Key Indicators for Asia and the Pacific 2015

A Smarter Future

Skills, Education, and Growth in Asia

http://www.adb.org/ki-2015

ICRIER, December 3 2015

Key points

- Attention to quality of basic education from a labor market perspective is likely to become even more important

- TVET: Many models out there and we need good evidence on what works

- The type of firms in an economy matters a lot for the "good" jobs agenda

Educational attainment has risen substantially

**Average Years of Schooling
(Developing Asia)**
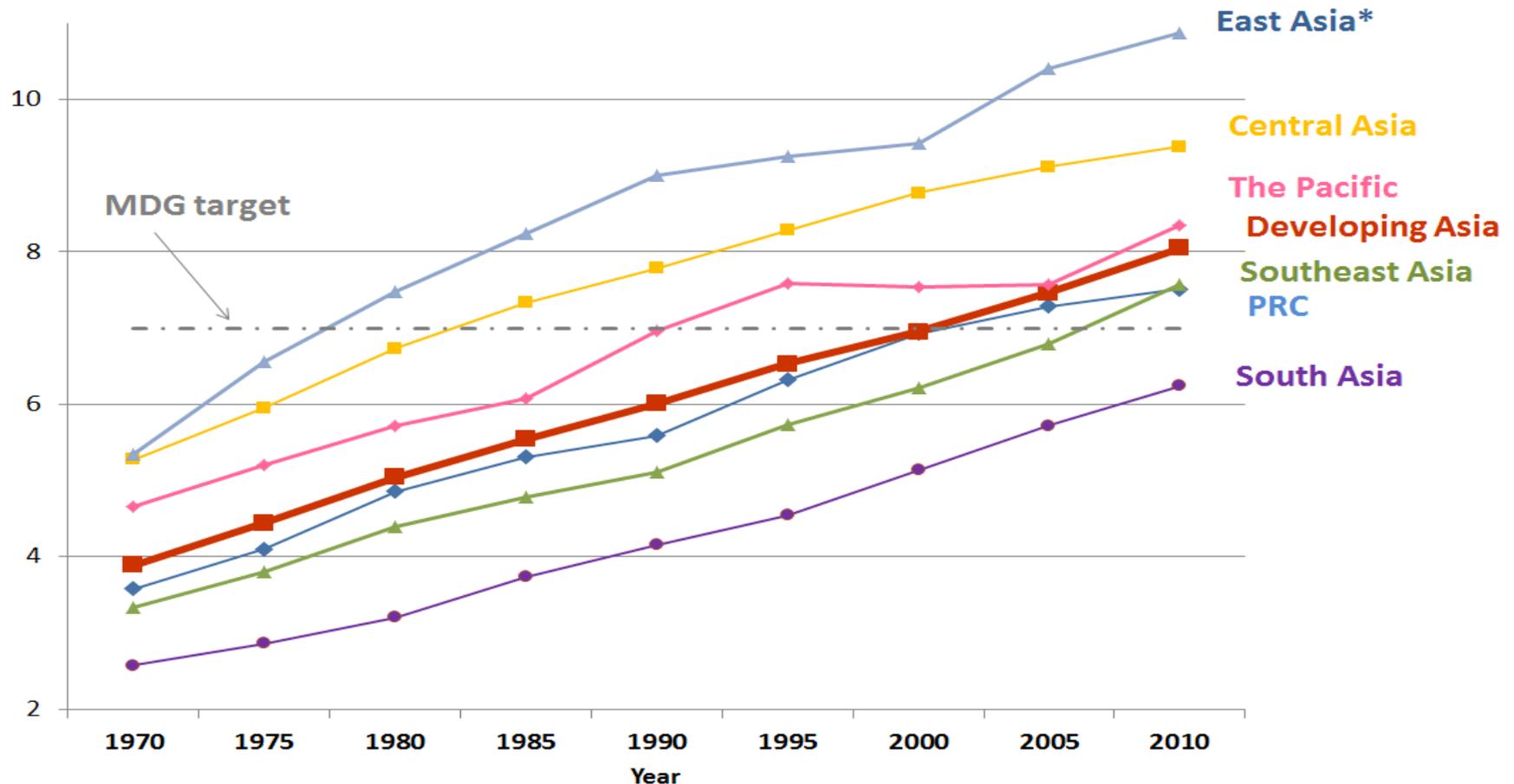
* Excluding PRC
Source: Barro -Lee website. http://www.barrolee.com. (accessed Oct 2015).

But various concerns

- How much does education matter (at an economy-wide level)?

