The Regional Dynamics Economic Analysis Model

What the REDYN Model Does

Regional Dynamics offers REDYN, a fundamentally new, web-based, massively multi-regional, dynamic, nonlinear New Economic Geography analysis engine with a complete economic database and baseline forecast. After subscribing to the system, users input online changes by region and year: e.g., jobs, wages, output, income, intermediate demand, and final consumption, investment, and government demand. REDYN then estimates detailed, annual, gravity-based trade flows and impacts in all US counties and industries. The model is a live, online Internet service. It's also available to run batch mode jobs to process massively multi-regional tasks (3,100+ regions) for automated or scripted work.

The REDYN model applies a fresh I-O methodology based on very detailed make-and-use tables with social accounting matrix features for all entities, a comprehensive commodity production transformation function, and impedance-based commodity trade flows by five transport modes. Oak Ridge National Laboratories developed the impedance measures.

The model automatically includes an explicit extra region for all US counties outside any given simulation to identify the full US output and trade flow response. The model also automatically seeks the suppliers of suppliers to find the complete US supply chain response by region and industry in any simulation.

REDYN excels at offering a uniquely complete and consistent model-building edge that no other modeling process can replicate for configuring and assessing plans, events, and risks fully and rapidly across regions and years.

Here's how it works. At run time, users apply their subscribed resources as an online tool kit to build and run custom models at will. This design flexibility lets users quickly build models scaled correctly for any studies, event analysis, overlapping or alternative analytic perspectives, or backcast analysis.

The REDYN model estimates employment, output, wages, occupations, income, gross product, demand, self-supply, trade flow, etc. Within a user's subscription, the model generates year-by-year reports by county and year, for all subscribed counties, or for any aggregation into user-defined areas for each study. For easy regional comparison at no extra cost, each report focuses on one concept (jobs, output, wages, and so forth) arranged by region by year on a sheet in a spreadsheet book. Users then can apply full spreadsheet tools for sorting and charting. Online and phone support are included.

The model is available to all users across agency levels. Clients can offer access to other users through user-group web pages with discounts or rebates based on the size of the client's subscription. Clients subscribe to a regional area (one or more counties, states, or groups); to 703 industries (North American Industrial Classification System); and to an analytic type (I-O only, or equilibrium and I-O). The client sets the number and identity of its subscribing users; one user is free. Subsequently added users including consultants or staff can be managed by one or more additional users on an incremental fee basis.