Structural policies and economic growth:

the impact through productivity, investment and labour market outcomes

Balázs Égert,

OECD Economics Department

OECD

BETTER POLICIES FOR BETTER LIVES

This presentation is based on:

De Serres A., B. Egert, P. Gal, A. Theising and I. Wanner (2015), **"The impact of structural reforms on long-term growth: towards a supply-side framework for quantification"**, OECD Economics Department Working Paper (forthcoming)
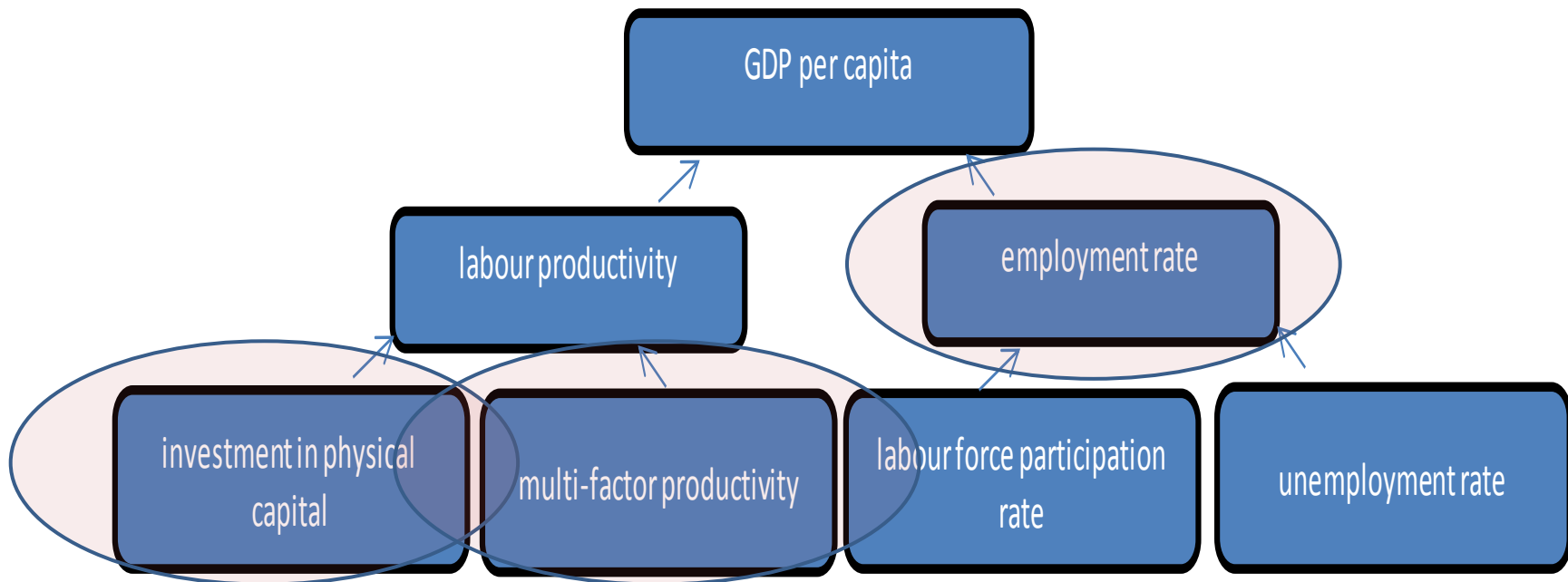
Motivation

Renewed interest in quantifying the impact of reforms on growth

- low economic growth in the aftermath of the crisis
  - help mitigate the negative impact of fiscal consolidation
  - help restore fiscal sustainability (public debt crisis => more growth lower debt)
  - mitigate the impact of slowing potential growth (population ageing)

Background

OECD uses a **production function approach** to assess policy impacts:

Motivation
Towards an improved supply side framework

Existing OECD frameworks are based on estimations which are:

- Partly **outdated**

  - Estimations run only till mid-2000s

- They could include more **policy channels**

- They are **not fully consistent** (time and country and data definition-wise)

SYSTEMATIC LITERATURE OVERVIEW

Literature overview

- **Collecting coefficient estimates for key policy variables (OECD and non-OECD studies)**