- Co-existence of over-qualification (workers) and under-qualification (employers)

Educational quality (PISA test scores) is what drives the education-growth relationship (Hanushek and Woessmann)
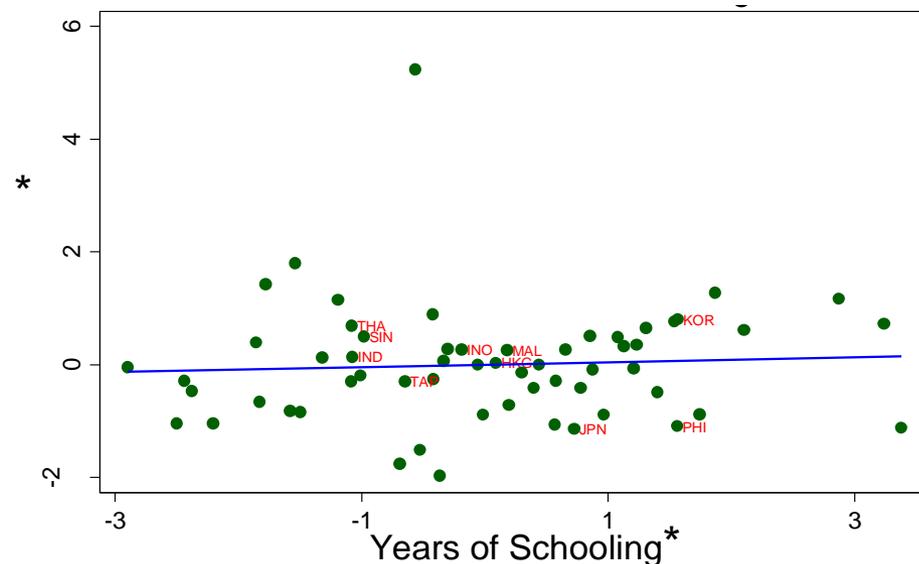

Growth and Test Scores
(adjusted for years of schooling and initial income)
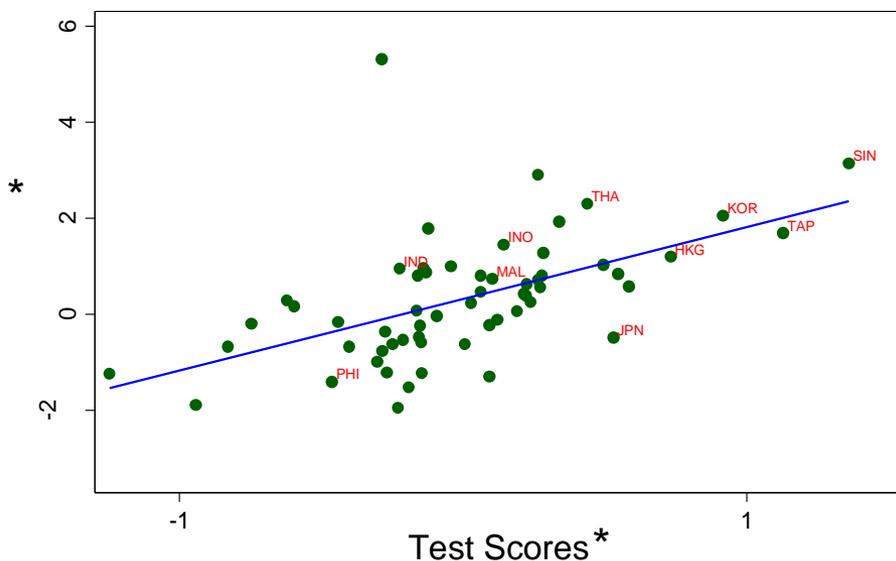
Coefficient = 1.491, se = .23, t = 6.484

Growth and Years of Schooling
(adjusted for test scores and initial income)

