Skills supply and demand and skills mismatch: Situation and outlook in Iceland

Skills Anticipation at a Pan-European level

Contribution to an open seminar and expert meeting, 9th November, Hilton Reykjavik Nordica, Iceland

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OVERVIEW

1. WHY produce employment forecasts?
   The value of skills projections and their limitations
   - What skills forecasts can and cannot achieve

2. HOW do we go about it?

3. RESULTS: Key messages from the Cedefop
   Projections for the whole of the EU and for Iceland
1. WHY FORECAST?

Why Not?

Forecasting is *impossible*
Forecasting is *unnecessary*
Forecasts are *inaccurate* and based on *invalid assumptions*
They are *illegal* in some countries, including the UK!
Is systematic anticipation possible?

Nobody can **predict** the future with certainty or precision – “All forecasts are wrong!”

Everybody can prepare or **plan** for the future - Government, employers, educational institutions & individuals

These plans and related decision help to determine actual outcomes – such planning involves some element of forecasting: either implicitly or explicitly

In this sense not only is forecasting **possible** it is **inevitable**

Comprehensive, systematic, consistent projections, based on explicit and transparent assumptions provide useful information for all labour market participants, helping to inform all those making choices & decisions
Is Forecasting Necessary?

Rapid change, uncertainty & evidence of market failure
Long lead times on investment decisions such as education and training choices

Need for a regular and systematic assessment of future prospects to:
- guide & inform policy formation;
- guide & inform individual decision making;
- avoid future imbalances & mismatches;
- need for a counterfactual to assess policy or different choices

The only meaningful questions are therefore how, by whom and with what end in mind?
So, Forecasts: Who Needs Them?

A Variety of audiences
The State - planners/policy makers
Education and training providers
Companies/Employers
  labour market pressures
  other reasons
Individuals: career choices
Careers advisors
2. HOW WE FORECAST

Folk-lore – Crystal balls and other methods!

More systematic approaches:
• Quantitative computer models
• Delphi techniques
• Scenario development
How to Forecast / Anticipate

Formal, quantitative models:
  • Extrapolation of past trends
  • Time series methods
  • Need for behavioural content

Other approaches:
  • quantitative & qualitative
  • surveys
  • scenario development

Key elements:
  • Where are we now?
  • What happens next?
Advantages of quantitative modelling

Natural desire to quantify, measure and evaluate:
• Benefits of a formal model
• Value of benchmark forecasts

Technological progress and statistical infrastructure

International best practice - Quantitative modelling approaches, based on macroeconomic, multi-sectoral models
The CEDEFOP framework for skills forecasting in Europe

Developments in the labour market dependent on developments in the economy more generally

Quantitative modelling approach involves 2 key elements:

• Multi-sectoral macroeconomic model
• Modules to translate the results into implications for skills demand and supply

Skills proxied by occupation (ISCO) & qualification (ISCED)

• Demand = Employment
• Supply = Economically active (by highest qualification) (HQ, MQ, LQ)
Overall approach – modelling framework

**Supply of skills**

- **Module 5**: Stocks of people by qualifications, 3 ISCED levels & by economic status (QUALMOD)
- **Module 6**: Flows and graduate numbers by ISCED category (FLOWMOD)
- Numbers in the labour force by qualification ISCED category
- Numbers in the population by Qualification ISCED category

**Module 1**: Multi-sectoral macroeconomic model (E3ME)

- Working age population by age and gender (exogenous)
- Active labour force by age and gender
- Benefit rates
- Employment (labour demand)
- Unemployment
- Wage rates
- Labour market participation rates
- Economic activity

**Demand for skills**

- **Module 2**: Employment levels and Expansion Demand by occupation (EDMOD)
- **Module 3**: Employment levels and Expansion Demand by qualification (QUALMOD)
- **Module 4**: Replacement demand by occupation / qualification (RDMOD)
- Job openings by Occupation (ISCO 2 digit)
- Job openings by Qualification (ISCED category)

**Module 7**: Imbalances & Mismatches (Supply-Demand), ISCED levels (BALMOD)

- Numbers in the labour force by qualification ISCED category
Role of the E3ME multi-sectoral macroeconomic model

Models the links between the labour market and the wider economy

Provides a consistent modelling framework for projecting skills demand and supply together
  - allows analysis of imbalances (unemployment)

Takes key drivers into account
  e.g. the impacts of the financial crisis and demographic change

