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# Global Macro Trends: Today & Tomorrow

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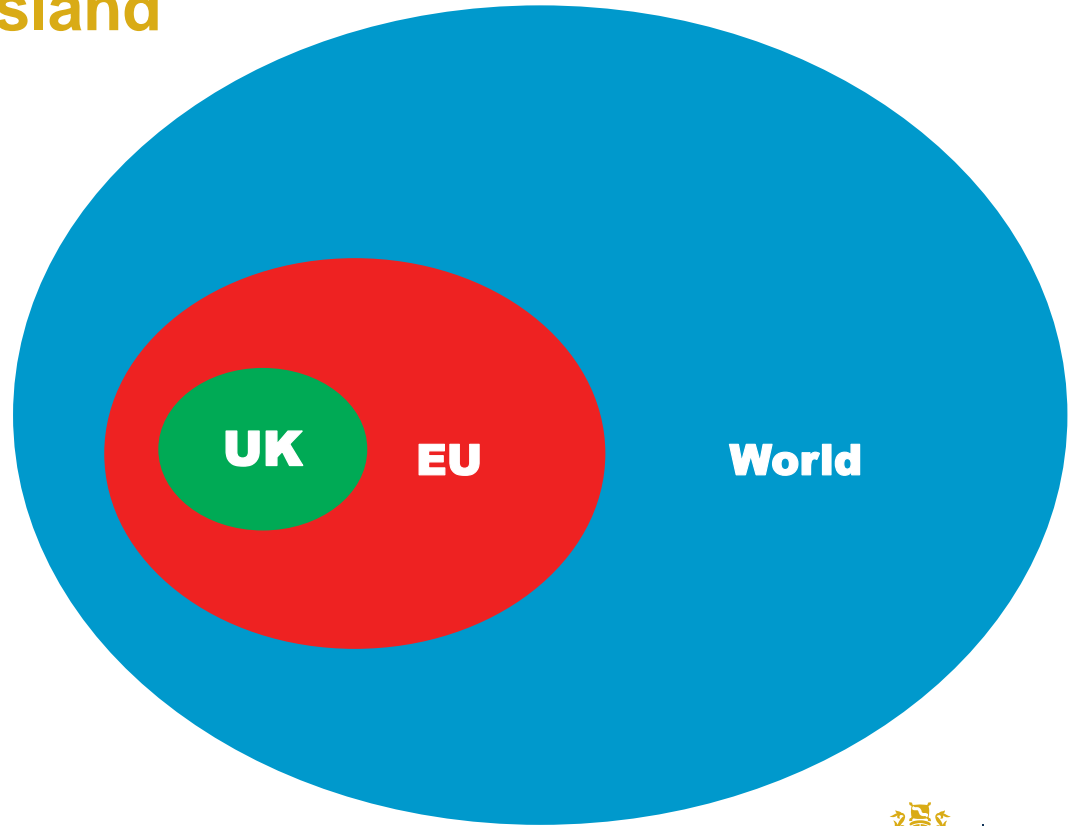
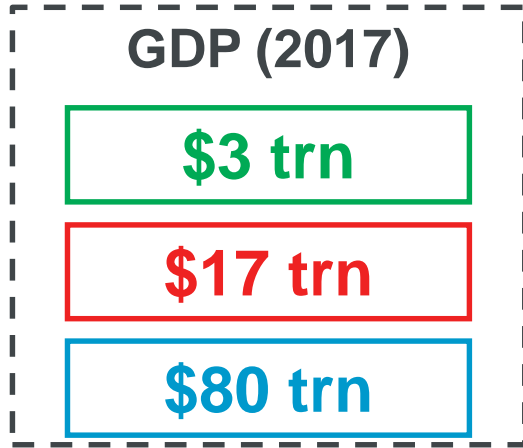