- **Wide range of estimates:**
  - **Often inconclusive** (from − to +)
  - **Often wide range** (from 0 to − or +)
 - **Rarely on one side**

Table 3: The range of coefficient estimates of policies on outcomes

VARIABLE	MFP		INVESTMENT		EMPLOYMENT RATE		UNEMPLOYMENT RATE		PARTICIPATION RATE	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
PMR	-3.000	0.000			-1.950	0.750	-0.289	8.417		
R&D intensity	0.000	0.265								
Trade openness	0.000	0.009								
Public ownership			-0.016	0.010						
Barriers to entry			-0.358	0.000						
Union density					-0.368	0.210	-0.050	0.805	0.080	0.292
UB Replacement rate					-0.685	0.170	-0.240	0.512	-0.252	0.180
Tax wedge					-0.670	0.110	-0.141	17.305	-3.090	-0.060
EPL					-6.076	8.963	-0.810	1.153	-3.541	4.910
EPL_reg							-2.028	2.410		
ALMP/unemployed					0.000	0.470	-0.113	0.000	0.062	0.280
Public employment rate					-1.295	0.460				
PES					0.000	4.658				
Benefit Duration							-7.285	3.977		
Bargaining Coverage							-1.572	1.712		
Minimum wage							-0.187	9.040		
Centralization							-2.806	5.660		
Coor x Tax wedge							-27.977	0.000		
(Employment) Tax rate							-0.160	16.357		
Initial UB RR							-0.070	0.109		
UBRR×BenDuration							0.240	32.451		
Wage Coordination Index							-10.650	1.947		
Wage bargaining at industry level									-6.520	3.840

Example – MFP and PMR

MFP – Product market regulation
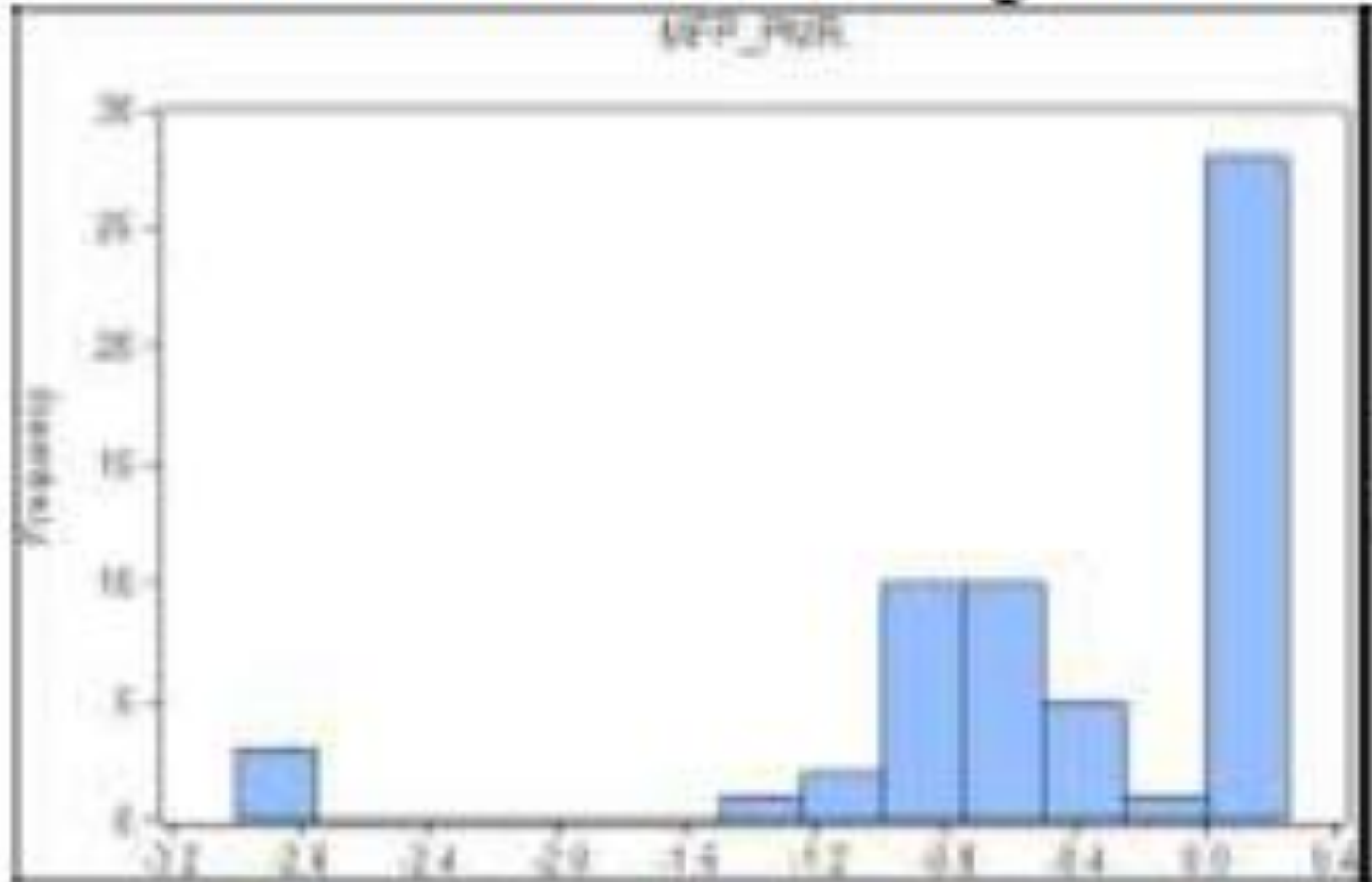
ESTIMATION ISSUES

