

**The Troika Process:**  
**Economic Models and Macroeconomic Policy in the USA**

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## Abstract

In the executive branch of the U.S. Federal government, a group known as the Troika --- comprised of senior officials of the President's Council of Economic Advisers, the Department of the Treasury, and the Office of Management and Budget --- plays an important role in developing the economic agenda for each Administration. The Troika develops the economic assumptions underlying the Administration's budget proposals including an assessment of current economic conditions and forecasts for key economic indicators. It meets regularly to address a variety of policy issues, to evaluate and modify the Administration's forecasts, and to monitor the current stance of fiscal and monetary policies relative to the economy's position in the business cycle.

This paper provides an overview of the Troika process and the role of empirical models in the development of the fiscal policies and macroeconomic forecasts of the U.S. government.

Keywords: macroeconomic forecasting; econometric models; government policy; government forecasting; judgmental forecasting; Troika.

The institutional structure for generating economic forecasts and for evaluating and coordinating macroeconomic policy within the Executive branch of the U.S. government has evolved over the past 40 years into a formal working group known as the Troika. While the Troika membership and scope of responsibilities has changed, the general structure and process have proven remarkably resilient despite the significant changes in Administrations, personnel, and political philosophies which have occurred during this time.

Within the Troika process, economic models play an important role in developing Administration forecasts, in evaluations of alternative policy scenarios, and in on-going analyses of the performance of the economy. Although the models often are used to examine various behavioral responses to policies or shocks, the models also serve to provide a structural framework that guarantees the internal consistency of any forecast and to provide a sound theoretical basis for both short- and long-run forecasts. Various types of models have been used, with the specific application determining the type of model used. Mainstream macroeconomic forecasting models are used to produce the detailed Administration economic forecast that is used for making budget projections, as well as for analyzing the likely performance of the economy in response to a specific policy proposal or economic shock. Growth models and growth accounting frameworks are used to provide a supply-side foundation for making long-term projections. Finally, smaller forecasting models are often produced by staff economists, with the gathering of data and the model specification and estimation occurring specifically for addressing a current policy or forecast issue. These smaller, “in-house” models take various forms, including single equation reduced form specifications, small multiple equation models, and VAR and VEC specifications.

### The Structure of the Troika

The Troika is made up of representatives from the three Administration groups with primary responsibility for economic and budget issues: The Council of Economic Advisers (CEA); the Office of Management and Budget (OMB); and the Department of the Treasury. Membership in the Troika is divided across three levels, with political appointees in the top two levels and a staff-level working group in the third. The cabinet-level principals of each branch of the Troika -- Chairman of the CEA, Director of OMB, and Secretary of the Treasury -- make up the highest level of the Troika and is commonly referred to as T-1. T-2 generally includes the

macroeconomics member of the CEA, the Associate Director for Economic Policy from the OMB, and the Assistant Secretary of the Treasury for Economic Policy. Staff members from the three agencies participate in the T-3 working group. In most Administrations, the Secretary of the Treasury assumes the lead role in directing economic policy and making public statements. The Council of Economic Advisers typically assumes the lead role in developing the economic assumptions underlying the Administration's budget proposals. The CEA also provides an analysis of current economic issues facing the nation and the Administration's economic agenda in its annual *Economic Report of the President*.

For the purposes of both forecasting and policy making, each of the three branches of the Troika play an important role. Economists at the CEA work with their counterparts at the Department of Treasury to provide background analysis for new policy initiatives while the OMB staff works out the fiscal implications of the proposals. The detailed economic assumptions produced by CEA are used by the Department of the Treasury and the OMB to produce budget revenue and outlay estimates, respectively. And at various times the principals from all three agencies will participate in internal and public debates concerning current policy issues.

#### History of the Troika

The President's Council of Economic Advisers was established by the Employment Act of 1946<sup>1</sup>, and shortly thereafter the Troika emerged in the form of informal policy groups which met during several post-WWII Administrations. Raymond Saulnier, chairman of the CEA from 1956 to 1961, referred to an Advisory Board on Economic Growth and Stability (ABEGS) as an important economic advisory group during the Eisenhower Administration.<sup>2</sup> Unlike the Troika of today, ABEGS included the Chairman of the Board of Governors of the Federal Reserve.

