

The Economic Outlook for 1992 & 1993

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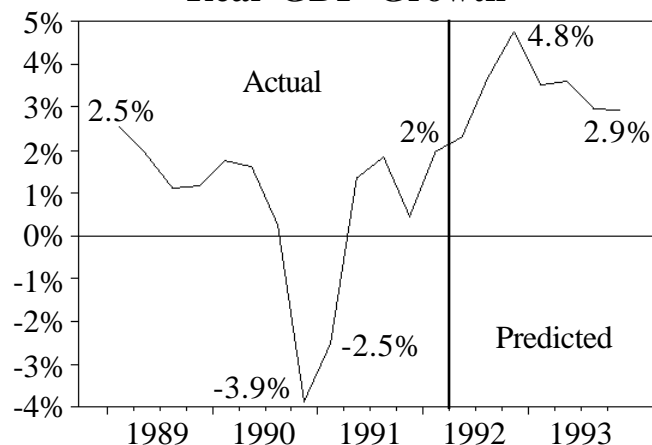
Introducing...

...*The Economic Outlook for 1992 & 1993!* This newsletter represents the final product of work by the students of the Seminar in Economic Forecasting at Yale University under the direction of Michael Donihue, Visiting Assistant Professor of Economics. *The Economic Outlook* examines the current state of the U.S. economy and provides our outlook for the next two years. The forecasts presented in this report are based on results from a small macroeconomic model constructed and maintained as part of the activities of this seminar. In this newsletter we begin with a look at some recently released economic indicators and a summary of our forecast for the next seven quarters. A general overview of our model of the U.S. economy follows. Next, the assumptions underlying our forecasts are outlined before turning to some highlights of the model's predictions for the major sectors of the economy. A special report on the coincident index of leading economic indicators takes a look at the recent performance of this closely watched variable and assesses its usefulness as a predictor of future economic events. The details of our forecasts are provided in the tables at the end.

Finally, A Genuine Recovery!

The government's announcement last week that real GDP grew at a healthy pace of 2% in the first quarter of 1992 appears to confirm recent economic evidence that the recession of 1990-91 is over. After posting almost no gain in 1991 (0.7%), retail sales grew at annual rates of 28% and 18% in January and February of this year. Employment rose in March and new housing starts have grown at annual rates of over 24% for each month of the first quarter of 1992. Even consumer sentiment appears to be showing signs of sustained improvement. The Federal Reserve's recent announcement that it was cutting a key interest rate target reinforces its commitment to economic growth in 1992. Evidence for a sustained recovery continues to come from the government's index of leading economic indicators which has increased in each of the first three months of this year.

Real GDP Growth



Almost all of the growth in real GDP during the first quarter of this year came from increased consumer spending --- a good sign for an economy which depended almost entirely on consumers to fuel economic growth during the latter half of the 1980s. The large drop in business inventories which occurred during 1992Q1 means that the manufacturing sector

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has yet to join the recovery as increases in demand were met primarily from sales out of inventories. Further evidence of a sluggish response on the part of manufacturing can be seen from declines in the index of industrial production and capacity utilization rates during the first quarter of 1992.

Forecast Summary

After eight years of sustained economic growth two successive quarters of negative growth in real GDP beginning with the last quarter of 1990 gave the nation its first recession since 1982. Fears of a "double dip" rose when the recovery faltered in late 1991 after lackluster growth during the spring and summer months. Real GDP grew at an annual rate of just four tenths of one percent in the fourth quarter of last year.

Our view is that economic growth will once again be the norm for the next seven quarters, albeit at a somewhat restrained level. We foresee further inventory reductions in the current quarter as the manufacturing sector of the economy continues to hold back resulting in only 2.3% annual growth in real GDP. Then, in mid summer, employment and output should begin to pick up steam as the economy is predicted to grow at annual rates of 3.7% in 1992Q3 and 4.8% in the fourth quarter --- higher than any quarter since President Bush took office. 1993 is expected to show sustained economic growth, averaging slightly more than 3.6% over 1992.

Contributions to Real GDP Growth			
	1991	1992f	1993f
GDP Growth	-0.74%	2.08%	3.61%
Consumption	-0.08%	1.88%	2.03%
Durables	-0.54%	0.54%	0.70%
Nondurables	-0.16%	0.26%	0.41%
Services	0.62%	1.08%	0.92%
Fixed Investment	-1.16%	0.28%	0.73%
Nonresidential	-0.74%	-0.12%	0.47%
Residential	-0.41%	0.40%	0.26%
Chg in Inventories	-0.29%	-0.14%	0.54%
Govt Purchases	0.16%	-0.09%	0.07%
Net Exports	0.62%	0.16%	0.23%
Exports	0.66%	0.70%	0.69%
Imports	0.04%	0.55%	0.47%

As the table above indicates, 1992 and 1993 are forecast to be very different from 1991 in terms of economic growth. In 1991, only government purchases, net exports and the consumption of services contributed positively to real GDP growth. Government spending is forecast to decline by about

one-half of one percent in 1992 which translates into a negative contribution to real GDP growth of about one-tenth of one percent. A slight rise in government purchases in 1993 leads to a nearly equal positive contribution to the predicted 3.6% increase in GDP.

In both 1992 and 1993, personal consumption expenditures are forecast to lead the major components of real GDP in terms of contributions to economic growth. 1992 and 1993 are forecast to be a much better years for consumer durables which should post the greatest gains of any of the three personal consumption expenditure categories, increasing by 6.4% in 1992 and 7.9% in 1993. 1993 looks to be a much better year for business investment as nonresidential fixed investment begins to contribute positively to real GDP growth. Total fixed investment is forecast to grow by 2% this year and 5.2% next year.

In the foreign sector, we are predicting a small surplus of \$2.9 billion in the real balance of trade in the fourth quarter of 1993. Exports are forecast to grow at an annual rate of 6% in real terms throughout the forecast horizon. The fall in net exports comes as real imports are forecast to grow by only 4.7% in 1992 and 3.9% in 1993.

In other areas, consumer prices are forecast to rise by about 3% in 1992 and slightly more in 1993. Prices for medical care are forecast to rise near their average of 8% for the past two decades, increasing by 8.2% in 1992 and 7.75% in 1993. As a measure of overall inflation, the GDP price deflator is predicted to rise by 2.8% in 1992 and 3.9% in 1993.

Disposable income is forecast to rise by 2.1% this year and 2.6% in 1993. Expenditures on health care are forecast to continue rising in 1992 and 1993 while consumers, on average, should pay less for gasoline at the pump this year than they did in 1991.

The Economic Model

The model on which the forecasts in this newsletter are based is a simplified model of real Gross Domestic Product disaggregated across the various sectors of the economy. The model contains 45 behavioral equations and 16 identities. While focusing on the principle components of GDP, key features of the model include expenditures and employment in the health services sector, retail automobile sales, vendor performance, and a break down of the federal budget.

