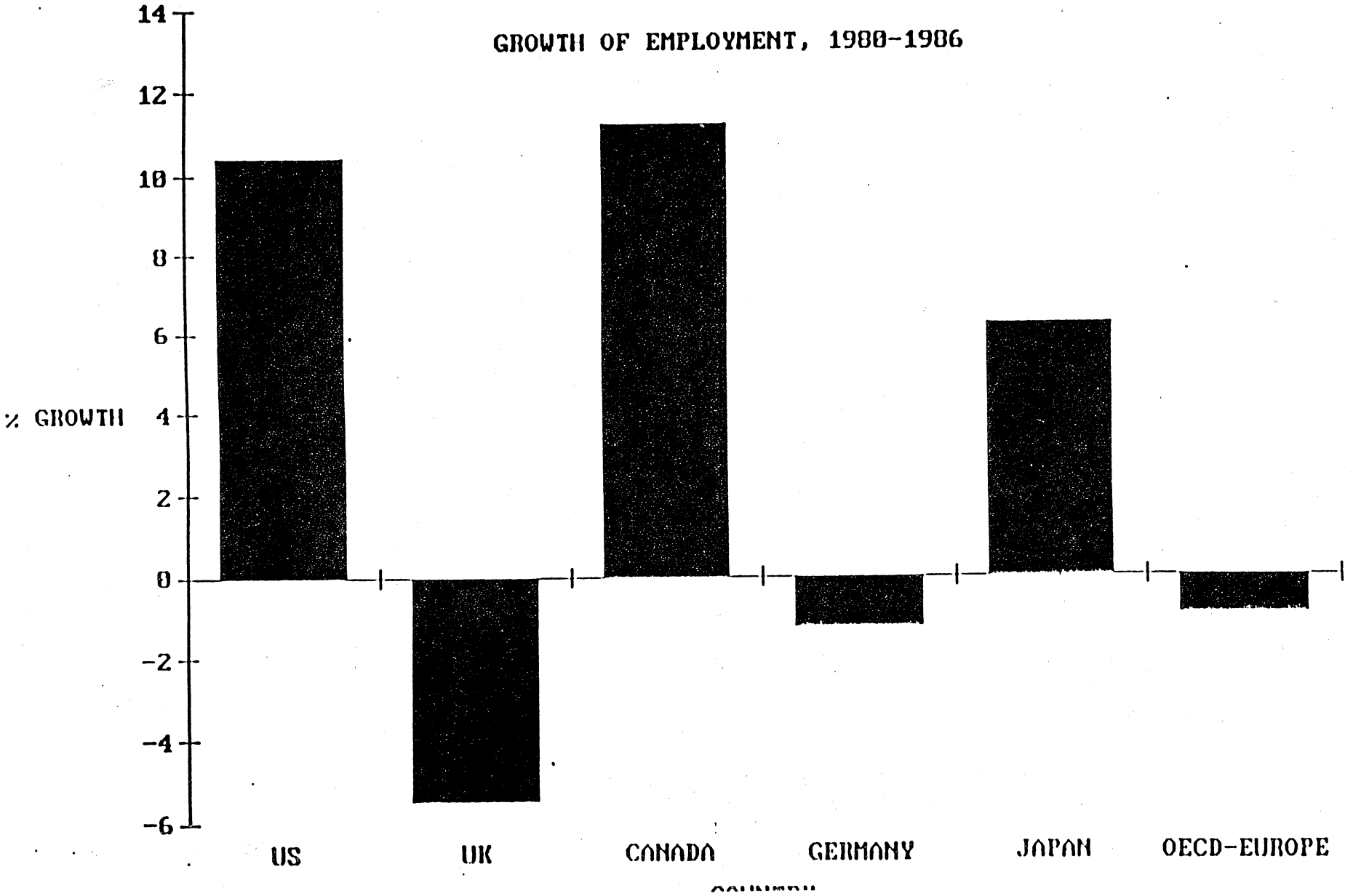
GROWTH OF EMPLOYMENT, 1980-1986
14
12
10
8
6
4
2
0
-2
-4
-6
% GROWTH
US
UK
CANADA
GERMANY
JAPAN
OECD-EUROPE

Figure 3.