Coefficient = .141, se = .091, t = 1.541

Note:* Left graph: Adjusted growth and test scores are computed as deviations from their respective expected values based on initial income and years of schooling. Right graph: Adjusted growth and years of schooling are computed as deviations from their respective expected values based on initial income and test scores.
Source: ADB estimates based on PWT data for 1970-2010 (growth), Barro-Lee data (years of schooling) and PISA/TIMSS (test scores).
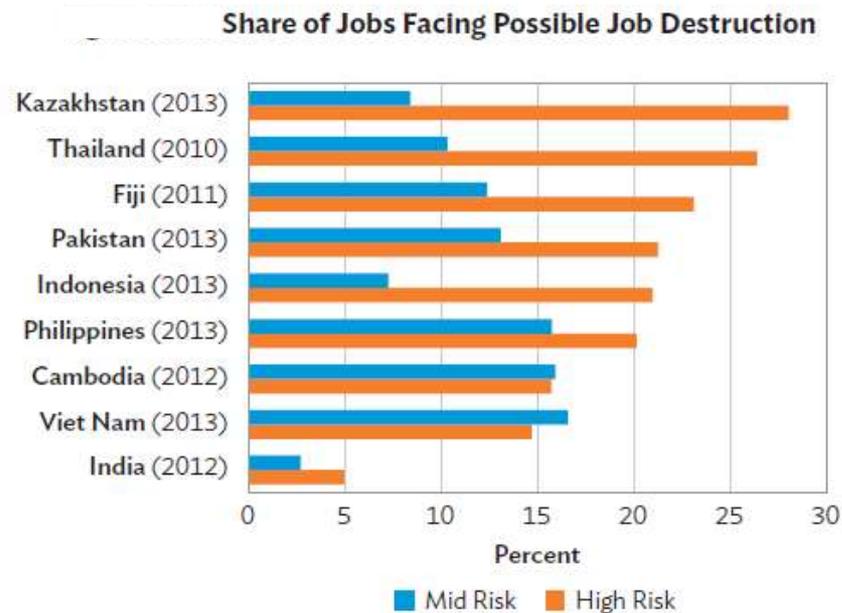
Attention to quality has large payoffs for growth

Cumulative Percentage Increase in GDP per capita by 2045

■ Scenario 1   ■ Scenario 2   ■ Scenario 3
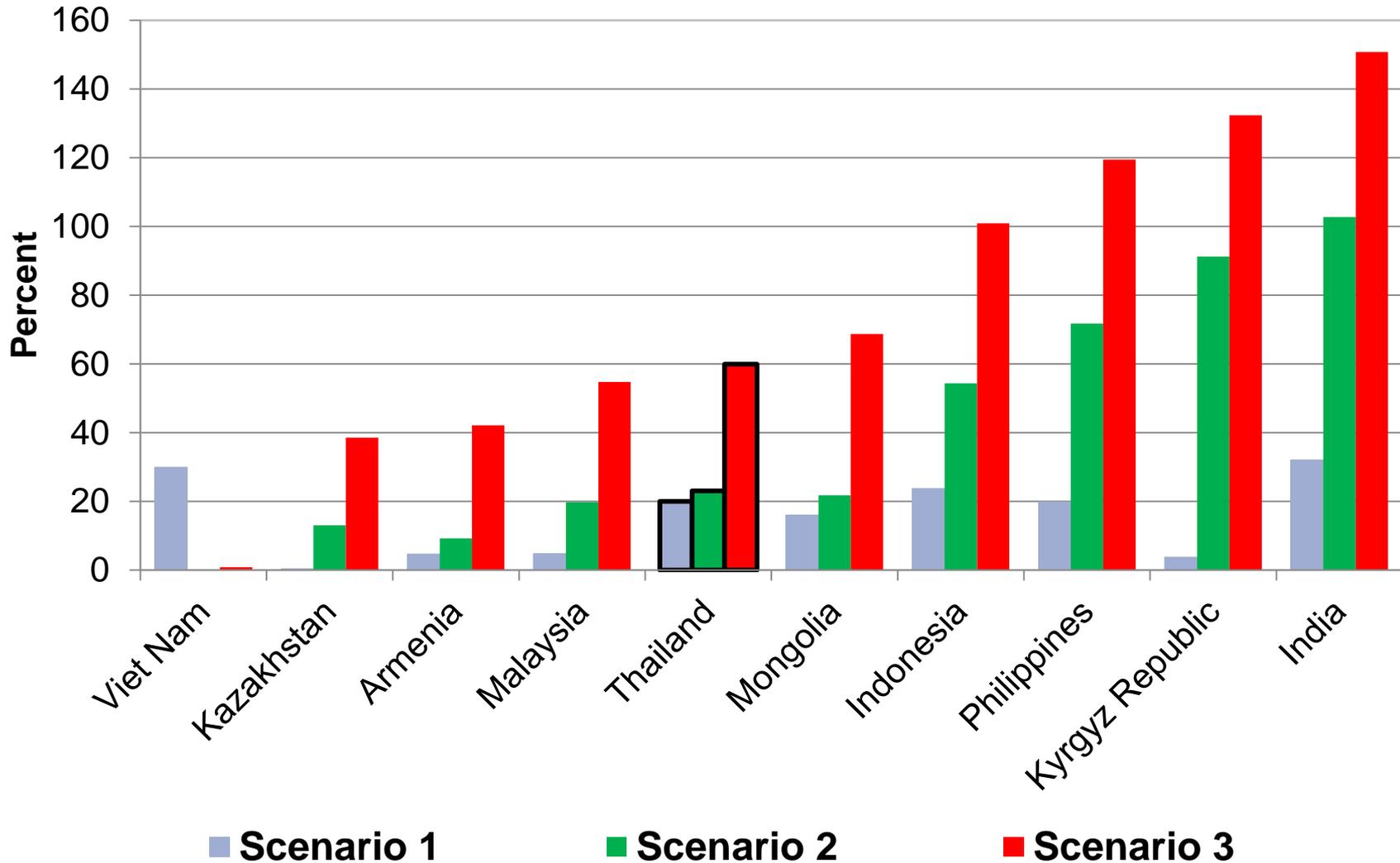
1. Quality is likely to become even more important