It's about the right tool for the job

Econometrics art

Increasing consistency

For the different channels (MFP, investment, labour market outcomes)

- Similar time period and
- Similar country coverage
- Same data sources and variable definitions
- Harmonised estimation approach

Estimation strategy

Our main interest: long-run effect

Long-term relationship: Dynamic OLS (DOLS)

corrects for endogeneity and serial correlation

$$Y_{c,t} = \sum_i \beta^i X_{c,t}^i + \sum_i \sum_{s=-1}^{1} \gamma^{i,s} \Delta X_{c,t+s}^i + D_c + D_t + \varepsilon_{c,t}$$

Introducing more policies

Policies specific to production factors
(widely used in earlier studies)

      Innovation, trade (MFP)
      Corporate tax (physical capital)
      Active labour market policies (employment)

Framework conditions
(used to varying extent in earlier studies)

      Product and labour market regulations (widely used)
      Competition law and policy (not used)
      Efficiency of bankruptcy legislation (used to some extent)

Basic institutions, legal infrastructure
(rarely used in earlier studies – infrequent observations)

      Rule of law
      Efficiency of judicial systems
      Intellectual property rights

Mostly time-invariant variables

The million dollar question

HOW TO USE THEM IN THE ESTIMATIONS?

Mostly time-invariant variables

We replace

country fixed effects
