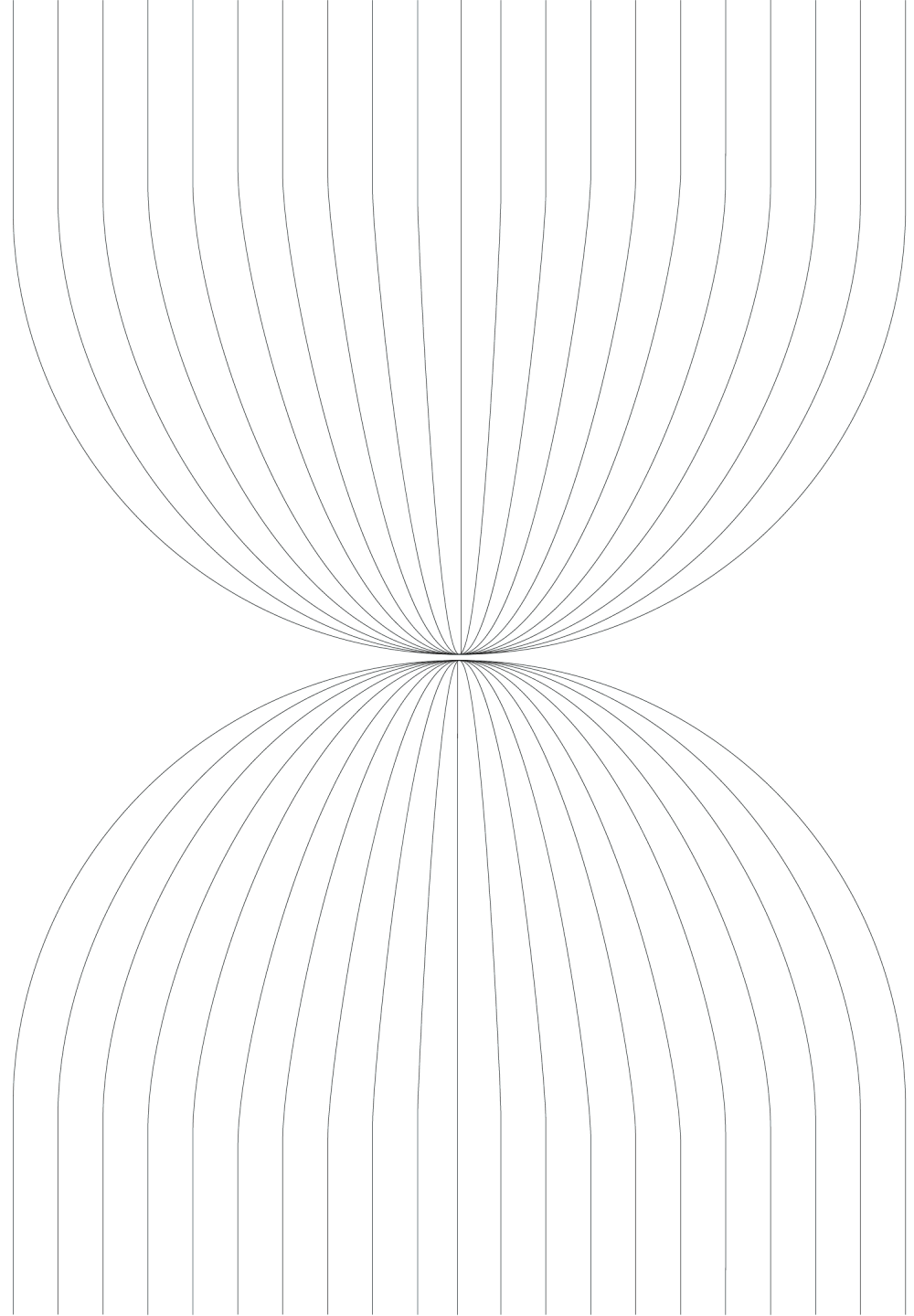


Future of jobs in Armenia: Lessons learned from labour market modelling exercises

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Three messages from Armenia's experience

01

Two exercises, one evolution

2012 graduate demand → 2019 jobs, labour supply and skills

02

Forecast quality depends on the evidence system

Data gaps, uncertainty and the missing occupation / task layer

03

Institutionalise skills anticipation

Continuous LMI linked to policy decisions

Armenia's experience suggests skills anticipation is a system-design problem, not only a forecasting problem

Three pressures shape the evidence design

Data availability

What can be measured consistently and at what level?

