# Colby Economic Outlook

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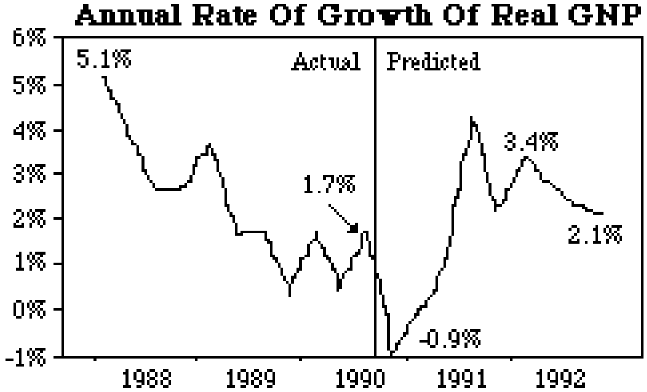
## Announcing...

...the first public release of *The Colby Economic Outlook* (CEO)! This newsletter represents the final product of work by the students of Economics 493, an annual Senior Seminar in Economic Forecasting under the direction of Michael Donihue, Assistant Professor of Economics at Colby College. The CEO provides our current economic outlook for the U.S. economy and selected sectors of interest for the Maine economy for the coming two years. The forecasts presented in this report are based on results from the Colby Quarterly Econometric Model of the U.S. Economy (CQEM), a small macroeconometric model constructed and maintained as part of the ongoing activities of this seminar.

**Annual Rate Of Growth Of Real GNP**




## A Consumer Vote Of Not Confidence Brings A Halt To Economic Growth

After eight years of economic expansion it now seems clear that the economy will indeed experience the "meaningful downturn" Federal Reserve Chairman Alan Greenspan spoke of, in the current quarter. Just how long and how deep the downturn will be is the real question. Despite the almost daily flow of gloomy economic news, the CEO is optimistic about the future. Our forecast indicates that after the 1.7% growth experienced in the third quarter, real GNP will fall at an annual rate of slightly less than 1% in the final quarter of 1990. 1991 will begin with essentially no growth in the first quarter and then improve slightly with an average increase in real GNP of just under 1% relative to 1990. Given the current economic climate, economic growth in 1992 should improve, however overall the economy will continue to be sluggish. This is pretty much the way the economy looked at the beginning of 1990 --- prior to Iraq's invasion of Kuwait. In fact, we believe that the current slowdown is due largely to an over reaction on the part of consumers to the jump in oil prices in August and September. Look for the special report entitled "War & Peace" on the impact of the Iraqi aggression on the economy beginning on page 5 of this newsletter. What follows is an overview of our forecast and a description of the Colby Quarterly Econometric Model. Forecasts for each sector of CQEM are then examined in detail before turning to our outlook for the Maine economy.

### Inside The CEO



### Co-Authors

Assistant Professor Michael Donihue
Steven Dimitriou — Kim Merriman
Johanna Hardy — Tracy Mungeam
Kaylyn Hipps — Pamela Newsome
James Lamberti — Tamar Snyder

## Forecast Summary: It Feels Like A Recession

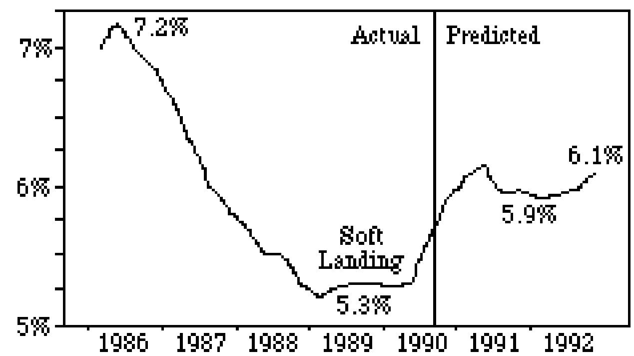
Our forecast last year at this time focused primarily on the success of the Federal Reserve in engineering a "soft landing" by curbing inflation while preserving economic growth. The hot topic then was how to achieve "zero" inflation without a recession. The Federal deficit and the bailout of the nation's troubled savings and loan institutions and the impacts these would have on domestic investment were the only storm clouds on an otherwise positive economic outlook. Growth was sluggish as 1990 began, but the general impression was that, as long as nothing unusual happened, there was no reason to expect an end to the unprecedented period of economic growth.

Saddam Hussein turned out to be the unusual something. At the beginning of the year consumer spending had begun to slow down thereby removing some of the fuel that had stoked the engines of economic growth for the past eight years. However consumers remained optimistic about the future. Then came Iraq's invasion of Kuwait. Just about everyone remembers what happened the last time oil prices rose suddenly above $30 per barrel and when a speculative bubble drove prices above $40 per barrel consumers reacted as evidenced by the sudden drop in the various measures of consumer confidence. We believe that the recent announcements in Washington and Baghdad have increased the chances for a peaceful resolution of the crisis in the Persian Gulf prior to the second quarter of 1991 at which time oil prices should return to their pre-invasion levels.

We believe that the current downturn in economic growth is due primarily to the fact that a drop in consumer confidence led to increased uncertainty on the part of businesses. As the housing industry began to deteriorate and new car sales fell, it began to feel more and more like a recession was in the making. To some extent this became a self-fulfilling prophecy and as a result we will experience at least one, and perhaps two quarters of negative growth in real GNP.

