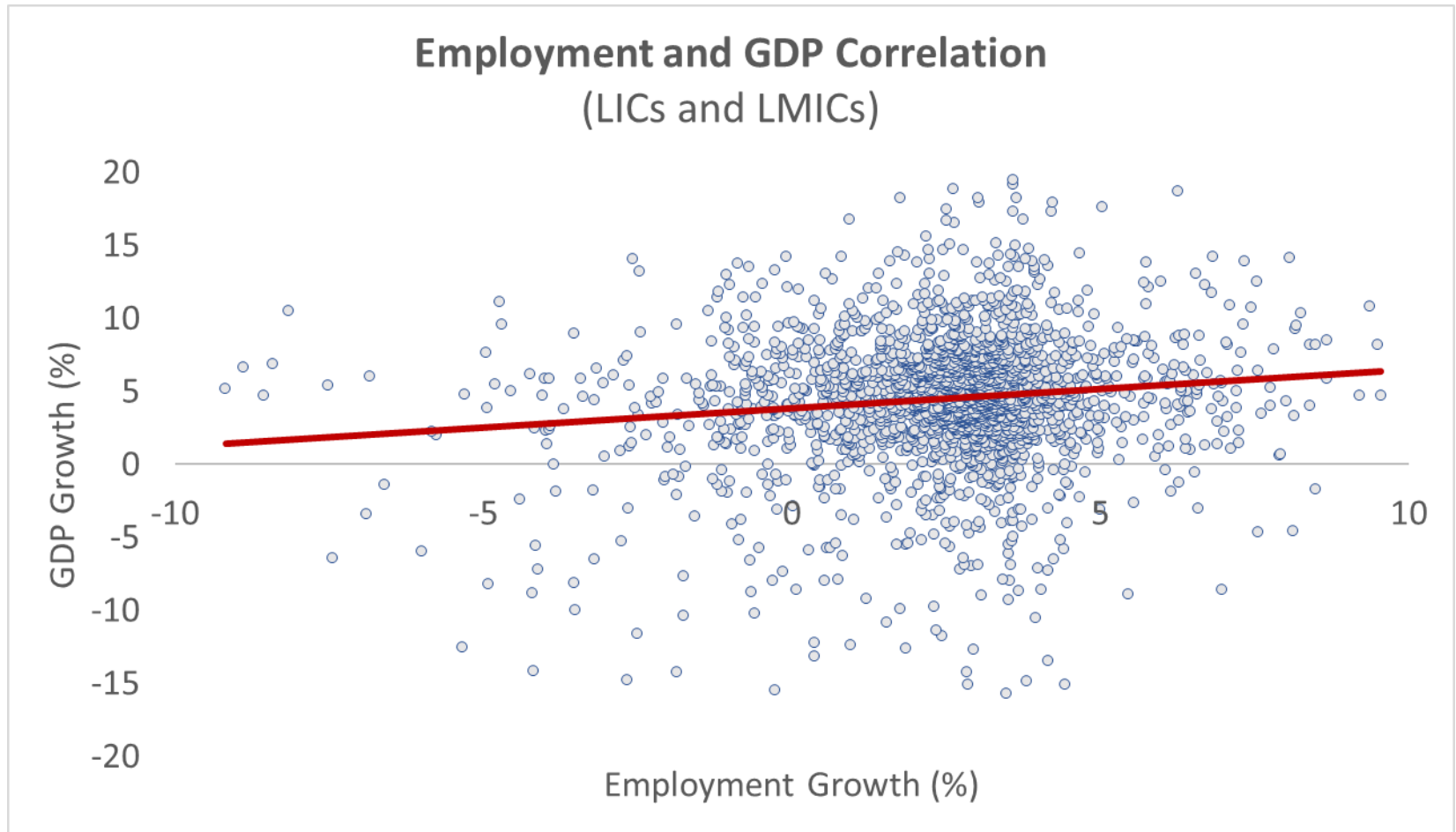


# THE FUTURE OF WORK



# The previous paradigm driving the Jobs Agenda



# PRO-GROWTH APPROACH IGNORES EXTERNALITIES LINKED TO JOBS CREATION

Labor  
Externalities

Social  
Externalities

Private investments that would be socially efficient do not take place