by
the time-invariant variables

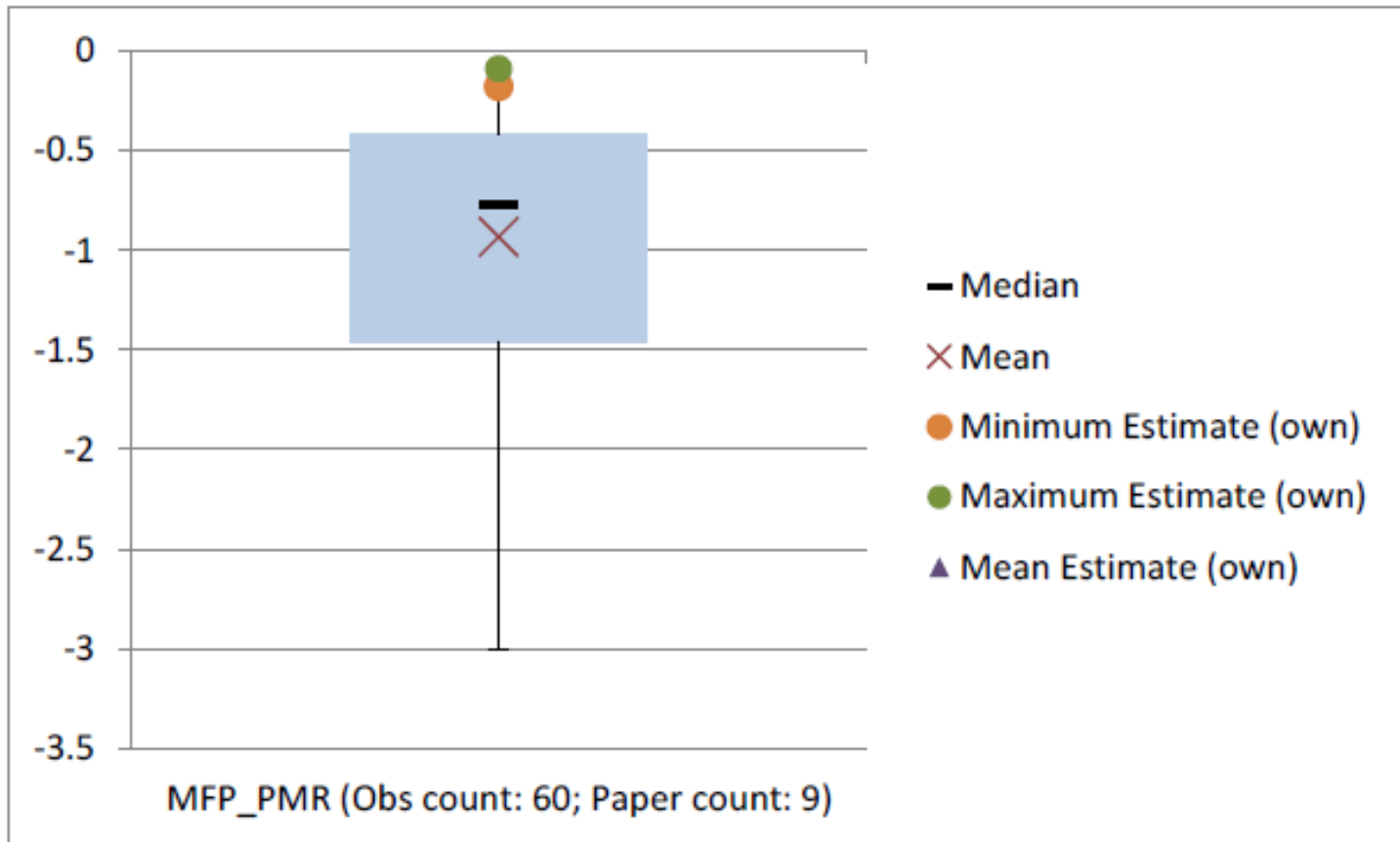| Broad area covered	Specific indicators	Included in MFP analysis	Included in investment analysis	Included in labour market analysis
Institutions				
Legal and political institutions	Rule of law, accountability, political stability, regulation quality, corruption, judicial independence	Yes	Yes	Yes
Policies and policy outcomes				
Government involvement	State control from PMR	Yes	Yes	Yes
Entry barriers	Entry barriers from PMR	Yes	Yes	Yes
Trade barriers	Barriers to trade and investments from PMR	Yes	Yes	Yes
Competition law and policy	Subindicators on accountability, efficiency, independence, etc. of the competition authority	Yes	Yes	Yes
Housing market regulations	Transaction tax, rent control, tenant landlord relationship, tax relief for buying	No	No	Yes (but not all items)
Health	Life expectancy	Yes	Yes	Yes
Education	PISA scores, years of schooling by gender	Yes	Yes	Yes
Innovation	Nobel prizes awarded in natural sciences	Yes	Yes	No
Industrial structure	Natural resources, share of manufacturing and construction, military industry	Yes	Yes	Yes
Financial development	Credit/GDP, stock market capitalization, venture capital	Yes (except venture cap.)	Yes	Yes
Non-policy country characteristics				
Geography	Land area, temperature, market access, urbanization	Yes	Yes	Yes