❑ "Automation anxiety": Future jobs may not be the same as today's

❑ A solid foundation of cognitive & noncognitive skills

  ❑ Adapt to new technologies

  ❑ Acquire new technical skills

Share of Jobs Facing Possible Job Destruction

Kazakhstan (2013)
Thailand (2010)
Fiji (2011)
Pakistan (2013)
Indonesia (2013)
Philippines (2013)
Cambodia (2012)
Viet Nam (2013)
India (2012)

0   5   10   15   20   25   30
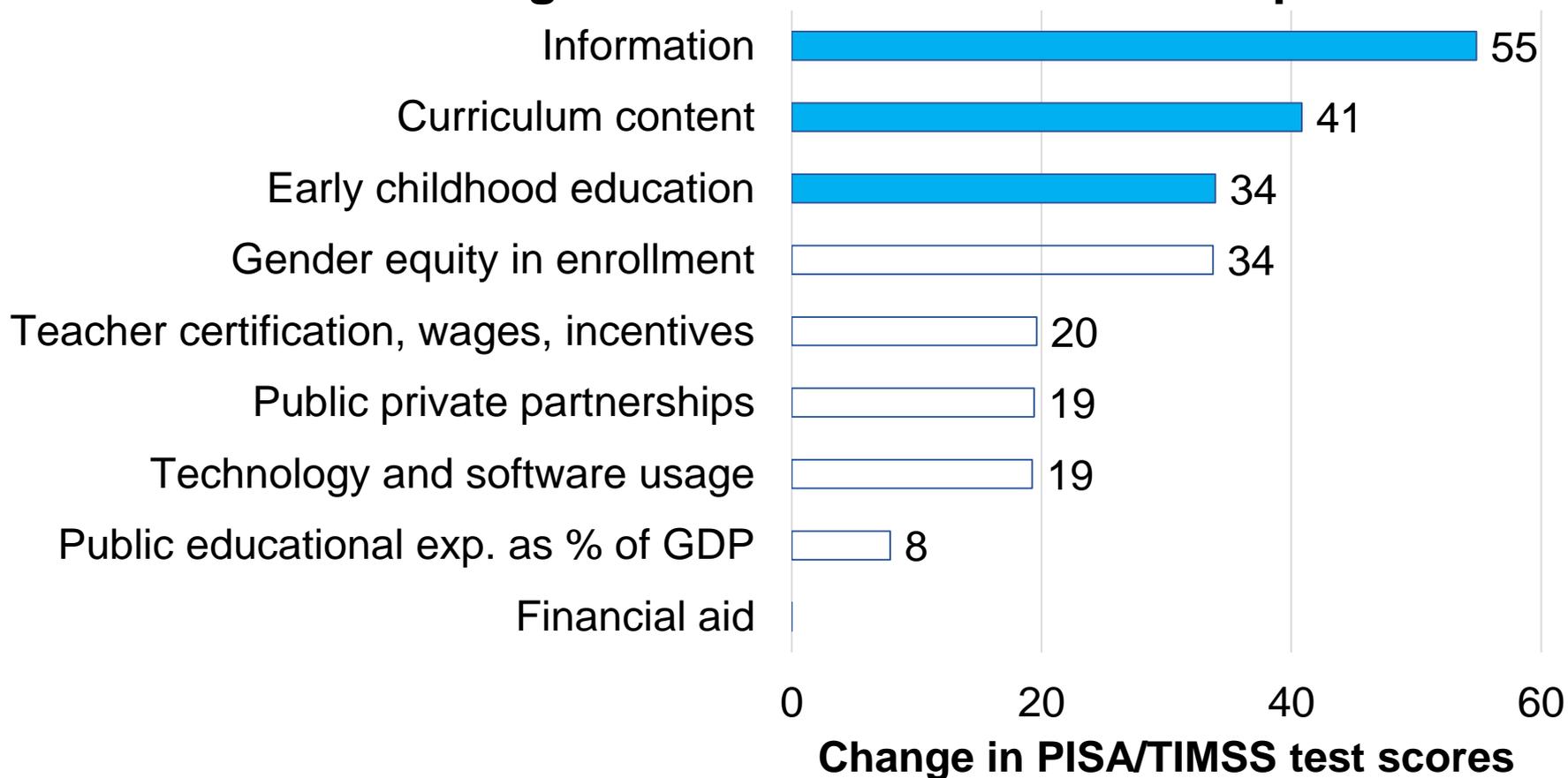
Percent

■ Mid Risk   ■ High Risk

Notes: Mappings from standard occupational classification (SOC) codes 2010 to ISCO-08 at 3- or 2-digit level used. Employee weights used. Only regular employees assumed to be at risk for job destruction.

Source: ADB estimates using data from labor force surveys and Frey and Osborne (2013) computerization probabilities.

