Use of Economic Tendency Surveys

UN Workshop Hangzhou

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Outline

1 Measurement of Assessments and Expectations of the Businesses and the Consumers
   - Aims of ETS
   - Customers of ETS results

2 Composite Indicators
   - Motivation
   - Classical Approach (NBER)
   - Factor Analysis

3 Special Graphical Representations

4 Forecasting
   - Time Series Methods
   - Quantification

5 Economic Research
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- Base for business cycle relevant indicators
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- Receive timely signals about general business cycle course
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  - expectations about price changes
  - plans about employment
  - capacity utilization
The information covered by ETS goes beyond topics which are usually captured by conventional quantitative statistics. Examples include

- assessments (e.g. capacities, stocks)
- plans and expectations
- bottlenecks
Business Climate in Afghanistan

Graph 1b - Business Climate by Regions, Oct 2013 and March 2014

Source: Afghanistan Chamber of Commerce and Industries
Customers of ETS results

- Respondents
Customers of ETS results

- Respondents
- Enterprises
Customers of ETS results

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- Enterprises
- Public and Media
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- Public and Media
- Policymakers
- Central Banks
- Commercial Banks and financial markets
- Associations
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- Enterprises
- Public and Media
- Policymakers
- Central Banks
- Commercial Banks and financial markets
- Associations
- Experts
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- Experts
- Researchers
Customers of ETS results

Two broad categories of users according to their needs:

- **'Executives’** (e.g. senior business executives, politicians, senior civil servants responsible for government policy, senior personal in banks and financial institutions and the press and other media)
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- **’Analysts’** (e.g. economists and researchers operating in the academia, research institutions and governmental bodies)
August 14, 2014 5:04 pm

Russian shadow unsettles German business confidence

By Stefan Wagstyl and Chris Bryant in Berlin

FT.com
FINANCIAL TIMES
UK business confidence dips for first time in two years
By Brian Groom, Business and Employment Editor

FT.com
FINANCIAL TIMES
UK consumer confidence falls for first time in six months

By Emily Cadman
Japan’s Tankan business survey falls after consumption tax rise

By Ben McLannahan in Tokyo

Any questions?
Poor business confidence points to challenges ahead

January 26th 2012
Business confidence falls to ten-year low
Euro-Zone Consumer Confidence Keeps Climbing

Sentiment at Strongest Level Since Before Financial Crisis
South Africa Business Confidence Falls to 15-Year Low
Strikes Have Been a Drag on Economic Growth
Italian Confidence Undimmed by Statistics, Floyd Norris

**Italy Turns Optimistic**

The Italian economy does not appear to be in good shape, with growth stagnant and unemployment high. But financial markets have turned up, and consumer confidence is at the highest level in years.

**The unemployment rate in Italy is high...**

- Unemployment rate
  - 14%

**...and many expect it to rise**

Percent of consumers expecting that over the next 12 months:

- 80%
- 60%
- 40%
- 20%
- 0%
Italian Confidence Undimmed by Statistics, Floyd Norris
Users of ETS

Users of economic tendency surveys

Executives

Analysts
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Composite Indicators

Economic Tendency Survey data results are a popular ingredient of composite indicators.

The advantage of composite indicators over the individual component series are:

- fewer false alarms and fewer missed turning points than its individual components
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- more stable lead-times
- capacity to react to various sources of economic fluctuations
- resilient to perturbations affecting only one of the components
Composite Indicators

- Soft/general questions vs. hard specific questions
Composite Indicators

- Soft/general questions vs. hard specific questions
- Selection of indicators
Composite Indicators

- Soft/general questions vs. hard specific questions
- Selection of indicators
- Aggregation of indicators
**Current Situation (CS)**

We assess our current business situation for XY as:
- good
- satisfactory
- bad

**Expectations for the next 6 months (EX)**

Our business situation for XY will be — excluding seasonal fluctuations —
- better
- about the same
- worse
Ifo Business Climate

Ifo Business Survey
Industry and Trade, 1) September 2014

Index, 2005 = 100, seasonally adjusted

Business expectations
Ifo Business Climate
Assessment of business situation

1) Manufacturing, construction, wholesaling and retailing.

