Economic Society of Singapore Post-Budget Forum 2016

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29 March 2016
From broad productivity to automation

- PIC expires in 2018: most expenditure on automation

- **Automation Support Package, $400m over 3 years**
  - Why subsidise private investment?

- **National Robotics Programme, $450m over 3 years**
  - Announced in 2015, few details yet
Automation and jobs

• Classification of tasks/jobs:
  • **abstract**: mid- to high-end PMET – automation highly complementary
  • **routine**: low-end PMET – easy to automate
  • **manual**: non-PMET – difficult to automate
    • flexibility, judgment, and common sense (Polanyi’s paradox), e.g., nursing
    • sensory-motor skills, physical flexibility, e.g., construction

• Automation will have negative consequences for the lower end of PMET

• Automation may not greatly lessen dependence on non-PMET foreign labour
Change in Employment by Major Occupational Category in the US, 1979–2012

Autor (2015)
Change in Occupational Employment Shares in Low, Middle, and High-Wage Occupations in 16 EU Countries, 1993–2010

Autor (2015)
More targeted R&D

• Up to $4bn out of $19bn of RIE 2020 dedicated to industry-research collaboration
Benefits of R&D for Singapore

• Assumption: more R&D good for Singapore

• Clear direct economic benefits of R&D ecosystem (jobs) but are **spillovers** from R&D investment captured **locally**?

• International mobility of labour in R&D sector is extremely high
  • Singapore successful at attracting established researchers
  • Just stepping stone for young researchers?

• Very little is known!
Thank you!