The consumption sector of the model contains equations for personal consumption expenditures on durables, nondurables and services in real terms as well as equations for their corresponding price deflators. This sector also contains equations forecasting automobile sales, consumer credit, and consumer sentiment.

The investment sector breaks down expenditures into both real and nominal fixed investment in the business and residential construction sectors.

Inventory investment is also modeled explicitly as are new housing starts.

In the government sector, both real purchases of goods and services and its implicit price deflator are modeled. An equation predicting nominal receipts is used with exogenous forecasts of other federal expenditures and state and local expenditures to produce a forecast of the federal budget deficit.

In the monetary sector, both M1 and M2 are forecast as are six different interest rates. The effective rate on federal funds is the key interest rate in the model and behaves according to an assumed reaction function on the part of the Federal Reserve.

In the labor sector, forecasts of the civilian labor force are determined by an identity between predictions of the unemployment rate and the level of employment. Hourly earnings and productivity are modeled in this sector along with female labor force participation and vendor performance with the latter serving as one of the model's leading economic indicators.

Finally, in the foreign sector the exchange rate is determined according to purchasing power parity and relative interest rate relationships. Real imports and the deflators for imports and exports are modeled explicitly in this sector and used with an exogenous prediction of real exports to determine the balance of trade.

Assumptions Underlying the Forecasts

There are 15 exogenous variables in our model. In the foreign sector, real exports are assumed to grow at an annual rate of 6% throughout the forecast horizon. The relative price of foreign and domestic goods is assumed to fall by 2.2% in 1992 and rise by .6% in 1993. The price of imported oil is predicted to remain at \$19 per barrel throughout 1992 and the first half of 1993 before rising to \$20 in the last two forecast quarters. The Euro-Dollar deposit rate is assumed to rise to 5% by the end of this year and to 6% in the final forecast quarter. Nonoil import prices are forecast to grow at an annual rate of 3% in each quarter of the forecast horizon. And the difference between receipts from, and payments to, the rest of the world are forecast to remain roughly constant in 1992 and rise slightly for 1993 in both real and nominal terms.

In the manufacturing sector, almost no growth in capacity utilization rates are foreseen for 1992, while 1993 is predicted to see capacity utilization increase to 81%. The number of hours worked per week in the services sector is forecast to grow by 3.3% this year and by 4% in 1993. Virtually no growth is seen in the average hours of production workers.

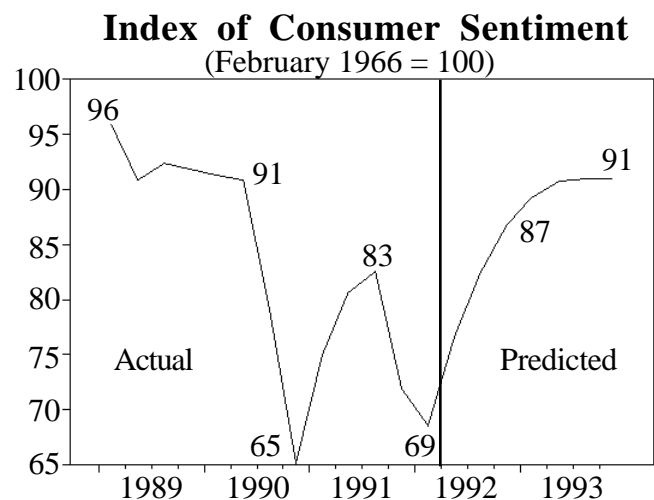
In terms of the federal budget, we are assuming cuts of \$5 billion, in real terms, in each quarter of FY 1993. State and local government expenditures are forecast to rise by 3.75% in 1992 and by 5% in 1993. Other federal government expenditures (transfers, etc.) are forecast to grow by 14.3% this year and 6% next year.

Mortgage debt is forecast to grow, on average, by roughly 5% in both 1992 and 1993. The median price of existing single-family homes follows its historical seasonal pattern throughout the forecast horizon, rising an average of 5.8% in 1992 and 4.9% in 1993.

Finally, we are assuming that the Federal Reserve will begin nudging up the effective rate on federal funds and increase the discount rate during 1993 in response to higher inflation. The discount rate is forecast to be 4% during the first half of 1993 and rise again to 4.25% for the remaining quarters of the forecast horizon. Complete details of the assumptions underlying the forecast can be found on pages 11-12.

Consumer Spending

The consumer services sector is recognized by most observers to have been the engine of economic growth for much of the past decade. The engine can be viewed as a consumer-combustion type in the following sense. The industry takes in consumers through its employment valve, which charges them with new confidence for the future. These workers then raise their consumption of goods and services, which spurs growth in GDP, which leads to new hiring and more consumption. In the past expansionary period this engine was performing beautifully. The services industries added 19 million jobs to the economy during the 1980's.



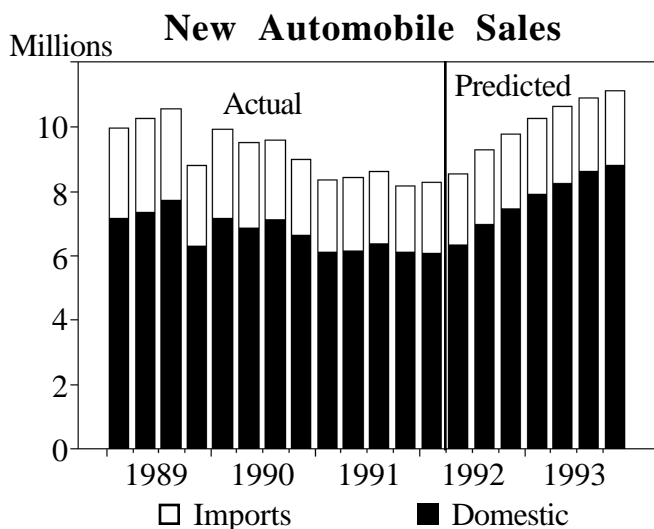
During the most recent recession we saw a reverse effect. A bloated services sector has finally been forced to examine its productivity, and has therefore slowed its hiring dramatically. These lost opportunities have been particularly disheartening among white-collar consumers who have not really met with uncertainty and unemployment in previous recessions. This new loss of consumer confidence will be much harder to overcome than in other downturns because the reorganization in the services sector is not likely to be a quick adjustment. Blue-collar workers are equally threatened by a wave of "downsizing" spreading across the country in the name of increased

competitiveness in global markets on the part of major manufacturers. As a result, consumer confidence in 1990 dropped to its lowest level since the 1970s.