ESTIMATION RESULTS

MULTIFACTOR PRODUCTIVITY

Productivity

- *Broadly confirming earlier results*:
  - More competition-friendly **product market regulation** has a positive effect
    - But considerably **lower** than previously found

- *Extending earlier results:*

  - **Framework policies** (competition law and policy)

  - **Basic institutions** (government effectiveness; regulation quality)

Productivity

Figure 6: The size of the coefficient estimates on ETCR compared to the literature

MFP_PMR (Obs count: 60; Paper count: 9)

Legend:
- ─ Median
- ✕ Mean
- ● Minimum Estimate (own)
- ● Maximum Estimate (own)
- ▲ Mean Estimate (own)

Table 6: Estimation results for MFP (without absolute MFP frontier)

		MFP22	MFP24	MFP25	MFP22	MFP22	MFP22	MFP22	MFP22	MFP22	MFP22	MFP22
ETCR	OVERALL	-0.179**	-0.158**	-0.145**	-0.14**	-0.126**	-0.15**			-0.116**	-0.096**	-0.12**
	GOV INVOLVEMENT							-0.07**				
	BARRIERS TO ENTRY								-0.065**			
OPENNESS		0.187**	0.303**	0.076**	0.077*	0.099**	0.106**	0.163**	0.081*	0.132**	0.124**	0.113**
R&D INTENSITY	PATENTS PER CAPITA	0.044**	0.055**	0.055**	0.032**	0.038**	0.031**	0.024**	0.027**			
	R&D/GDP ALL									0.028**		
	R&D/GDP PUBLIC										-0.018**	
	R&D/GDP PRIVATE											0.025**
HUMAN CAPITAL					0.249**	0.235**	0.089	0.345**	0.315**	0.188**	0.321**	0.216**
OUTPUT GAP					0.016**	0.014**	0.013**	0.015**	0.015**	0.019**	0.017**	0.018**
ECT		-0.08**	-0.1**	-0.11**	-0.03**	-0.04**	-0.04**	-0.03**	-0.04**	-0.02**	-0.03**	-0.03**
adj, R-squared		0.900	0.937	0.927	0.913	0.903	0.923	0.909	0.912	0.894	0.896	0.896
OBS		634	634	634	630	580	457	630	630	721	709	712
COUNTRIES		34	34	34	34	31	23	34	34	34	34	34

Note: * and ** denote statistical significance at the 10% and 5%. ECT= error correction term; long-term coefficients obtained using the DOLS estimator. Estimations include country fixed effects. All variables (except output gap) are in logs. Cells in dark grey/figures in bold indicate the parameters that change compared to the specification in the column marked in light grey.

Investment in physical capital

- *Earlier OECD frameworks:*
  - No policy effects on *aggregate* physical capital