Aside: What features of educational systems help develop cognitive skills?

Moving indicator from bottom 3 to top 3 DMEs

Indicator	Change in PISA/TIMSS test scores
Information	55
Curriculum content	41
Early childhood education	34
Gender equity in enrollment	34
Teacher certification, wages, incentives	20
Public private partnerships	19
Technology and software usage	19
Public educational exp. as % of GDP	8
Financial aid	

Notes: (1) Information is comprised of Data for Evidence-based Policy Decisions (National) and Information for Basic and Upper Secondary Education

2. Research on effectiveness of TVET is needed!

Figure 5.4: Share of Secondary TVET students
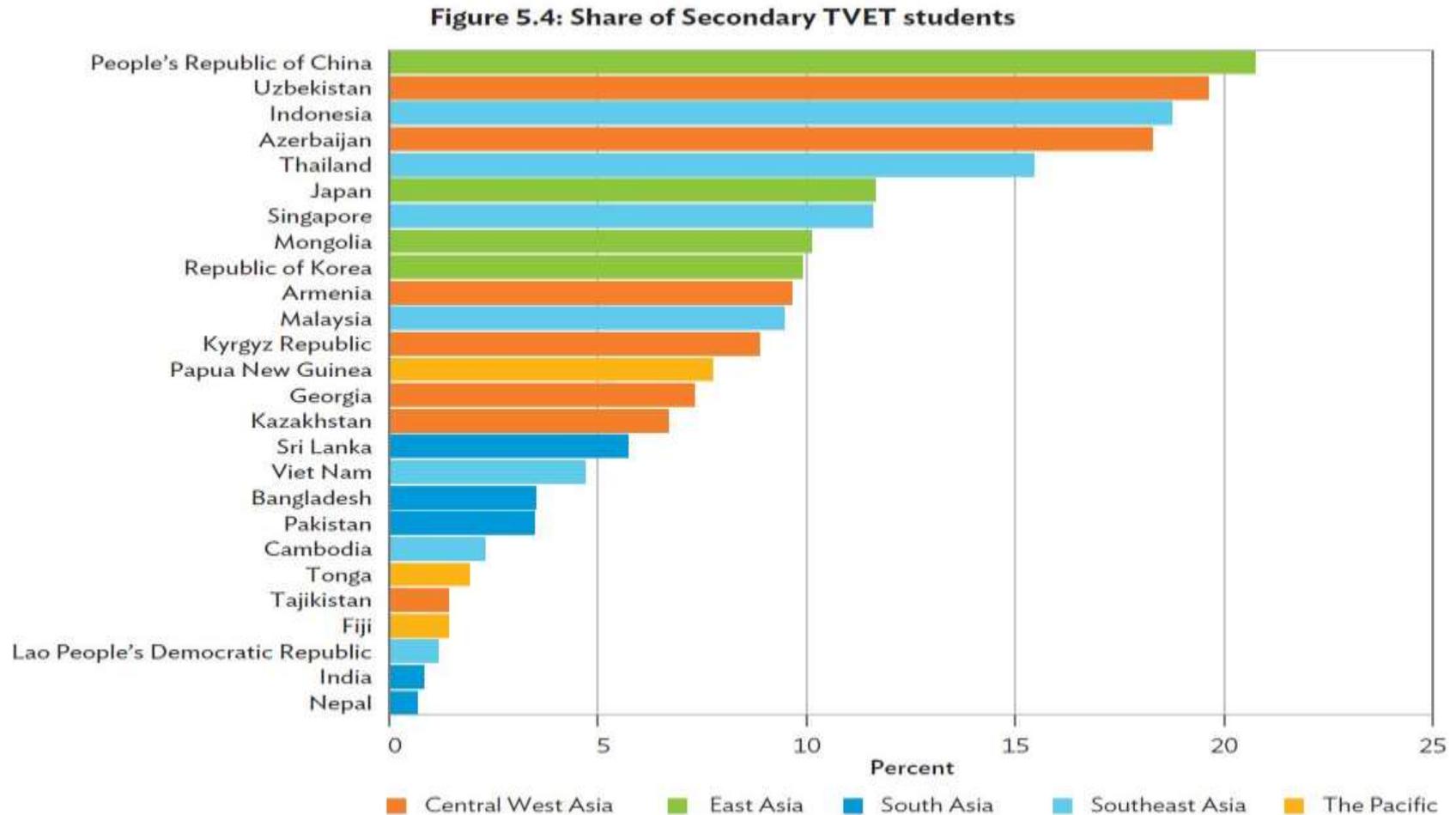
Source: World Bank EdStats. UNESCO (2007). Data for most recent year available.