Source: Ifo Business Survey.
KOF Business Situation

Source: KOF
KOF Business Situation Radar

- Wholesaling
- Services
- Hotels.Restaurants
- Manufacturing
- Retailing
- Finance
- Planning
- Construction

Good and poor indicators for each category.
KOF Employment Indicator

Source: KOF
DG EFCIN Capacity utilisation in %

Graph 6: Construction confidence indicator

Graph 7: Financial services confidence indicator

Graph 8: Price expectations in the EA

Graph 9: Employment and unemployment in the EA

Graph 10: Capacity utilisation in manufacturing (since 1990)

Graph 11: Capacity utilisation in manufacturing and services

Source: DG ECFIN
Hard questions: European Union

Industrial Confidence

- Assessment of order books
- Assessment of current stock of finished goods
- Production expectations
Hard questions: European Union

Service Confidence

- Development of business situation
- Development of demand
- Expected demand
Hard questions: European Union

Retail Trade Confidence

- Development of business activity
- Assessment of stock of goods
- Expected business activity
Hard questions: European Union

Construction Confidence

- Assessment of order books
- Employment plans
Hard questions: European Union

Consumer Confidence

- Expected financial position of household
- Expected general economic situation
- Expected number of people unemployed
- Household intention to save
DG EFCIN Economic Sentiment

BUSINESS AND CONSUMER SURVEY RESULTS

Graph 1: Economic sentiment indicator (s.a.)

Euro Area (EA)
European Union (EU)

Source: European Commission services
Approaches

Question:
How can we condense information contained in various indicators into one (or at least in a view) indicator(s)?

- Classical (NBER)
- Factor analysis
Classical Approach

Steps in Classical Approach

- Choose and classify indicators (de-trending, cross-correlations, turning points, co-spectral analysis)
- Standardize indicators
- Average indicators (and standardize)
Factor Analysis

Factor Models

- A common force drives the dynamics of all variables.
- Common force, also known as common factor, is typically of low dimension and is not directly observed because every macroeconomic variable embodies some idiosyncratic noise or short term movements.
- Factor models clean every variable from these idiosyncratic movements and estimate the common component in every series.
Let $Z_t$ be a $N$-dimensional multiple time series. It is assumed that $(Z_t)$ admit a factor model representation with $r$ common latent factors $F_t$,

$$Z_t = \Lambda F_t + e_t$$  \hspace{1cm} (1)$$

where $e_t$ is a $N \times 1$ vector of idiosyncratic disturbances.
OECD System of leading indicators

To get some ideas about possible indicators look for example at the OECD website.

The link to the indicator department is: OECD Indicator Department

The link to the composition of OECD Leading Indicators is: OECD Leading Indicators
OECD System of leading indicators

Source: OECD
OECD System of leading indicators

Look at the different country indicators. There are various types of indicators. E.g.:

- Production, stock of orders, employment, unfilled job vacancies, new car registrations, housing starts, nights spend in hotels
- Business tendency surveys
- Consumer surveys
- Various price figures and share prices, terms of trade, exchange rate, silver price
- Interest rates (spreads), bank credits
- Indicators of other countries

... and much more.
Insee French Business Climate

Source: INSEE
In July the €-coin indicator decreased slightly, falling to 0.27 from 0.31 in June, returning to its level at the end of last year. The negative impact of the fall in industrial production in May and of the weak performance of the stock market in July was partially offset by the flattening of the yield curve. The €-coin indicator developed by the Bank of Italy provides a summary index of the current economic situation in the euro area. The indicator is an estimate of quarterly GDP growth shorn of the most erratic components (seasonal variations, measurement errors and short-run volatility). €-coin is published monthly by the Bank of Italy and CEPR. Next €-coin release dates: Friday 29 August and Friday 26 September (preliminary).

Source: Bank of Italy
KOF Barometer

Economic Barometer and Reference Series

- KOF Economic Barometer
  (Index values; long-term average 2003–2012 = 100; left scale)
- Month-on-month change of the Swiss business cycle
  (Reference series; SECO/KOF, right scale)
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Ifo Business Cycle Clock

Ifo World Economic Climate

Recovery / Upswing
- Present economic situation: still bad, but improving
- Economic expectations: positive

Consolidated Upturn / Boom
- Present economic situation: good
- Economic expectations: positive

Trough / Recession
- Present economic situation: bad
- Economic expectations: negative

Cooling-down / Downswing
- Present economic situation: still good, but deteriorating
- Economic expectations: negative

Economic expectations for the next six months

Present economic situation
Ifo Business Cycle Clock

Ifo Business-Cycle Clock Germany
Manufacturing Industry

Assessment of Current Business Situation vs. Business Expectations


Source: Ifo Business Survey.