COMPARISON OF PRIME RATE AND CONSUMER PRICE INDEX

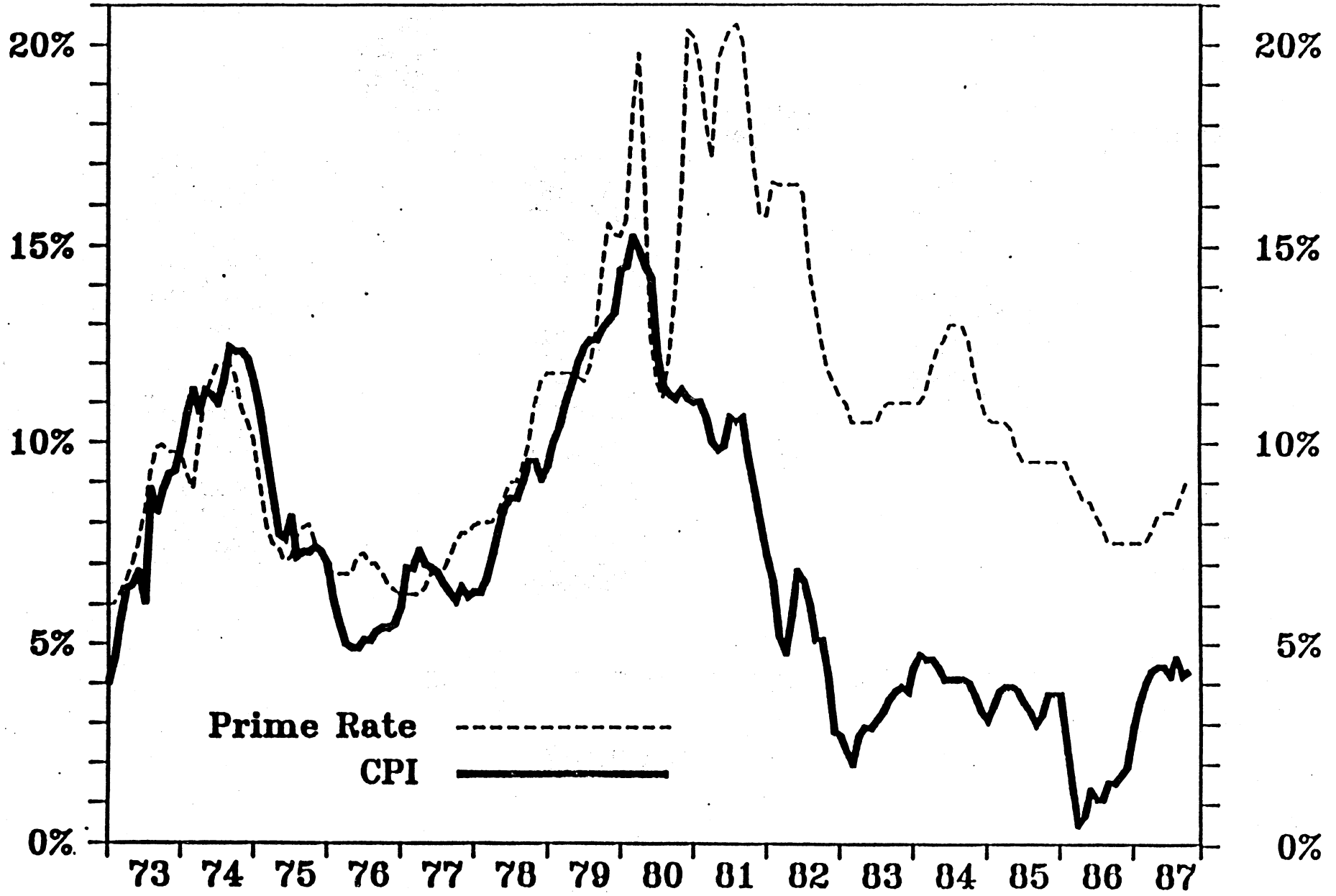

Figure 4.

