The NBER Digest

NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.

March 1987

How Far Has the Dollar Fallen?

From February 1985 to July 1986, the dollar fell in value by nearly 24 percent—a reversal of about two-thirds of its appreciation since January 1980, according to a new study by NBER President **Martin Feldstein** and **Philippe Bacchetta**. Overall, the dollar was about 24 percent higher in July 1986 than it had been in January 1980, they conclude in **How Far Has the Dollar Fallen?** (*NBER Working Paper No. 2122*).

Feldstein and Bacchetta's results confirm the dollar's pattern of sharp rise and steep decline that the Federal Reserve Board has estimated. According to the Fed's multilateral trade-weighted index, the real value of the dollar fell 33 percent between its peak in February 1985 and October 1986, reversing 74 percent of the 78 percent appreciation that took place from January 1980 to February 1985.

The Fed's index has been criticized because it considers currencies of only ten industrial countries and uses weights based on trading patterns that existed in 1972–6. Using different indexes to measure the dollar's value, some of the critics have calculated little or no decline since February 1985. However, Feldstein and Bacchetta show that these calculations have two fatal flaws.

First, some of the indexes are based on nominal exchange rates, that is, rates that are not adjusted for inflation (as opposed to real exchange rates). In an index that considers only the major industrial countries, this presents no problem. But when the index includes such countries as Mexico or Brazil,

with annual inflation rates of more than 100 percent, the use of nominal rates can be misleading. Specifically, Feldstein and Bacchetta show that the dollar *rose* 23 percent in nominal terms against an average of all currencies of developing countries between February 1985 and July 1986, while the corresponding real exchange rate with those countries remained unchanged.

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Second, the critics' calculations may use bilateral trade weights, or weights that reflect only direct trade with the United States, rather than multilateral weights that reflect a country's share of world trade. Using bilateral trade weights ignores the influence of the bilateral exchange rate on competition for sales in a third country. Feldstein and Bacchetta show that the bilateral trade-weighted real exchange value of the dollar fell only 16 percent between February 1985 and July 1986, while the multilateral value fell 24 percent. Similarly, the dollar's real appreciation

during 1980–5 was 38 percent with bilateral weights versus 63 percent with multilateral weights. Thus, shifting from multilateral to bilateral weights reduces the net appreciation of the dollar between January 1980 and July 1986 to 16 percent from 24 percent.

For this study, Feldstein and Bacchetta construct a multilateral trade-weighted price index of the dollar's real value relative to the currency of 80 countries (21 industrialized countries and 59 developing countries). These countries represent 89 percent of world trade; the weights used reflect the pattern of trade in 1984. The authors use the countries' consumer price indexes to convert nominal exchange rates to real rates, as does the Federal Reserve Board. The index that Feldstein and Bacchetta construct is a geometric average of the 80 real exchange rates.

Supply-Side Effects of the 1986 Tax Reform

The sweeping revision of the U.S. tax code enacted in 1986 will tend to reduce saving and investment, increase stock prices, and increase the supply of labor slightly, according to two new studies by National Bureau of Economic Research economists. The net effect of these changes will be to depress economic growth.

In **Tax Policy, Asset Prices, and Growth: A General Equilibrium Analysis** (NBER Working Paper No. 2128), **Lawrence Goulder** and **Lawrence Summers** estimate the effects of eliminating the investment tax credit (ITC) and lowering the tax rate on corporate profits from 46 percent to 34 percent. They find that eliminating the ITC will lower corporate investment by about 7 percent initially and will reduce the aggregate capital stock by 12 percent in the long run. The combined effect of the two changes in the tax code will be an initial decline in investment of 2 percent, and a long-run reduction in the aggregate capital stock of 3.5 percent, according to Goulder and Summers.

Elimination of the ITC and corporate tax reduction have opposite influences on stock prices. While canceling the ITC alone would depress stock prices by about 5 percent, lowering the tax rate on corporate profits would increase aftertax corporate earnings on existing investments, causing stock prices to rise by almost 20 percent in the long run. Combined, the two tax changes will cause the value of corporate shares to rise by about 13 percent in the

long run, Goulder and Summers estimate. They conclude that "the elimination of the investment tax credit and the reduction of corporate tax rates together generate windfalls to capital owners yet produce no favorable effect on capital formation."

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In **Household Behavior and the Tax Reform Act of 1986** (NBER Working Paper No. 2120), NBER Research Associates **Jerry Hausman** and **James Poterba** ask how individual taxpayers are likely to respond to last year's tax changes. Using NBER's TAXSIM model, they estimate that 6 million households will be removed from the tax rolls by 1988 as a result of changes in the personal exemption and the earned income tax credit. Of the 107 million remaining taxpayers, only 11 percent will face marginal tax rates that are more than 10 percentage points lower than before tax reform. Fourteen percent of taxpayers will see no change in their marginal rates. In addition, many taxpayers will face higher marginal tax rates, even if their total tax bill declines. Over 23 percent will face tax rates that are up to 10 percentage points higher than before, and 4 percent will have their marginal rates rise by more than 10 percentage points. Tax bills can fall despite higher marginal tax rates because of the increase in the personal exemption.