The formal beginning of the Troika occurred in 1961, during the first year of the Kennedy Administration. According to the "Council Activities" section of the 1962 *Economic Report of the President*,

Of particular importance was the development of new machinery for interagency cooperation in formulating fiscal estimates and policies. The Chairman of the

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<sup>1</sup> See the three articles by J. Bradford De Long, Charles L. Schultze, and Herbert Stein published in the Summer 1996 issue of *The Journal of Economic Perspectives* commemorating the fiftieth anniversary of the Council of Economic Advisers.

<sup>2</sup> See Hargrove and Marley (1984), p. 135.

Council served with the Secretary of the Treasury and the Director of the Bureau of the Budget on a committee charged with coordinating the economic, budgetary, and revenue estimates for which the three agencies have primary responsibility, and of reporting on them to the President. The estimates are developed with the aid of working groups representing the Council, the Treasury Department, and the Bureau of the Budget.<sup>3</sup>

Former CEA chairmen Walter Heller (1961-1964), and Arthur Okun (1968-1969) pointed to a staff member employed by the Bureau of the Budget named Sam Cohn as the “father” of the Troika.<sup>4</sup> During the Kennedy Administration, the three Troika principals met frequently with the Chairman of the Federal Reserve, and Walter Heller referred to the group as the “Quadriad.”<sup>5</sup>

The responsibilities of the Troika evolved over time. In the early years, the Troika’s focus was primarily on contemporaneous economic behavior and the outlook for economic performance for just the coming year. This focus reflected an era in which the economic and budget outlook was much more short-term in nature than it is today, and a time when economic theory and empirical methods were more rudimentary. The composition of the budget in the early 1960s was also responsible for this short-term focus. In the early 1960s, discretionary outlays accounted for about 70 percent of total outlays, non-interest mandatory spending accounted for roughly 26 percent, and Federal budget deficits were routinely less than 1 percent of GDP. By comparison, in fiscal year (FY) 1998, discretionary outlays were less than 34 percent of total outlays, and non-interest mandatory spending had increased to 52 percent.

Furthermore, by law the outlook only needed to be short-term in nature. The Budget and Accounting Act of 1921 required publication of the current and following fiscal year budget estimates but made no explicit mention of the underlying economic assumptions. The Employment Act of 1946 appears to have been the first law that actually required publication of information concerning the economic outlook. The Employment Act of 1946 required publication of an economic report setting forth, among other things, “...current and foreseeable trends in the levels of employment, production, and purchasing power...”<sup>6</sup>

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<sup>3</sup>*Economic Report of the President 1962*, p. 197.

<sup>4</sup> See the interviews published in Hargrove and Morley (1984), pages 6, 190, and 286.

<sup>5</sup> Hargrove and Morley (1984), p. 190.

<sup>6</sup> Bailey (1950) provides a good overview of the Employment Act of 1946.

As the economy matured, several factors contributed to a lengthening of the temporal horizon for the budget outlook. The increasing importance of international trade and uncertainties regarding its impact on the domestic macroeconomic outlook were one factor. The surge in entitlement spending also weighed heavily on the agenda of policy makers. Thus the forecast window for the economic assumptions underlying the budget widened. The Congressional Budget Act of 1974 extended the requirements of the Budget and Accounting Act of 1921 by requiring five-year budget projections. The Act also specified that:

Accompanying these estimates shall be the economic and programmatic assumptions underlying the estimated outlays and proposed budget authority, such as the rate of inflation, the rate of real economic growth, the unemployment rate, program caseloads, and pay increases.