As a result of the war in the Persian Gulf, consumer sentiment rose during the summer of 1991 before falling off again. We are estimating that the index bottomed out in January when it reached 65.7 (based on Feb '66=100) and that the average for the first quarter will be slightly below 69. Improvements in February and March will continue as the index is forecast to rise steadily this year before leveling off at the end of 1993.

When making observations on the state of an economic recovery, many economists look for a rebound in durable goods to signal the strengthening of consumer confidence and willingness to spend the country out of recession. Indeed, of the 2% increase in real GDP in the first quarter of 1992, total consumption contributed 3.5% to this growth rate (investment contributed a -2.3%). And of that 3.5%, expenditures on consumer durables accounted for 1.4%, while nondurables and services each contributed slightly less than 1.1%. We predict that durables consumption will increase by 6.4% in real terms this year and by 7.9% in 1993.

One of the most popular durables industries to watch is the automobile industry. The domestic auto industry has been under severe pressures during the most recent economic downturn and we see significant improvements in the next two years. Sales of domestic automobiles are forecast to rise by 8.9% this year and by 25% in 1993 to a level of 8.4 million units in 1993. This means that recent gains in the import share of total sales will level off in the coming 7 quarters as a falling dollar and increased competitiveness on the part of U.S. manufacturers takes its toll on the number of autos coming from abroad.



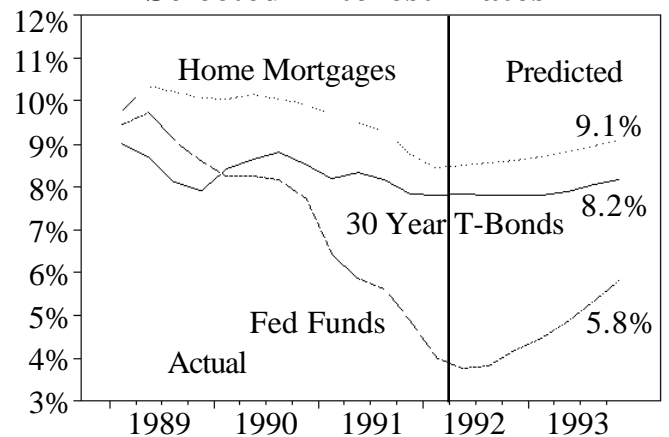
Interest Rates & the Money Supply

With federal spending running largely out of control and an increasing federal deficit, Congress and the Bush administration can do little in terms of discretionary fiscal policy have been largely ineffective in boosting the ailing economy. This has left all eyes on the Federal Reserve Bank to guide the economy out of the recession and to help ensure economic growth for the future.

Since it became evident in 1990 that the economy had entered a recessionary period, the Fed has been aggressively pursuing expansionary monetary policy. The discount rate has been reduced to 3.5% --- its lowest level since 1964 --- and the target for the rate on federal funds has reportedly been dropped to a ten-year low of 3.75%. The reasoning behind these cuts is that lower rates will make it more attractive to borrow for both individuals and businesses leading to increased investment and consumption.

This reaction has been slow in occurring however. Interest rate cuts typically take some time to work through the system, and this recession is no exception. In fact, the economy has been even less responsive than would have been thought. Problems in the banking industry have given rise to fears about making too many risky loans, which may be contributing to the fact that the cuts in the discount and federal funds rates have not spurred the expected level of borrowing by businesses.

Selected Interest Rates



There is some good news despite the difficulties mentioned above. At least one major bank has cut its prime lending rate by a quarter of a percentage point to 6.25%, and many banks are beginning to announce interest rate reductions on their major credit cards. After falling by more than 45 basis points in 1991, long term rates are forecast to fall by 33 additional basis points in 1992 before rising by about 20 basis points in 1993.

Home mortgage rates currently stand at an average of around 8.45%. We predict that rates will begin to rise slowly in response to increased demand for

loanable funds and some tightening on the part of the Fed. As mentioned earlier, we are assuming that the Fed will begin increasing its target rate on Federal Funds beginning at the end of 1992. As a result, short-term interest rates, which fell by 212 basis points in 1991 will begin rising in 1993 after falling an additional 140 basis points this year according to our projections. Our forecast is for the average rate on 3 Month Treasury Bills to increase by 74 basis points in 1993.

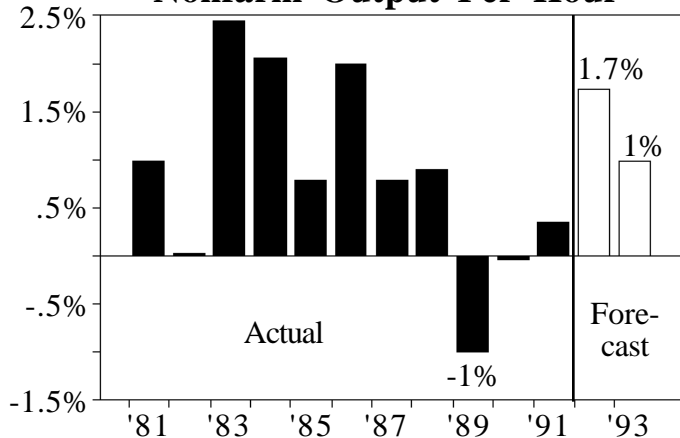
Following an unprecedented negative growth rate of the money supply (M2) in the third quarter of 1991, M2 grew at an annual rate of 4.3% in the first quarter of 1992. For our forecast horizon we expect money supply growth to be 3.3% in 1992 and 2.7% in 1993.

Labor & Productivity

Current data on the labor sector of our model presents a speckled report on the prospect of economic recovery. Later this week the Department of Labor will release its estimates of the unemployment rate for April and we foresee some slight improvement in the employment picture. The civilian unemployment rate rose steadily throughout 1991 increasing from 6.2% in January to 7.1% in December. In March the unemployment rate leveled off, posting no change from its level of 7.3% in February. The size of the labor force, after declining in February, posted a strong gain in March as more people began looking for work as word of an improving economic climate spread.

We are predicting that by the end of 1993 the unemployment rate in this country will have fallen to 5.7%. Employment in the health services sector is predicted to increase by 4% this year and 3% next year --- somewhat higher than the predicted increases for total employment of 1.4% in 1992 and 2.5% in 1993.

Productivity Growth In The U.S. Nonfarm Output Per Hour



Productivity growth in this country has become an increasingly popular topic in recent years. The post-war average annual increase in productivity in this

country has been 1.8%. Throughout most of the 1980s nonfarm output per hour remained positive --- until 1989 and 1990 when economists and policy makers in Washington began sounding a distress signal over the declining productivity of America's workforce. 1991 showed an actual increase in productivity in a year of rising unemployment. We foresee no reason to believe that productivity is on the decline in this country and are predicting a 1.7% rate of growth in 1992 and a 1% increase in 1993.