We believe that the Fed will continue on its course of cautious fine-tuning in an effort to prevent the economy from sinking too deeply into a recession while keeping a wary eye on inflation. The Fed Funds Rate will dip below 7% and, with the announcement this week that the Fed has reduced the discount rate, other short-term interest rates will follow, declining by about 100 basis points by the end of 1992. Long-term rates are forecast to decline as well, falling by roughly 80 basis points. In the absence of any intervention, falling interest rates will add to the continued decline in the value of the dollar and Net Exports are forecast to rise in real terms yielding a trade surplus by the second quarter of 1992 for the first time in eight years!

**Civilian Unemployment Rate**




Our forecast indicates that we will begin 1991 with an unemployment rate slightly above 6% and remaining stubbornly constant, declining only slightly during the next seven quarters. Despite the recent rise in oil prices, it would appear that the Fed has little to worry about in terms of a sudden burst of inflation. We foresee a rise of 4% in consumer prices in both 1991 and 1992. The really bad news lies in the construction industry with housing starts falling below one million units (SAAR) in the current quarter. We expect to see only moderate improvement in this sector in 1991 and 1992.

## The Colby Model: CQEM

The Colby Quarterly Econometric Model of the U.S. Economy is a simplified model of real gross national product and its major components. It contains twenty-two behavioral equations and four identities. Of the 46 variables in the model, 18 are exogenously determined. The model contains equations which model personal consumption expenditures of durables, nondurables, and services, and inflation as measured by the consumer price index, and the implicit price deflators for consumption of nondurables and services. There are also equations for predicting gasoline prices, the unemployment rate, the female labor force participation rate, output per hour, housing starts, personal disposable income, and business fixed investment --- both total and nonresidential. The monetary sector of the model includes three interest rate equations and one equation for the money supply. Real imports, the import price deflator, net foreign investment, and the exchange rate are modeled separately and make up the foreign sector of the model.

Most of the development effort on CQEM this semester went into incorporating oil prices and the index of consumer sentiment into the model. In addition, new equations for housing starts, gasoline prices and productivity were constructed. Evaluating the accuracy of CQEM as well as enhancing the existing structure of the model and expanding its scope make up the research agenda for the CEO in the future.

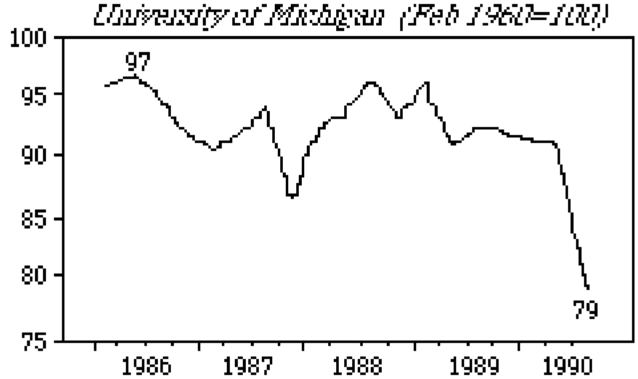
## Consumption, Income & Inflation

The past year and a half has witnessed quite a bit of volatility in personal consumption expenditures of consumer durables in real terms. Led by a drop in new auto purchases the current slowdown became evident in the second quarter of 1990. Because of the overall downturn in the economy expenditures on consumer durables are forecast to drop from their third quarter value of $429 billion (1982 $'s) to $422.6 billion in the current quarter. This decline will continue into 1991 with expenditures on consumer durables averaging 2.3% below their level in 1990. Improvement begins in this sector at the end of 1991 as personal consumption expenditures are forecast to rise by 3.4% in 1992. With the resolution of the crisis in the Persian Gulf and a return to more normal oil price levels we are forecasting moderate growth in consumption of nondurable goods of 1.7% in 1991 and 1.4% in 1992. The services sector is the only portion of consumption that has realized regular growth during the past two years. Consumption of services is forecast to continue its growth pattern of the past decade, moderating only slightly during 1991 and 1992 reaching $1.4 trillion (1982 $'s) by the end of the forecast horizon --- $60 billion above the current level.

The Index of Consumer Sentiment, as reported by the Survey Research Center at the University of Michigan has turned out to be a very influential variable in explaining economic behavior in CQEM. The negative growth we are forecasting in 1990 Q4 and 1991 Q1 is due in large measure to the deterioration of consumer confidence as measured by the Index of Consumer Sentiment. What the chart below does not show is that in October the value of this index fell to 64 and recovered slightly in November to a level of 66. We are anticipating further gains in December for a fourth quarter average of 68 --- still well below recent levels. By the end of the forecast horizon we are predicting that the Index will recover only to a level near 86.

**Index Of Consumer Sentiment**

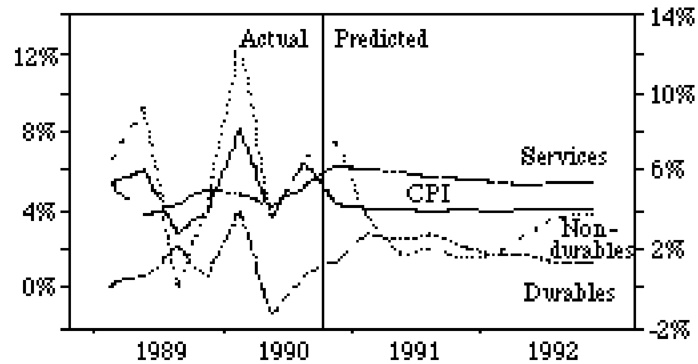
*University of Michigan (Feb 1960=100)*




Recent trends in real disposable personal income reflect the economic slowdown the country has been facing. Growth in the third quarter of 1990 was negative despite moderate increases at the beginning of the year. We are forecasting a decline in real disposable income through the second quarter of next year then recovering to post a slight increase for 1991 and rising by an additional 2% in 1992.

