

# Manufacturing in China - Challenges

MMD Student Think Tank  
18<sup>th</sup> February 2014

Boyang Song  
MSc Engineering and Management of  
Manufacturing Systems

- I. Overview
- II. Challenges
- III. Outlook

# I. Overview

Low Labour Cost

The World Workshop

Cheap

What's Your Impression Of China Manufacturing?

Fast

Rapid Growth

The World's Largest Manufacturer

Low Labour Cost Rising

Trade Protectionism

Cheap ?

What is happening in China Manufacturing?

Fast ?

Growth Slowing

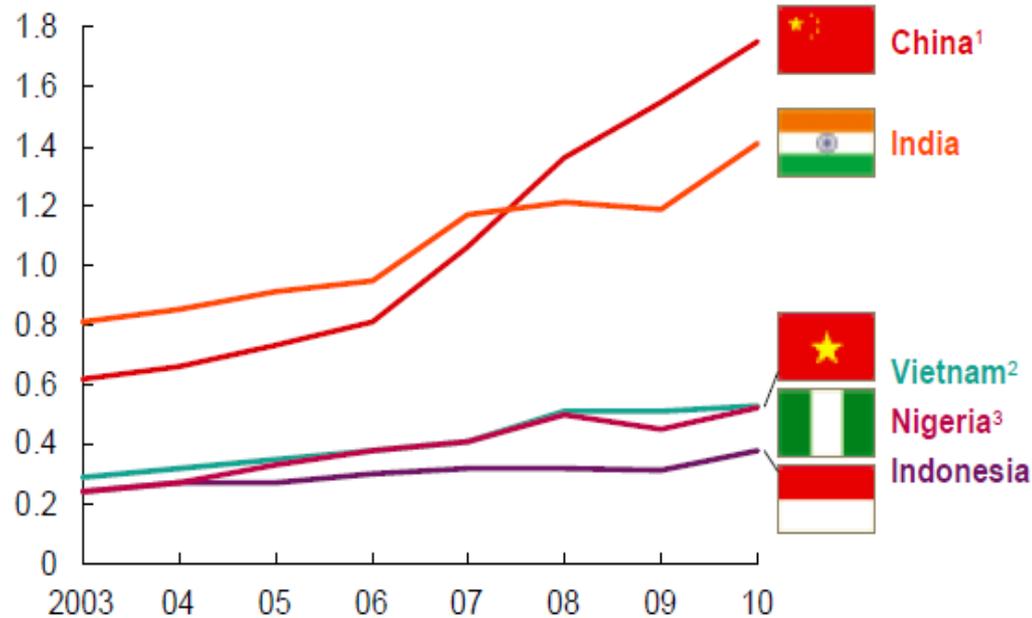
Pollutions

Key Statistics	China	World Average
Mfg GDP Compound Average Growth Rate (2005-10)	11.9%	2.9%
Mfg GDP percentage of total GDP (2010)	32.4%	18.3%
Labour cost (US\$/hour) (2011)	2.8	21.9
Mfg exports percentage of total export (2011)	93.2%	59.9%
Mfg jobs created per hundred person (2001-2010)	3.1	-0.8
Research per million population (INSEAD 2012)	1071	2980

## II. Main Challenges

# Labour cost are rising

Manufacturing labor cost per hour  
Nominal \$



Compound annual growth  
rate, 2003–10 (%)

Increase in labor cost per hour	Increase in value added per employee
---------------------------------------	--

16	14
----	----

8	17
---	----

9	9
---	---

14	15
----	----

7	12
---	----

1 2003–09.