The Congressional Budget Act of 1974 brought about a noticeable change in the scope of the Administration's economic assumptions. In 1974, the economic assumptions published with the FY 1975 Budget consisted of one-year-ahead forecasts of gross national product, personal income, and corporate profits. With the publication of the FY 1976 Budget in 1975 (after passage of the Congressional Budget Act of 1974), the economic assumptions became much more complete, showing a table that is very similar in breadth of detail and forecast horizon to the tables presented in current budget documents.

The Full Employment and Balanced Growth Act of 1978 (Humphrey-Hawkins Act) was the most specific piece of legislation regarding required publication of the Administration's economic assumptions. The Humphrey-Hawkins Act required the President to specify "...annual numeric goals for employment and unemployment, production, real income, productivity, and prices..." for the current and following calendar years and to describe the policies and timetable for achieving those goals in the *Economic Report of the President*. Specific goals for the civilian unemployment rate (4 percent) and the rate of CPI inflation (3 percent) were established in the Act.<sup>7</sup> The first Administration forecast following the passage of the Humphrey-Hawkins Act

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<sup>7</sup> The act explicitly stated, however, that the unemployment rate goal took precedence over the inflation goal (Sec. 4. (b) (2)): "...policies and programs for reducing the rate of inflation shall be designated so as not to impede achievement of the goals and timetables specified in clause (1) of this subsection for the reduction of unemployment." The Act considered the 4 percent unemployment and 3 percent inflation goals to be "medium term" goals with optimistic ultimate goals of "full employment" and reducing inflation to zero. The act also specified other goals such as a balanced budget and "improved trade balance."

complied fully with its requirements. Thereafter, however, there was a steady erosion of compliance, beginning with a delay of the timetable to meet the goals (1980), followed by discussion of the Act's requirements in the *Economic Report of the President* with no explicit timetable for attaining the goals (1981-1989), to no specific mention of the Act or its goals (1990-1999). Specific discussion of the goals of the Humphrey-Hawkins Act steadily faded from the policy making process as they appeared less and less attainable and as other legislation was passed which imposed other constraints on the efficacy of fiscal policy.<sup>8</sup> Technically, the provisions of the Humphrey-Hawkins Act remain in force today.<sup>9</sup>

### The Troika Process Today

Throughout the Bush and Clinton Administrations the Troika has served two main roles. At the T-2 level, the Troika meets regularly to formulate policy recommendations and review the Administration's economic agenda on a variety of issues. General macroeconomic policy issues are typically at the forefront, but the Troika also has been involved in other issues, including health care reform, welfare reform, entitlement spending, tax reform, and alternative mechanisms to increase private saving. The Troika's most important on-going responsibility is to produce the Administration's economic projections.

The macroeconomic forecasts of any Administration serve two purposes: (i) as a basis for the determination of the revenue and outlay estimates of the budget; and (ii) as a policy statement by the Administration. As a basis for the determination of the budget estimates, there is an implicit requirement for an honest and accurate assessment of current economic conditions in order to formulate reasonable assumptions on which to base the forecasts. At the same time, however, because these forecasts are designed to reflect the presumably beneficial economic effects of the Administration's policy proposals, there is a potential inherent tension between developing "politically correct" economic assumptions that suggest a strong economy moving toward full employment with low inflation versus a completely honest assessment of current conditions and the likely impacts of Administration policies over the forecast horizon. The weights applied to

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<sup>8</sup> Examples include the Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman-Hollings), and the Omnibus Budget Reconciliation Acts of 1990 and 1993.

<sup>9</sup> At the time of this writing, the numeric goals were within striking distance with the unemployment rate just above 4 percent and the core CPI inflation rate running at just over 2 percent. Whether a 4 percent level of the unemployment rate would be sustainable (e.g., the NAIRU level) is another issue.

these sometimes conflicting responsibilities can vary greatly across Administrations and as membership in the Troika changes.

