OXFORD ECONOMICS

The leader in global forecasting and quantitative analysis

Overview
About Oxford Economics

- **Oxford Economics is a world leader in global forecasting and quantitative analysis.** Our worldwide client base comprises over 850 international corporations, financial institutions, government organizations and universities.

- **Founded in 1981 as a joint venture with Oxford University, Oxford Economics is now a leading independent economic consultancy.** Our link to Oxford University is still present today through our management board, empirical research approach and access to Oxford scholars.

- **Headquartered in Oxford, with offices around the world, we employ more than 150 people, including 90 economists, and a network of 500 contributing researchers.** The rigor of our analysis, caliber of staff and links with Oxford University and other leading research groups make us a trusted resource for decision makers.
We specialise on three types of analysis

**Forecasts & Models**
Track, analyse, forecast and model country, industry and urban trends around the world

**Economic Impact**
Assess the impact of a company, industry, new technology, regulation, or market change

**Thought Leadership**
Evidence-based research to influence corporate leaders, policy-makers, and other stakeholders
Our modelling expertise sets us apart

- Oxford Economics has developed the world’s leading globally integrated economic model, relied on by over 100 leading organisations around the world.

- Our model replicates the world economy by interlinking 46 countries, 6 regional blocs and the Eurozone. It is available with 5, 10 and 25-year forecasting horizon.

- The global economic model feeds into a series of industry, sub-regional and city models. So, you can quantify the impact of global events on a consistent basis down to your industry and local markets.

- Our team of over 90 economists set underlying global assumptions and ensure that the data, forecasts and formulas in these models are fully up-to-date.
We go deeper and further with our global analysis

Further
- Event-driven scenario planning and stress testing
- Tailored market sizing and sales forecasting
- Impact of macro events on your markets and business

Deeper
- Economic outlook for 201 countries
- Forecasts for 100 industrial sectors
- Analysis on 3,000 cities and sub-regions
A complete decision-support service

- Scenario and modeling services
- Deep-dive Databanks on countries, industries, and cities
- Event-driven analysis
- Regularly updated country and industry reports

Track … ... Analyze … ... Forecast
We deliver decision-support how you want it

Interactive
- Microsites, interactive tools, and infographics
- Databases and models
- Direct feeds into intranets and tools

Personal
- Executive meetings and presentations
- Custom research and thought leadership
- Economic outsourcing and alliances
Our clients represent a global who’s who

Corporate and consulting
- GE
- Shell
- SAP
- AT&T
- Coca-Cola
- Airbus
- IBM
- Rolls-Royce
- DHL
- BP
- BAT
- Daimler
- France Telecom

Financial and real estate
- Citigroup
- Prudential
- Putnam
- Barclays
- UBS
- Banco Santander
- Bank of Tokyo
- HSBC
- NM Rothschild
- Deutsche Bank
- MasterCard
- Amex
- Visa
- CBRE
- DTZ
- Invesco
- Cushman & Wakefield
- Jones Lang LaSalle
- Bouwfonds

Government and academic
- World Bank
- UN
- Bank of England
- HM Treasury
- OPEC
- EU Commission
- Asian Development Bank
- Oxford University
- UCLA
- NYU
- London Business School
We have one of the world’s best forecasting track records

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Note: Forecasts made in December for year ahead
Our analytical approach
High-caliber economic team

- 90 in-house economists with extensive industry, financial and public-sector experience.
- Access to over 100 economic research groups through the UN's Project Link.
- Links to Oxford University and other leading research institutes.
- Board includes noted Oxford University economists, Andrea Boltho and Christopher Allsopp, former Member of the Court of Directors of the Bank of England.
How our analytical team is organised

We employ over 90 in-house economists – supported by a specialist data team

- Our economic team has links to Oxford University and other leading economic research centers.
- To ensure the rigor of our analysis, each economist typically covers only several countries or industries.
- Our economists are responsible for monitoring macro trends and keeping our data, forecasts and models up-to-date.
- Our specialist data team is tasked with gathering and codifying data and presenting it in useful formats.
- Our economists work with 10 in-house business analysts and an outside network of over 500 research contributors.

Organisation by macro focus

- 201 countries
- 10 key industries
- 3000 cities

Organisation by analytical expertise

- Macro forecasting
- Economic impact
- Urban development
- Financial markets
- Labour economics
- Business strategy
Finding and gathering global data

- The first step in our analytical process is to identify and gather the most reliable current and historical data.
- Our team of data specialists work with our economists to pull data from a wide range of public and private sources.
- We also rely on specialist data aggregators such as Haver Analytics to help us gather data.

Supranational
IMF/World Bank, UN, Bank of International Settlement, International Labor Organization, etc.

Local
Eurostat, UK National Statistics Regional Accounts, US Census Bureau by State, etc.

National
For the US for example: BEA, BLS, US Treasury, Federal Reserve, etc.

Private
Fitch, Moody’s, S&P, ISM, Markit, LMC Automotive, etc.
Ensuring data consistency

To ensure data consistency across multiple locations, our economics team uses a series of methods to codify and standardize data:

- **Adjust** for seasonality
- **Create** common base years
- **Re-index** data
- **Set comparable** ratios
- **Identify** sources of consistent data

Where there are data gaps, our economists provide data estimates and extrapolations. We include derived series, along with the original official data in our models, particularly for emerging markets, where data can be inconsistent.
Our quality control process

**Bottom up monitoring**
Our economists constantly monitor macro developments and data releases on the countries they cover. Every month, they check all data inputs and outputs for their country models.