3. Firms play a crucial role in the skills development process

❑ Evidence from the US: 20%-60% of skills are developed in firms and on-the-job
  ❑ This is one reason the returns to experience can be so high

❑ But, not any job will do
  ❑ The type of *firm* a job is in matters
  ❑ The type of *contract* a worker has matters

❑ Larger firms seem to play a key role

What explains this?

- Larger firms can afford the fixed costs associated with:
  - Adoption of new production technologies
  - Training
  - Use of modern management methods, including Human Resource Management practices

Larger/formal firms: A virtuous cycle of demand for and supplier/provider of skills?

Technology/equipment used in apparel (India)

Purpose	Standard/ Best Practice	Description	Technology/Equipment used and costs (US$)		Optimal scale that supports the technology/equipment: Sewing machines per plant
Spreading	Standard	Manual Spreading	Rudimentary	$3,000	Any
	Best Practice	Automatic spreading of fabric for cutting	Autospreader	$50,000	250
Cutting	Standard	Manual Cutting	Straight knife, Band Knife	$7,250	Any
	Best Practice	Electronic copies of layouts are sent to computer controlled cutting machines	CNC Cutter	$130,000	600

Modern management methods, including HRM practices

Source: Nick Bloom

Management scores by plant size for apparel, textiles and other manufacturing sectors in India

| Plant-size (No. of workers between)	Mean Management Scores		
	Apparel	Textile	Other Manufacturing
20-49	2.21	2.35	2.40
50-99	2.23	2.29	2.52
100+	2.58	2.58	2.85
Overall	2.45	2.51	2.78

Source: Authors' analysis based on Bloom and Van Reenen (2010) datasets.
Note: Range of score: 1-5 (1 is the worst and 5 is the best). There were very few firms in the '10-19' category (only 8 firms in the entire sample) and were outliers, so they have been dropped. Sample size: 93 observations for apparel, 163 for textiles and 335 for other manufacturing.

Larger/formal firms: A virtuous cycle of demand for and supplier/provider of skills?
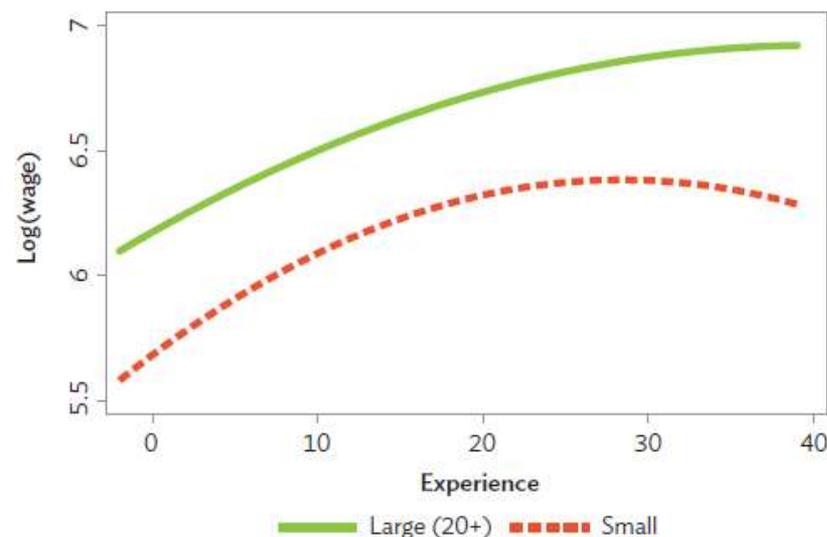
Larger firms train more