The Troika forecast is also subjective in nature and this fact historically has led to the tension between accuracy and political purpose. Various statistical models and technical and theoretical relationships are used to construct the forecast (as will be discussed further below), but they do not ultimately determine the final forecast. This subjective approach actually isn't that different from the methods used by the vast majority of macroeconomic forecasters, both public and private, although different incentives may exist. Judgment on the part of the forecaster typically enters in three ways: (i) in the specification of the model; (ii) in determining forecast paths for the exogenous variables; and (iii) in targeting, or "add-factoring" the near-term forecast values of the endogenous variables of the model to bring the model predictions in line with current data.<sup>10</sup> The process of generating a model-based forecast then becomes an iterative one of specifying alternative paths for the exogenous variables, fine-tuning the near-term forecasts of the endogenous variables, and checking the forecast throughout the horizon for reasonableness and consistency.

While the Troika often meets at various times during the year to discuss evolving policy issues, the process for determining the Administration's economic projections occurs twice a year to coincide with the production of estimates for the Budget of the United States Government and the Mid-Session Review of the Budget. The process usually begins about two to three months before the publication date for the budget document. After several preliminary meetings within each agency, consultation with outside experts in the economic and financial community, and considerable exploratory data analysis, the T-3 staff meet formally to develop a research agenda for the Troika concerning pertinent economic issues and to draft a memorandum for T-2.

In its final form, the T-3 memorandum typically summarizes the findings pertaining to the research agenda and provides both a current assessment of economic conditions and a forecast of key economic variables over a six-year horizon. The primary purpose of the T-3 memorandum is to provide a "most-likely" forecast scenario to T-2 under current policies, without political overtones or assumptions about the impact of proposed policy initiatives. Occasionally, the T-3 memorandum will include alternative forecast scenarios under different policy assumptions at the

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<sup>10</sup> See Donihue (1993) for an analysis of the role judgment plays in producing macroeconomic forecasts.

request of T-2. T-2 then examines the staff recommendations and writes a memorandum to the T-1 principals with the T-2 recommendations. Political factors can play a role at this stage of the Troika process as T-2 often incorporates the political objectives of the Administration into the economic assumptions. T-1 then specifies (subject to the approval of the President) the forecast paths for the key economic variables.

The set of economic variables for which the Troika determines forecast paths typically have included the following six key indicators: real GDP growth; the rate of inflation as measured by the GDP price index; inflation as measured by the consumer price index; civilian unemployment rate; the yield on three-month Treasury bills; and the yield on ten-year Treasury notes.<sup>11</sup> The set of other key variables followed by the Troika has evolved over time but generally includes: the rate of growth of labor productivity for the nonfarm business sector; wage inflation as measured by hourly compensation in the nonfarm business sector; the average workweek; labor force growth; and the percentage shares of GDP for various measures of taxable personal and corporate income.

A detailed macroeconomic forecast, disaggregated across various sectors of the economy comprising over one hundred variables, is then constructed by the T-3 member from CEA in such a way so that the T-1 forecast paths for the six key variables are met precisely, along with more general targets for the other variables of interest. The detailed quarterly forecast paths used internally by the Administration include forecasts of: nominal and real GDP and its components; various labor force, employment, and unemployment variables; various inflation measures and indicators; the various components of national income on a national income and produce accounts (NIPA) basis; and other key variables such as housing starts, motor vehicle sales, and industrial production. This forecast detail is then provided to the Troika members and key staff at the OMB and Department of the Treasury.<sup>12</sup> Typically, during this process, the OMB runs a simplified budget model (see the “hits model” discussion below) to provide preliminary estimates of the budget effects of the updated economic assumptions to report to the Troika principals and the President. When the economic assumptions and detailed projections are made final, the Office of Tax Analysis in the Department of the Treasury produces revenue projections while the OMB

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<sup>11</sup> The yield on ten-year Treasury notes first appeared as part of the official Troika forecasts in 1983.

works with the various Federal agencies to produce expenditure estimates. Together they produce final estimates for the Budget that is subsequently published.

### The Role of Models in the Troika Process

Economic models play an important role within the Troika process. This section discusses various types of models used by the Troika and presents some examples of how they are used.