Structural change

Which sectors, occupations and tasks are actually changing?

Uncertainty

How quickly can assumptions become obsolete?

Two exercises were designed around different policy decisions

2012

Which graduates and skills should the education system prepare for priority sectors?

2019

How might economic growth, labour supply and changing skills reshape the workforce?

Start with the decision. Then choose the model that fits the evidence and the uncertainty that can credibly be represented.

The 2012 exercise focused on eight government-priority sectors to estimate future demand for higher-educated labour

Policy question

Inform education and workforce planning

Evidence task

Estimate future recruitment needs for higher-educated labour in government-priority sectors

Eight priority sector groups

01 IT and Internet

02 Precision Engineering

03 Pharmaceuticals

04 Tourism

05 Food and Beverages

06 Wine and Brandy

07 Textiles

08 Jewellery and Diamonds

** Agriculture was analysed separately because community demand depended on a state order and support infrastructure.

2012: a transparent chain from sector growth to recruitment needs

01**Sector output**

Revenue and
scenario path

02**Productivity**

Output per worker

03**Total
employment**

Output ÷
productivity

04**HE workforce**

HE share +
specialist /
administrative mix

05**Recruitment
need**

Expansion +
replacement
demand

Evidence base

Official statistics + sector strategies / benchmarks + employer and expert input

Recruitment need

Expansion demand from new jobs + replacement demand from retirement, migration and other exits

The logic was common across sectors, but assumptions were adapted when the binding constraint differed.

2012 lesson: forecast quality was constrained more by labour-market evidence gaps than by model complexity

Where the evidence chain was weakest

Observed / modelled	Missing / weak	What would improve it
Sector revenue, employment and HE shares	Insufficient workforce detail by specialty, age and education	Regular 2-digit, then 4-digit labour statistics linked to education and occupations
Employer consultations	Predominantly short-term company planning horizons	Repeat employer surveys and sector reviews regularly
Graduate-demand model	Weak links to graduate outcomes, education quality and VET alternatives	Programme-level outcomes, graduate tracer studies and VET supply data
Sector strategies and expert assumptions	Targets and sector conditions may change	Version assumptions and refresh scenarios as conditions change

A one-off model can answer a specific question; it cannot substitute for recurring labour-market intelligence.

Taken together, the two exercises showed that useful skills anticipation must connect labour demand, labour supply, market evidence and uncertainty

2012 / Graduate demand

2019 / Jobs and skills

Policy question	Align graduate supply with priority-sector workforce needs	Plan economy-wide workforce and skills response
Unit of analysis	Priority sectors + HE labour groups	Economy + labour supply + task/skill signals
Core model	Revenue / productivity → employment → HE recruitment	Output / productivity → employment + demographic labour supply
Uncertainty	Sector scenarios and sensitivity ranges	Two quantified paths; disruption kept qualitative
Evidence	Official data, strategies, employers and experts	Macro data, demographics, firms, focus groups, students

2019: triangulate labour demand, labour supply and market evidence rather than rely on one model

Demand model

Sector output + productivity

Translate sector GVA into employment under explicit scenario assumptions.

Supply model

Population, migration + participation

Separate workforce quantity from the education profile of new entrants.

Market evidence

86 firms + focus groups + ~630 students

Technology adoption, changing roles, skill constraints and career expectations.

Why triangulation matters

Models quantify

Plausible pathways and the implications of explicit assumptions.