Firm Training across Global Regions
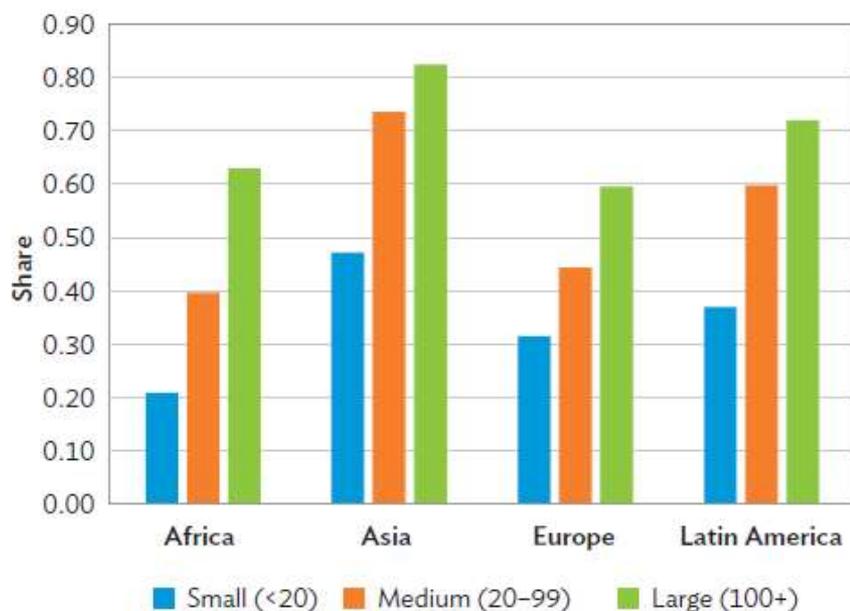
Note: Only latest survey year available for each country is used.
Source: ADB estimates using the World Bank Enterprise Surveys (2006–2014) http://www.enterprisesurveys.org/

Working in larger firms seems to develop more marketable skills (India)

Wage Employment by Firm Size

Note: Plotted wages for sample of male workers in nonpublic sector only. Estimates from log monthly wage regressions controlling for experience, squared experience, education, cohort group, and calendar year fixed effects. Left chart includes type of employment while right chart includes an indicator for the firm having at least 20 employees.
Source: ADB estimates using data from India Labor Force Surveys (2000, 2005, and 2012).

The skills agenda is more challenging when small/informal firms dominate

Share of Employment by Enterprise Size
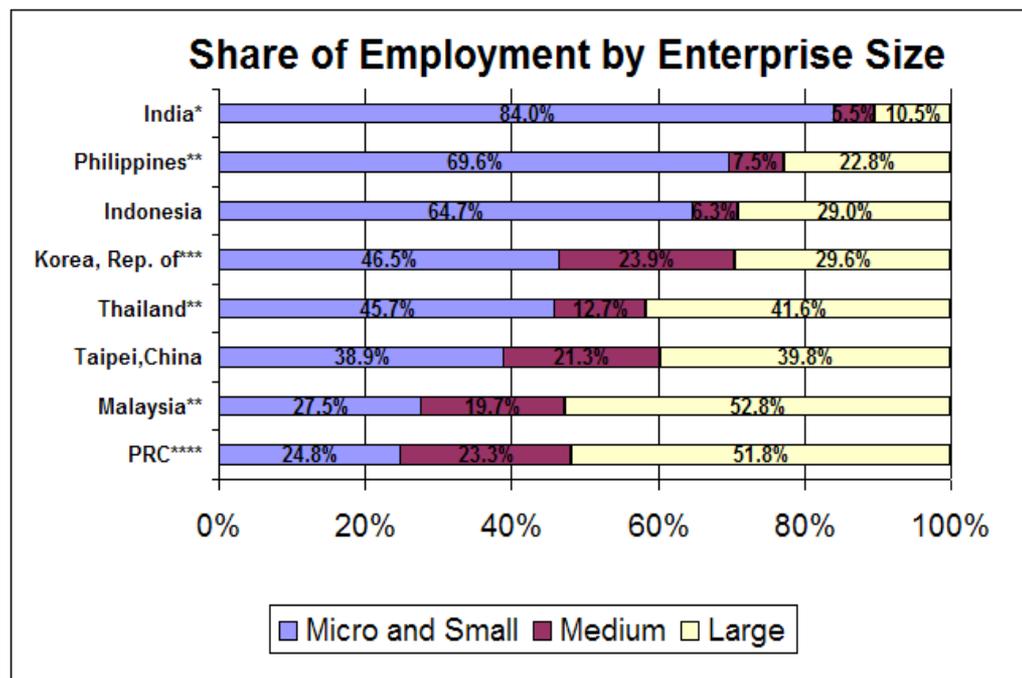
Notes: Micro and Small: 1-49 workers in all countries except Thailand (1-50 workers); Medium: 50-199 in all countries except Thailand (51-200 workers); Large: 200 or more workers in all countries except Thailand (more than 200 workers)