On a quarter-to-quarter basis the annual rate of increase in the consumer price index has been markedly unstable since the beginning of 1989 with inflation ranging from 2.83% in 1989 Q3 to 8.07% in 1990 Q1. Our forecast is for inflation to average 4.4% in 1991 and 4.1% in 1992.

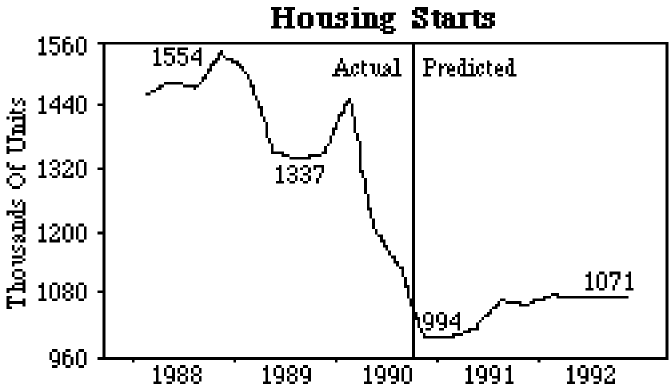
**Inflation As Measured By Annual Rates Of Growth Of The CPI & Consumption Deflators**




Average gasoline prices had witnessed only moderate increases through 1989 and early 1990 before the Gulf Crisis spurred drastic upswings. In the third quarter of this year gas prices jumped 12 cents per gallon and are expected to peak out at $1.61/gallon in the first quarter of 1991 due to continued uncertainty about a resolution in the conflict with Iraq and due to the increase in the federal gasoline tax, the first phase of which went in to place this month.

## Investment & Housing

Total fixed investment has shown a noticeable decline beginning in the second quarter of 1990. Our forecast indicates that, as the economy moves into a recession this trend will continue until the third quarter of 1991. By the end of 1991 however fixed investment will have recovered much of what was lost and end up just below the current level of $692 billion (1982 $'s). By the end of our forecast horizon total fixed investment will continue on its slow upward trend to $702 billion in real terms. Looking at the components of fixed investment, the nonresidential sector will take a bit longer to recover --- returning to its current level of $518.5 billion (1982 $'s) by the end of 1992. Residential investment will follow a similar pattern but will remain sluggish over the next two years.




The past few month have seen a virtual collapse of the market for new houses as housing starts dropped to just over 1.1 million units, on a seasonally adjusted basis, in the third quarter of 1990. This crisis in the housing market has drawn considerable attention because it has started to have serious impacts throughout the economy. Not only are homeowners finding that they cannot sell their homes, but when they do they are losing money in many areas of the nation. Unfortunately we see little hope for the market for new homes in the near future. We predict that housing starts will fall just below 1 million units, on a seasonally adjusted basis, in the current quarter and hover near that level at the beginning of next year. We see a modest recovery in 1992, however housing starts will remain well below historical levels.

## Labor & Productivity

The unemployment rate exhibits countercyclical behavior: it rises during economic contractions and it falls during economic expansions. Consequently, unemployment has been falling steadily for the past 8 years --- until the current quarter. The economic growth of the late 1980s started slowing down in 1989 as the unemployment rate hovered around 5.3% in the last two quarters of that year and the first two quarters of 1990. With the crisis in the Middle East and the apparent economic downturn, the unemployment rate rose to 5.6% in the third quarter of 1990. Last month unemployment rose to 5.9%. Our forecast for the unemployment rate for the fourth quarter of this year is 5.9%, rising to 6.1% in the first and second quarters of 1991. Assuming that by that time the crisis in the Persian Gulf has been resolved, the expansionary measures now being implemented by the Fed will have begun to help turn the economy around. However, our forecast is for unemployment to remain stubbornly high at around 5.9% throughout 1991 and 1992 due to continued sluggishness in the economy.

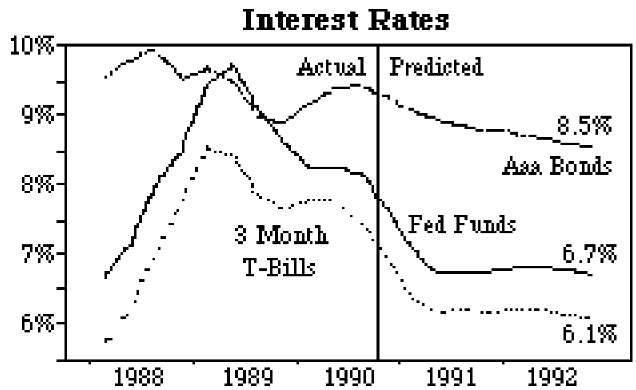
The female labor force participation rate has shown a steady upward trend since the late 1940s, although this trend does slow down slightly in periods of economic contraction. Female labor force participation began to slow down in 1989, around the same time that unemployment stopped falling, increasing by only four tenths of one percent from the first quarter of 1989 to the first quarter of 1990. During the previous period of economic growth, from late 1983 through 1988, female labor force participation was growing at an average rate of 0.8% a year. The female labor force participation rate increased by 0.1%, to 57.7%, in the second quarter of 1990 and it fell again, by 0.2%, in the third quarter of this year. This decline may be due to negative perceptions of job availability as a result of the oil crisis and the state of the economy. The female labor force participation rate will most likely fall to approximately 57% in the fourth quarter of this year. Our forecast predicts that female labor force participation will rise again to 57.3% in the first quarter of 1991 and will continue to increase at a rate of approximately 0.2% each quarter through 1992.