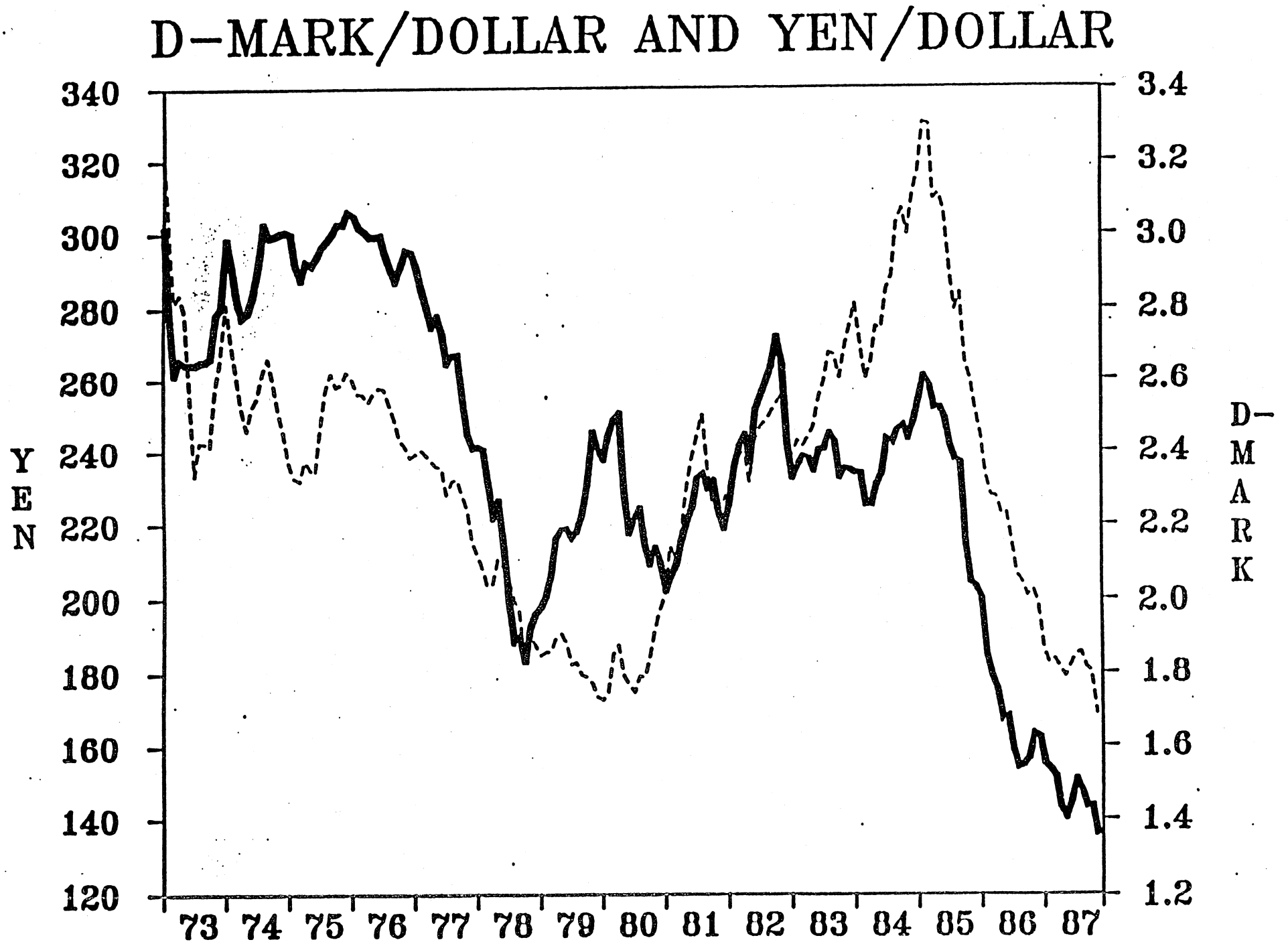
D–MARK/DOLLAR AND YEN/DOLLAR
340
320
300
280
260
240
220
200
180
160
140
120
YEN
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
D–MARK
73 74 75 76 77 78 79 80 81 82 83 84 85 86 87