Large-scale Macroeconometric Models: Large-scale macroeconometric models are used in several different ways in the Troika process. Such models typically are used to produce the detailed macroeconomic forecast for the budget (as described above) or to examine behavioral responses to specific policies or shocks. Historically, the CEA, Treasury, and OMB have subscribed to a variety of commercial macroeconomic forecasts and models. The agencies subscribe to these models rather than face the higher resource cost of estimating and maintaining an in-house large-scale macroeconometric model.<sup>13</sup>

Probably the most important role for these models, in practice, is in the production of the detailed macroeconomic forecast that is used in the budget process as described above. In the past, the detailed macroeconomic forecast often was constructed using a so-called “black box” of accounting identities resident within a dynamic, simultaneous equations, structural macroeconometric model. The so-called “black box” is a software program of national income and product accounting relationships that allowed for a “top-down” imposition of the key forecast variables described above on the model, assuring consistency across all the variables of the forecast.<sup>14</sup> The alternative to the “black box” is to achieve the target forecast paths manually through additive or multiplicative adjustment factors and successive iterations of the macroeconometric model. The iterations approach is being used currently as improved model software has made such efforts easier in recent years.

Macroeconometric models also are used, in conjunction with internally generated models, to simulate alternative policy scenarios and/or exogenous shocks and their likely effects on key

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<sup>12</sup> OMB circulates an edited version of the disaggregated economic assumptions to various agencies of the Federal government for use in determining their agency’s budget projections.

<sup>13</sup> This contrasts with the Federal Reserve, for example, where resources are devoted to a large staff of research economists to maintain forecasting models and undertake related research projects.

<sup>14</sup> The “black-box” and accompanying structural macroeconometric model, were developed by Laurence H. Meyer & Associates (now known as Macroeconomic Advisers, LLC) of St. Louis.

variables such as real GDP growth, unemployment and inflation. Specific examples include the examination of potential or actual shocks, such as the oil price increase when Iraq invaded Kuwait; the possible effects of a decline in stock market valuation; and net export shocks from disruptions in international markets. Large scale macroeconomic models also have been used to examine potential economic benefits from policy proposals. For example, at the beginning of the Clinton Administration in 1993, model simulations of the “Vision of Change” deficit reduction plan were used to try to project what the long-term interest rate response would be to deficit reduction. The models’ predictions for the ultimate effects of the deficit reduction plan on long-term interest rates then served as the basis for a prediction of what the immediate decline could be given the forward-looking nature of financial markets. Later, in 1995, similar simulations examining the response of long-term interest rates to deficit reduction served as a basis for determining what the “fiscal dividend” might be from proposals to balance the budget.<sup>15</sup>

Smaller Macro and Policy Models: Smaller models are often developed internally to address specific issues, and members of the T3 staff often maintain their own models based on their own research efforts. Examples include Phillips Curve models of the inflation process, Solow-type growth models, and models of the monetary policy process such as Taylor’s rule models,<sup>16</sup> among others. By their nature, these models are used to answer specific questions about wage and/or price inflation and unemployment, long-term macroeconomic relationships in the economy and how policy proposals affect such relationships, and projected policy paths for short-term interest rates for alternative paths for real growth and inflation.

The Growth Accounting Framework: Over the past decade, medium- and long-term Troika forecasts have focused on properly estimating potential GDP growth. An important part of the philosophy of the Troika has been that the budget forecasts should avoid attempting to predict cyclical turning points in the economy, and instead identify the economy’s potential output growth rate as a benchmark for policy recommendations. Hence, the short-run projections are used to

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<sup>15</sup> The “fiscal dividend” was generally defined as the beneficial economic effects that would result from deficit reduction, but typically focused on the lower real interest rates and higher real GDP growth rates. The Congressional Budget Office (CBO) conducted similar simulations (see Congressional Budget Office, April 1995).

<sup>16</sup> See Taylor (1993).

return the economy gradually to its long-run growth path. For example, if the level of real GDP was above the estimated level of real potential GDP, the short-run projection would have real GDP growth lower than growth of potential GDP by a sufficient amount and for a sufficient duration to return the level of real GDP to potential. Thereafter, the medium and long-term projections would follow the path for potential GDP.