The rate of growth of productivity, as measured by output per hour in the nonfarm business sector, was only approximately 1% per year through 1988, which is smaller than in previous decades. Productivity actually started to decline in 1989. During the 1980s, productivity in the labor-intensive services sector remained at about the same level while productivity in the relatively capital-intensive manufacturing sector increased. One possible explanation for the recent decline in productivity is that the less-productive, labor-intensive services sector accounts for approximately 75% of total output. The third quarter of this year, however, saw a rise in productivity which our forecast predicts will continue throughout the forecast horizon. At annual rates we see only slight growth in productivity in the current quarter but by the middle of next year productivity will grow at an annual rate of just above 1% before slowing down slightly in 1992.

## Interest Rates & Monetary Policy

With rumors of a credit crunch, the crisis in the Persian Gulf, the increasing burden of bailing out the nation's savings and loan institutions, and a federal deficit that seems to be uncontrollable just about everyone is looking to the Federal Reserve for some leadership in setting credible economic policy. It's clear that Alan Greenspan and the other members of the Board of Governors have been concerned about the economy's lackluster performance for the past two or three quarters. During the past two months the Fed has indeed begun to engage in a serious effort to stimulate the economy. In December alone the Fed has removed a portion of banks' reserve requirements and reduced an important short-term interest rate, the Fed Funds rate, toward a target value of about 7%. This week the Fed announced that it was reducing the discount rate by one-half of one percent. These moves should have the effect of increasing the amount of loanable funds and send a strong signal to the financial markets that the Fed is willing to let interest rates fall.

Although the way in which the Fed has chosen to ease monetary policy can be viewed as largely symbolic, we foresee real effects from the Fed's actions. On December 11th the interest rate on 3 Month Treasury Bills was 6.86% --- the lowest it has been in over a year. We expect the 3 Month T-Bill rate will decline further by more than 80 basis points by the end of 1992. Longer term interest rates are also forecast to decline. We are predicting a decline of about 70 basis points in the rate for Aaa Corporate Bonds over the forecast horizon.



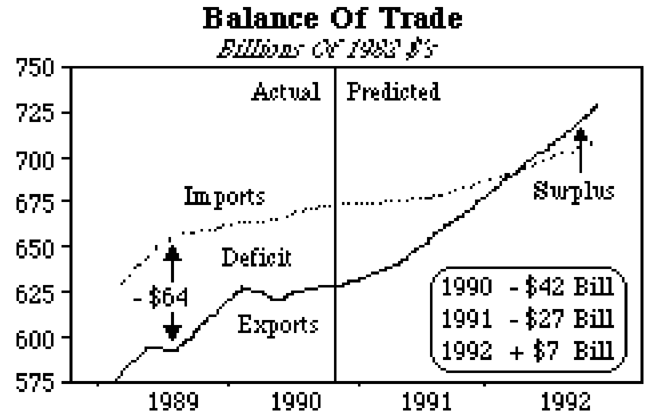

With the easing of monetary policy the money supply, as measured by M2, is forecast to rise at annual rates near 5.75% in 1991 and 6% in 1992.

## The Foreign Sector

The key features of our forecast of the foreign sector of the economy are a declining exchange value of the dollar, a marked improvement in the balance of trade and stable world oil prices. In fact the foreign sector is forecast to be the primary factor behind the shallowness of the current economic downturn and the rapid recovery in the second quarter of next year. With GNP weakened, the growth of real imports comes almost to a stand still in the current quarter and in the first quarter of next year. The declining value of the dollar will contribute to a rise in real exports leading to strong growth in real net exports throughout the forecast horizon. By the second quarter of 1992 we are forecasting a trade surplus as real exports pave the way for economic growth.

Import prices, after rising by 27% at annual rates in the current quarter due to the rise in oil prices, are forecast to rise by only 3% on average in 1991 and then fall by 3% in 1992 as the decline in the dollar slows and economic growth begins to falter.

Net foreign investment, an important factor in explaining domestic fixed investment in our model, is forecast to increase with the improving balance of trade and declining domestic interest rates. Defined as imports plus interest and transfer payments paid to foreigners minus total receipts from foreigners, we are forecasting an increase of about $30 billion by the end of 1991 and another $30 billion by the end of 1992.




We are forecasting an 11% drop in the trade-weighted exchange value of the dollar during 1991 and a further 4.9% decrease in 1992. The decline in the value of the dollar is a mixed blessing. While improving the balance of trade, part of the decline is due to the fall in interest rates in this country which widens the interest premium foreign investors gain by putting their money in investments outside the U.S. In addition, a falling dollar means higher import prices which could lead to domestic inflation.