Table 1

Accounting for Growth in Real GNP, 1948-87
(Average Annual Percent Change)

Item	1948 IV to 1981 III	1973 IV to 1981 III	1981 III to 1987 IV[1]
Growth In:			
1) Civilian noninstitutional population aged 16 and over	1.5	1.8	1.2
2) Plus: Civilian labor force participation	.2	.5	.5
3) EQUALS: Civilian labor force	1.8	2.4	1.7
4) PLUS: Civilian employment rate	-.1	-.4	.3
5) EQUALS: Civilian employment	1.7	2.0	2.0
6) PLUS: Nonfarm business employmnt as share of civilian employment	.1	.1	.1
7) EQUALS: Nonfarm business employmnt	1.7	2.1	2.0
8) PLUS: Average weekly hours (nonfarm business)	-.4	-.6	0.0
9) EQUALS: Hours of all persons (nonfarm business)	1.4	1.5	2.0
10) PLUS: Output per hour (productivity nonfarm business)	1.9	.6	1.4
11) EQUALS: Nonfarm business output	3.3	2.0	3.4
12) LESS: Nonfarm business output as share of real GNP	.0	-.1	.6
13) EQUALS: Real GNP	3.3	2.2	2.8

[1]Data for 1987 IV are preliminary.

Note: Based on seasonally adjusted data. Detail may not add to totals due to rounding.

Sources: Dept. of Commerce (Bureau of Census and Bureau of Economic Analysis), Department of Labor (Bureau of Labor Statistics), and Council of Economic Advisers.

Table 2

Federal Revenues, Outlays and Deficits
as a Share of GNP
(fiscal years)

Fiscal Year	Actual Revenues (1)	Projected in 2/85 for Policies in Effect Jan 1, 1981 (2)	Projected in 2/85 for Policies in Effect Jan 1, 1985 (3)	Actual Outlays (4)	Deficit (5)
1976	17.6%	-	-	21.9%	4.3%
1977	18.4	-	-	21.2	2.8
1978	18.4	-	-	21.1	2.7
1979	18.9	-	-	20.6	1.6
1980	19.4	-	-	22.1	2.8
1981	20.1	-	-	22.7	2.6
1982	19.7	21.0	19.7	23.8	4.3
1983	18.1	20.3	18.1	24.3	6.3
1984	18.1	21.4	18.6	23.1	5.0
1985	18.6	21.9	19.1	24.0	5.4
1986	18.4	22.1	19.0	23.6	5.3
1987	19.4	22.4	19.1	22.8	3.4
estimated 1988	19.3	-	-	22.4	3.1
1989	19.2	-	-	21.8	2.6
1990	19.4	-	-	21.3	1.9
1991	19.5	-	-	20.9	1.4

Sources: Columns 1,4,5: Fiscal 1989 Budget;
Columns 2,3: Congressional Budget Office

Table 3

Net Worth in Billions of 1982 Dollars

Year	Private	Public	National
1948	$3906.1	$-831.2	$3074.9
1949	4167.0	-873.0	3294.1
1950	4241.8	-797.2	3444.7
1951	4362.9	-738.2	3624.7
1952	4558.3	-754.2	3804.1
1953	4721.8	-779.7	3942.1
1954	4936.4	-817.9	4118.5
1955	5231.2	-817.3	4413.9
1956	5467.1	-791.1	4676.0
1957	5566.3	-777.2	4789.1
1958	5709.8	-817.8	4892.0
1959	5879.9	-828.4	5052.0
1960	6002.4	-820.3	5182.1
1961	6160.1	-846.9	5313.3
1962	6316.7	-862.8	5454.0
1963	6422.6	-859.8	5562.8
1964	6691.4	-872.0	5819.4
1965	6925.6	-865.7	6059.9
1966	7251.1	-851.5	6399.6
1967	7475.8	-878.8	6596.9
1968	7770.4	-879.6	6890.8
1969	7896.7	-838.6	7058.1
1970	7959.8	-835.4	7124.4
1971	8327.2	-886.8	7440.4
1972	8784.4	-897.5	7886.9
1973	9106.8	-832.7	8274.1
1974	9452.8	-774.0	8678.8
1975	9714.2	-867.8	8846.4
1976	10315.9	-922.6	9393.3
1977	10927.8	-926.4	10001.4
1978	11586.4	-902.6	10683.8
1979	11667.1	-834.9	10832.3
1980	11745.9	-827.1	10918.7
1981	12050.6	-839.5	11211.1
1982	11883.4	-962.9	10920.5
1983	12246.2	-1108.5	11137.6
1984	12496.9	-1223.9	11273.1
1985	12553.9	-1352.9	11201.1
1986	13158.9	-1528.0	11630.9
1987	13382.8	-1626.1	11756.7