Since 1985, the Administration's forecasts have been accompanied in the annual *Economic Report of the President* with a growth accounting table which formed the basis of the official forecasts of medium-term growth and provided a check on the Administration's model-based econometric forecasts. The results presented in Table 1, reproduced from the *1998 Economic Report of the President*, are based on a simple accounting identity for real output:

$$\text{Output} \equiv \frac{\text{Output}}{\text{Avg Hours}} \times \frac{\text{Avg Hours}}{\text{Employment}} \times \frac{\text{Employment}}{\text{Labor Force}} \times \frac{\text{Labor Force}}{\text{Population}} \times \text{Population}$$

which implies that output can be decomposed as:

$$\begin{aligned} \text{Output} \equiv & \text{Productivity} \times \text{Avg Hours per Worker} \times (1 - \text{Unemployment Rate}) \\ & \times \text{Labor Force Participate Rate} \times \text{Population} \end{aligned}$$

The time periods in Table 1 coincide with business cycle peaks in the U.S. macroeconomy. Real GDP grew at an annual rate of 4.2 percent from 1960 to 1973 and by 2.7 percent from 1973 to 1990, according to the Commerce Department's chain-weighted measure of real output. Most of this growth can be attributed to growth in population and labor productivity (output per hour). Because of their cyclical behavior, employment rates and average hours worked vary little from one business cycle peak to the next.

As shown in Table 1, population growth in the U.S. has slowed during the current expansion, and has led to slower overall employment growth of just 1.2 percent, compared with nearly 2 percent growth during previous expansions. The most difficult puzzle, however, is explaining the behavior of non-farm business labor productivity growth. Labor productivity growth slowed sharply after 1973, slowing from 2.9 percent to 1.1 percent. In recent years, productivity growth has increased, but it is difficult to say if this is a cyclical phenomenon or a higher permanent trend. Much has also been written about possible sources of mismeasurement and bias in the reported productivity statistics. And the data on productivity, particularly in the service sectors of the

economy, do seem to be much lower than anecdotal and survey evidence would tend to imply.<sup>17</sup> Table 1 shows that the Administration's view is that potential real GDP growth in the U.S. is in the neighborhood of 2.4 to 2.6 percent.

Hits Model: Staff members of the Troika from the Office of Management and Budget also maintain a model casually referred to as the "hits model." It received this name because it is used to estimate what "hit" the budget would take from a specific change in economic assumptions. The hits model is a detailed set of budget accounting identities and relationships that permit a comparison of alternative and base budget estimates. The base scenario typically is the existing Administration budget forecast, and the alternative scenarios account for a different, or updated, set of economic assumptions. For example, if data releases show that real GDP growth is faster and unemployment lower than in the Administration projections, that information can be introduced into the hits model and the likely effect on budget estimates -- the amount of higher revenues and lower spending -- can be predicted.

The hits model allows policy makers and the Troika to understand what the likely budget effects would be on an ongoing basis as new information comes in about changing economic conditions. It also is used during the Troika forecast process, to consider what the likely budget effects would be from changing the Administration's economic assumptions. The hits model allows quick estimates to be made without having to conduct a detailed set of tax and spending estimates -- such as occurs for formal budget estimates -- that would require a time consuming effort on the part of all agencies and departments.

The hits model also is used to provide rules of thumb to the public about what the likely budget effects would be from changes in economic assumptions. The annual budget submissions contain a table "Sensitivity of the Budget to Economic Assumptions" showing that information.<sup>18</sup>

Long-term Budget Model: In recent years, as the budgetary focus of policy makers has become increasingly longer-term in nature, efforts have been made to produce long-term budget estimates. The Troika staff from the Office of Management and Budget now maintain a budget model for

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<sup>17</sup> See Gullickson and Harper (1999).

<sup>18</sup> See, for example, *Analytical Perspectives, Budget of the United States Government, Fiscal Year 1999*, p. 14.

producing long-term budget estimates based on current policy or new Administration budget proposals.