One of the linchpins to our forecast is our outlook for peace in the Middle East and the implications on the price of imported oil. If indeed a negotiated settlement is reached early in 1991 then oil prices should quickly return to their pre-invasion levels of $22/barrel.

## Special Report:
## War Or Peace In The Middle East ?

The volatile situation in the Middle East presents a challenging forecast dilemma. Currently, we foresee a negotiated settlement with Iraq drawn out over the first half of 1991 and a slow decline of oil prices until the second quarter of 1991 based on a peaceful resolution to the crisis. What will happen if war breaks out ? What will happen if Saddam Hussein leaves Kuwait peacefully in January ? This special report outlines these two possible scenarios and examines the effects on real GNP growth rates using the Colby Quarterly Econometric Model and alternative assumptions regarding crude oil prices and consumer sentiment.

The war scenario simulates a two month conflict during the first quarter of 1991. The forecast assumes moderate damage to oil fields in Kuwait and Saudia Arabia. Due to an international effort to step up production, the market supply of oil is currently greater than before the August invasion. Therefore, prices will initially rise based only on fear alone. After the conflict ends, prices will quickly settle back to normal. In fact, as Iraq and Kuwait come back on line, a glut in the world market will occur, thus causing prices to drop from $65 per barrel in the first quarter of 1991 to $15 per barrel in the fourth quarter.

### War Scenario

| Period | Price Of Imported Oil ($/Barrel) | Growth Of Real GNP (Annual Rates) |
|---|---|---|
| 1990QIV | $34.17 | -0.91% |
| 1991QI | $65.00 | -1.92% |
| 1991QII | $40.00 | 1.59% |
| 1991QIII | $25.00 | 5.59% |
| 1991QIV | $15.00 | 2.61% |
| 1992QI | $22.31 | 3.16% |
| 1992QII | $21.58 | 2.94% |
| 1992QIII | $21.79 | 2.19% |
| 1992QIV | $22.09 | 2.02% |

In a peaceful scenario, based on a settlement early in the first quarter of 1991, a more serious producer shock will occur to the benefit of consumers around the world. Kuwait and Iraq will most likely resume drilling quickly adding yet more oil to an already glutted market and plummeting prices to $13 per barrel. The saturation of oil supplies in the world market is predicted to effect the U.S. economy drastically. GNP will grow in the first quarter of 1991 by .88% as opposed to the -1.92% recession which is forecast to occur if war breaks out.

### Peace Scenario

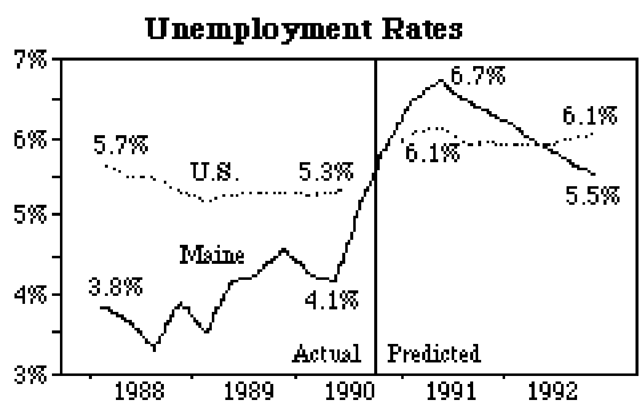
| Period | Price Of Imported Oil ($/Barrel) | Growth Of Real GNP (Annual Rates) |
|---|---|---|
| 1990QIV | $34.17 | -0.91% |
| 1991QI | $18.00 | 0.88% |
| 1991QII | $13.00 | 1.14% |
| 1991QIII | $15.00 | 3.31% |
| 1991QIV | $20.00 | 1.67% |
| 1992QI | $22.31 | 3.14% |
| 1992QII | $21.58 | 2.87% |
| 1992QIII | $21.79 | 2.23% |
| 1992QIV | $22.09 | 2.05% |

While the peace scenario is a valid forecast, the war scheme is much more susceptible to error. Widespread destruction of the Middle Eastern oil fields will most likely kindle a world recession. This same recession could worsen if the war is prolonged or expanded to include Israel and thereby a majority of the Arab states. Regardless, our forecast of the war scenario is basically optimistic and appears the most likely outcome if a conflict occurs. In either scenario, the U.S. economy is forecast to rebound quickly in the third quarter of 1991. For disheartened consumers and struggling businesses, there is a light at the end of the tunnel.

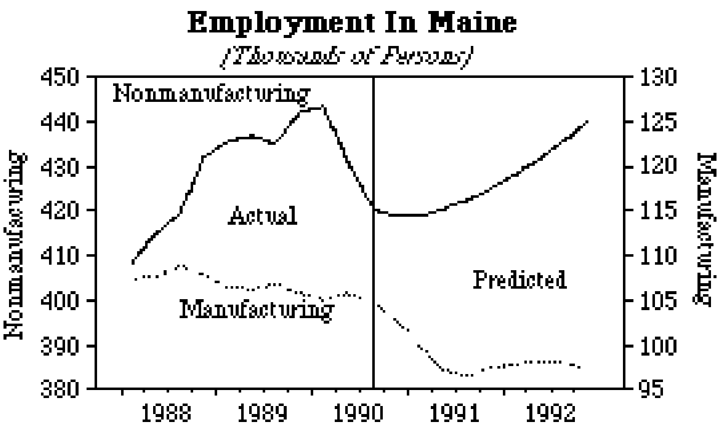
## Economic Outlook For The Maine Economy