One sign as to the magnitude of the recession came in female labor force participation rates which actually declined in 1991 after 29 years of successive increases. We are predicting increases in the rate of female labor force participation in both 1992 and 1993, however the increases of 1.1% and 1.2%, respectively, are slightly below the post-WWII average of 1.3% per year.

Investment & Housing Starts

The importance of inventories in business cycles has been well documented by economists. Despite claims that "just in time" methods of inventory control made a difference in the role inventories played in the most recent recession, a comparison of several recent recessionary periods shows the most recent experience in fact wasn't all that different.

Recession (peak & trough)	Change In Real GDP	Change In Inventory Investment	Chg in Inventory Investment as a % of Chg in Real GDP
1960:1-1960:4	-12.7	-45.5	358%
1969:3-1970:4	-12.6	-32.3	256%
1973:4-1975:1	-135.7	-84.7	62%
1980:1-1980:2	-98.2	-10.7	11%
1981:3-1982:4	-104.9	-80.6	77%
1990:3-1991:1	-79.3	-46.7	59%

(Billions of 1987 Dollars)

For these six recessions, the change in inventory investment averaged 137% of the change in real GDP. This is especially interesting when you consider that inventory investment average just .6% of real GDP during this period, while personal consumption expenditures average over 64% of real GDP. During the last recession net exports and government spending actually increased, while in real terms consumption fell by \$40 billion.

During the first quarter of this year inventory investment was reportedly -\$26 billion in constant dollar terms, and we are forecasting continued declines in inventories throughout the year as manufacturers remain cautious about recalling workers and restarting production.

1993 is forecast to be a healthy year for investment however with total investment increasing by over 9% relative to 1992. Residential investment in new

construction should lead the way after remaining depressed for much of 1991.

The long-awaited recovery in new housing appears to finally be under way. 1991 proved to be the worst year for housing starts since WWII. Housing starts were reported to have been up to almost 1.3 million units in March. We are predicting a growth of almost 26% in 1992, but a leveling off in 1993 as housing starts are forecast to grow by just 1% over the level in 1993 as mortgage rates begin to rise.

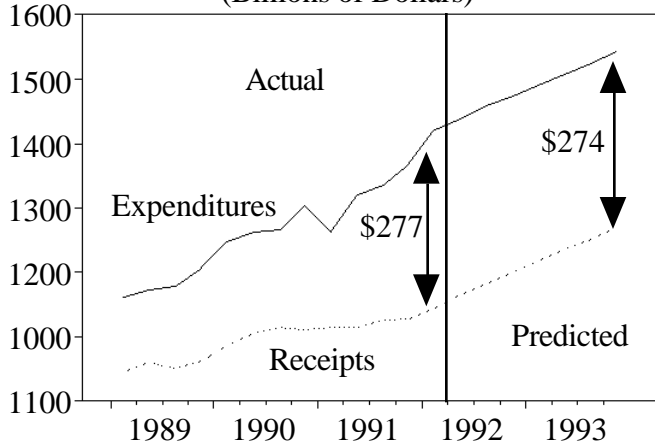
The Federal Deficit

Balancing the federal budget is always a topic of hot debate among politicians as well as economists. The government has consistently run a deficit since 1970. After high deficits through the early 1980s, the size of the deficit decreased from 1987 to 1989 but since then has increased again, approaching \$242 billion by the end of 1991. Government purchases of goods and services actually decreased in the last two quarters of 1991, but total government expenditures, which includes interest and transfer payments, rose by nearly 11% in 91Q4. Meanwhile, federal government receipts only rose by 0.7% that quarter. So even though the government has curtailed purchases, it has yet to be a favorable effect on the deficit.

Currently the focus in Washington is the so-called "peace dividend." Recent changes in the world's political structure have led to huge proposed cuts in overall military spending. This reduction in government expenditures should increase the potential for a reduction in the federal deficit.

Although there will be some election-year pressure for spending on other programs and for tax reform, deficit reduction is a distinct possibility for the years ahead. As the economy moves out of the recession, an increase in employment will increase government receipts and help reduce the size of the deficit.

The Federal Budget Gap
(Billions of Dollars)



Based on the data we currently have, we estimate that the budget deficit in the first quarter of this year

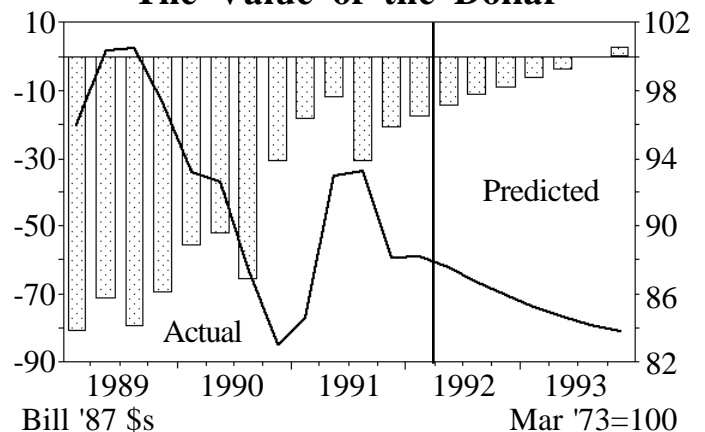
was slightly less than \$277 billion. Given that we are currently in an election year and there is a general perception that unemployment remains a problem in this country, little if any progress is expected for the deficit in fiscal year 1993. Total Federal expenditures are forecast to rise by 9% in the current fiscal year, relative to FY '91, and by 5.4% in FY '93. Receipts are predicted to rise by 3.4% in FY '92 and by 5.5% in FY '93. Thus we are forecasting that the beginning of fiscal year 1994 will pick up right where fiscal year 1993 left off, with a deficit of about \$274 billion.

The Foreign Sector

The outlook for the foreign sector will depend on a variety of factors. Chief among these is the fact that many of America's trading partners are engulfed in a period of slowed economic activity. In Germany for example, the huge costs of reunification have resulted in a higher budget deficit, higher inflation, and higher interest rates. This in turn has had adverse effects on the rest of the economies in Europe. In Japan, slower growth and a stock market free fall have resulted in fears of a prolonged recession. This world-wide slow-down will dampen export growth for the U.S.

Another issues facing the U.S. is the GATT negotiations. The goals of the talks include lowering world-wide tariffs on manufactured goods, limiting the ability of various countries to restrict imports unilaterally and the application of free-trade rules to agriculture and services like investment banking and accounting. But progress in all areas has nearly stopped because the U.S. has been insisting that the European Community prune its sprawling system of farm subsidies. If an agreement can be reached however, there is a potential for much greater growth in U.S. exports.