**Private Rate of Return  $\neq$  Social Rate of Return**

# How the Labor Force Looks Today

Working Age Population = 4.87 B

## Inactive

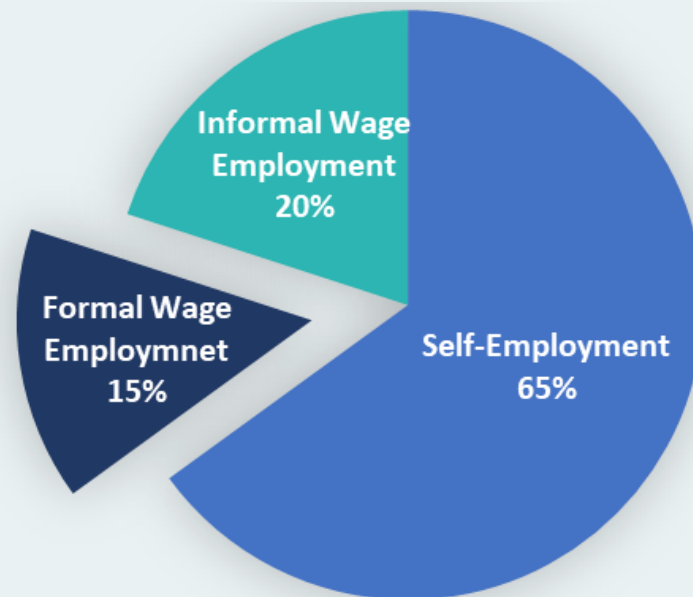
29% (1.42 B)

260 M Youth are Out of School and Out of Work

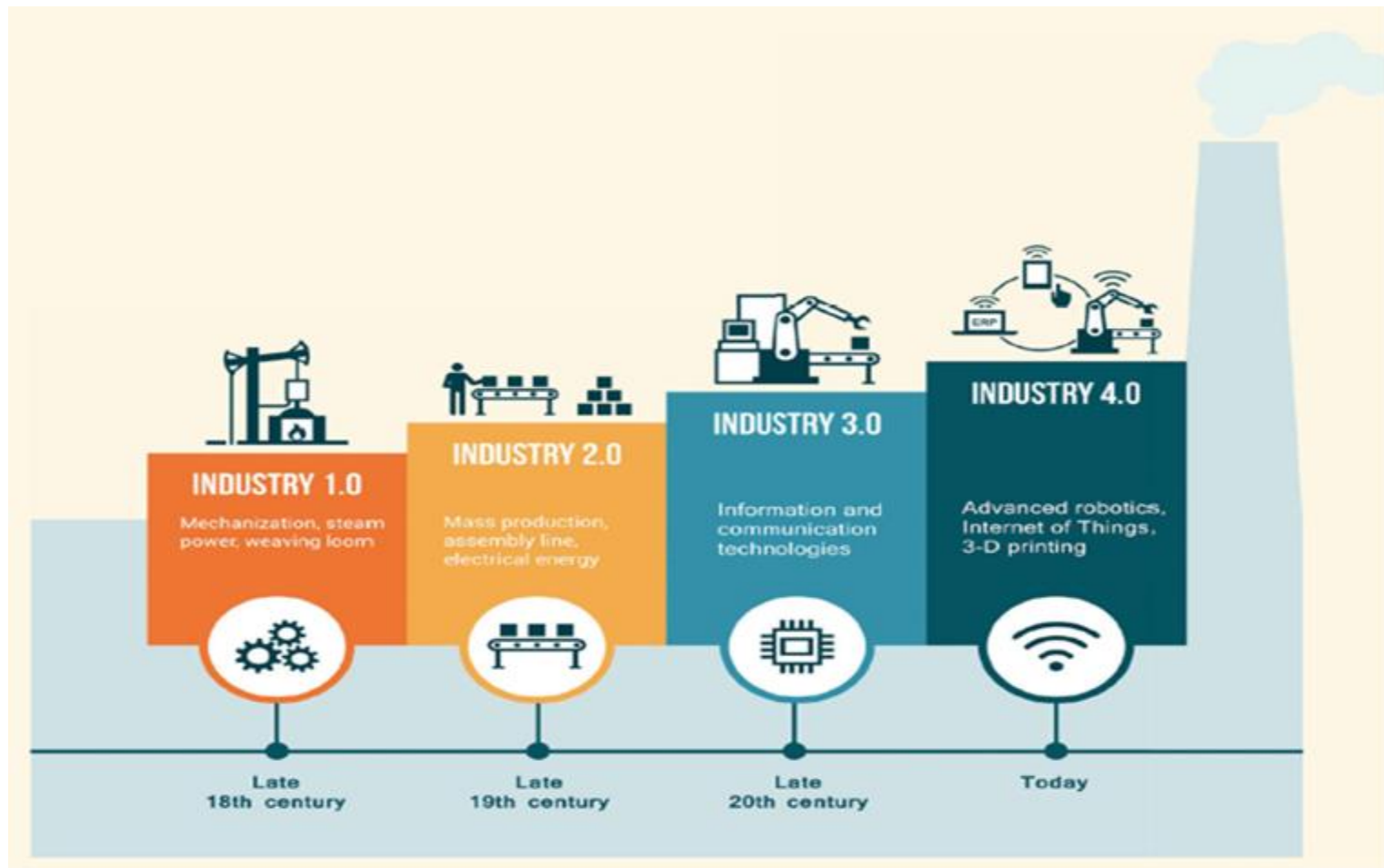
Youth **Unemployment**  
= 2.4 x unemployment rate

