



Models and databases

Vista Analyse has a comprehensive modeling system available, which we employ in our calculations and analyses. We continually update both the models and the comprehensive databases that our models are based on. In this section, we discuss briefly our modeling tools.

National and regional economics

KOMSAM: Model for assessing economic effects of municipal mergers in urban areas in Norway. The model is built in MSEExcel. The model estimates expected changes in municipal efficiency and their economic situation. Furthermore, the model estimates changes in long-term regional growth caused by the municipal merger.

NOREG: Macro Model for regional measures in a national framework: A long-term macro model of the MSG-type is paired with a regional model to map the economic consequences of different measures. This ensures that regional measures and effects are kept within a real economic framework so that both national and regional effects are



modeled more realistically.

MERNYTTE: Model for net economic effects: The model is based on theory, which explains external productivity effects of investments and business localization. The theory can explain business clusters and other clusters (such as cities). The model also includes net effects of adjustments in the labor market. The model is calibrated using estimates from literature.

KIMO (Local government revenue model) is used to calculate municipal revenues due to increased activity (employment and settlement) in the short and long run.

MEMO (Municipality Expenditure Model) is used to calculate the municipal operating expenditures of demographic development in the short and long run.

Osker: Business and employment sorted by area-categories in the 5-digit NACE level, using data from 2008 to 2014, per municipality. The number of employees divided between skilled jobs, government jobs, space-demanding trade and service, customer intensive trade and service, and resource-based and mobile production.

Vista: Models the turnover of retail trade at the municipal level. The database shows trade leakage and -import, coverage and a detailed overview down to/for certain types of goods. The database is updated annually back to 2000 and is cost adjusted.

Municipal-NM: Models the status and development since 2009 at the municipal level for employment, demographics, business, education and municipal economy.

Transportation

The Intercity model: Modeling tool for the development of market models for regional passenger transport, and for analyzing the competition between different modes of transport. The model is used to calculate the traffic impacts of new infrastructure and changes in transport services.

MERKLIN: Cost-benefit model for rail investment: The model calculates the economic costs and benefits of new transport solutions, including costs related to investment, operation and maintenance of new solutions for infrastructure and other forms of transport. The model also calculates economic consequences related to noise, emissions and health effects. Vista Analysis has continuously developed Merklin on behalf of Jernbaneverket during the last fifteen years. The model is an alternative to EFFEKT, which we also are familiar with. Our model MERNYTTE covers indirect effects of transport.

NYBIL Econometric estimation model for car choices: The model is estimated on a data set that includes all car purchases from 2004 to 2014. Using knowledge on price changes, tax changes and macroeconomic conditions, it estimates a model to test the effect of changes in car taxes. The model is also used to analyze the effect on the emergence of electric vehicles.

VEIVALG: Model for transport choice and transportation costs. The model is used, among other things, to calculate



the effect of tolls on traffic and air pollution.

KVIRK: A model for calculating the benefits and cost-effectiveness of government maritime transport measures (fairways, fishing ports, etc.).

HELIKOPMOD: A model that captures the developments in offshore helicopter traffic from all Avinor airports. HELIKOPMOD is under development and owned jointly with ECON Consulting Group.

Computer technology and databases

GAINS: Model for uncertain benefits of information and computer technology: New computer technology and databases provide entirely new products, services and new ways of working in the public sector. We use @Risk to parameterize this benefit, based on expert judgment and existing literature.

Uncertainty Analysis on project level

The tools *Crystal Ball* and @Risk are generally used in uncertainty analysis.