Long-run budget projections require long-run demographic and economic forecasts -- even though any such forecast is highly uncertain and likely to be at least partly wrong. The forecast used ... extends the Administration's medium-term economic projections ... augmented by the long-run demographic projections from the most recent Social Security Trustees' Report. ... The economic projections ... are set by assumption and do not automatically change in response to changes in the budget outlook. This is unrealistic, but it simplifies comparisons of alternative policies. A more responsive (or dynamic) set of assumptions would serve mainly to strengthen the same conclusions reached by the current approach. In their investigations of the long-run outlook, both CBO and GAO have explored such feedback effects and found that they accelerate the destabilizing effects of budget deficits.<sup>19</sup>

Revenue Models: A representative of the staff of the Office of Tax Analysis (OTA) of the Department of the Treasury also participates in the Troika. The OTA is of critical importance in the Troika and budget process because they produce the detailed revenue forecasts for the budget projections. The OTA uses numerous models for estimating revenues from various sources, in the broadly-defined categories of personal income taxes, estate and gift taxes, corporate profits taxes, customs duties, social security and Medicare payroll taxes. The models have to be quite sophisticated, but are proprietary in nature and no details are available for discussion here.

#### Integrity of the Troika Forecasts

There are a number of areas in which the integrity of the Troika forecasts can be questioned. The Administration's forecasts typically are considered to be "policy forecasts", i.e., the forecasts are made conditional on the adoption of the Administration's policy proposals. In such instances there is a political incentive toward positive bias in the economic projections which would reflect optimistic scenarios regarding productivity and employment objectives. If the Administration's policy proposals are not adopted by Congress, forecast errors could presumably therefore be

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<sup>19</sup>*Analytical Perspectives, Budget of the United States Government, Fiscal Year 1999*, pp 24-25.

blamed on implementation failures rather than unrealistic economic assumptions. However, pursuit of policy promotion over accuracy can be a risky political strategy and the credibility of the Administration's forecasts can suffer, incurring costs to both sides of any budget battle as witnessed during the Reagan, Bush and Clinton Administrations.

A number of researchers, both inside and outside the government, have followed the accuracy of official government forecasts. The Congressional Budget Office (CBO) regularly provides an evaluation of its forecasts relative to the Administration and a consensus of private-sector forecasts.<sup>20</sup> Kamlet, Mowrey and Su (1987) examined Administration forecasts for the 1962-1984 period and CBO forecasts for 1976-1984 and found little optimistic bias in Administration short-term forecasts, but substantial optimistic bias in longer-term forecasts. John Kitchen (1993) has examined the informational content of the CBO and Troika forecasts relative to private sector consensus forecasts and identified historical periods of positive biases in the Administration's economic budgetary assumptions.

An interesting difference in the methodology employed by the Administration and the CBO is that the CBO's medium-term projection rests on the assumption that real output maintains a (historical) gap below potential, while the Administration assumes medium-term growth at potential. Although the differences in growth projections have often been on the order of just 0.1 to 0.2 percentage points per annum, the effects of compounding such differences over a 5- to 10-year budget horizon has often led to significant differences in overall deficit projections – and the resulting budget projections.

Stephen K. McNees (1995) has examined the historical accuracy of economic projections through 1994 made by the Council of Economic Advisers beginning in 1962; the CBO beginning in 1976; and the Federal Reserve Board dating back to 1980. McNees looked at forecast errors for inflation and output projections made by each agency relative to each other and a variety of private-sector forecasts. As expected, his results vary depending on the time period in which the forecasts were generated, the economic variable analyzed, and the length of the forecast horizon. He does, however, confirm the significant positive biases in the Administration's multiyear output growth forecasts noted by Kitchen, and notes that the private-sector and CBO output growth forecasts were noticeably more accurate. Of these agencies however, McNees concludes that the

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<sup>20</sup> See, for example, *The Economic and Budget Outlook: Fiscal Years 1996-2000*, p. 20.