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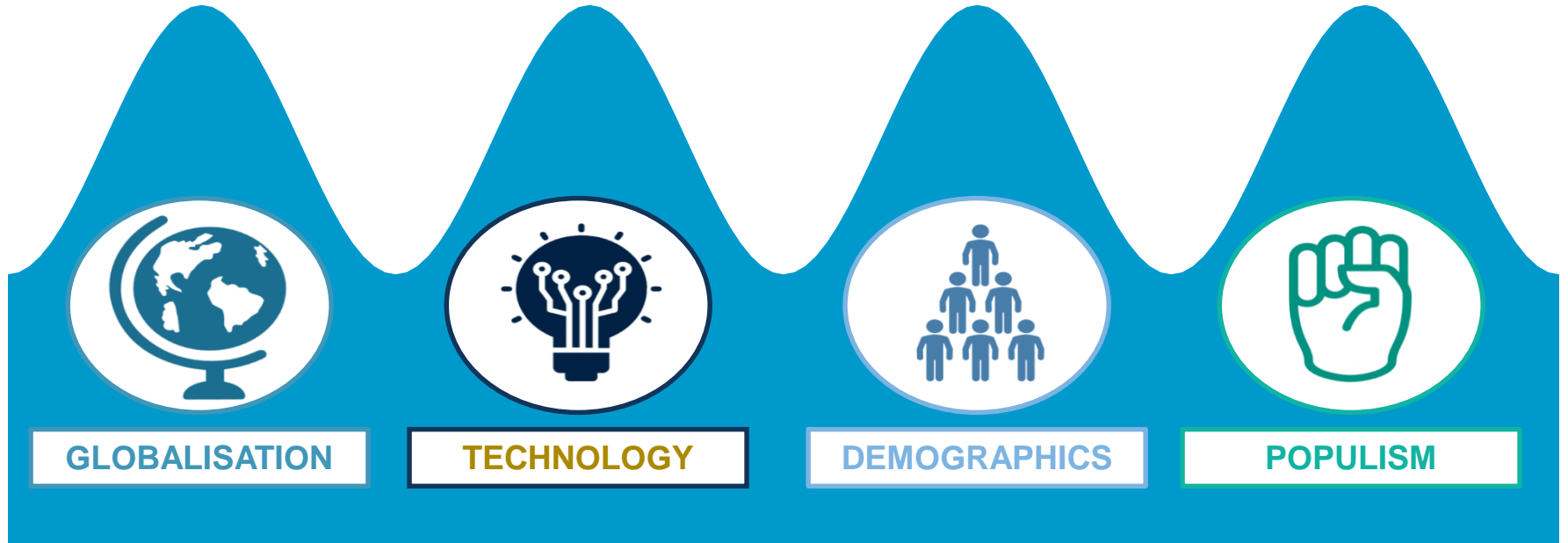
# Global Macro Trends: Today & Tomorrow

Globalisation, Technology, Demographics, Populism

# Notes from a Small Island



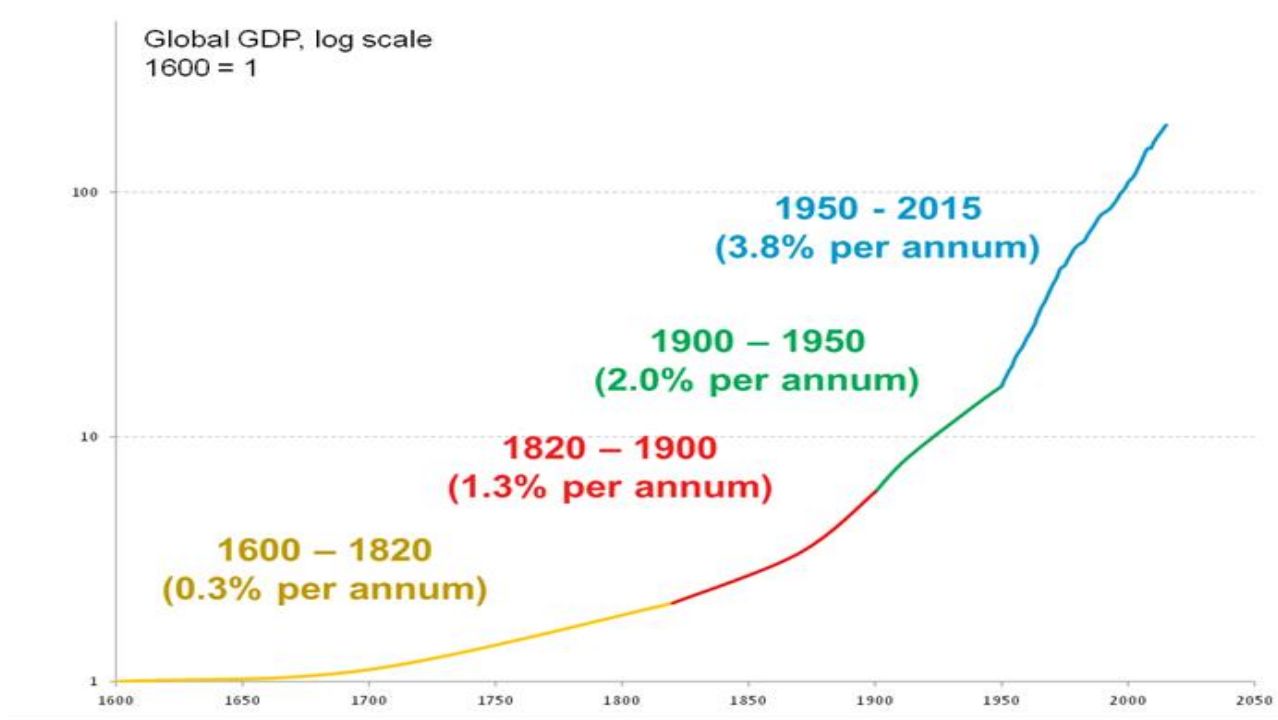
# The impact of four waves



# Global growth... we've never had it so good?



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# Driven by specialisation and trade