**Top down checks and balances**
A quality control team of economists runs centralised checks, including quantitative measures to spot mathematical errors and to reconcile past trends with current forecasts, as well as qualitative reviews to ensure the effectiveness of the analysis.

**Ongoing quantitative validation**
Our use of rigorous econometric models surface any inconsistent data or forecasts. Models impose a logical framework that can spotlight flaws in your analysis.
Our modeling capabilities
Economic drivers behind the model

- The Oxford model is an eclectic model designed to capture the key relationships in the global economy.
  - Keynesian in the short run
  - Monetarist in the long run
- In the short run, shocks to demand will generate economic cycles that can be influenced by fiscal and monetary policy.
- But over the long-run, output is determined by supply side factors: investment, demographics, labour participation and productivity.
Comprehensive geographic coverage

The model covers 46 countries in detail, including many emerging markets, and provides headline forecasts for another 30 countries. The remaining countries are covered in 6 ‘blocs’: OPEC, Eastern Europe, Africa, Latin America, rest of OECD, rest of World.

### Europe
- Austria: 500+
- Belgium: 550+
- Bulgaria: 450+
- Croatia: 400+
- Czech Republic: 500+
- Denmark: 500+
- Eurozone: 300+
- Finland: 500+
- France: 600+
- Germany: 600+
- Greece: 500+
- Hungary: 500+
- Ireland: 500+
- Italy: 700+
- Netherlands: 550+
- Poland: 500+
- Portugal: 500+
- Romania: 450+
- Slovakia: 500+
- Spain: 600+
- Sweden: 550+
- Switzerland: 600+
- Turkey: 500+
- UK: 850+

### Americas
- Argentina: 400+
- Brazil: 450+
- Canada: 600+
- Chile: 400+
- Mexico: 500+
- United States: 950+

### Asia
- Australia: 550+
- China: 650+
- Hong Kong: 450+
- India: 450+
- Indonesia: 400+
- Japan: 700+
- Malaysia: 400+
- Philippines: 400+
- Singapore: 400+
- South Korea: 550+
- Taiwan: 550+
- Thailand: 400+

### Middle East & Africa
- Saudi Arabia: 400+
- South Africa: 400+
- UAE: 400+
Integrated global model with multiple linkages

- **Trade volumes**
  - World trade for each country is a weighted average of the growth in total goods imports (excluding oil) of all other countries.

- **Competitiveness**
  - IMF relative unit labour costs where available.

- **Trade prices**
  - One country’s exports is another’s imports

- **Interest rates and exchange rates**

- **Commodity prices**
  - Oil depends on supply/demand balance
  - Metals on industrial growth

- **Capital flows**
  - Including the impact of FDI, credit ratings and bond spreads.
Our global model supports a wide range of business analysis

Our global economic model can provide a rigorous, customisable framework to support a wide range of planning, marketing and risk management activities.

**Scenario planning**
Assess the impact of potential economic, political or financial shocks on your revenue, costs and market exposure.

**Market sizing**
Help identify key markets around the world and size the opportunity for your products and services.

**Forecasting**
Enable you to correlate economic drivers to your business so that you can forecast sales performance.

**Stress testing**
Conduct stress testing and reverse stress testing. Financial firms can use the model to run CCAR scenarios to stress test balance sheets.

**Impact analysis**
Gauge how a change to a government policy or emerging macro development will affect your business.

**Data codification**
Provide a rich databank of consistent economic indicators to support various planning and budgeting activities.
Example: A China hard landing

If you have a China hard landing then this translates into the global economy in a number of ways:

**Weaker demand causes Chinese imports to fall.** This translates into lower exports. Countries whose exports are most dependent on China suffer most, which in turn hits their economic growth so that they import less from China (and other countries), creating adverse global multiplier effects.

**There will be downward pressure on Chinese inflation,** resulting in lower Chinese export prices. Other countries’ import prices will therefore be lower, cutting their import bill but also putting downward pressure on their inflation.

**Lower Chinese demand mean fewer jobs.** This subdues wages, and improves manufacturer competitiveness. If Chinese authorities respond to weaker growth by managing the exchange rate lower, that also increases competitiveness in world markets. These factors add to the pressure on exporters in the rest of the world.

**Lower growth means less demand for oil and other commodities.** That puts downward pressure on commodity prices, exacerbating the impact of the China slowdown for net commodity exporters but mitigating the impact to some degree for countries that are net commodity importers.
User-friendly interface

Oxford Economics’ models come with user-friendly, Windows-based software. This software makes it very easy to:

- Change economic assumptions to produce new forecasts or scenarios.
- Add new variables and equations.
- Produce presentation-quality graphics.
- Download data into spreadsheets and other data-handling packages.
- Compare, map and graph data across countries and alternative scenarios.
- Build your own economic models.
- Access Oxford Economics’ scenarios with one click.
The Oxford suite of econometric models

- Oxford Economics has a suite of econometric models that have transparent links with the Global Economic Model.
- The Global Industry Model is run once a quarter to produce globally consistent industry forecasts covering 100 sectors across 67 countries.
- City and regional forecasting models, covering 3,000 locations worldwide driven by our macro and industry forecasts.
- Individual country models can be provided for most countries.