Throughout the 1980's, the state of Maine experienced a period of rapid growth and expansion. Personal income grew at an average rate of 8.9% --- 1.1% above the national average --- while unemployment fell 1.1% below the nation as a whole and retail sales in the state boomed. Now however, Maine is experiencing sluggish growth due largely to the slowdown in the national economy and the weakening construction, manufacturing and retail sectors of the Maine economy. The Iraqi invasion of Kuwait, the credit crunch here in New England, the Federal budget crisis and the newly revealed imbalance of the State budget have created an environment of uncertainty concerning the stability of the economy. The recent drop in consumer confidence at a national level is helping to drive the country into a recession --- both nationally and here in Maine. We are forecasting that the State will experience a moderate recession in the 4th quarter of 1990 and the first two quarters of 1991. Assuming the resolution of the crisis in the Persian Gulf by the second quarter of 1991, we predict that the Maine economy will resume on a path of sluggish growth for the last two quarters of 1991 and throughout 1992.

The unemployment rate in Maine is expected to overtake the national unemployment rate for the first time since the first quarter of 1981, and average 6.5% in 1991. As the economy strengthens in 1992, Maine unemployment is forecast to drop to a level of 5.8%, once again below the forecasted level of the national unemployment rate. The state of Maine, when compared to its New England neighbors appears to be doing surprisingly well ---- quite a different story from that in Massachusetts and Connecticut for example, which are taking harder hits to employment and retail sales in the wake of the national economic downturn.




Manufacturing employment will be hit hard by the current recession in Maine, especially in the first and second quarters of 1991 with -11.6% and -9.7% growth rates. The manufacturing sector begins to recover only slightly in the fourth quarter of next year. Nonmanufacturing employment is more stable throughout the forecast horizon. Employment in the nonmanufacturing sector will experience slight negative growth for two quarters and then follow on a slow growth path through 1992. Total nonagricultural employment for Maine follows a similar pattern. (Layoffs from Bath Iron Works in the second quarter of 1991 and some layoffs over the next three quarters in state and local government were incorporated into our forecast of employment in Maine.)




Retail sales, which took a sharp drop in the second quarter of this year, are expected to decline again in the fourth quarter and gain only slightly in the first quarter of 1991. Since they are largely a function of consumer confidence in the economy, retail sales have been slack this quarter as consumers are less confident and more leery about spending money. Retail sales are expected to resume a normal growth path, assuming a peaceful resolution of the crisis in the Middle East and a credible solution to the State's budget problems, by the second quarter of 1991.

Personal income will not enjoy the exponential growth in Maine that it did during the 1970's and 80's. We are forecasting slower growth rates through the second quarter of 1991, climbing to an average of 6.8% growth in 1992.


## Acknowledgements

We would like to thank Assistant Professors David Findlay and Saranna Robinson here at Colby College for their comments on earlier drafts of this forecast report. We also want to acknowledge six members of the Colby College class of 1990 who participated in the first Senior Seminar in Economic Forecasting and worked with Professor Donihue to design and construct the original version of the Colby Quarterly Model of the U.S. Economy in the Fall of 1989. They include: Julie Depew, Kim Gilbo, Bernie Khoo, Danny Reed, Tracy Roy and Tim Tanguay.

# THE COLBY ECONOMIC OUTLOOK FOR THE MAINE ECONOMY

20-Dec-90

| | | Actual | Forecast | | | | | | | | | Percent Change | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **Units** | **90QIII** | **90Q4** | **91QI** | **91QII** | **91QIII** | **91QIV** | **92QI** | **92QII** | **92QIII** | **92QIV** | **1990-91** | **1991-92** |
| Total Employment | (Thousands) | 525.37 | 521.84 | 518.69 | 517.57 | 519.09 | 522.45 | 526.19 | 530.03 | 533.68 | 537.20 | -2.55 | 2.37 |
| Manufacturing | (Thousands) | 105.00 | 102.85 | 99.72 | 97.20 | 96.54 | 97.29 | 97.89 | 98.17 | 97.97 | 97.39 | -6.66 | 0.17 |
| Nonmanufacturing | (Thousands) | 420.37 | 418.99 | 418.97 | 420.38 | 422.56 | 425.16 | 428.30 | 431.86 | 435.71 | 439.80 | -1.55 | 2.88 |
| Unemployment Rate | (%) | 5.20 | 5.97 | 6.50 | 6.74 | 6.47 | 6.31 | 6.10 | 5.89 | 5.70 | 5.52 | 1.61 | -0.70 |
| Personal Income * | (Bill $'s) | 20.78 | 20.98 | 21.24 | 21.54 | 21.90 | 22.27 | 22.65 | 23.02 | 23.41 | 23.79 | 4.78 | 6.81 |
| Annual Rate Of Growth | (%) | 4.96 | 4.00 | 4.91 | 5.84 | 6.93 | 6.87 | 6.89 | 6.88 | 6.83 | 6.77 | | |
| Retail Sales | (Thsnd $'s) | 7387.30 | 7329.45 | 7314.33 | 7358.14 | 7470.70 | 7619.31 | 7780.44 | 7942.14 | 8094.48 | 8242.09 | 0.10 | 7.72 |
| Annual Rate Of Growth | (%) | 9.61 | -3.10 | -0.82 | 2.42 | 6.26 | 8.20 | 8.73 | 8.58 | 7.90 | 7.50 | | |

