

*You may need to search for the appropriate Standard Industrial Classification (SIC) code. The employment includes full and part-time employees.

Task #2. Empirical Literature Review.

Pick an article, in which you are interested.*

1. Prepare a 10-minute in-class presentation on the article, assuming that you are a "real planner" and speaking to some professional planners in the City of Boston who are interested in the potential use of REMI for their socioeconomic impact analyses.

a. Check with the class to see if someone else is interested in that article as well. We would like two to three of you (no more than four to six groups in total) to prepare the presentation on a single article. Only one of you will actually do the presentation.

b. When you find your article and the group, please send Rajendra and Karen e-mail.

2. Each student should prepare a 2-page double-spaced (tables and figures are separate) essay about the strengths and weaknesses, suggestions, questions, and so forth, on the article. Basically, the essay is open-ended, and it will be part of the answer you submit to us for Problem Set 1.

* The articles will be available on MIT Server early next week.

Brief Introduction to REMI

REMI Policy Insight™ is a structural model, meaning that it clearly includes cause-and-effect relationships. The model is based on two key underlying assumptions from mainstream economic theory: households maximize utility and producers maximize profits. Since these assumptions make sense to most people, lay people as well as trained economists can understand the model.

In the model, businesses produce goods to sell to other firms, consumers, investors, governments and purchasers outside the region. The output is produced using labor, capital, fuel, and intermediate inputs. The demand for labor, capital and fuel per unit of output depends on their relative costs, since an increase in the price of any one of these inputs leads to substitution away from that input to other inputs. The supply of labor in the model depends on the number of people in the population and the proportion of those people who participate in the labor force. Economic migration affects the population size. People will move into an area if the real after-tax wage rates or the likelihood of being employed increases in a region.

Supply and demand for labor in the model determine the wage rates. These wage rates, along with other prices and productivity, determine the cost of doing business for every industry in the model. An increase in the cost of doing business causes either an increase in prices or a cut in profits, depending on the market for the product. In either case, an increase in costs would decrease the share of the local and U.S. market supplied by local firms. This market share combined with the demand described above determines the amount of local output. Of course, the model has many other feedbacks. For example, changes in wages and employment impact income and consumption, while economic expansion changes investment and population growth impacts government spending.

Figure 2-1 is a pictorial representation of REMI Policy Insight. The Output block shows a business that sells to all the sectors of final demand as well as to other industries. The Labor and Capital Demand block shows how labor and capital requirements depend both on output and their relative costs. Population and Labor Supply contribute to demand and to wage determination. Economic migrants in turn respond to wages and other labor market conditions. Supply and demand interact in the Wage, Price and Profit block. Prices and profits determine market shares. Output depends on market shares and the components of demand.

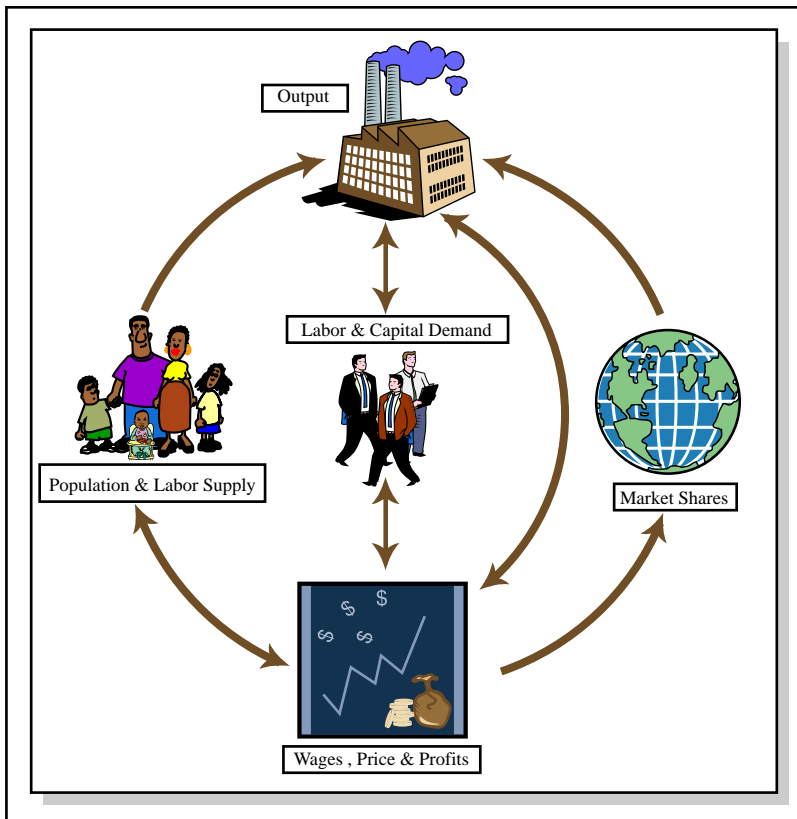


Figure by MIT OCW.

Figure 1. REMI Policy Insight™ overview

The REMI model brings together all of the above elements to determine the value of each of the variables in the model for each year in the baseline forecast. The model includes all the inter-industry interactions that are included in input-output models in the Output block, but goes well beyond an input-output model by including the linkages among all of the other blocks shown in Figure 2-1.