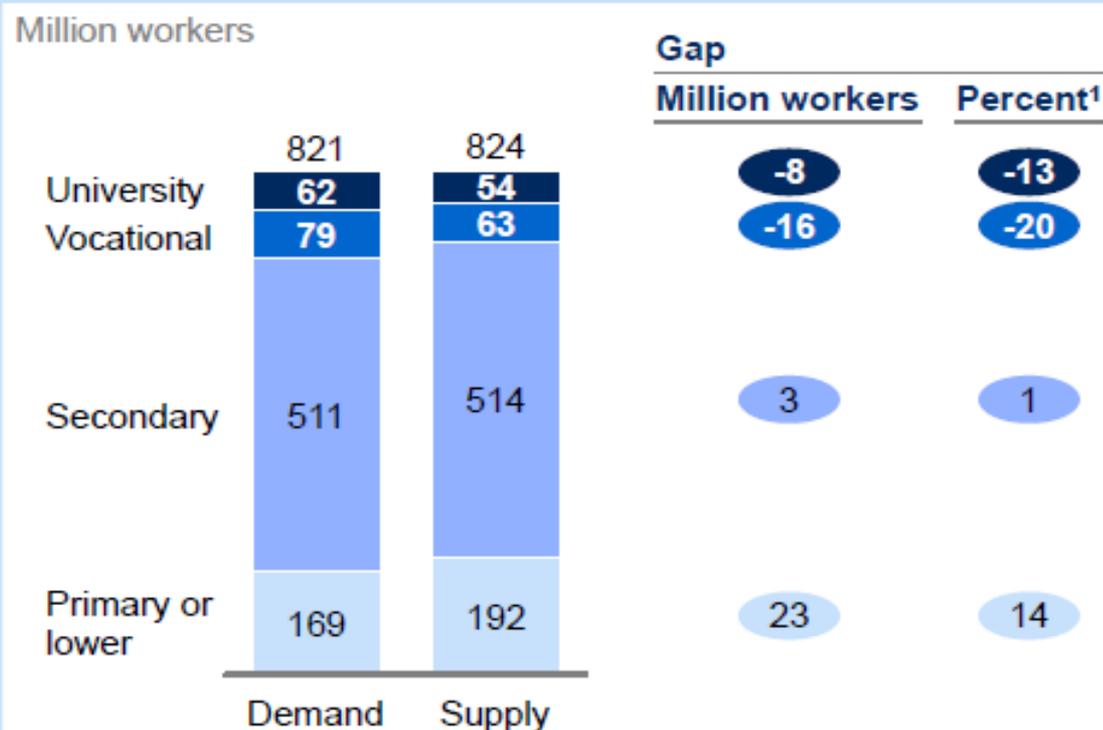
2 2005–10.

3 2003–07.

SOURCE: Economist Intelligence Unit; IHS Global Insight; country labor ministries; McKinsey Global Institute analysis

**Demand for university and vocational labor in China is expected to exceed supply by ~24 million workers in 2020**

**China labor demand and supply by education level, 2020E**



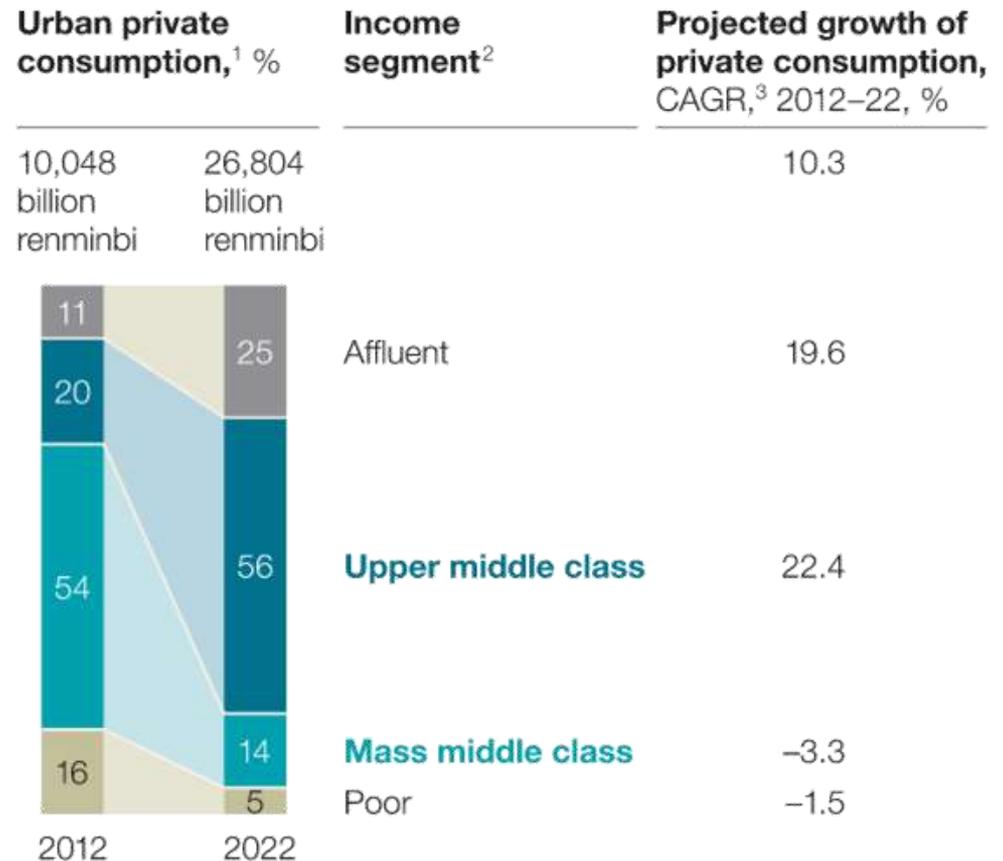
<sup>1</sup> Gaps are percent of demand for shortages, and percent of supply for surpluses