Federal Reserve Board forecasts were, in general, more accurate than other “official” forecasts and slightly more accurate than private-sector forecasts.

Partly in response to criticisms that Administration forecasts had become too optimistic, an effort began during the Bush Administration and has continued through the Clinton Administration to re-establish the credibility of Administration forecasts by placing greater emphasis on the accuracy of economic assumptions and conservative estimates of budget projections. The effort has been successful, with the accuracy of the Administration and budget forecasts often exceeding that of the CBO and many private-sector forecasters.

### Conclusion

Over the past three-and-a-half decades the Administration Troika has played an important role in evaluating economic policy and coordinating the development of the Administration’s economic outlook and projections. It is hard to imagine how an Administration could function properly on macroeconomic policy and outlook issues in the absence of a formal structure and process such as that provided by the Troika. The Troika’s importance is not limited to its analytical role in which economic analyses and models play the key role. The Troika also serves as an interagency “clearing house” through which key Administration personnel can meet and discuss policy proposals and how best to implement them.

The issue of forecast accuracy and possible biases will continue to influence the Troika process as the conflicting objectives of policy promotion versus credibility weigh on the inherently political nature of the process. Ultimately, the success of the Troika will rest on the accuracy and credibility of its forecasts and the soundness of the advice the Troika presents to the President and Administration political appointees.

### Authors’ Note

The conclusions and results presented in this paper are the authors and do not necessarily represent the opinions of the U.S. Department of Treasury or any other agency of the U.S. government.

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**Table 1**  
**ACCOUNTING FOR GROWTH IN REAL GDP**  
(Average Annual Percent Change)

|  | 1960q2<br>to<br>1973q4 | 1973q4<br>to<br>1990q3 | 1990q3<br>to<br>1998q3 | 1998q3<br>to<br>2007q4 |
|--|------------------------|------------------------|------------------------|------------------------|
| Civilian Population aged 16 & over   | 1.8                    | 1.5                    | 1.0                    | 1.0                    |
| PLUS: Labor force participation rate <sup>1</sup>                                  | .2                     | 0.5                    | .0                     | .1                     |
| EQUALS: Total Labor Force <sup>1</sup>   | 2.0                    | 2.0                    | 1.0                    | 1.1                    |
| PLUS: Employment rate <sup>1</sup>   | .0                     | -.1                    | .2                     | -.1                    |
| EQUALS: Total Employment <sup>1</sup>  | 2.0                    | 1.9                    | 1.2                    | 1.1                    |
| PLUS: Nonfarm business employment as<br>a share of total employment <sup>1,2</sup> | .1                     | .1                     | .4                     | .1                     |
| EQUALS: Nonfarm Business Employment  | 2.1                    | 2.0                    | 1.6                    | 1.2                    |
| PLUS: Average weekly hours   | -.5                    | -.4                    | .0                     | .0                     |
| EQUALS: Total Hours Worked   | 1.6                    | 1.7                    | 1.7                    | 1.2                    |
| PLUS: Output per hour (productivity)   | 2.9                    | 1.1                    | 1.4                    | 1.3                    |
| EQUALS: Nonfarm Business Output  | 4.5                    | 2.8                    | 3.1                    | 2.5                    |
| PLUS: Nonfarm business output as a<br>share of real GDP <sup>3</sup>               | -.3                    | -.1                    | -.4                    | -.2                    |
| <b>EQUALS: R E A L G D P</b>   | <b>4.2</b>             | <b>2.7</b>             | <b>2.6</b>             | <b>2.3</b>             |

Notes:

Except for 1998, time periods are from business-cycle peak to business-cycle peak to avoid cyclical variation.

Detail may not add to totals because of rounding.

<sup>1</sup> Adjusted for 1994 revision of the Current Population Survey

<sup>2</sup> Translates the civilian employment growth rate into the nonfarm business employment growth rate.

<sup>3</sup> Translates nonfarm business output back into output for all sectors (GDP), which includes the output of farms and general government.

Source: *1999 Economic Report of the President*, p. 85.