



Macroeconomic Modeling and Policy Analysis



When assessing a public policy option, a government, trade, or development organization needs to consider the effect on the regional, state, and national economy.

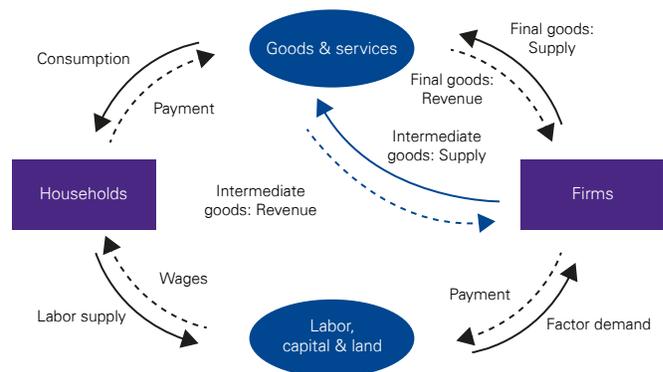
Using its economic modeling capabilities, Economic & Statistical Consulting (ES) professionals in KPMG LLP's (KPMG) Economic & Valuation Services (EVS) practice can measure the net economic benefits of economic, social, environment, industry policies and the contributions of a business, organization, industry, or event to the regional, state, or national economy.

The KPMG approach

ES professionals have developed a thorough economy-wide modeling system, referred to as a Computable General Equilibrium (CGE) model, which represents an economic structure in terms of economic activities between agents, including households, firms, and governments along with underlying price/cost relationships for products, labor, and capital markets. The modeling outputs include:

- Key macroeconomic variables, such as gross output, employment, consumption, investment, exports, and imports
- Prices, wages, cost trends, and industry rates of return
- Tax revenues by type and tax burden distribution across households
- Industry outputs and industry employment by occupation.

