

# Technical Change and Productivity

## Panel: How can data help lift productivity performance?



Stats NZ's Longitudinal Business Database (LBD) is a large research database containing de-identified microdata about businesses.

The LBD contains business-centred microdata from various Stats NZ surveys and government agencies. For more information about data in the LBD, see [www.stats.govt.nz/lbd](http://www.stats.govt.nz/lbd).

The Integrated Data Infrastructure (IDI) complements the LBD with microdata about people and households. For more information about data in the IDI, see [www.stats.govt.nz/idi-data](http://www.stats.govt.nz/idi-data).



#### Innovation data

- Business Finance Survey – 2004
- Government Assistance Programmes – 1994 to 2013
- Innovation Survey – 2003
- Intellectual Property Office – 1972 to 2014
- Research and Development Survey – 1996 to 2016

#### Business financials data

- Annual Enterprise Survey – 1999 to 2016
- Business Activity Indicator (GST) – 1999 to 2016
- IR4: Inland Revenue Company Tax Return – 1999 to 2016
- IR10: Inland Revenue Tax-filed financial accounts – 1999 to 2016

#### Agriculture data

- Agricultural Production Survey – 2002 to 2016

#### International trade and tourism data

- Accommodation Survey – 1996 to 2016
- International Trade in Services Survey – 1998 to 2016
- Overseas Merchandise Trade – 1988 to 2016
- Quarterly International Investment Survey – 2000 to 2016

#### Business practices data

- Business Operations Survey – 2005 to 2016
- Business Practices Survey – 2001
- National Survey of Employers – 2014 to 2015
- Manufacturing Energy Use Survey – 2006