## Active

71% (3.41 B)

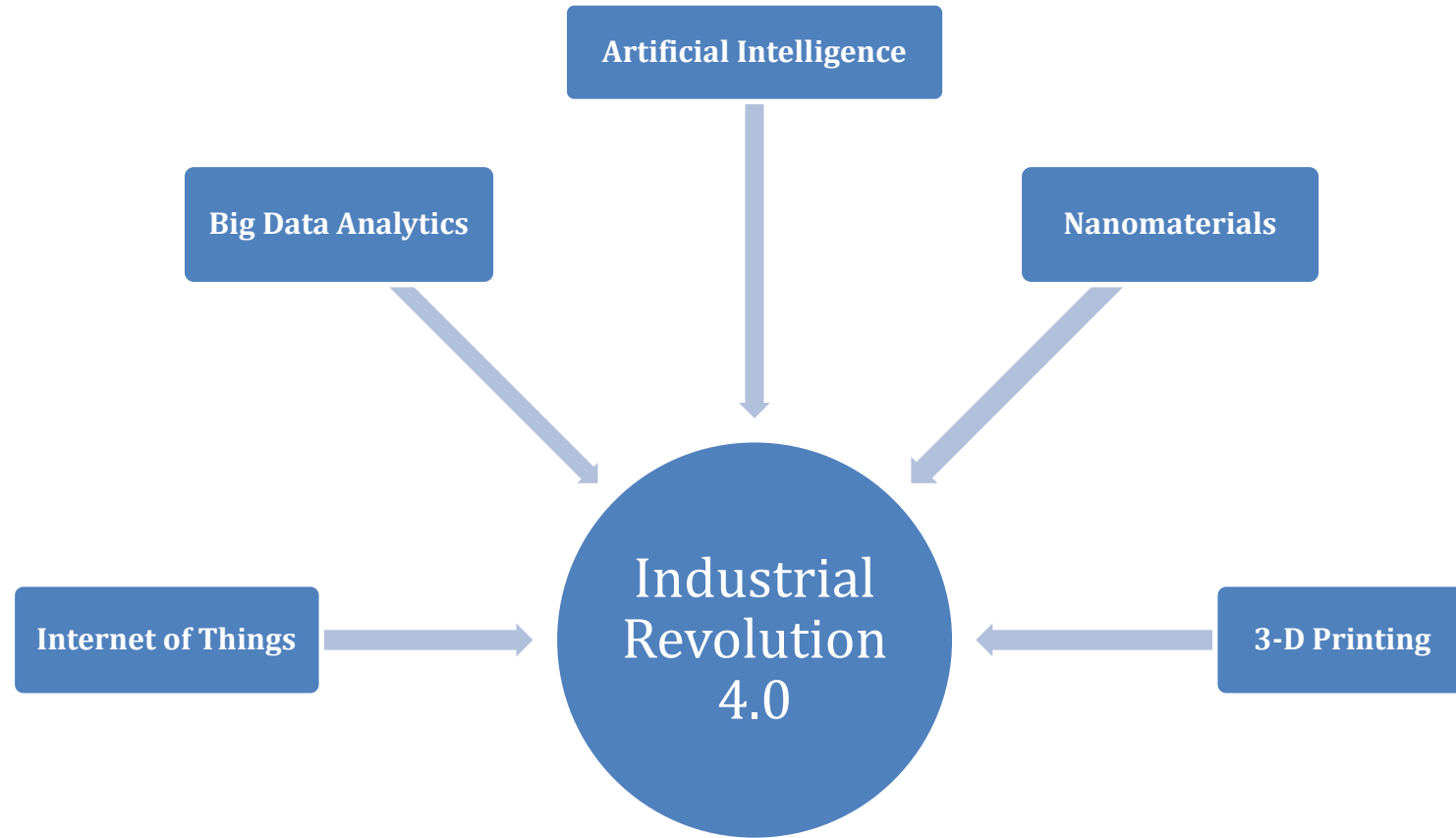


# Technology is an engine of growth



Source - World Bank, Trouble in the making (2017)