General framework of a CGE model



Application areas

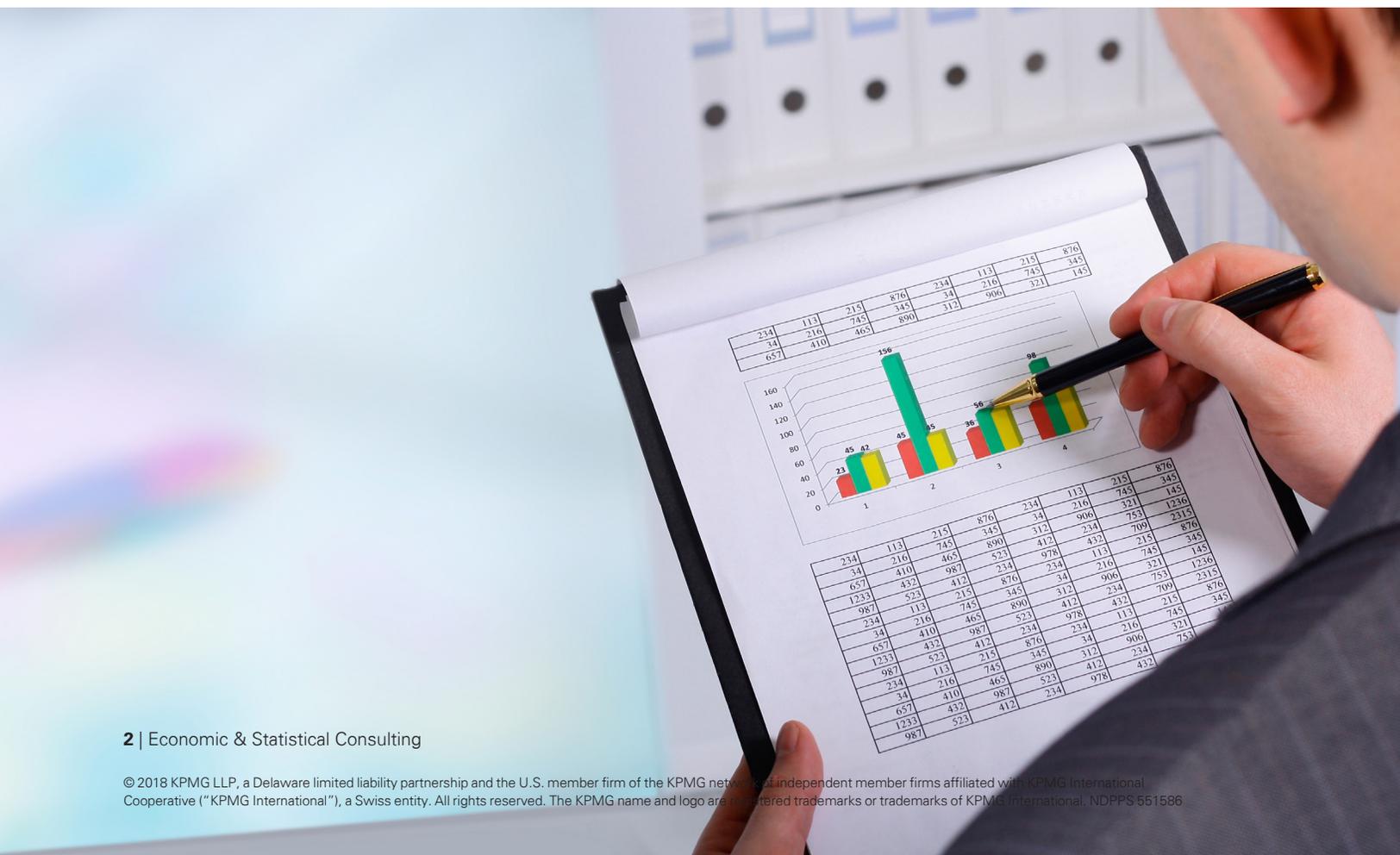
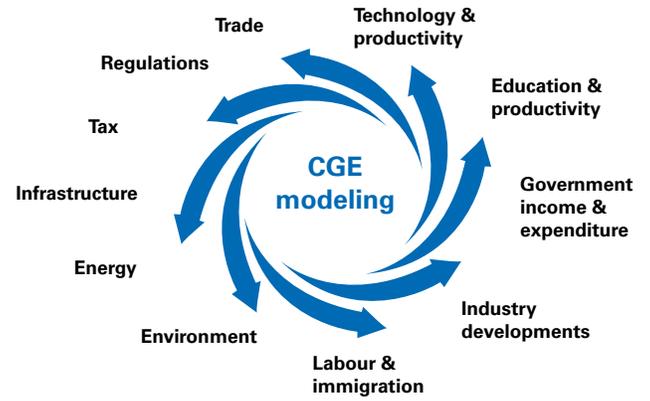
A CGE model can be used to address a wide range of economic and policy issues. Any industry or commodity-related economic shocks and risks can be assessed in terms of the economy-wide flow-through impacts. Any economy-wide shocks originating from other countries or government macro policies can be evaluated in terms of detailed industry/commodity impacts.

Broadly speaking, a CGE model can be applied to three areas:

- **Policy analysis:** Tax policy development and assessments of reform options, regional economy or industry development policies, trade policies including tariff and nontariff policies, fiscal policies, research and development policies, migration and labor market policies, regulatory reform, and emissions policies
- **Industry or project:** Contributions of an organization and an industry to the economy; economy-wide impacts of an investment project, an event, or public and private infrastructure project; and macro and industry impact assessment of a natural disaster or social disruption
- **Macro and industry scenario development and forecasting:** “What if” macroeconomic scenario analysis, “what if” industry and company risk scenario analysis, and industry activity forecasting.

Overall, a CGE modeling analysis can be applied to a variety of issues as illustrated below:

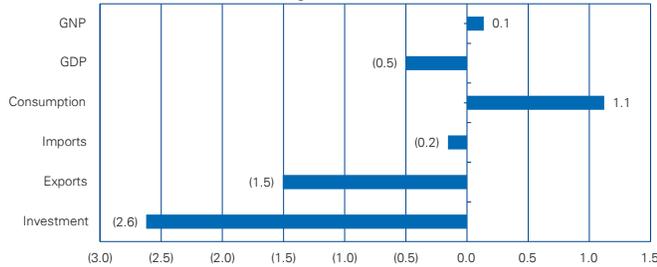
Application Areas for the CGE Modeling Approach