#### Employment data

- Employer-Employee Tax (from IDI) – from 1999



# Why we need more Firm level- based analysis of productivity?

## Creating a dataset for Asia-Pacific

**Filippo di Mauro**

*National University of Singapore  
Business School*

*Chairman of CompNet*

**NZ Productivity Commission**

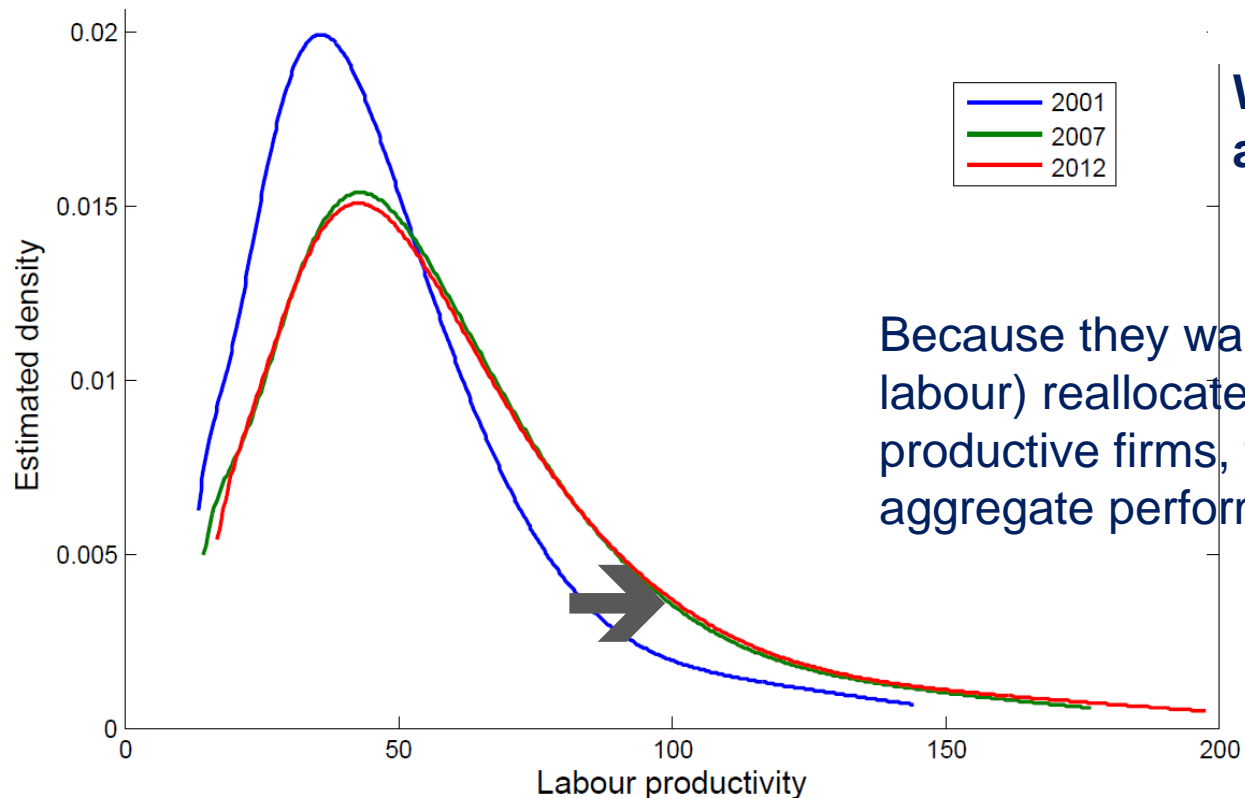
**Wellington**

**13 February 2018**

# The rational of firm-level perspective

- Firm performance distribution is **very disperse** and **asymmetric**
- Most firms are around an “average” LOW performance,
- and **only a few** which are **very productive** in the “**right-tail**” of the distribution (the so called “*happy few*”)

Evolution of labor productivity distribution in France  
Manufacturing sector - firms with 20+ employees