24/09/2014
Example of a Business Monitor (Clock)

German Federal Statistical Office: Business Cycle Monitor

Statistics Netherlands: Business Cycle Tracer
DG EFCIN Turning point indicator for the euro area

The turning point index, based on a Markov switching model, estimates the difference between high and low regime probabilities.

On the basis of the latest survey data for the euro area, the turning point index (TPI) was at 0.28 in March 2013, after readings of 0.89 and 0.55 in February and January respectively.

By design, the computation of the turning point aims to extract the surprises—positive or negative—from new information in the surveys.

In the beginning of the first quarter of 2013 (January and February), confidence increased two months in a row by a magnitude that was last witnessed in January/February 2012. Therefore, the innovations within the framework of the AR modelling method are interpreted as positive. The negative results of March came accordingly rather unexpected and drove the TPI back into negative territory.

Probability for upswing minus probability for downswing

Source: OECD
Ifo Business Cycle Traffic Lights

Source: Calculations of the Ifo Institute.
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Month 1  Month 2  Month 3  Month 4  Month 5  Month 6  Month 7  Month 8  Month 9
Quarter I  Quarter II  Quarter III

Time
Month 1  Month 2  Month 3  Month 4  Month 5  Month 6  Month 7  Month 8  Month 9
Quarter I  Quarter II  Quarter III
GDP/National Account

Month 1
Month 2
Month 3
Month 4
Month 5
Month 6
Month 7
Month 8
Month 9
Quarter I
Quarter II
Quarter III

Times:
- t+45
- t+65
?casting

Time
Month 1 Month 2 Month 3 Month 4 Month 5 Month 6 Month 7 Month 8 Month 9
Quarter I Quarter II Quarter III
GDP/National Account
t+45 t+65
ETS
Forecasting
Nowcasting
Backcasting

Month 1 Month 2 Month 3 Month 4 Month 5 Month 6 Month 7 Month 8 Month 9
Quarter I Quarter II Quarter III

KOF
Forecasting with time series models

For example bridge models

\[ Y_t = \alpha + \sum_{i=1}^{p} \beta_i L^i Y_t + \sum_{j=1}^{n} \gamma_j L^j \bar{X}_t + \epsilon_t \]
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- **Workhorse is the balance statistic (percentage share of positive answers minus percentage share of negative answers)**
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- Workhorse is the balance statistic (percentage share of positive answers minus percentage share of negative answers).
- Other approaches: probability method, regression approach.
Quantification: Probability Approach

decrease

no change

increase
Quantification: Probability Approach

decrease | no change | increase
Quantification: Probability Approach

decrease

no change

increase

0
Quantification: Probability Approach

decrease  no change  increase

0
The regression approach uses the relationship between actual values (measured by official statistics) and respondents’ perception of the past (reported in the business surveys as judgements) as a yardstick for the quantification of respondents’ expectations about the future. Thus, quantitative expectations are function of a specific regression model rather than a specific probability distribution.
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Economic research (macro and micro)

- Expectation formation (on which information base?)
- Epidemiological Expectations Hypothesis
- Status Quo Bias
Economic research (macro and micro)

- Permanent income hypothesis
- Credit access/credit crunch indicators
- Transmission of shocks (industries/international)
The job market situation, inflation and changes in consumption in relation to consumer survey results

Do Consumers in Europe Anticipate Future Inflation? Has it Changed Since the Beginning of the Financial Crisis?
Quantification and Characteristics of Households’ Inflation Expectations in Switzerland

Synchronisation of economic cycles in Latin America: evidence from the World Economic Survey
CIRET Conference 2014

- Shocks and the Expectations Formation Process. A Tale of Two Expectations
- The Role of Expectations in Labor Supply Dynamics
CIRET Conference 2014

....and indeed: lots of business cycle analysis and forecasting!
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