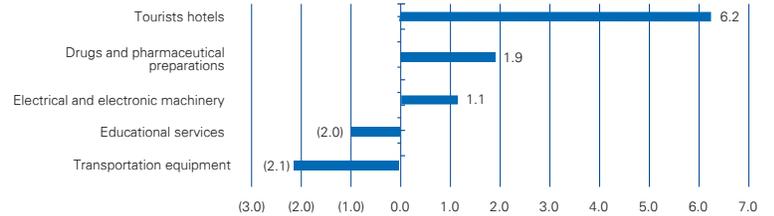
Examples of CGE modeling outputs

KPMG was asked to evaluate the economic impacts of a change in tax policy. Our CGE analysis clearly informed legislators about the effects of the policy change. The following charts illustrate the outputs from a recently completed tax policy analysis. Charts 1 and 2 show the macroeconomic and industry impacts of proposed tax law. Charts 3 and 4 show the burden of tax changes on each income group, and Chart 5 shows the impact on source of tax receipts by type of tax.

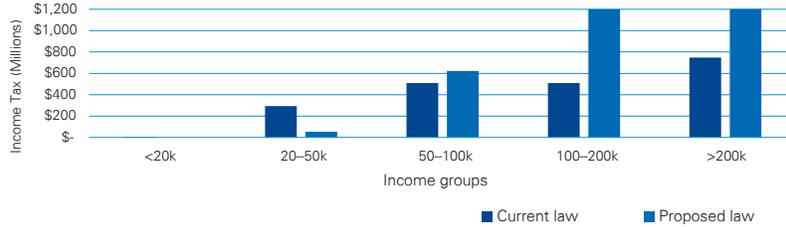
1. Potential macroeconomic impacts of the proposed law
(% change from baseline)



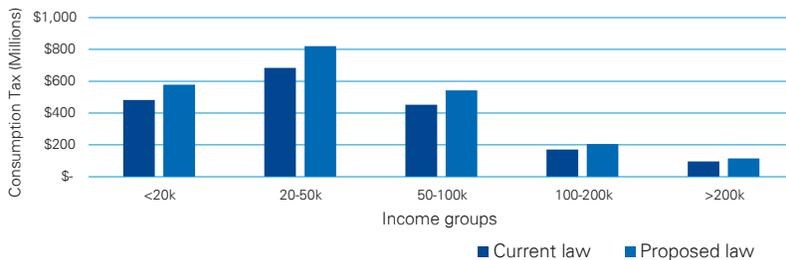
2. Potential industry impacts under proposed law
(% change in output)



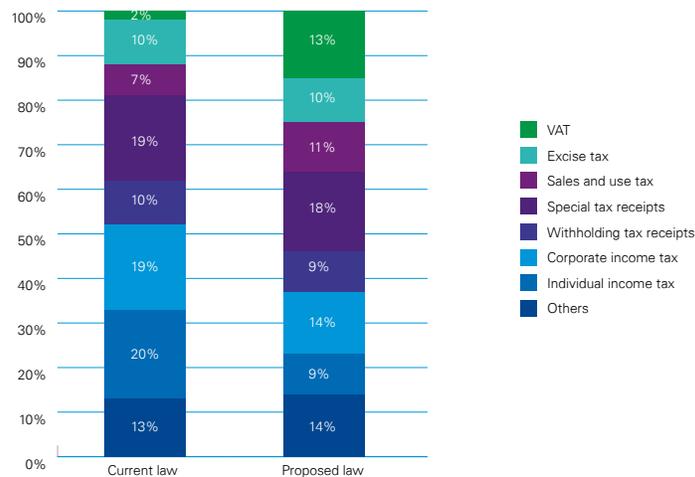
3. Income tax burden distribution by income groups
under current and proposed law



4. Consumption tax burden distribution by income groups
under current and proposed law



5. Sources of general fund tax receipts under
current and proposed law



Our commitment

The professionals in KPMG's Economic & Statistical Consulting Group can help you analyze proposed policies using a CGE modeling framework and its underlying input-output databases. Our team of PhD-level economists and econometricians can provide the economic modeling and analytical framework to meet your objectives.

Contact us

For more information on how we can help you with economic modeling and policy analysis, contact your local KPMG adviser:

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