Net Exports & The Value of the Dollar



Prior to the Gulf War, the value of the dollar was falling rapidly which led many economists to predict a trade surplus by the end of 1991. In fact some policy makers saw export growth as a way to bring the economy out of the recession. The war with Iraq

however, caused the dollar to appreciate in value and prevented the improvement in the balance of trade which people were seeking.

We are predicting that real exports will grow at an annual rate of 6% in each quarter of the forecast horizon. Real imports are forecast to be 4.7% higher in 1992 and 3.9% higher in 1993. We are also forecasting that the exchange value of the U.S. dollar will fall by almost 3% this year, relative to 1991, and by slightly more than 3% next year. By making imports more expensive and U.S. exports more attractive abroad this should bring about an overall improvement in the balance of trade so that by the final quarter of 1993, the U.S. will have an overall trade surplus of \$2.9 billion (1987 dollars).

Special Report:

mis-Leading Economic Indicators

The summer of 1990 marked the beginning of a recession for the United States economy. The recession caught some people by surprise, and brought much attention to the various indicators which were supposed to have provided advance notice of such events in the economy. The Composite Index of Leading Indicators (CLI) was one such measure that had continued to forecast prosperity even after the economy had begun its downturn. The values for the CLI published at the time gave no evidence of decline until late September 1990, although the recession is now officially dated as having begun in July. For an index purported to give several months warning of changes of direction in the economy, some analysts felt it performed remarkably poorly. Defenders of the CLI pointed to exceptional circumstances, many claiming that the Iraqi invasion of Kuwait in August had initiated the recession so quickly that it would have been impossible to predict its coming. As seen in the chart below, a cursory glance at the index's past

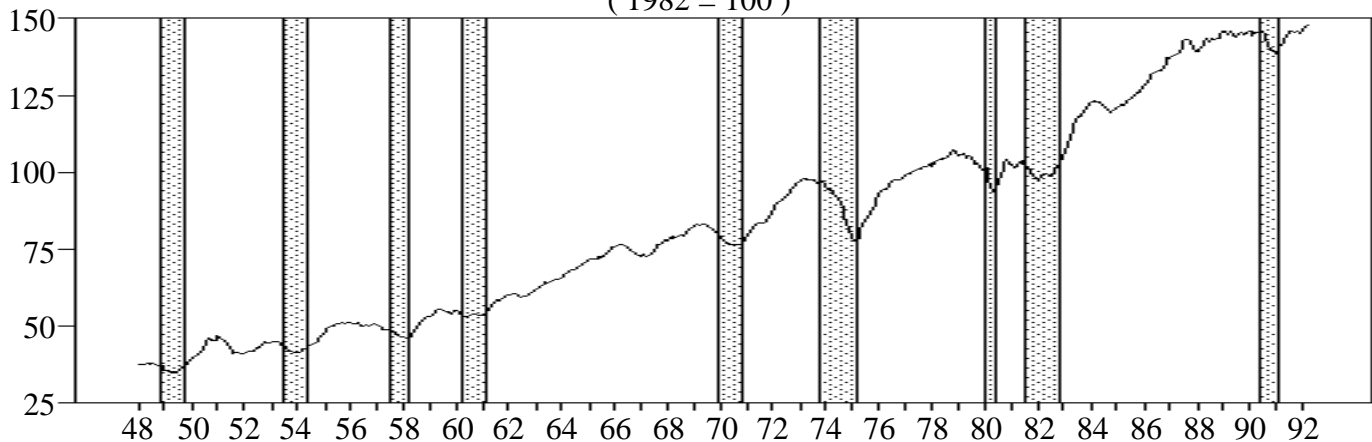
behavior does seem to indicate that it had a good record historically in anticipating business cycle turning points. Note however that there are several instances when the index turned downward and a recession did not occur. In fact, closer examination of the index reveals that it suffers from a number of flaws which make it difficult to rely on when making predictions about the economy's future.

The concept of leading economic indicators originated during the severe recession of 1937-38, when then Secretary of the Treasury Henry Morgenthau, Jr. decided that he needed to know if and when the recession was nearing its end. He asked the National Bureau of Economic Research to devise a system of indicators that would provide him with this knowledge. Economists at the Bureau proceeded to examine hundreds of time series and selected those which seemed to have been good predictors of past business upturns. The chosen series had cycles which tended to lead the business cycles of the economy, i.e., the peaks and troughs of the series' cycles tended to occur before the corresponding peaks and troughs in the business cycle. Since the publication of those indices in May of 1938, the basic approach behind construction of leading indicators has changed very little. The CLI was first published in 1968 and represents a combination of variables which are chosen primarily based on their historical record of having cycles which precede those of the macro economy.

Three of the series which make up the CLI are forecasted individually in our model (consumer sentiment, M2, and vendor performance). There are a total of eleven economic variables which are combined to form the CLI. Historically, the index has signaled changes in the direction of the economy an average of about nine and one-half months before the peak in economic growth and about four and one-half months before the trough.

Composite Index of Leading Economic Indicators

(1982 = 100)

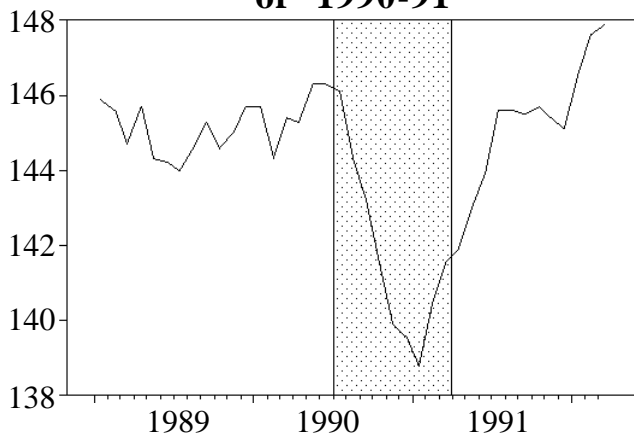


The trough for the 1990-91 recession has yet to be officially dated. We are assuming that it occurred sometime near the end of the first quarter of 1991 based on the fact that real GDP growth has been positive since 1991Q2.

One of the problems with the CLI is that, although the data for the series which make up the index are available on a monthly basis, the index itself is typically not released until the month following the period on which the data are based (the preliminary estimate of the CLI for May 1992 was released on April 30th) which reduces the lead time of the index. Furthermore, many of the series which make up the CLI are subject to historical revisions, thus the CLI must be revised as well. These revisions make the CLI more accurate in terms of explaining business cycles *ex post* but do not help the index in terms of its predictive ability. In fact, the revised data in the table at right paint a different picture of the CLI and the recession of 1990 than what was reported at the time.