Source: Author's calculations from National Balance Sheets, Board of Governors of Federal Reserve.

Table 4

Output and Productivity Growth in the U.S. Economy
(average annual percentage rates of growth)

Year	Real Gross Product	Real Product per Employee Hour
1948-73	3.6	2.9
1973-81	2.0	0.6
1981-87	3.3	1.6

Source: U.S. Dept. of Labor

Table 5: Net Effect of Major Enacted Legislation on Receipts[1]
(In billions of dollars)

	1987	1988	1989	1990	1991	1988-89
Econ. Recovery Tax Act, 1981	-241.7	-260.8	-285.5	-315.7	-350.2	-546.2
Tax Equity & Fiscal Responsibility Act, 1982	56.9	57.3	55.8	57.4	61.6	113.1
Highway Revenue Act, 1982	4.7	4.9	5.1	5.1	5.1	10.0
Social Sec. Amendments, 1983	12.1	24.6	31.0	23.9	23.9	55.6
Interest & Dividends Tax Compliance Act, 1983	-1.7	-1.8	-2.0	-2.5	-2.8	-3.8
Railroad Retirement Act, 1983	1.2	1.2	1.1	1.1	1.1	2.3
Deficit Reduction Act, 1984	22.0	25.3	27.7	31.0	34.0	53.0
Consolidated Omnibus Budget Reconciliation Act, 1985	2.7	2.9	3.0	3.0	3.2	5.9
Fed. Emps.' Retirement System Act, 1986	-0.1	-0.2	-0.2	-0.3	-0.4	-0.4
Omnibus Budget Reconciliation Act, 1986	2.7	2.5	2.0	1.0	0.2	4.5
Superfund Amendments & Reauthorization Act, 1986	0.4	0.8	0.8	0.8	0.8	1.6
Continuing Resolution, 1987	1.9	2.7	2.6	2.7	2.8	5.3
Tax Reform Act, 1986	21.5	-4.5	-17.2	-13.5	-9.5	-21.8
Omnibus Budg. Rec. Act, 1987[2]	----	9.1	14.3	16.2	15.6	23.3
Continuing Resolution, 1988		2.4	3.1	3.3	3.4	5.5
Net tax reduction (-)	-117.5	-133.7	-158.4	-186.3	-211.4	-292.1
ADDENDUM						
Net effect on receipts by source:						
Indiv. income taxes	-158.7	-193.1	-224.8	-250.2	-278.3	-418.0
Corp. income taxes	19.7	24.2	26.8	33.1	41.0	51.0
Soc. ins. taxes & contrib.	14.1	29.2	36.0	27.9	25.8	65.3
Excise taxes	14.1	13.1	11.7	11.8	9.4	24.8
Estate & gift taxes	-7.6	-7.8	-8.7	-9.3	-9.7	-16.5
Customs duties	0.7	0.2	0.2	*	*	0.3
Misc. receipts	0.2	0.5	0.4	0.4	0.3	0.9

Notes to Table 5:

* 50 million or less.

[1] These estimates are based on the direct effect only of legislative changes at a given level of economic activity. Induced effects on the economy are taken into account in forecasting incomes, however, and in this way affect the receipts estimates by major source and in total.