NOTE: Numbers may not sum due to rounding

SOURCE: China National Bureau of Statistics; McKinsey Global Institute analysis

# Shifting and fragmenting demand

- The 'middle-class' is growing
- Purchasing power is raising
- Demand **innovative** product
- Request more new products and services



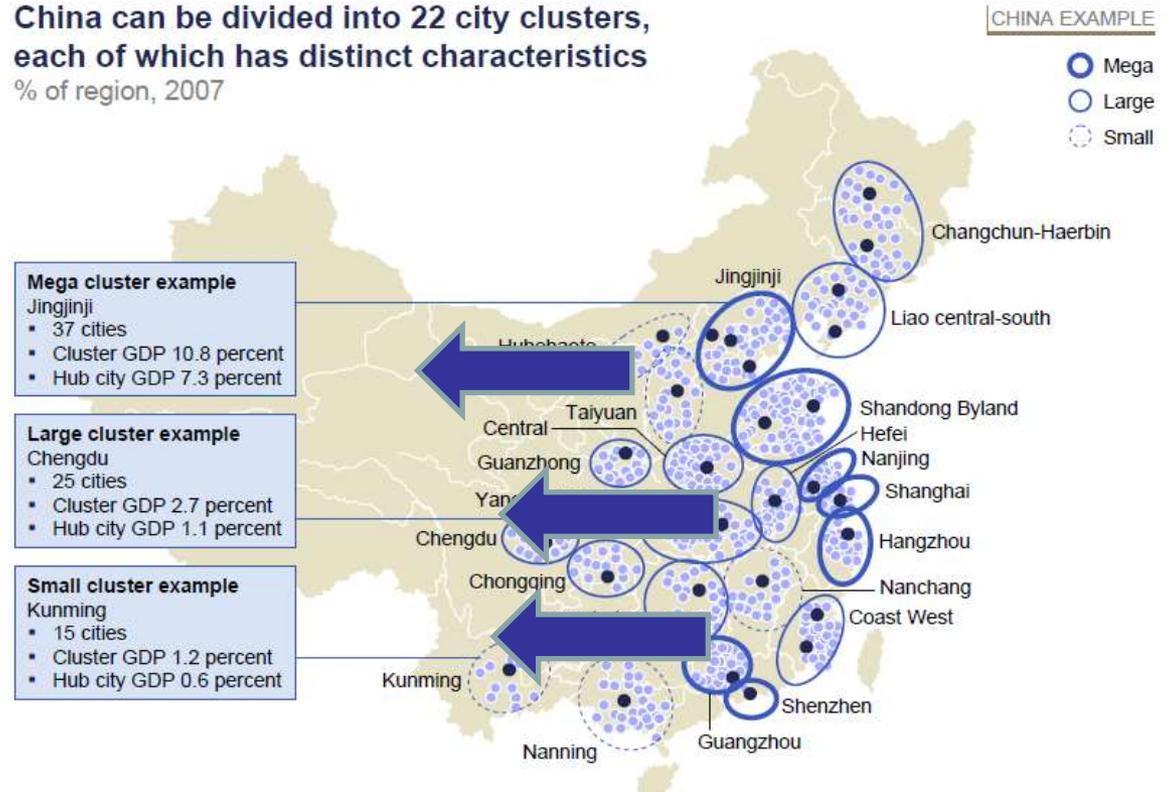
# Rising supply chain complexity

Urbanization is going west

Greater consumption in Tier 3, Tier 4 cities

Demanding consumer

China can be divided into 22 city clusters, each of which has distinct characteristics  
% of region, 2007



SOURCE: McKinsey Insights China; McKinsey Global Institute analysis

# Other challenges

Energy and environment

Intellectual property protection

Currency control

...

# III. Outlook

- Achieve manufacturing excellence
- Look upstream: develop R&D pipelines
- Growing Talent for Innovation
- Turn Green, clean and sustainable

# The 7 strategic industries

- Energy saving and environmental protection (clean energy technology)
- Next generation IT (modernization of the country's telecommunications infrastructure)
- Bio-technology (pharma and vaccine manufacturers)
- High end equipment (aerospace, satellites, manufacturing technology)
- New energy (nuclear, wind, solar)
- New materials (rare earths)
- New energy vehicles (electric and hybrid cars, batteries)

Thank  
You/

Boyang Song  
MSc Engineering and Management  
Of Manufacturing Systems

Cranfield University  
b.song@cranfield.ac.uk

# References

Accenture, 2011. Wage Increases in China. [Online]

Available at: [http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture\\_Wage\\_Increases\\_in\\_China.pdf](http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture_Wage_Increases_in_China.pdf)  
[Accessed 2 2014].

Boston Consulting Group, Knowledge@Wharton, 2013. New Challenges: for 'Made in China'. [Online]