Because the majority of taxpayers will experience only a small change in their marginal tax rates, the resulting aggregate change in labor supply and saving is likely to be small. Hausman and Poterba estimate that the marginal tax rate of a typical married man earning $11.15 per hour will fall from 18 percent to 15 percent. As a result, he will increase the total number of hours he wishes to work by less than 1 percent per year. They also estimate that a married man earning $45,000 per year will increase his labor supply by 1.5 percent, while the average married woman will increase her labor supply by 2.6 percent. The aggregate increase in labor supply will be about 1 percent, they calculate.

Hausman and Poterba also analyze the effect of tax reform on saving. These effects are difficult to estimate precisely, since the law restricts contributions to Individual Retirement Accounts and other tax-deferred savings vehicles on the one hand, but reduces marginal tax rates on income from savings on the other hand. They conclude that the net effect of these changes will be to reduce private saving slightly.

State and Local Capital and Investment

Net investment by state and local governments is an important part of national capital formation. Yet while many localities maintain separate capital budgets, they do not attempt to measure depreciation or to estimate the size of their capital stocks.

In a new study for the National Bureau of Economic Research, coauthors **Michael Boskin, Marc Robinson,** and **Alan Huber** estimate that net state and local nonresidential capital totaled $1.8 trillion in 1985. Moreover, the total net capital stock of state and local governments was about twice the federal government's capital stock, they write in **New Estimates of State and Local Government Tangible Capital and Net Investment** (*NBER Working Paper No. 2131*).

In 1985, states and localities spent $517 billion, more than half of what the federal government spent, on providing and financing education, highways, hospitals, police and fire protection, sewage treatment, and welfare programs. Of this amount, $68 billion was gross investment and $25 billion net investment. Highways and education buildings alone represented about 57 percent of the total state and local capital stock.

While the fraction of state and local purchases devoted solely to investment has fallen since 1951, it has consistently averaged more than 40 percent of *private* fixed nonresidential investment. Indeed, this study finds that state and local government investment exceeded federal net capital formation each year since 1951 except during defense buildups.

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The Bureau of Economic Analysis (BEA: a division of the U.S. Department of Commerce) also estimates state and local capital and investment. However, they use a different method and rate of depreciation from those used in this study. As a result, the estimates of net investment for 1981-5 calculated by Boskin and his coauthors are about twice as large as the BEA's estimates, while their estimates of the net capital stock are 25-35 percent below the BEA's estimates.

Boskin, Robinson, and Huber conclude that reliable figures for state and local capital and investment "can be one important component to more comprehensive and accurate budget reporting, fiscal policy analysis, and national wealth measurement."

Forecasting the Depression: Harvard versus Yale

During the 1920s and 1930s, economists at Harvard and Yale published forecasts of the economy. However, neither group predicted the stock market crash of October 1929, nor the onset or severity of the Depression. The forecasters at both universities saw only continued growth on the eve of the crash, and once the Depression began, they thought that the economy would recover quickly.

Could they have done better? Probably not, concludes a new NBER study by **Ray Fair, Matthew Shapiro,** and **Kathryn Dominquez.**

In **Forecasting the Depression: Harvard versus Yale** (*NBER Working Paper No. 2095*), the authors use modern statistical techniques to analyze the data that were available at that time for preparing forecasts. Their results indicate that, given that data, the Harvard and Yale economists were not overly optimistic. Neither the onset nor the persistence of the decline in the economy in the early 1930s could have been predicted from the data available in the 1920s. Modern statistical analysis also would have produced optimistic forecasts for that period.

Although the Harvard group noted in May 1929 that "signs pointing to a recession continue to pile up," by the fall of that year they were reporting that a recession was "not indicated at present." In any case, they had confidence that the Fed would ease the money supply if "recession should threaten serious consequences for business." At Yale, Irving Fisher agreed that a stock market crash and a severe business slump both seemed unlikely.

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After Black Friday, both schools' forecasters were optimistic that the downturn would be temporary and that growth would resume quickly. Just before

Christmas 1929, the Harvard group wrote that "1930 should prove at least a fairly good year." All through 1930, both Fisher and the Harvard economists thought that the slump would be mild and that recovery was about to begin. As late as October 1931, Fisher continued to see signs that the worst of the downturn had just passed. Not until late 1931, more than two years after the stock market crash and well into the Depression, did the Harvard team stop seeing signs of an upturn.

Harvard's forecasting service, begun in 1919, produced weekly reports on a stock price index, bank lending, interest rates, and commodity prices, as well as short and medium-term forecasts of the economy. Yale's service, with weekly reports written by Fisher and begun in 1923, included data on stock and commodity prices and a discussion of current economic issues.

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