Includes analyses of key uncertainties
  - alternative scenarios show how these may impact on skills

WARWICK INSTITUTE for EMPLOYMENT RESEARCH
Why skills projections are useful

Understanding past trends

Future employment prospects:

- Numbers employed by sector & occupation - job openings
- Education and training requirements - qualifications and skills needed
- Supply/demand balances (avoidance of imbalances and mismatches)

Caveats:

- Implicit assumptions about the labour market
- Not mechanistic manpower planning
- Focus on the formal economy
- The Future is not fixed or predetermined
3. SOME KEY RESULTS – The EU+3

The future of employment – the rise of the Professionals
## Key issues and drivers

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<th>Demand: employment trends</th>
<th>Supply: labour force trends</th>
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<td>Government spending</td>
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Demographics, 2016-2030, EU + 3

- Population change
- Labour force change
Slow, but significant and inexorable sectoral change, EU +3

The Service Sector will continue to provide the main source of job growth
Austerity measures will curb employment growth in the public sector.
Significant structural change by Occupation too - but few big surprises, EU +3
Replacement demands, 2016-2030, EU +3

- Armed forces: -183
- Legislators, senior officials and managers: +2,148
- Professionals: +4,899
- Technicians and associate professionals: +5,675
- Clerks: +884
- Service workers and shop and market sales workers: +1,728
- Skilled agricultural and fishery workers: -815
- Craft and related trades workers: -1,207
- Plant and machine operators and assemblers: +475
- Elementary occupations: +2,800

Legend:
- Total Requirement
- Net Change
And also by qualifications held, net changes 2016-2030, EU + 3
Driven by supply side trends (numbers economically active), EU+3

Labour force, millions

- Low
- Medium
- High

Years:
- 2011
- 2016
- 2021
- 2026
- 2030
Comparison of supply and demand trends - BUT imbalances not easy to measure, EU + 3
Key results

Labour supply: expanding but also ageing
Employment: rising slowly, constrained by supply
Unemployment: falling slowly but persistent
Macroeconomic uncertainties: Brexit & Trump
Sectoral change: significant change (relentless shift from primary and manufacturing towards services)
Skill Supply: increasing number formally qualified
Skill demands: rising demand but polarisation
Replacement needs: Even where employment is falling
Imbalances and mismatches: problems remain but markets will adjust if allowed to operate freely
Increasing diversity, imbalances, mismatches & risks of over qualification

Increasing diversity of Higher & Further Education (HE)

HE no longer a “minority sport” (participation rates >>50%)

Demand for skills: 2008 crisis has accelerated changes

- Fewer job opportunities for the low-qualified (but some growth)
- Some better qualified may need to accept lower level jobs
- Science, Technology, Engineering & Mathematics is a key area
- But Quality more important than Quantity

Skills mismatches and imbalances are a persistent phenomenon, we need to develop the right skill mix to:

- manage transitions & adjustments in the labour market
- match & anticipate knowledge- & skills-intensive jobs
On the right track?

Europe is on track to raise its qualifications profile
- more Europeans acquiring better qualifications
- fewer low-qualified Europeans
- younger cohorts the best qualified ever

Rising supply mirrors projected growth in demand

**BUT Concerns about over- qualification & mismatch:**
- High level qualifications may no longer guarantee success
- Results suggest some polarisation in skills demand - many graduates may need to find jobs in non-traditional areas
- Looking beyond formal qualifications – need “T-shaped” individuals with general as well as specific core technical skills
4. SOME KEY RESULTS – ICELAND
Demographics, 2016-2030, Iceland
Broad sectoral trends, Iceland

The Service Sector will continue to provide the main source of job growth.
Sectoral details, 2011-30, Iceland

The Food drink and tobacco sector has the best prospects according to our data.

Banking hard hit by the financial crisis.
Structural change by Occupation, Iceland

- Legislators, senior officials and managers
- Professionals
- Technicians and associate professionals
- Clerks
- Service workers and shop and market sales workers
- Skilled agricultural and fishery workers
- Craft and related trades workers
- Plant and machine operators and assemblers
- Elementary occupations
Replacement demands, 2016-2030, Iceland
Net changes by qualifications held, 2016-2030, Iceland
...... a greater % share of jobs for the better qualified in Iceland too
Again driven by supply side trends (numbers economically active), Iceland
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Cedefop Pan-European projections:
www.cedefop.europa.eu/skillsnet