- *Extending earlier frameworks:*
  - More competition-friendly **product market regulation** (lower entry barriers) tends to raise *aggregate*
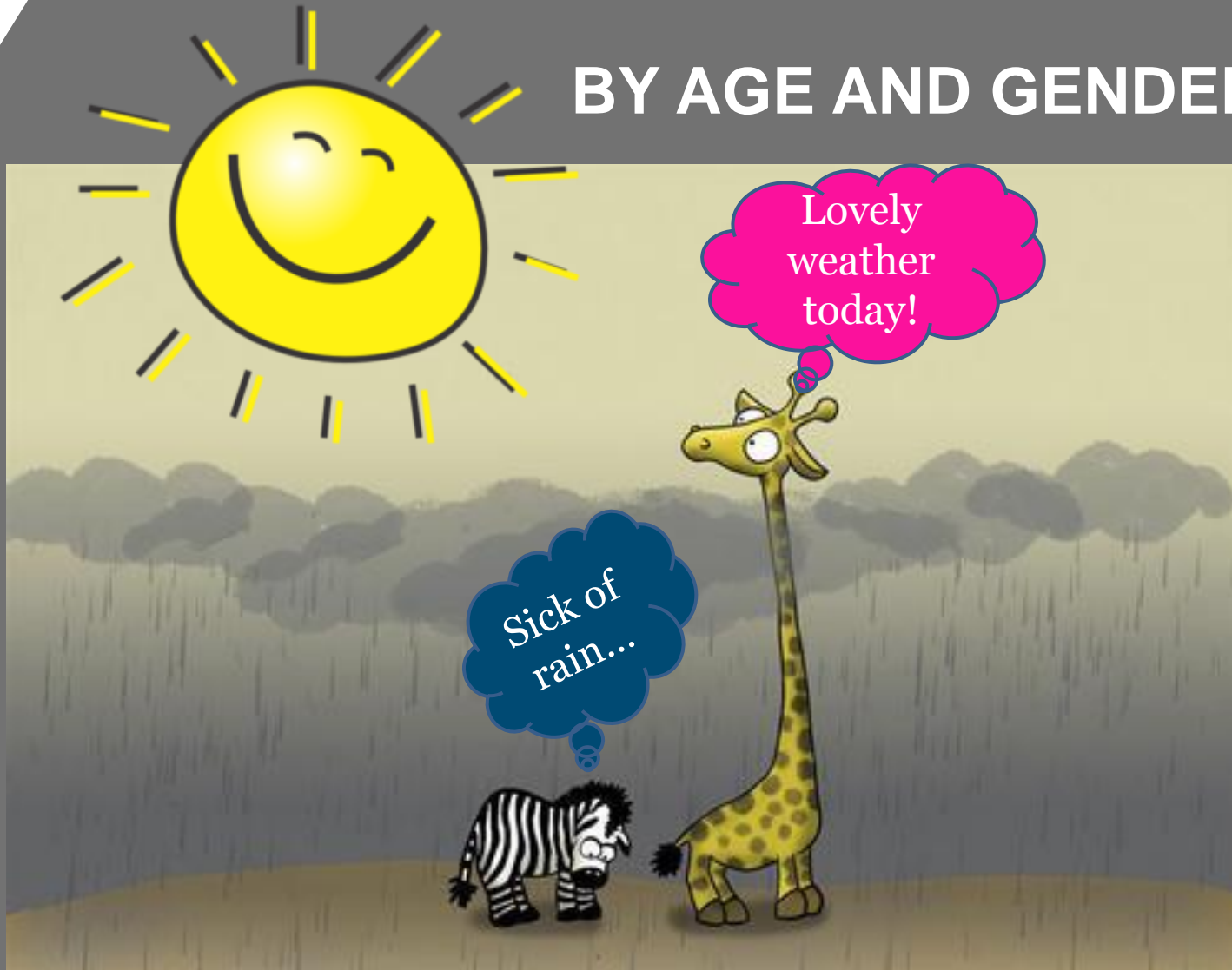   - **private business** and
    - **ICT** investments

Labour markets

- Heterogeneous effects

  –By <u>detailed age and gender</u> groups

  –By <u>education</u> levels (~skills)

Labour markets

- *Labour market policies*
  - Higher **tax wedge** and **unemployment benefits** and
  - Lower spending on **active labour market policies**

  tend to have <u>negative</u> effects. Even more so:

  - on the elderly and the youth (more detailed, 5-year age groups)
  - on the low educated

- *Framework conditions and <u>institutions</u>*
  - <u>Positive</u> effects: **rule of law**; **judicial** independence; **competition law** and policy; **financial** development
  - <u>Negative</u> effects: **barriers to trade**, **investment** and **entrepreneurship**; **housing market** regulations

Next steps

- The development of a coherent and tractable **simulation framework** for GDP/capita

- Considering **more complex (non-linear) policy effects** depending on other policies or legal or institutions (Rule of law, efficiency of judicial systems, Intellectual property rights)

- **Accounting for policy spill-overs** between MFP, investment and labour market outcomes

- Integrating **emerging market economies** in the framework

Integrating EMEs

1. Applying estimated effects from the **OECD sample**

2. Using more **time-invariant** indicators available for EMEs (e.g. rule of law)

3. Using more **non-OECD, time-varying** indicators available for EMEs (e.g. R&D, openness)

4. Collecting **new data** for existing OECD indicators on EMEs
(long-term goal, partly ongoing)