While every peak or trough in the business cycle has been preceded by at least a one month change in the appropriate direction by the index, there have also been a number of changes in the index which led to no turning point in the economy. There are various strategies which economists have used to try and ascertain when the CLI is forecasting a turning point and when a change in the CLI should be ignored. One simple method is to say that the index is forecasting a turning point after the direction change has been maintained for, two consecutive months. Historically such a rule would have led to 23 false signals since 1968, and on average this alarm would have been sounded 1.3 months *after* the recession actually began. A three-month rule would have resulted in only 13 false alarms for the same period, but the signal was on average almost three months late. For predicting expansions, a two-month rule results in two false signals and is only about 0.2 months late. A three-month rule produces no false signals, but sounds the alarm 1.3 months after the fact. The accuracy gets much worse when you apply these rules to the unrevised data. The key is that there exists a tradeoff between signal time and the incidence of false alarms.

CLI & the Recession of 1990-91



Monthly Change In The CLI

1990	
January	0%
February	-0.9%
March	0.8%
April	-0.1%
May	-0.7%
June	0%
July	-0.1%
August	-1.2%
September	-0.8%
October	-1.2%
November	-1.1%
December	-0.2%
1991	
January	-0.6%
February	1.2%
March	0.8%
April	0.3%

It now seems apparent that the economy was showing signs of slowing down throughout much of 1989. A two-month negative change rule would have signaled a recession at least two months prior to the official date of July 1990. The CLI hit bottom in January of 1991 and continued its string of successive monthly increases until December 1991 fueling fears of a "double dip" recession at that time. However the CLI has racked up another string of monthly increases in 1992 and as a result most economists now foresee a period of sustained economic growth.

Although the discussion here regarding the CLI is somewhat mixed, it should not be concluded that the CLI is not a useful tool for economists and policy makers. As with all measures of economic performance the CLI suffers from limitations, however no one index can be expected to perform with complete accuracy as a predictor if used mechanically or in isolation of other information that might be available. Whatever the measure, forecasts of future economic performance must be viewed in light of the current climate and in the context of the other economic information which is available. Relying on one single measure absolutely can be very *mis*-leading.

Acknowledgments

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ECONOMIC OUTLOOK FOR THE U.S. ECONOMY, 1992:Q2 - 1993:Q4

4-May-92

Variable	Units	Actual Forecast								Percent Change	
		92:Q1	92:Q2	92:Q3	92:Q4	93:Q1	93:Q2	93:Q3	93:Q4	1991-92	1992-93
Gross Domestic Product	(Bill '87 \$'s)	4892.0	4919.9	4964.6	5023.0	5066.5	5111.8	5149.2	5186.5	2.08%	3.61%
Annual Rate of Growth		2.0%	2.3%	3.7%	4.8%	3.5%	3.6%	3.0%	2.9%		
Personal Consumption Expenditures	(Bill '87 \$'s)	3313.8	3332.8	3363.1	3390.3	3416.6	3440.7	3462.3	3483.2	2.79%	3.01%
Durable Goods	(Bill '87 \$'s)	429.9	430.5	442.8	452.6	462.6	470.8	477.5	483.2	6.40%	7.88%
Nondurable Goods	(Bill '87 \$'s)	1047.6	1052.4	1058.0	1063.6	1068.6	1073.7	1078.2	1083.1	1.19%	1.94%
Services	(Bill '87 \$'s)	1836.3	1849.9	1862.3	1874.2	1885.4	1896.2	1906.6	1916.9	2.90%	2.46%
Gross Private Domestic Investment	(Bill '87 \$'s)	666.1	669.8	678.3	707.7	722.1	739.4	750.5	762.0	1.01%	9.26%
Fixed Investment	(Bill '87 \$'s)	692.2	695.0	702.5	715.5	725.1	734.6	742.0	748.2	2.00%	5.15%
Nonresidential	(Bill '87 \$'s)	503.7	503.5	506.3	512.8	519.1	526.6	533.5	540.3	-1.13%	4.60%
Residential	(Bill '87 \$'s)	188.5	191.5	196.2	202.8	206.0	208.1	208.5	207.9	11.14%	6.60%
Change in Business Inventories	(Bill '87 \$'s)	-26.1	-25.2	-24.2	-7.8	-3.0	4.7	8.5	13.8	50.14%	-128.9%
Government Purchases	(Bill '87 \$'s)	929.8	931.6	934.9	934.2	934.5	935.5	936.9	938.4	-0.47%	0.40%
Net Exports of Good & Services	(Bill '87 \$'s)	-17.7	-14.4	-11.7	-9.3	-6.6	-3.8	-0.5	2.9	-36.27%	-84.79%
Exports of Goods & Services (a)	(Bill '87 \$'s)	559.4	567.6	575.9	584.4	593.0	601.7	610.5	619.5	6.32%	6.00%
Imports of Goods & Services	(Bill '87 \$'s)	577.1	582.0	587.6	593.7	599.6	605.5	611.0	616.6	4.73%	3.94%
Gross National Product (b)	(Bill '87 \$'s)	4901.3	4928.9	4972.6	5031.0	5075.5	5121.8	5160.2	5198.5	2.02%	3.64%
Gross Domestic Product	(Bill \$'s)	5809.4	5883.8	5994.3	6120.5	6233.2	6349.4	6462.4	6581.5	4.93%	7.64%
Personal Consumption Expenditures	(Bill \$'s)	4023.6	4081.1	4154.4	4227.5	4299.9	4371.4	4445.1	4518.6	5.98%	6.97%
Durable Goods	(Bill \$'s)	468.3	470.0	484.8	497.3	509.9	520.8	530.1	538.4	7.83%	9.31%
Nondurable Goods	(Bill \$'s)	1270.8	1288.2	1305.7	1323.2	1339.7	1356.8	1376.6	1395.4	3.60%	5.41%
Services	(Bill \$'s)	2284.5	2322.9	2363.9	2407.0	2450.3	2493.8	2538.5	2584.8	6.96%	7.35%
Gross Private Domestic Investment	(Bill \$'s)	712.4	713.3	732.5	771.9	797.4	825.3	849.3	875.6	0.80%	14.25%
Fixed Investment	(Bill \$'s)	745.1	748.6	760.8	781.1	800.2	820.5	840.1	859.9	1.84%	9.39%
Nonresidential	(Bill \$'s)	535.3	535.9	542.4	554.7	568.2	583.9	600.1	617.3	-1.46%	9.28%
Residential	(Bill \$'s)	209.8	212.7	218.3	226.3	232.0	236.5	240.0	242.6	11.14%	9.68%
Change in Business Inventories	(Bill \$'s)	-32.7	-35.2	-28.3	-9.2	-2.8	4.8	9.3	15.7	42.60%	-125.5%
Government Purchases	(Bill \$'s)	1096.1	1107.3	1120.2	1128.7	1138.0	1148.5	1159.8	1171.5	2.35%	3.72%
Net Exports of Good & Services	(Bill \$'s)	-22.7	-17.9	-12.8	-7.5	-2.0	4.2	8.2	15.8	-50.25%	-143.0%
Exports of Goods & Services	(Bill \$'s)	613.6	627.4	642.9	659.4	676.1	693.5	712.0	731.2	7.53%	10.59%
Imports of Goods & Services	(Bill \$'s)	636.3	645.3	655.8	667.0	678.1	689.3	703.8	715.4	4.69%	7.00%
Gross National Product (b)	(Bill \$'s)	5820.4	5894.8	6003.3	6129.5	6244.2	6362.4	6477.4	6596.5	4.86%	7.68%

