European Commission
Directorate General Economic and Financial Affairs

Employment expectations in the euro area

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EU WORKSHOP ON RECENT DEVELOPMENTS IN BUSINESS AND CONSUMER SURVEYS

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Introduction

• Employment expectations may tell us something about actual employment developments.
• Results from the question on employment expectations are frequently watched and commented upon by economists.
Introduction (cont.)

• *Do employment expectations really reveal something new regarding actual employment developments?*

• *Something that we did not already knew?*

• Things we already know:
  (i) past employment developments
  (ii) overall confidence indicators
Outline

• Data

• Construction of indicator for overall economy

• Descriptive statistics

• Forecasting near-term employment

• Summary and Concluding Remarks
Survey data

- Business and Consumer Survey Database (BCS)

- Q: “How do you expect your firm's total employment to change over the next 3 months?”

- A: Improved, unchanged or deteriorated.

- For the euro area it has been a monthly question...
  ... in manufacturing sector since 1982
  ... in services sector 1997
  ... in retail trade sector 1985
  ... in construction sector 1980
Employment data for the euro area

- National accounts

- Quarterly from 1991q1

- Sector breakdowns in NACE Rev. 1.1
  - Not possible to distinguish quarterly employment data for the retail trade sector
  - Services sector with employment data for market services, i.e. branches g-k in NACE
  - Our aggregate for whole economy = industry+services+construction ≠ Eurostat aggregate

- Seasonal and working day adjusted data
Constructing an overall indicator

- Weighted average of the employment expectations (net balances) of the existing surveys.
- Weights determined by representativeness and tracking–performance.
- Coincident correlations between q-o-q change in total employment and employment expectations in
  - services sector 0.82
  - manufacturing sector 0.78
  - retail trade sector 0.68
  - construction sector 0.34

→ Seems that employment expectations in the services sector could work fairly well as a proxy for the whole economy.

- Coincident correlation could however be improved slightly by assigning 2/3 to services and 1/3 to manufacturing. Also more representative.
Good fit…

Total (all sectors)

- Employment (NA), y/y change, %
- Expectations (net balance)
Employment expectations (net bal.) and q-o-q employment growth
Sample: 1997Q2-2007Q2

<table>
<thead>
<tr>
<th>Sector</th>
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<th>Industry</th>
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<tbody>
<tr>
<td>Coincident correlation</td>
<td>0.84</td>
<td>0.73</td>
<td>0.74</td>
<td>0.36</td>
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<tr>
<td>Max. correlation</td>
<td>0.85(+1)</td>
<td>0.76(+1)</td>
<td>0.74(0)</td>
<td>0.36(0)</td>
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<td>0.71</td>
<td>0.46</td>
<td>0.56</td>
</tr>
<tr>
<td>Granger causality (y= empl. and E=exp.)</td>
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<td>y←E</td>
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<td>y ← E</td>
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EC Confidence Indicators (net bal.) and q-o-q employment growth

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⇒ Seems that confidence indicators are as good
Forecasting near-term employment

• Quarterly data, 1991Q1 – 2007Q2

• Overall economy, as well as for the services, manufacturing and construction sectors

• Benchmark AR(1)…
  …which is compared to a model that also includes most recent survey data, either employment expectations or confidence indicator.

• Simple and parsimonious procedure

• Evaluation based on out-of-sample forecasting errors.
Forecasting near-term employment (cont.)

• First estimation 1991Q2 – 2001Q4
  → Forecasts for 2002Q1 and 2002Q2 are saved.

• Second estimation 1991Q2 – 2002Q1
  → Forecasts for 2002Q2 and 2002Q3 are saved.

• Procedure repeated until last forecast for 2007Q2

• In total 22 out-of-sample forecasts, for each horizon, used to calculate the forecasting errors.

• More specifically, we compare the RMSEs produced by the different models, i.e. AR(1) vis-à-vis those including survey data (employment expectations or confidence indicators).
Releases of survey data and employment (national accounts)

Survey data \( m_1_t \) available
Survey data \( m_2_t \) available

\( m_3_t \)
\( m_1_{t+1} \)
\( m_2_{t+1} \)
\( m_3_{t+1} \)

(i) (ii) (iii) (iv)

Quarter \( t \)

Employment figure for \( t \) is released \((t+75\text{ days})\)

Dotted line = Time span in which forecasting quarter \( t \) and \( t+1 \) is considered
## Root mean-squared errors (Overall economy)

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<td><strong>1-step ahead</strong></td>
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<td>AR(1)</td>
<td>0.15</td>
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<td>AR(1) + employment exp.</td>
<td>0.14*</td>
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<tr>
<td>AR(1) + ESI</td>
<td>0.14</td>
<td>0.14*</td>
<td>0.13*</td>
<td>0.12*</td>
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<tr>
<td><strong>2-steps ahead</strong></td>
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<td>AR(1)</td>
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<tr>
<td>AR(1) + employment exp.</td>
<td>0.18</td>
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* indicates statistically significant lower RMSEs at 5% significance level.
Summary of forecasting exercise

- Statistically significantly lower RMSEs when including survey data.

- Forecasting precision improves by as much as 20%.
  (from 0.15 to 0.12 for 1-step ahead, from 0.20 to 0.16 for 2-steps ahead)

- As expected, the importance of survey data seems to increase as more of them become available over time, though not very much.

- No difference in using employment expectations or confidence indicators.
  (If anything, confidence indicators performs better.)
Overall Summary and Concluding Remarks

1. Manager’s employment expectations are highly correlated with actual employment growth.
2. Most recent signals from employment expectations rather unreliable (low frequency of co-movements)
3. Employment expectations seem valuable in forecasting actual employment growth.

• Bullet 1) to 3) above holds equally well for the confidence indicators ⇒ Intrinsic value of monitoring employment expectations appears to be small.

• Future work:
  - Employment expectations more useful around turning points?
  - Add other explanatory variables, such as labour shortage or unemployment.
  - Check stability of results across countries.