Market evidence explains

Mechanisms, emerging signals and constraints that macro data cannot reveal.

Neither source is sufficient alone: signals need regular repetition and validation against observed outcomes.

2019 lesson: without consistent occupation and task data, sophisticated macro models still cannot produce precise skill forecasts

Where the evidence chain breaks

Available / modelled	Missing / inconsistent	What would improve it
Sector GVA, productivity and employment	Few recurring occupation- and task-level time series	Harmonised occupation codes + task/skill mappings + current occupational standards
Firm technology intentions	Plans may diverge from realised adoption and jobs	Repeat employer, vacancy and technology evidence
Sector datasets	Definitions varied; some sector series had to be regrouped because data were sparse	Stable classifications, harmonised definitions and transparent metadata
Student perceptions	No direct observation of subsequent career outcomes	Nationwide VET and tertiary graduate tracer studies

Without a consistent occupation-statistics layer, more sophisticated macro models do not automatically yield precise skill forecasts.

The system implication: move from one-off forecasts to a continuous labour-market and skills intelligence cycle



Collect → analyse → validate → update assumptions → act → measure outcomes

AI and technological disruption make continuous skills intelligence more valuable — and long-range point forecasts less durable

WHY FORECAST SHELF LIFE IS SHORTER

- 01 AI & automation**
Tasks and workflows change faster.
- 02 Occupation boundaries shift**
The same job title can require a different skill mix.
- 03 Forecasts age quickly**
Long-run point estimates become less defensible.

POLICY RESPONSE

RAPID ADAPTATION

Reskill • Upskill • Move across roles

LEARNING CAPABILITY

Critical thinking • Problem solving • Communication • Teamwork

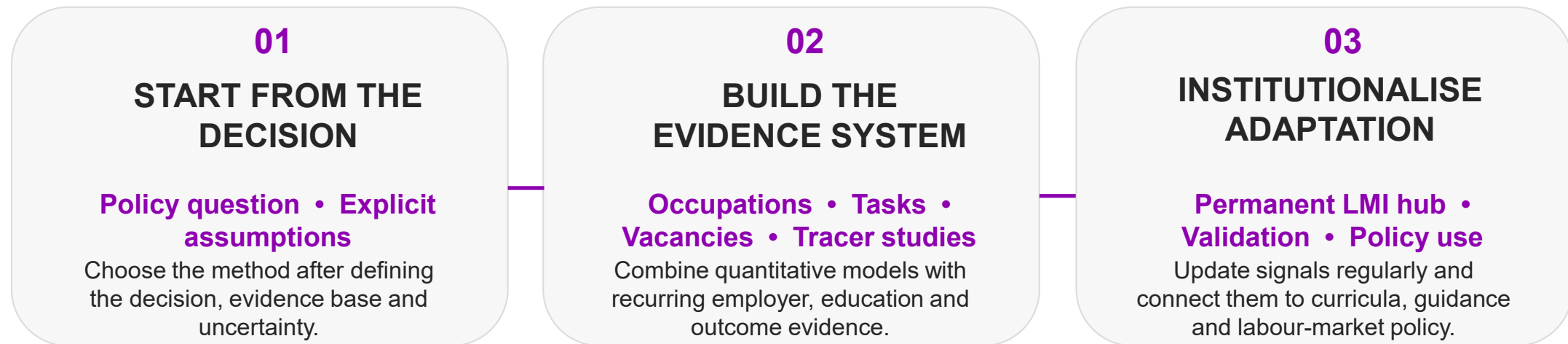
STRONG FOUNDATIONS

Languages • Mathematics • Basic science

Three transferable lessons for skills anticipation in the EaP region

DESIGN FOR DECISIONS, EVIDENCE AND ADAPTATION

The durable capability is not perfect prediction — it is a system that learns and updates.



The goal is not to predict every future job, but to help people and institutions adapt faster than the labour market changes.