# But, also a source of disruption



Technological disruptions imply a significant **reallocation of employment between activities**

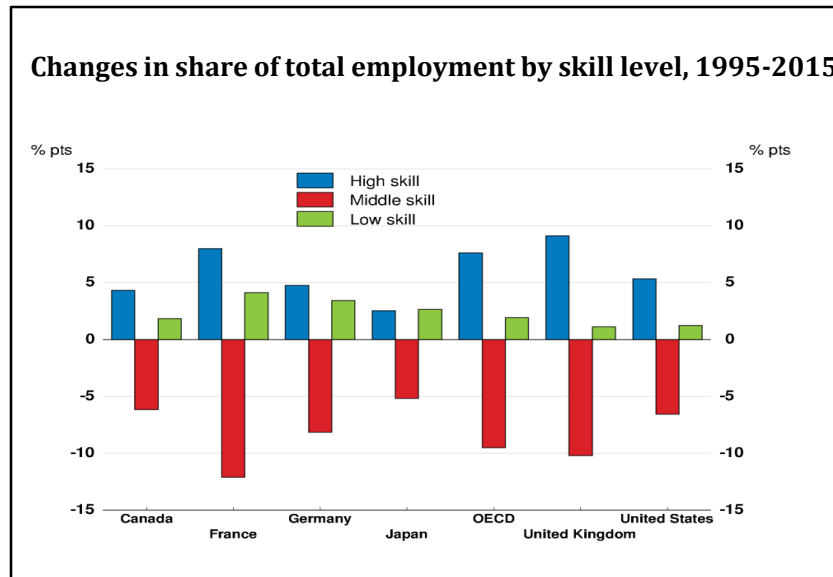
# Impact on labour markets

## Interactions between technology and skills at work

		Ease of Complementarity (Technology is labour -augmenting)	
		High (tasks intensive in cognitive, analytical and socio-emotional skills)	Low (tasks intensive in manual skills)
Ease of automation (Technology is labour saving)	High (routine tasks)	<i>Quadrant 1</i> Bookkeepers Proofreaders Clerks	<i>Quadrant 2</i> Machine Operators Cashiers Typists
	Low (non-routine tasks)	<i>Quadrant 4</i> Researchers Teachers Managers	<i>Quadrant 3</i> Cleaners Hairdressers Street Vendors

Source- World Development Report (2016)

## Job Polarization



Source- OECD Employment Outlook (2017)