[2] These estimates reflect only the effect on budget receipts. The Act reclassified the ad valorem customs user fee as an offsetting collection, rather than as a budget receipt, which reduces outlays by the following amounts: 1988, $0.1 billion; 1989, $0.1 billion; and 1990, $0.7 billion.

Source: U.S. Office of Management and Budget, Budget of the United States Government, Fiscal Year 1989.

Table 6

U.S. Economy - Saving/Investment Imbalances
(% of Gross National Product)

	1980	1986	1987
Output	100.0	100.0	100.0
Expenditure	99.9	103.3	102.7
GAP (net imports)		3.3%	2.7%
Net Private Saving plus State/local surplus	7.3	6.9	5.3
Net Investment	5.0	5.4	5.3
	2.3	1.5	0.0
Net Federal Saving	-2.2	-4.9	-3.4
GAP (net capital imports)		3.4%	3.5%

Table 7

U.S. Gross and Net Saving, 1951-1987

	1951-60	1961-70	1971-80	1981	1982	1983	1984	1985	1986	1987
Total Net Saving	7.1	7.8	7.0	5.7	2.0	2.0	4.1	2.3	1.8	1.9
Net Private Saving	7.5	8.2	8.0	6.6	5.5	5.7	6.8	5.7	5.3	4.3
Personal Saving	4.7	4.8	5.5	5.2	4.9	3.8	4.4	3.2	3.1	2.7
Corporate Saving	2.8	3.4	2.4	1.4	0.6	1.9	2.5	2.5	2.2	1.7
State & Local Government Surplus	-0.2	0.1	0.9	1.1	1.1	1.4	1.7	1.6	1.3	1.0
Federal Government Surplus	-0.2	-0.5	-1.8	-2.1	-4.6	-5.2	-4.5	-4.9	-4.8	-3.4
Memoranda: Capital Consumption	8.7	8.4	9.8	11.4	12.1	11.6	11.0	10.9	10.8	10.7
Gross Private Saving	16.2	16.6	17.8	18.0	17.6	17.4	17.9	16.6	16.1	15.0

Source: U.S. Department of Commerce, National Income and Product Accounts.
Notes: Data are averages (except for 1981-1987) of annual flow, as percentages of gross national product.
Detail may not add to totals because of rounding.
1987 figures are preliminary.

Table 8

Augmented Saving Rates, U.S. and Japan, Selected Years,[1]

U.S. Gross Saving Rates (Gross National Saving/GNP)

	Exclude Govt Nonmilitary Investment (NIPA Basis)	Include Govt Nonmilitary Invstmt in Fixed Reproducible Capital (OECD Basis)	Include Govt Nonmilitary Invstmt in Fixed Reproducible Capital & Consumer Durables	All Govt. Invstmt & Consumer Durables
1950	17.8	20.3	24.7	23.9
1960	15.0	18.3	21.9	22.9
1970	13.8	16.8	21.3	21.8
1980	16.4	18.1	23.2	24.0
1985	13.8	15.5	22.2	24.3

U.S. Net Saving Rates (Net National Saving/NNP)

1950	11.7	13.2	14.6	11.8
1960	8.2	10.6	10.9	11.1
1970	6.2	8.2	8.8	8.7
1980	7.7	8.5	8.7	9.2
1985	4.7	5.5	7.0	8.8

Japan, Net Saving Rates

1970	22.8	30.9	31.6	31.7
1975	14.7	22.6	23.1	23.2
1980	13.2	21.1	21.6	21.7
1984	14.4	19.8	20.2	20.4

[1]GNP and NNP augmented to include corresponding rental flows.
Sources: U.S.: Boskin, Robinson and Huber (1988); Japan: Boskin and Roberts (1986).

Table 9

Sectoral Average Saving Rates
(% of GNP)

Years	Private	Public	National
1951-60	12.2	-0.1	12.0
1961-70	9.0	-0.1	8.9
1971-80	12.8	0.0	12.8
1981-87	6.5	-3.3	3.2

Source: Author's calculations from National Balance Sheets, Board of Governors of Federal Reserve.

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