* India's manufacturing empoyment includes workers in own-account manufacturing enterprises (OAME)

** includes imputation for the self-employed based on differentials between LFS and enterprise survey/census data

*** data on Korean microenterprises are not available

****adds the 5.9 million self-employed described in Box 3.1

Source: ADB staff estimates

Obstacles to larger/formal firms can become obstacles to skills upgrading

- Obstacles work in 2 ways:
  - Small/informal firms don't "grow up"
  - New investment in larger/formal firms is lacking

- What might the obstacles be?
  - Credit
  - Bad infrastructure (power and logistics)
  - Barriers to entry and exit for firms, trade, and FDI
  - Industrial policy that dis-incentivizes growth/diversification
  - Labor market regulations and institutions
    - Do employment contracts align incentives of both firms and workers to invest in skills?
    - Do current institutions provide for effective matching?

Temporary employment is unlikely to be associated with acquisition of skills
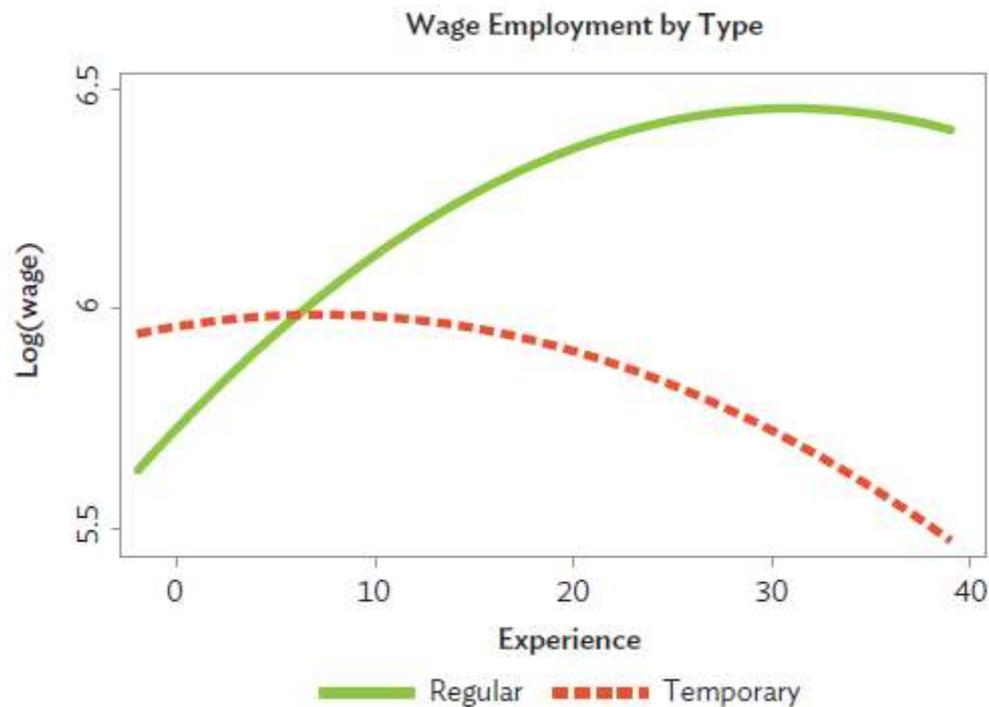
Wage Employment by Type

Regular ━━━ Temporary ▪▪▪▪▪

Note: Plotted wages for sample of male workers in nonpublic sector only. Estimates from log monthly wage regressions controlling for experience, squared experience, education, cohort group, and calendar year fixed effects. Left chart includes type of employment while right chart includes an indicator for the firm having at least 20 employees.

Source: ADB estimates using data from India Labor Force Surveys (2000, 2005, and 2012).

Some questions for future research

- Labor regulation (and social protection)
  - What are "optimal" LR-SP bundles from the perspective of structural transformation? Flexicurity?
  - Deviations between actual and optimal LR-SP: Do these have measureable costs? How do you transition to optimal bundles?

- Management practices and labor practices
  - Within a given LR-SP regime, you see variation in these. What are good practices? How do you get firms to adopt these?

THANK YOU