* Value for 90QIII is predicted

## Input Assumptions Underlying The Colby Economic Outlook For The Maine Economy

| | | Actual | Forecast | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exogenous Variables** | **Units** | **90QIII** | **90Q4** | **91QI** | **91QII** | **91QIII** | **91QIV** | **92QI** | **92QII** | **92QIII** | **92QIV** |
| Gross National Product | (Bill '82 $'s) | 4173.20 | 4163.55 | 4162.87 | 4173.15 | 4216.64 | 4239.45 | 4274.75 | 4304.65 | 4328.59 | 4350.95 |
| Michigan Index of Consumer Sentiment | (2/60=100) | 79.1 | 67.9 | 67.9 | 72.3 | 79.4 | 84.9 | 86.7 | 87.2 | 86.2 | 85.7 |
| Avg Hourly Earnings Of Production Wkrs | (% Per Qtr) | 1.07 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| Civilian Unemployment Rate | (%) | 5.60 | 5.89 | 6.07 | 6.14 | 5.95 | 5.97 | 5.91 | 5.92 | 5.99 | 6.07 |
| Productivity: Nonfarm Output/Hour | (1977=100) | 111.20 | 111.29 | 111.48 | 111.91 | 112.36 | 112.77 | 112.95 | 113.15 | 113.29 | 113.44 |
| **Endogenous Variables With Nonzero Adjustment Constants** | | | | | | | | | | | |
| Total Employment | (Thousands) | | -7 | -7 | -6 | -5 | -4 | -4 | -4 | -4 | -4 |
| Nonmanufacturing Employment | (Thousands) | | -12 | -11 | -10 | -10 | -10 | -10 | -10 | -10 | -10 |
| Unemployment Rate | (%) | | 1.0 | 1.2 | 1.3 | 1.0 | 1.0 | 0.8 | 0.6 | 0.4 | 0.2 |
| Personal Income | (Mill $'s) | -250 | -200 | -150 | -100 | -50 | -50 | -50 | -50 | -50 | -50 |
| Retail Sales | (Thsnd $'s) | | -400 | -400 | -400 | -400 | -400 | -400 | -400 | -400 | -400 |