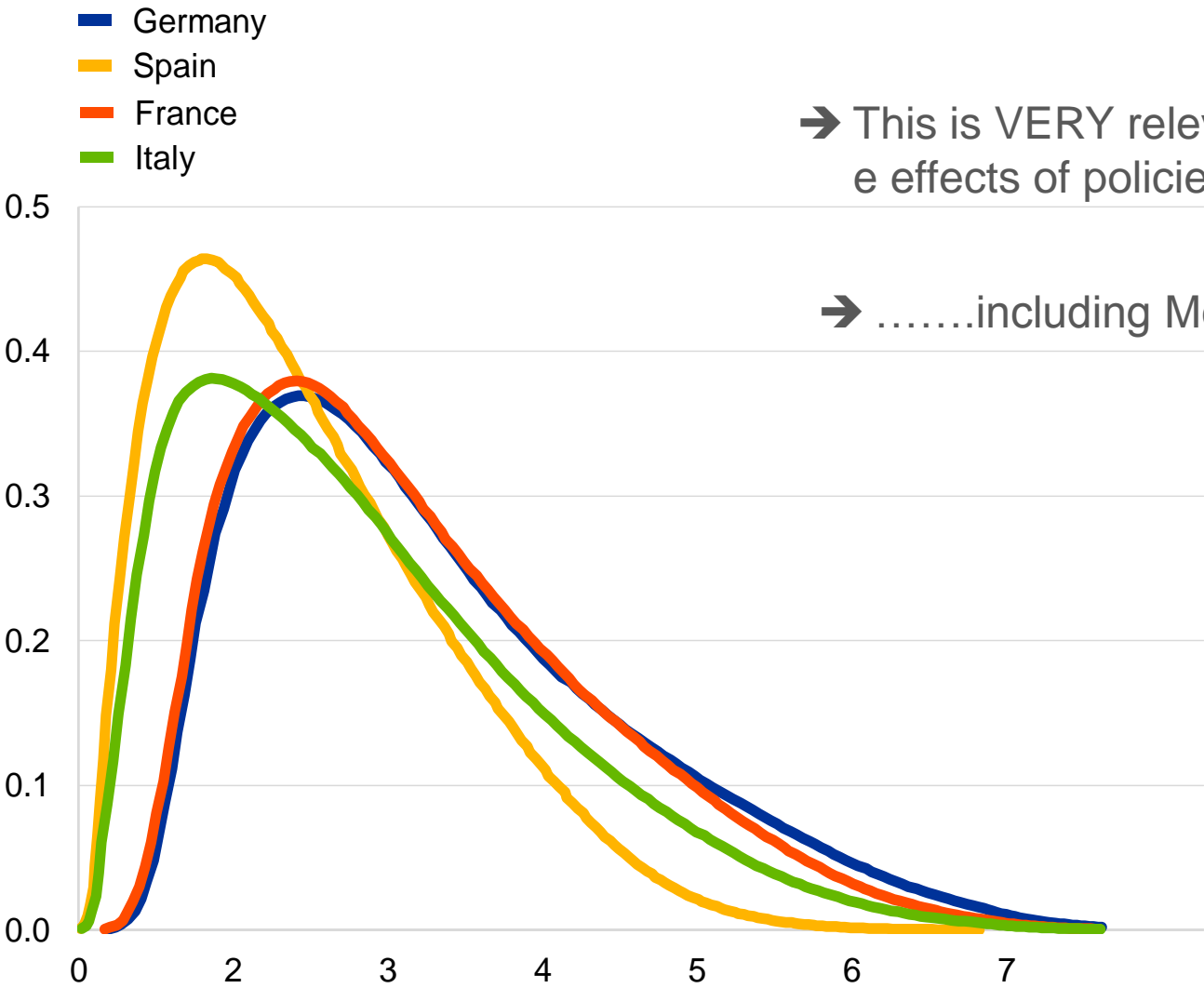


**Why do economists care about firm heterogeneity?**

Because they want resources (capital and labour) reallocated from low to high productive firms, to increase the economy aggregate performance

# Firm performance is heterogeneous within/across sectors and countries

*Firm productivity distribution in manufacturing (2006-12)*



→ This is VERY relevant when measuring the effects of policies

→ .....including Monetary Policies

Sources: ECB staff calculations based on CompNet data, Eurostat data and Statistical office of Germany – AFiD-Panel data for Germany.  
Note: Re-scaled so the mean of the distribution equals GDP per capita.  
Data refers to the 20E sample.