(a) Exogenously Determined
(b) Value in 92:Q1 is predicted

ECONOMIC OUTLOOK FOR THE U.S. ECONOMY, 1992:Q2 - 1993:Q4

4-May-92

Variable	Units	Actual Forecast												Percent Change	
		92:Q1	92:Q2	92:Q3	92:Q4	93:Q1	93:Q2	93:Q3	93:Q4	1991-92	1992-93				
Inflation: GDP Deflator	(%,A.R.)	2.90	2.86	3.89	3.73	3.92	3.90	4.23	4.51	2.78%	3.89%				
Consumer Price Index	(%,A.R.)	2.83	3.02	3.09	3.25	2.85	3.09	3.55	3.65	3.02%	3.15%				
Personal Consumption Deflator	(%,A.R.)	2.68	3.51	3.57	3.82	3.78	3.86	4.27	4.24	3.10%	3.84%				
Consumer Durables	(%,A.R.)	1.48	0.98	1.23	1.39	1.31	1.38	1.41	1.54	1.32%	1.34%				
Nondurable Consumption	(%,A.R.)	1.67	3.72	3.30	3.30	3.08	3.25	4.18	3.70	2.37%	3.39%				
Consumer Services	(%,A.R.)	3.62	3.80	4.42	4.80	4.87	4.87	5.04	5.20	3.91%	4.78%				
Government Purchases	(%,A.R.)	3.47	3.29	3.30	3.34	3.22	3.28	3.40	3.41	2.82%	3.30%				
Import Price Deflator	(%,A.R.)	-2.85	2.11	2.63	2.69	2.70	2.70	4.80	2.90	-0.09%	2.93%				
Export Price Deflator	(%,A.R.)	-0.36	3.07	4.03	4.41	4.22	4.46	4.82	4.92	1.12%	4.33%				
CPI for Medical Care	(%,A.R.)	9.65	8.56	8.06	7.81	7.66	7.58	7.53	7.48	8.24%	7.75%				
Retail Gasoline Prices (All Types)	(\$/Gal.)	1.12	1.16	1.17	1.18	1.18	1.19	1.21	1.23	-3.05%	3.54%				
Real Disposable Income	(Bill '87 \$'s)	3573.7	3594.1	3623.2	3651.6	3671.7	3693.1	3713.1	3735.1	2.14%	2.56%				
Nominal Disposable Income	(Bill \$'s)	4339.1	4369.7	4432.2	4515.0	4593.2	4677.1	4759.6	4845.3	4.64%	6.91%				
Avg Conventional Home Mortgage Rate (b)	(%)	8.45	8.51	8.57	8.62	8.71	8.81	8.95	9.11	-8.24%	4.18%				
Aaa Corporate Bond Rate	(%)	8.28	8.41	8.41	8.44	8.54	8.63	8.79	8.93	-4.37%	4.03%				
30 Year Treasury Bond Rate	(%)	7.80	7.86	7.79	7.78	7.83	7.90	8.05	8.18	-4.03%	2.31%				
3 Month Treasury Bill Rate	(%)	3.89	3.97	3.96	4.07	4.34	4.52	4.88	5.10	-26.06%	18.53%				
Effective Rate on Federal Funds	(%)	4.02	3.76	3.82	4.18	4.44	4.86	5.34	5.81	-30.67%	29.66%				
Average Foreign Interest Rate	(%)	8.92	8.90	9.01	9.29	9.50	9.71	9.86	10.02	-4.23%	8.24%				
Money Supply (M1)	(Bill \$'s)	926.6	951.4	969.0	982.0	992.2	1000.6	1007.9	1014.5	11.26%	4.86%				
Money Supply (M2)	(Bill \$'s)	3465.5	3504.2	3537.4	3564.3	3587.3	3606.7	3623.8	3638.9	3.28%	2.74%				
Index of Consumer Sentiment (b)	(Feb '66=100)	68.80	76.60	82.30	86.67	89.34	90.82	91.02	90.99	1.34%	15.20%				
Health Services Expenditures	(Bill '87 \$'s)	453.40	455.45	457.62	459.90	462.22	464.58	466.98	469.44	3.86%	2.02%				
Total Automobile Sales	(Mill \$'s)	8.30	8.52	9.28	9.77	10.26	10.62	10.90	11.13	6.91%	19.61%				
Domestic Automobile Sales	(Mill \$'s)	6.07	6.27	6.98	7.43	7.90	8.25	8.55	8.80	8.87%	25.24%				
Import Automobile Sales	(Mill \$'s)	2.23	2.24	2.31	2.34	2.36	2.36	2.35	2.33	1.53%	3.11%				
Outstanding Automobile Credit (b)	(Mill \$'s)	269.00	270.10	272.43	276.10	280.54	285.59	290.70	295.94	-1.11%	5.99%				
Exchange Value of U.S. Dollar	(3/73=100)	88.19	87.53	86.71	85.92	85.24	84.63	84.13	83.73	-2.95%	-3.05%				
Companies Reporting Slower Deliveries	(%)	49.0	49.5	50.3	52.2	52.4	52.1	51.2	50.3	6.53%	2.46%				
New Private-Owned Housing Units Started	(Millions)	1.28	1.24	1.28	1.32	1.33	1.31	1.28	1.25	25.99%	0.92%				

