

The Regional Dynamics REDYN economic analysis model offers comprehensive design excellence...

- **Database**
- **Trade flow**
- **Forecast**
- **Simulations**
- **Reports**
- **Applications**
- **Subscription by Internet**

Design excellence makes the REDYN model...

- **Flexible for Modeling**
- **Reasonably Priced**
- **Solidly Built**

*Synchronicity.
Simplified.*

Full Econometric Database Structure

- Government sources (BEA, BLS, Census, Oak Ridge) updated quarterly, annually
- Strong RAS-based suppression-fill process
- Comprehensive commodity make-and-use Input-Output tables apply Social Accounting Matrix features to capture every entity type. Entities include producers (industries), employed labor (occupations), remittance cohorts (unemployed labor, retirees), government, investors, speculators. Commodities include producer commodities, labor occupations, transfer payments, government goods, financial capital, physical capital
- Detailed industries and other entities by region by year transform input commodities into output commodities using a robust, parameterized, endogenous, iterative, dynamic production function in a continuous process that fully incorporates intermediate and factor inputs, final demand, jobs and output, and endogenous gravity trade flows
- The inclusive commodity transformation production function captures all production and gravity-based relationships – there is no need for post-process adjustment equations
- All 180+ NAICS non-agricultural commodity types
- All 820+ Standard Occupation Classification 6-digit occupations
- All 700+ NAICS 5-digit industries
- All 3,100+ US counties

Full New Economic Geography Trade Flows

- Based on the Oak Ridge transportation impedance model used by the Bureau of Economic Analysis to audit the BEA Transportation Satellite Accounts
- Transport cost varies by commodity, distance, mode, and direction in and between all US county origin-destination pairs; distance varies by mode & direction, and accounts for net elevation between origin-destination pairs (future: Canada, Mexico, global)
- 5 transport modes: road, rail, water, air, and proxy (e.g., public utility water delivery)
- Avoids locking each industry into a straight-line industry transportation cost within one implied universal transportation distance, mode, and direction between regional pairs
- Allows commodity-specific effects by mode due to policy or transportation inputs
- Manufacturing and Service sector trade flows are updated annually, vs every 5 years, manufacturing only, for Census of Transportation

Full Baseline Macroeconomic Control Forecast

- Fair-Parke macroeconomic model (Ray Fair, Yale Center for International Finance)
- Estimates near-term US business cycle by year—30 stochastic equations, 101 identities
- Standard 50-year control forecast generated from a spline curve fitted to history, near-term Fair-Parke business cycle, and BLS projections
- Later: apply other forecasts such as Economy.com, Global Insight (*user choice*)

Full Economic Simulation Forecast Process

- Massively multi-regional – every US county, or selected regions (*user choice*)
- Dynamic (year-by-year) nonlinear results up to 50 forecast years (*user choice*)
- Automatic US-wide regional response for full trade flow, output, supply chain effects
- All analysis at NAICS 5-digit industry detail and full occupation & commodity detail
- NAICS backcast capability from 1998 forward (*planned*)
- Indirect demand, induced demand, induced investment, exogenous demand result in local and remote output using impedance-based commodity trade flow by mode
- Induced investment demand for new plant and equipment applies the current mix in BEA and BLS tables adjusted for business cycles by detailed industry
- Commuter and local consumption effects by county reflect wages paid based on wage rates by industry and region, including employees and the self-employed
- Labor cost captures nonwage compensation by region as percentage of wage rates
- Displacement (sales crowding out) option for regional supply-source US allocation or regional equal-proportion US effect (*user choice*)
- Endogenous equilibrium price effect on baseline forecast, tax and policy analysis, fiscal analysis; cohort-survival demographics and migration (rational expectations notion)
- Later: standard occupation disaggregation by gravity flow to estimate occupations and income levels by place of residence; endogenous economic response to changes by mode in any county transportation network; endogenous global industry effects

Full Reports Process

- Display concepts by region as row and by year as column (*user concept choice*)
- Any industry detail; run time regions up to subscription ceiling (*user choices*)
- Base and simulation forecasts; differences & percentage difference effects (*user choice*)
- Display regional comparison sheets for economic, labor market, performance, and trade flow perspectives for complete user flexibility at no extra cost (*user choice*)
- Include simulation inputs by sector by concept by region by year (*user choice*)
- Generated as sheets in a spreadsheet book for full sorting, charting, scaling, and pivot capabilities (*user choice*)
- Detail concepts available by breakdown element (*user choice*):
 - Employment by industry, occupation, commodity; region & sector demanding
 - Output by industry or by commodity; or by export region or sector demanding
 - Wage bill and wage rate by industry, by commodity, and by occupation
 - Personal income component and residence adjustment
 - Gross business product (value added) by industry and by commodity
 - Gross resident product by final demand category and by commodity
 - Demand and Self-supply – each by industry and by commodity
 - Trade flow (imports, exports, shares imported, shares exported) – each by industry, commodity, and region
 - Added concepts (e.g., demographics) – new reports included in subscriptions

Full Economic Analysis Application Range

- Development planning, industrial targeting, and cluster effects
- Strategic planning, global effects, and location analysis by firms
- Policy design, tax & program results, and revenue analysis by agencies
- Workforce planning, transportation & energy analysis, homeland security impacts
- Association member analysis by county, state, all counties, all states
- Federal, business, or policy analysis simultaneously affecting all counties or states
- *Forecasting and analyzing economic impacts of plans, policies, programs, and related events for development, transportation, energy, workforce, taxation, the environment, homeland security... You name it... for policies affecting a region, or every US county...*

Examples: selected impact analysis projects

- Atlanta's MARTA transportation system
- Alternative rail transshipment locations
- DaimlerChrysler's cargo van plant
- Southern Company's electric power rate impacts on economic development
- Tourism labor demand forecast for the Southeastern states
- Defining Georgia's multi-county trade regions
- Scripted impact analysis for 168 hospitals and every affected Georgia county

Full Subscription Delivery – Batch & Internet

- Subscribe to a desired set of counties, states, or groups and the maximum regions per run time model; desired analytic resources (e.g., I-O only, or CGE and I-O); all NAICS detail is included; then make and run custom study models at will within a subscription
- Model selection process is immediate as all resources are present on the server
- Wide range of choices makes models flexible to meet custom study area requirements
- Server systems enable virtually unlimited capacity to add users and functionality
- The REDYN model is designed for the Internet – including wireless
- The REDYN model also is available offline as a service for large batch or scripted tasks
- Clients can offer access to any other users through user-group web pages with discounts or rebates up to 50% based on the size of the client's subscription

Contacting Regional Dynamics

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