Available at: <http://knowledge.wharton.upenn.edu>  
[Accessed 2 2014].

Deloitte Development LLC, 2013. Business Trends 2013. [Online]

Available at: [www.deloitte.com/us/bustrends2013](http://www.deloitte.com/us/bustrends2013)  
[Accessed 2 2014].

Ernst & Young, 2012. China's productivity imperative. [Online]

Available at: [www.ey.com/growingbeyond](http://www.ey.com/growingbeyond)  
[Accessed 2014].

EYGM Limited, 2013. China in transition: Insights for global companies. [Online]

Available at:  
[http://www.ey.com/Publication/vwLUAssets/China\\_in\\_transition:\\_insights\\_for\\_global\\_companies/\\$FILE/China\\_in\\_transition-Insights\\_for\\_globa\\_lcompanies.pdf](http://www.ey.com/Publication/vwLUAssets/China_in_transition:_insights_for_global_companies/$FILE/China_in_transition-Insights_for_globa_lcompanies.pdf)  
[Accessed 2 2014].

Karel Eloit, A. H. M. L., 2013. A new era for manufacturing in China. [Online]

Available at: <http://www.mckinsey.com/insights>  
[Accessed 2 2014].

Li-Kai Chen, M. M. A. G., 2013. The \$250 billion question: Can China close the skills gap?. [Online]

Available at: <http://mckinseyonsociety.com/can-china-close-the-skills-gap/>  
[Accessed 2 2014].

McKinsey Global Institute, 2012. Manufacturing in the future: The next era of global growth and innovation. [Online]

Available at:  
[http://www.mckinsey.com/~/\\_media/McKinsey/dotcom/Insights%20and%20pubs/MGI/Research/Productivity%20Competitiveness%20and%20Growth/The%20Future%20of%20Manufacturing/MGI\\_%20Manufacturing\\_Full%20report\\_Nov%202012.ashx](http://www.mckinsey.com/~/_media/McKinsey/dotcom/Insights%20and%20pubs/MGI/Research/Productivity%20Competitiveness%20and%20Growth/The%20Future%20of%20Manufacturing/MGI_%20Manufacturing_Full%20report_Nov%202012.ashx)  
[Accessed 9 2 2014].