# THE COLBY ECONOMIC OUTLOOK FOR THE U.S. ECONOMY

20-Dec-90

| | | Actual | Forecast | | | | | | | | | Percent Change | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **Units** | **90QIII** | **90Q4** | **91QI** | **91QII** | **91QIII** | **91QIV** | **92QI** | **92QII** | **92QIII** | **92QIV** | **1990-91** | **1991-92** |
| Gross National Product | (Bill '82 $'s) | 4173.20 | 4163.55 | 4162.87 | 4173.15 | 4216.64 | 4239.45 | 4274.75 | 4304.65 | 4328.58 | 4350.95 | 0.90 | 2.78 |
| Annual Rate Of Growth | (%, A.R.) | 1.74 | -0.92 | -0.07 | 0.99 | 4.23 | 2.18 | 3.37 | 2.83 | 2.24 | 2.08 | | |
| Personal Consumption Expenditures | (Bill '82 $'s) | 2699.80 | 2700.58 | 2708.81 | 2722.16 | 2733.72 | 2747.86 | 2762.29 | 2775.14 | 2786.50 | 2798.09 | 1.45 | 1.92 |
| Durable Goods | (Bill '82 $'s) | 429.20 | 422.55 | 418.01 | 416.25 | 419.24 | 423.18 | 428.02 | 431.85 | 435.04 | 438.22 | -2.30 | 3.37 |
| Nondurable Goods | (Bill '82 $'s) | 918.30 | 920.58 | 925.19 | 930.99 | 933.47 | 937.00 | 940.68 | 943.89 | 946.53 | 949.13 | 1.66 | 1.44 |
| Services | (Bill '82 $'s) | 1352.30 | 1357.44 | 1365.61 | 1374.92 | 1381.01 | 1387.68 | 1393.59 | 1399.40 | 1404.94 | 1410.74 | 2.50 | 1.81 |
| Gross Private Domestic Investment | (Bill '82 $'s) | 697.00 | 685.26 | 677.12 | 671.65 | 685.36 | 696.46 | 708.90 | 719.29 | 725.17 | 727.20 | -1.91 | 5.49 |
| Fixed Investment | (Bill '82 $'s) | 691.90 | 688.86 | 684.62 | 681.55 | 688.56 | 690.66 | 695.60 | 698.79 | 700.47 | 701.70 | -1.06 | 1.86 |
| Nonresidential | (Bill '82 $'s) | 518.50 | 513.20 | 508.81 | 502.66 | 505.23 | 506.68 | 510.49 | 513.64 | 515.20 | 516.02 | -1.53 | 1.58 |
| Residential | (Bill '82 $'s) | 173.40 | 175.66 | 175.81 | 178.89 | 183.32 | 183.98 | 185.11 | 185.15 | 185.27 | 185.68 | 0.27 | 2.66 |
| Change In Business Inventories (a) | (Bill '82 $'s) | 5.10 | -3.60 | -7.50 | -9.90 | -3.20 | 5.80 | 13.30 | 20.50 | 24.70 | 25.50 | | |
| Government Purchases (a) | (Bill '82 $'s) | 821.50 | 821.58 | 816.58 | 811.64 | 819.10 | 808.01 | 806.86 | 806.22 | 806.51 | 805.84 | -0.48 | -0.92 |
| Net Exports Of Goods & Services | (Bill '82 $'s) | -45.10 | -43.86 | -39.64 | -32.29 | -21.53 | -12.89 | -3.30 | 4.00 | 10.40 | 19.82 | 37 | 129 |
| Exports (a) | (Bill '82 $'s) | 626.70 | 629.00 | 634.00 | 643.20 | 657.50 | 670.90 | 686.40 | 700.30 | 713.40 | 729.60 | 4.06 | 8.60 |
| Imports | (Bill '82 $'s) | 671.80 | 672.86 | 673.64 | 675.49 | 679.03 | 683.79 | 689.70 | 696.30 | 703.00 | 709.78 | 1.46 | 3.20 |
| Net Foreign Investment | (Bill $'s) | -92.90 | -83.55 | -76.46 | -69.39 | -60.93 | -52.54 | -43.80 | -35.81 | -28.61 | -20.62 | 23.94 | 50.32 |
| Housing Starts | (Thousands) | 1130 | 994 | 1000 | 1015 | 1067 | 1061 | 1077 | 1073 | 1071 | 1071 | -13.37 | 3.61 |
| Federal Funds Rate | (%) | 8.16 | 7.64 | 7.08 | 6.71 | 6.73 | 6.74 | 6.82 | 6.84 | 6.78 | 6.69 | -1.26 | -0.03 |
| 3 Month Treasury Bill Rate | (%) | 7.48 | 6.92 | 6.38 | 6.18 | 6.19 | 6.17 | 6.21 | 6.19 | 6.15 | 6.09 | -1.25 | -0.07 |
| AAA Corporate Bond Rate | (%) | 9.40 | 9.26 | 9.06 | 8.93 | 8.86 | 8.78 | 8.73 | 8.67 | 8.61 | 8.55 | -0.40 | -0.27 |
| Disposable Personal Income | (Bill '82 $'s) | 2899.30 | 2891.99 | 2890.28 | 2893.59 | 2910.24 | 2923.41 | 2939.27 | 2956.19 | 2970.68 | 2985.27 | 0.20 | 2.01 |
| Retail Gasoline Prices (All Types) | ($/Gal) | 1.24 | 1.52 | 1.61 | 1.58 | 1.53 | 1.45 | 1.39 | 1.36 | 1.36 | 1.37 | 24.27 | -11.46 |
| Civilian Unemployment Rate | (%) | 5.60 | 5.89 | 6.07 | 6.14 | 5.95 | 5.97 | 5.91 | 5.92 | 5.99 | 6.07 | 0.52 | -0.06 |
| Female Labor Force Participation | (%) | 57.50 | 57.05 | 57.28 | 57.50 | 57.77 | 57.98 | 58.22 | 58.44 | 58.64 | 58.82 | 0.18 | 0.90 |
| Productivity: Nonfarm Output/Hour | (1977=100) | 111.20 | 111.29 | 111.48 | 111.91 | 112.36 | 112.77 | 112.95 | 113.15 | 113.29 | 113.44 | 1.05 | 0.96 |
| Inflation: Consumer Price Index | (%, A.R.) | 6.43 | 4.28 | 4.09 | 4.02 | 3.99 | 4.08 | 4.04 | 4.10 | 4.09 | 4.07 | 4.36 | 4.06 |
| Inflation: PCE Services Deflator | (%, A.R.) | 5.29 | 6.30 | 6.05 | 5.83 | 5.71 | 5.54 | 5.42 | 5.37 | 5.39 | 5.41 | 5.77 | 5.49 |
| Inflation: PCE Nondurables Deflator | (%, A.R.) | 6.65 | 7.56 | 3.55 | 1.70 | 2.07 | 1.61 | 1.76 | 2.86 | 3.71 | 3.89 | 3.99 | 2.35 |
| Inflation: PCE Durables Deflator (a) | (%, A.R.) | 0.72 | 1.43 | 2.87 | 2.49 | 2.83 | 2.10 | 1.74 | 1.73 | 1.38 | 1.37 | 1.93 | 1.93 |
| Inflation: Imports Deflator | (%, A.R.) | 8.82 | 27.36 | -0.44 | -7.25 | -3.94 | -4.98 | -4.17 | -1.01 | 1.17 | 1.35 | 2.96 | -2.92 |
| Exchange Value Of U.S. Dollar | (3/73=100) | 87.44 | 82.20 | 80.80 | 79.45 | 78.25 | 77.19 | 76.28 | 75.46 | 74.68 | 73.92 | -11.18 | -4.87 |
| Money Supply: M2 | (Bill $'s) | 3304.30 | 3343.77 | 3387.87 | 3434.53 | 3482.64 | 3531.96 | 3582.51 | 3634.35 | 3687.65 | 3742.53 | 4.99 | 5.85 |
| Annual Rate Of Growth | (%, A.R.) | 3.16 | 4.86 | 5.38 | 5.62 | 5.72 | 5.79 | 5.85 | 5.91 | 6.00 | 6.09 | | |

*(a) Exogenously Determined*