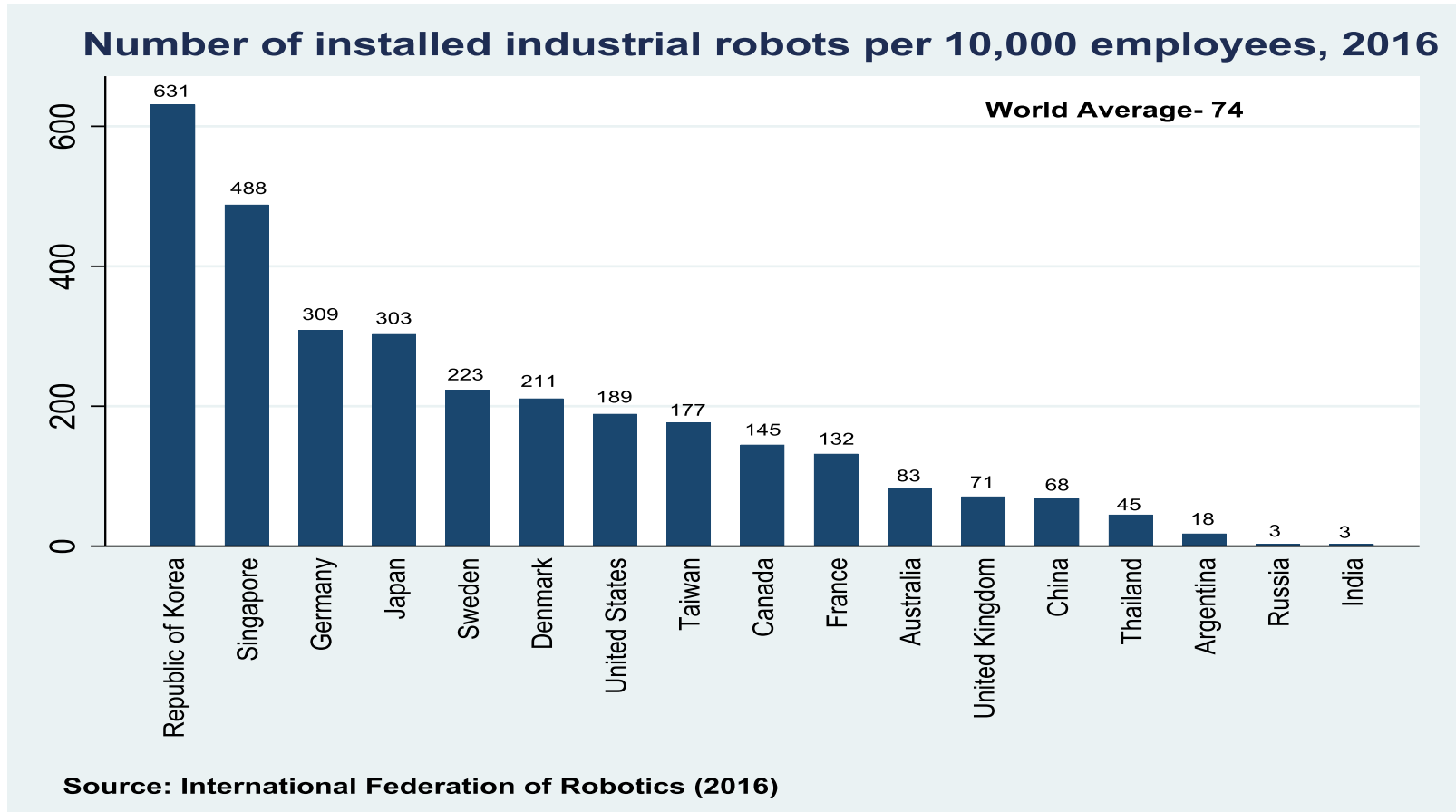
# Risk of Automation

The interaction of big data, machine learning and artificial intelligence are now enabling both non-routine cognitive and manual tasks to be automated.

Study	Country	Occupation-based approach (FO Methodology)	Task-based approach	Estimates of share of jobs at risk of automation
Frey and Osborne (2013)	United States	✓		47%
Brzeski and Burk (2015)	Germany	✓		59%
Citi GPS and Oxford Martin School (2016)	China	✓		77%
Citi GPS and Oxford Martin School (2016)	India	✓ (using World Bank data)		69%
OECD (2016)	United States		✓	9%
OECD (2016)	Korea		✓	6%
OECD (2016)	Germany and Austria		✓	12%