(a) Exogenously Determined

(b) Value in 92:Q1 is predicted

ECONOMIC OUTLOOK FOR THE U.S. ECONOMY, 1992:Q2 - 1993:Q4

4-May-92

Variable	Units	Actual Forecast												Percent Change	
		92:Q1	92:Q2	92:Q3	92:Q4	93:Q1	93:Q2	93:Q3	93:Q4	1991-92	1992-93				
Civilian Unemployment Rate	(%)	7.23	7.19	7.03	6.69	6.41	6.14	5.93	5.74	4.22%	-13.91%				
Health Services Employment	(Millions)	8.47	8.54	8.61	8.67	8.74	8.80	8.87	8.94	4.07%	3.07%				
Total Employment	(Millions)	117.17	117.99	119.02	119.85	120.54	121.13	121.75	122.48	1.40%	2.50%				
Civilian Labor Force	(Millions)	126.3	127.12	128	128.4	128.8	129.1	129.4	129.9	1.72%	1.44%				
Female Labor Force Participation Rate	(%)	57.73	57.88	58.03	58.22	58.40	58.57	58.73	58.87	1.07%	1.17%				
Productivity: Nonfarm Output/Hour (b)	(1982=100)	109.6	110.06	110.7	111.1	111.2	111.4	111.5	111.7	1.73%	0.98%				
Average Hourly Earnings, Private Nonag	(\$/hour)	10.51	10.58	10.65	10.71	10.78	10.85	10.92	10.99	2.63%	2.58%				
The Federal Budget															
Government Purchases of Goods & Services	(Bill \$'s)	1096.1	1107.3	1120.2	1128.7	1138.0	1148.5	1159.8	1171.5	1.42%	3.42%				
- State & Local Government Purchases (a)	(Bill \$'s)	654.3	662.3	670.5	678.7	687.0	695.4	704.0	712.6	2.97%	4.31%				
+ Other Federal Govt Expenditures (a)	(Bill \$'s)	980.0	994.4	1009.0	1023.8	1038.8	1054.0	1069.5	1085.2	14.01%	5.99%				
- Federal Government Receipts (b)	(Bill \$'s)	1145.0	1163.6	1182.5	1200.4	1217.9	1235.1	1252.4	1269.8	3.42%	5.49%				
= Federal Government Budget Deficit (b)	(Bill \$'s)	276.8	275.8	276.3	273.4	271.9	271.9	272.9	274.3	41.59%	1.68%				

Input Assumptions: Endogenous Variables with Nonzero Intercept Adjustments

	92:Q2	92:Q3	92:Q4	93:Q1	93:Q2	93:Q3	93:Q4
Total Automobile Sales	(c)	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01
Import Automobile Sales	(c)	0.03	0.03	0.03	0.03	0.03	0.03
Consumer Price Index	(d)	-5E-04	-6E-04	-0.001	-0.002	-0.002	-0.002
Change in Business Inventories	(Bill \$'s)	-25	-25	-12	-20	-18	-15
Avg Conventional Home Mortgage Rate (b)	(%)	0.4	0.4	0.4	0.4	0.4	0.4
Aaa Corporate Bond Rate	(%)	0.4	0.3	0.3	0.3	0.3	0.3
3 Month Treasury Bill Rate	(%)	0.2	0.1	0	0	0	0
Effective Rate on Federal Funds	(%)	-0.5	-0.4	-0.3	-0.2	-0.1	0
Imports of Goods & Services	(Bill '87 \$'s)	4	4	4	4	4	4
Exchange Value of U.S. Dollar	(d)	0.001	0.001	0.001	0.001	0.001	0.001
Export Price Deflator	(c)	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004
Total Employment	(Millions)	0	20	40	60	80	100
Government Purchases of Goods & Services	(Bill '87 \$'s)	0	0	-5	-5	-5	-5

(c) Forecasting equations for these variables were estimated in terms of the natural logarithms.

(d) Forecasting equations for these variables were estimated in terms of the first difference of the natural logarithms.

(a) Exogenously Determined

(b) Value in 92:Q1 is predicted

Input Assumptions: Forecast Paths for the Exogenous Variables in the Model

Variable	Units	Actual Forecast								Percent Change	
		92:Q1	92:Q2	92:Q3	92:Q4	93:Q1	93:Q2	93:Q3	93:Q4	1991-92	1992-93
Exports of Goods and Services	(Bill '87 \$'s)	559.4	567.6	575.9	584.4	593.0	601.7	610.5	619.5	6.32%	6.00%
Annual Rate of Growth (a)	(%)		6.0	6.0	6.0	6.0	6.0	6.0	6.0		
Avg. Refiners' Price of Crude Oil (a, b)	(\$'s/Barrel)	19	19	19	19	19	19	20	20	-0.41%	2.63%
Manufacturing Capacity Utilization (a)	(%)	78.0	78.5	80	81	81	81	81	81	0.01%	2.06%
Relative Foreign Prices (a, c)	Index	87.2	87	87.2	87.4	87.4	87.6	87.8	88	-2.18%	0.57%
Discount Rate (a)	(%)	3.5	3.5	3.5	3.5	4	4	4.25	4.25	-35.75%	17.86%
Median Price of Single-Family Homes (b)	(Thsnd \$'s)	103.5	106.31	106.9	104.5	108.5	111.5	112.1	109.5	5.81%	4.87%
Seasonal Growth Rates (a)	(%, A.R.)		11.3	2.3	-8.9	16.6	11.3	2.3	-8.9		
Weekly Hours Index: Services Industry	(1977=100)	150.2	151.71	153.2	154.7	156.2	157.8	159.3	160.9	3.28%	4.00%
Annual Rate of Growth (a)	(%)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		
Average Hours of Production Workers (a)	(Hrs/week)	34.47	34.5	34.5	34.5	34.5	34.5	34.5	34.5	0.56%	0.02%
Euro-Dollar Deposit Rate (a)	(%)	4.12	4.3	4.5	5.0	5.3	5.5	5.8	6.0	-23.77%	25.89%
Nonoil Import Price Deflator	(1987=100)	109.26	110.1	110.9	111.7	112.5	113.4	114.2	115.1	1.13%	3.00%
Annual Rate of Growth (a)	(%)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		
Mortgage Debt Outstanding (b)	(Mill \$'s)	4.13	4.18	4.23	4.28	4.34	4.39	4.44	4.50	5.08%	5.00%
Annual Rate of Growth (a)	(%)		5.0	5.0	5.0	5.0	5.0	5.0	5.0		
State & Local Government Purchases	(Bill \$'s)	654.3	662.3	670.5	678.7	687.0	695.4	704.0	712.6	3.75%	5.00%
Annual Rate of Growth (a)	(%)		5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Other Federal Government Expenditures (d)	(Bill \$'s)	980.0	994.4	1009.0	1023.8	1038.8	1054.0	1069.5	1085.2	14.29%	6.00%
Annual Rate of Growth (a)	(%)		6.0	6.0	6.0	6.0	6.0	6.0	6.0		
Rest of World: Real (a, b, e)	(Bill '87 \$'s)	9	9	8	8	9	10	11	12	-24.45%	22.45%
Rest of World: Nominal (a, b, e)	(Bill \$'s)	11	11	9	9	11	13	15	15	-23.95%	35.00%

(c) Defined historically as: (Nonoil Import Price Deflator x Exchange Value of the \$)/Export Price Deflator

(d) Defined historically as: Total Federal Expenditures - Total Government Purchases of Goods & Services + State & Local Government Purchases

(e) Defined historically as: Gross National Product - Gross Domestic Product

(a) Exogenously Determined

(b) Value in 92:Q1 is predicted