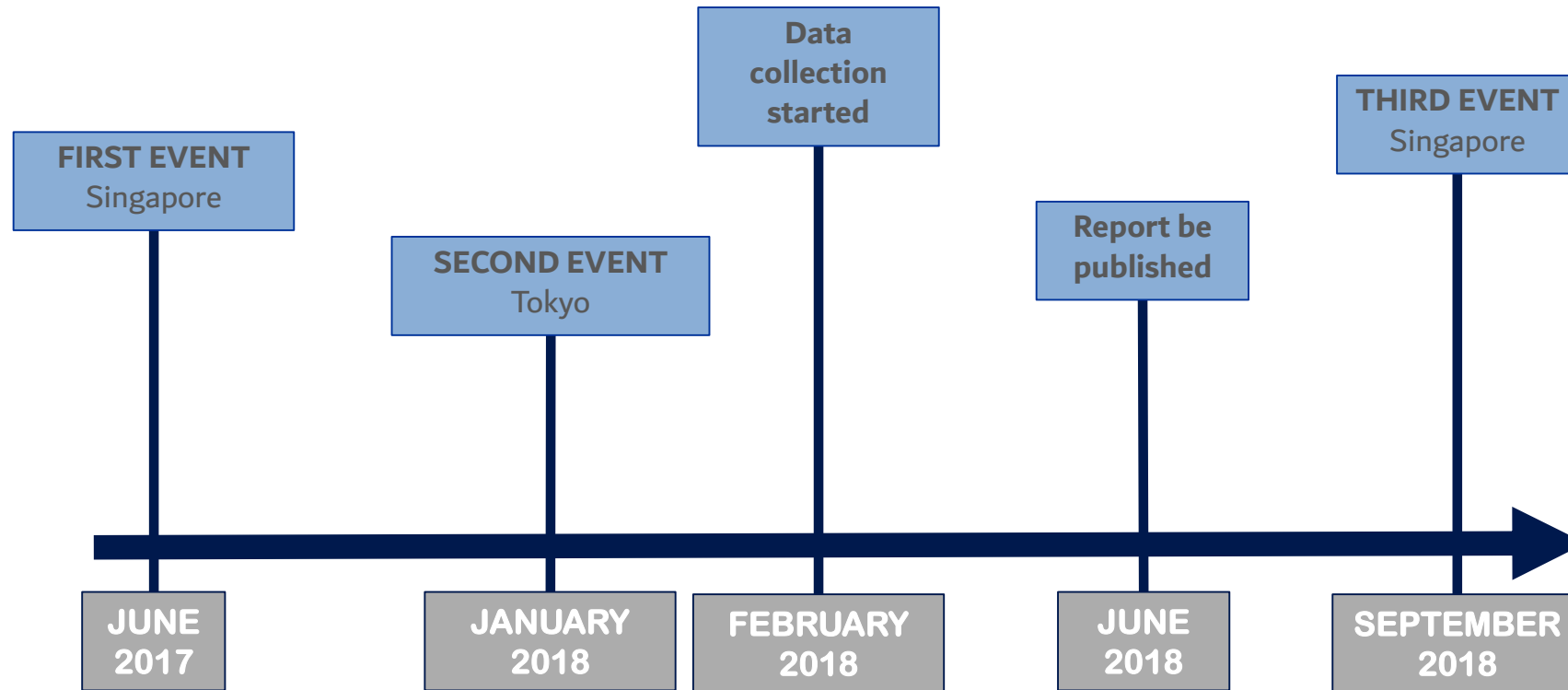
# PRODUCTIVITY RESEARCH NETWORK

## Dataset

- What's Included:
  - ✓ *Productivity Indicators*
  - ✓ *Financial Indicators*
  - ✓ *Labour Indicators*
  - ✓ *Markup Indicators*
  - ✓ *Trade Indicators*
  - ✓ *Joint Distribution*
- Firms
  - ✓ *Across 60 sectors*
- Time Covered
  - ✓ *Varies with each country*

Coverage: Asia-Pacific	Data
Japan JP	Basic Survey of Japanese Business Structure and Activities (BSJBSA), 1994-2015E2
Thailand TH	Thailand Industrial Census (2007) and Thailand Industrial and Business Census (2012)
Indonesia ID	
Vietnam VN	Vietnam Enterprise Surveys, 2000-2015
Malaysia MY	Malaysian census data, every 5 years, 2000-2010
Korea KR	
Australia AU	Business Longitudinal Analysis Data Environment (BLADE), 2001-2015
New Zealand NZ	Longitudinal Business Database, from 1999
India IN	Prowess database, 1988-2016
Turkey TR	
China CN	Innovation Data of China, 1992-2015
Singapore SG *	Annual Census of Manufacturing Activities, 2002-2015