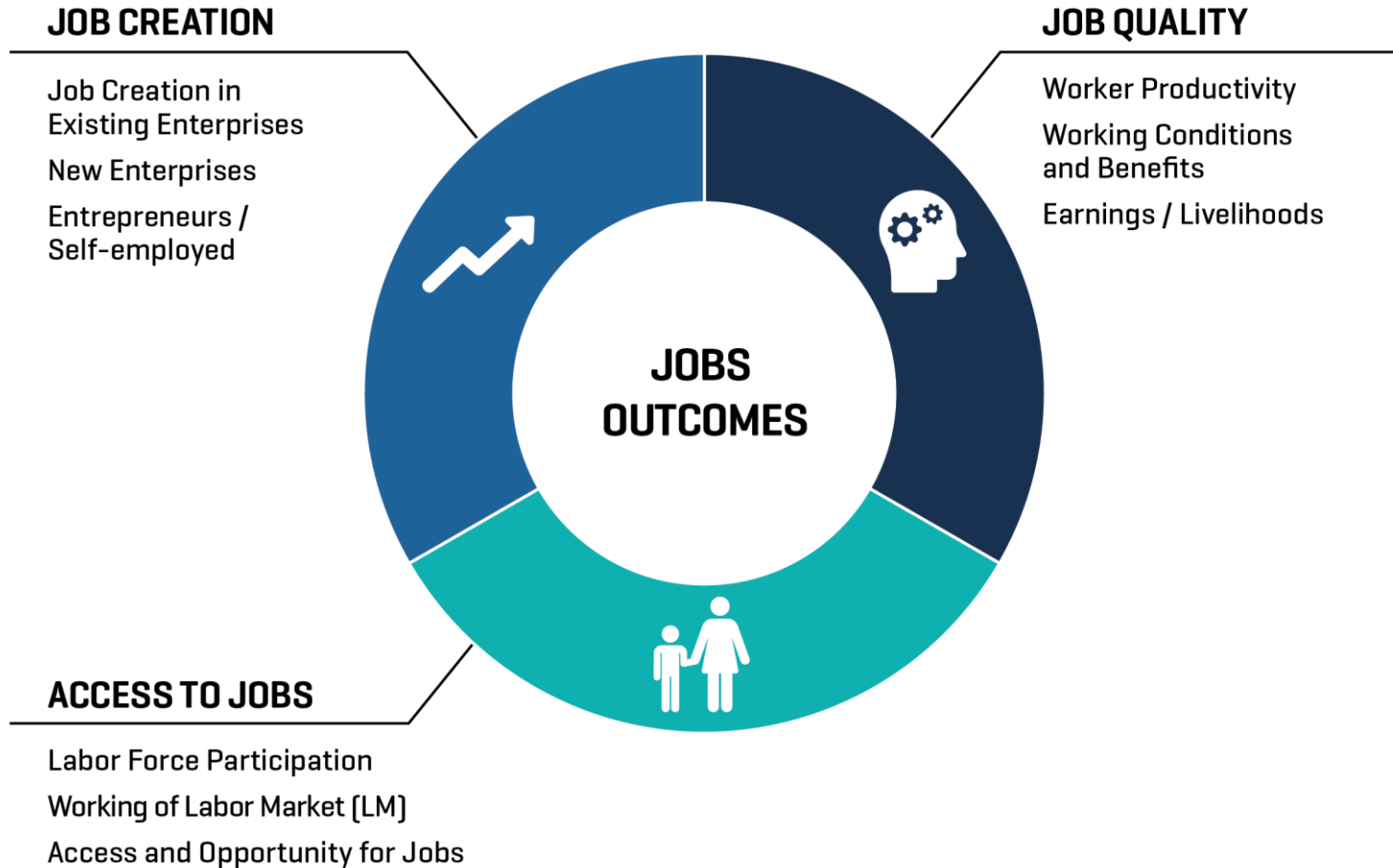


# Diffusion of Technology varies between and within countries



- *Do different countries require separate responses to deal with the challenge?*
- *How can we facilitate global cooperation and coordination to lay the foundation for an automated future which is productive and inclusive ?*

# Jobs Strategies



# Policy Responses

- ***Education & Skill Development***

- Educational institutions must reduce current levels of skill-mismatch
- Stronger linkages between universities, employers and vocational institutes must be fostered
- Curricula must be more forward-looking

- ***Labour Regulations***

- Must account for and anticipate a changed labour landscape
- Allow extension of social security benefits to workers in non standard forms of employment, possibly by reducing eligibility thresholds

- ***Social Safety Nets***

- Social safety nets enhance workers ability to deal with disruption, and must be maintained and strengthened
- The aim should be to protect *people* not *jobs*, since regulation would be unable to keep up with the pace of change of the latter