In order to broaden the model in this way, it was necessary to estimate key relationships. This was accomplished by using extensive data sets covering all areas in the country. These large data sets and two decades of research effort have enabled REMI to simultaneously maintain a theoretically sound model structure and build a model based on all the relevant data available.

The model has strong dynamic properties, which means that it forecasts not only what will happen but also when it will happen. This results in long-term predictions that have general equilibrium properties. This means that the long-term properties of general equilibrium models are preserved while maintaining accurate year-by-year predictions and estimating key equations using primary data sources.

Figure 2-2 shows the policy simulation process for a scenario called Policy X. The effects of a scenario are determined by comparing the baseline REMI forecast with an alternative forecast that incorporates the assumptions for the scenario. The baseline REMI forecast uses recent data and thousands of equations to generate projected economic activity for a particular region. The policy variables in the model are set equal to their baseline value (typically zero for additive variables and one for multiplicative variables) when solving for the baseline forecast. To show the effects of a given scenario, these policy variables are given values that represent the direct effects of the scenario. The alternative forecast is generated using these policy variable inputs. Figure 2-2 shows how this process would work for a policy change called Policy X.

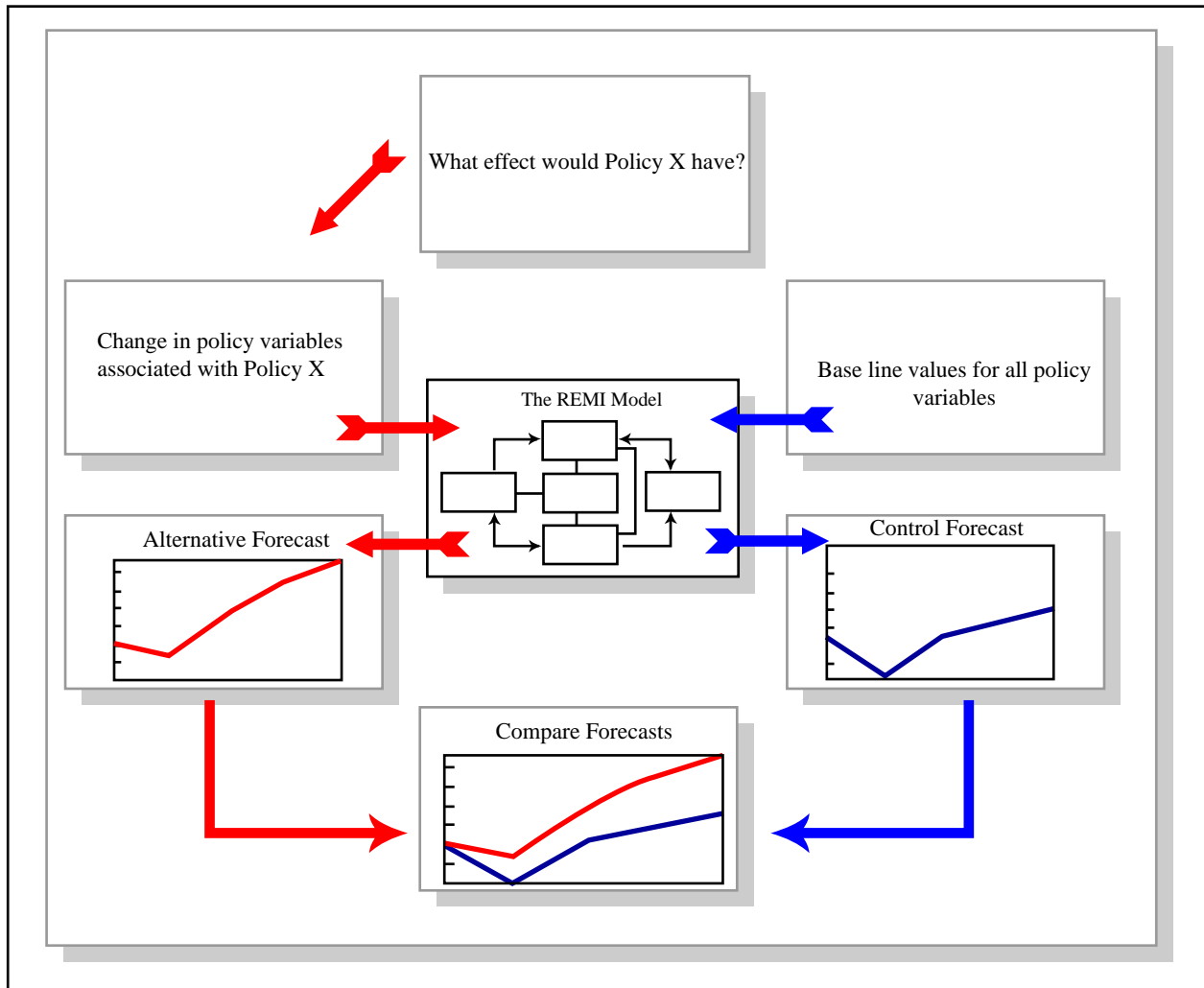


Figure 2. Policy X scenario

Figure by MIT OCW.