# PRODUCTIVITY RESEARCH NETWORK



## TIMELINE AND MILESTONES



**Thanks for your attention**

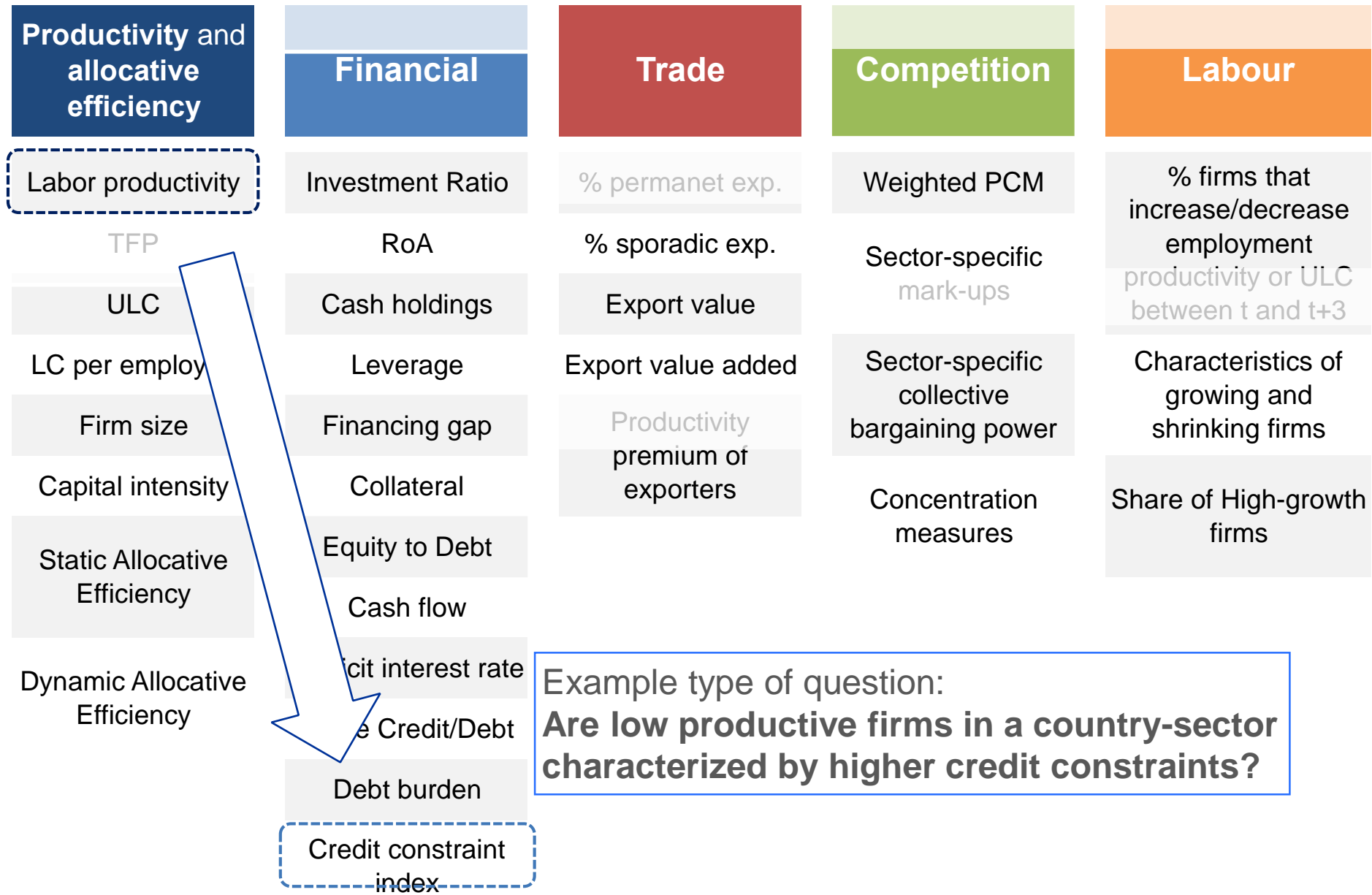
[Www.comp-net.org](http://www.comp-net.org)



# Five broad categories of variables are available...

Productivity and allocative efficiency	Financial	Trade	Competition	Labour
Labor productivity	Investment Ratio	% permanent exp.	Weighted PCM	% firms that increase/decrease employment productivity or ULC between t and t+3
TFP	RoA	% sporadic exp.	Sector-specific mark-ups	Characteristics of growing and shrinking firms
ULC	Cash holdings	Export value	Sector-specific collective bargaining power	Share of High-growth firms
LC per employee	Leverage	Export value added	Concentration measures	
Firm size	Financing gap	Productivity premium of exporters		
Capital intensity	Collateral			
Static Allocative Efficiency	Equity to Debt			
Dynamic Allocative Efficiency	Cash flow			
	Implicit interest rate			
	Trade Credit/Debt			
	Debt burden			
	Credit constraint index			

# Example of joint distributions



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