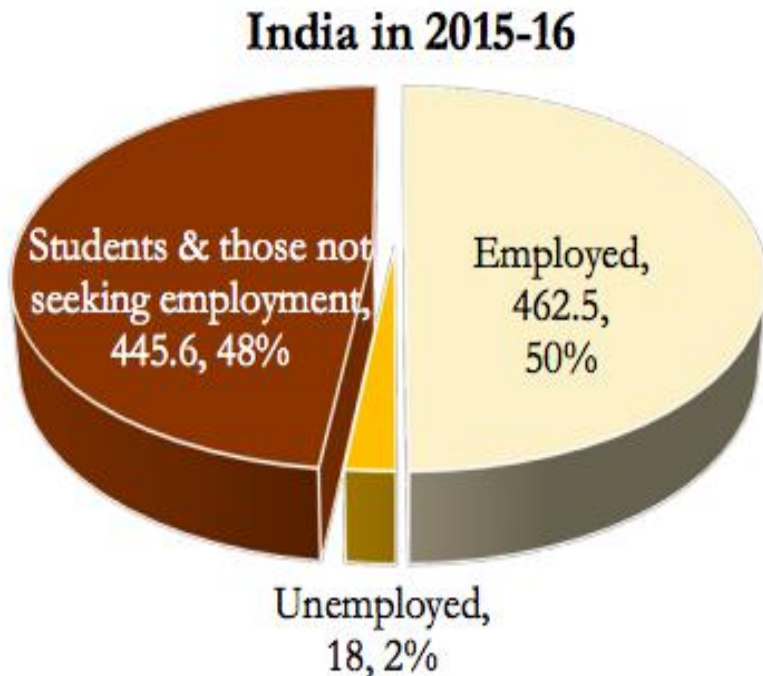
- ***Taxation***

- Public spending will play an important role in managing the 4<sup>th</sup> Industrial Revolution
- Expanding the tax base in a progressive manner and curbing Base Erosion and Profit Shifting (BEPS) Activities must be a priority for all governments

- ***Competition Policy***

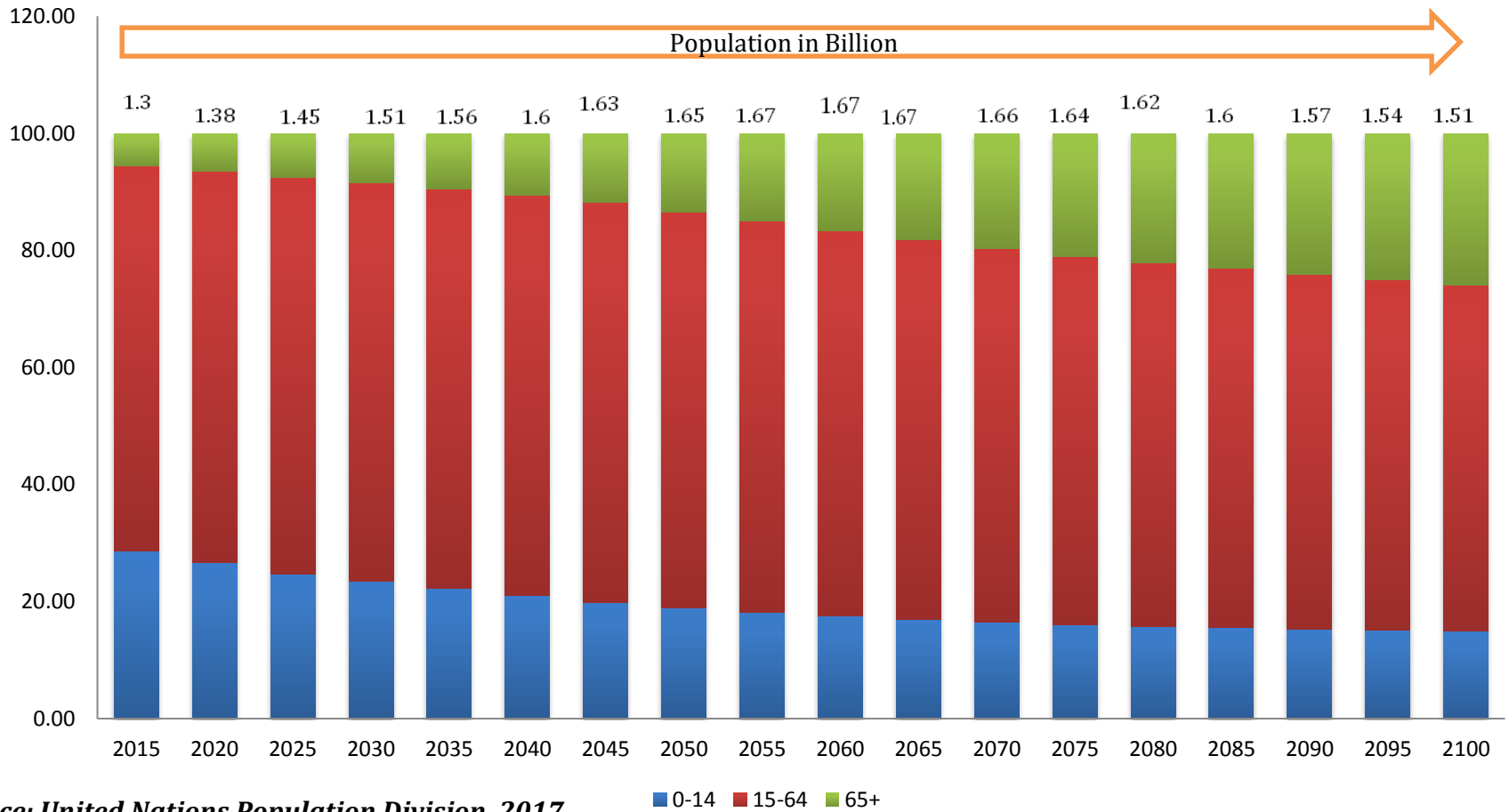
- Recent trends point to innovation and market power being concentrated in the hands of a few "superstar" firms
- Less competitive markets dampen innovation and productivity, ultimately harming the potential that technology holds for doing good
- Competition policy, therefore, must enforce norms of fair competition, and prepare for doing so in markets that are in constant churn

# The Rise of Informality in India



- The informal sector is the biggest job creator, followed at distant second by the government (30.5 million) and private sector 19.2 million
- There is also a glaring gender gap in India's labour force, with the labour force participation of women being among the lowest in the world (23.7% LFPR as reported by the 5<sup>th</sup> EUS, 2015-16)

# The demographic profile



Source: United Nations Population Division, 2017

0-14 15-64 65+

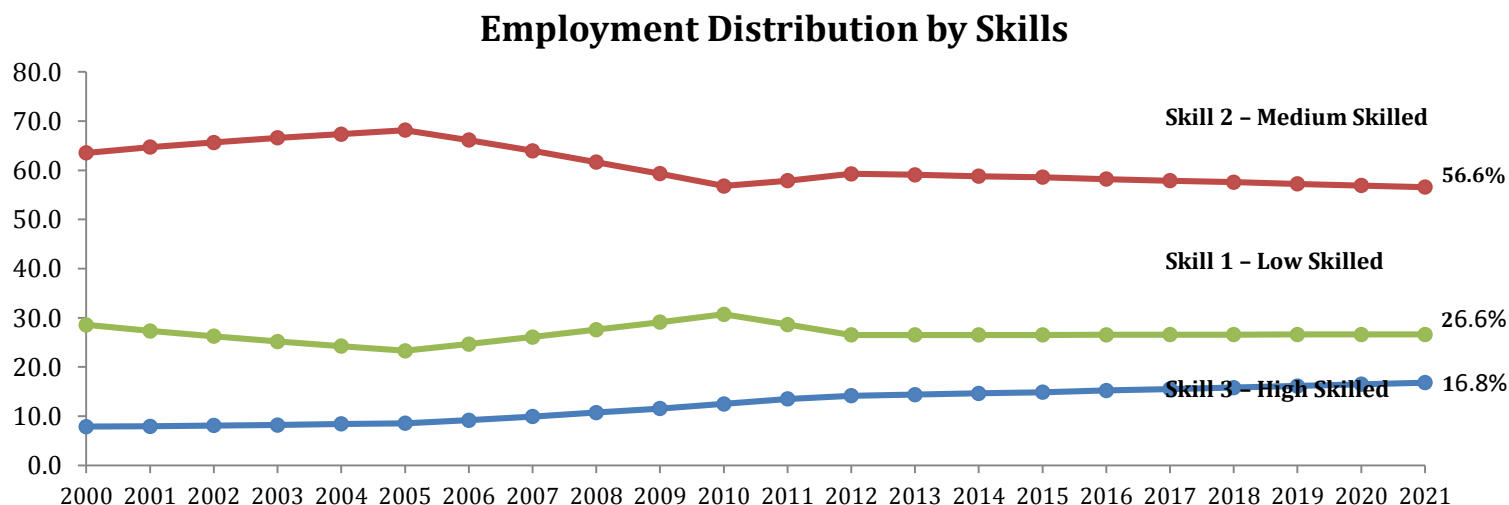
# Challenges and Opportunities for India

- Challenge of job creation exacerbated:

*Will manufacturing be a less accessible pathway for growth and development?*

*Will reconfiguration of GVCs reverse the importance and length of GVCs and reorient global trade and production back towards advanced countries*

- Impact on informal economy complex



Source - ILOSTAT

But, also opportunities ahead...

- Technology can improve delivery of public services and expand access to new opportunities—including programs targeting those who are displaced or vulnerable.
- While there is a risk that manufacturing may be a less accessible pathway for low-income countries to develop, there are also opportunities to “leapfrog” the traditional development path.



**Thank You!**

*For questions or clarifications please reach out at [rkathuria@icrier.res.in](mailto:rkathuria@icrier.res.in)*