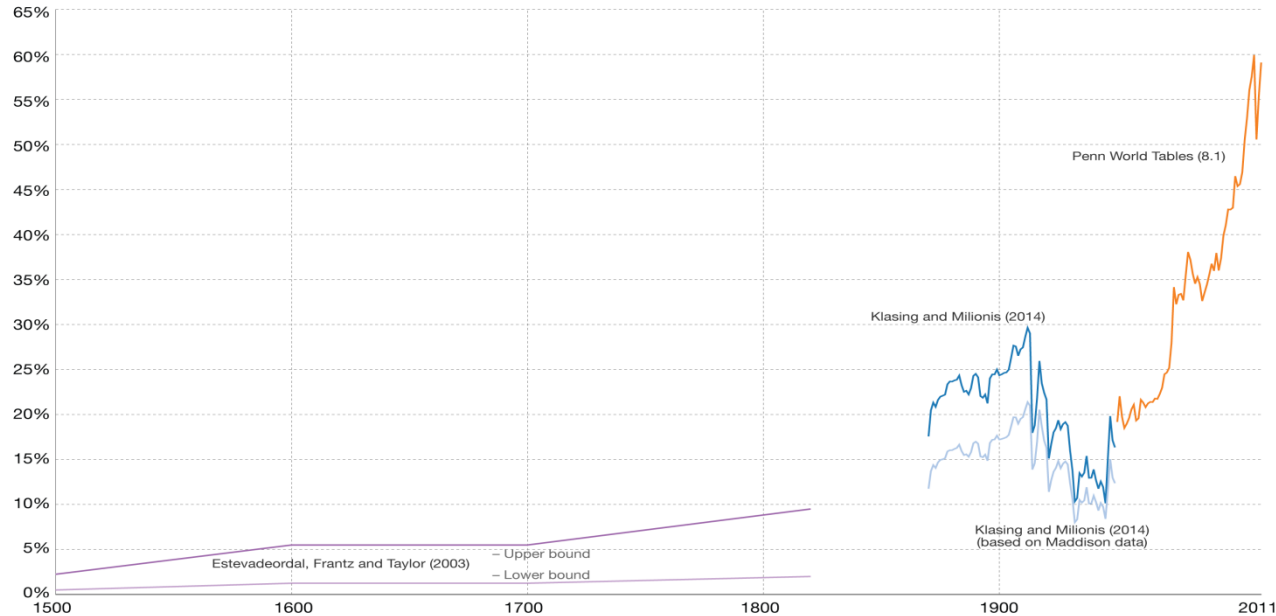


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Our World  
in Data

## Globalization over 5 centuries (1500-2011)

Shown is the sum of world exports and imports as a share of world GDP (%)  
The individual series are labeled with the source of the data



Data sources: Klasing and Milionis (2014), Estevadeordal, Frantz and Taylor (2003) and the Penn World Tables Version 8.1  
The interactive data visualization is available at [OurWorldinData.org](https://ourworldindata.org). There you find the raw data and more visualizations on this topic.

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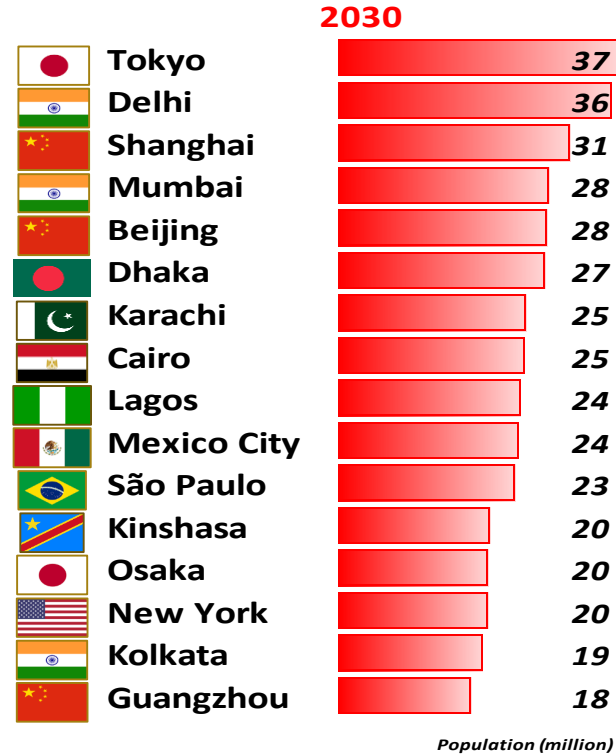
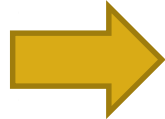
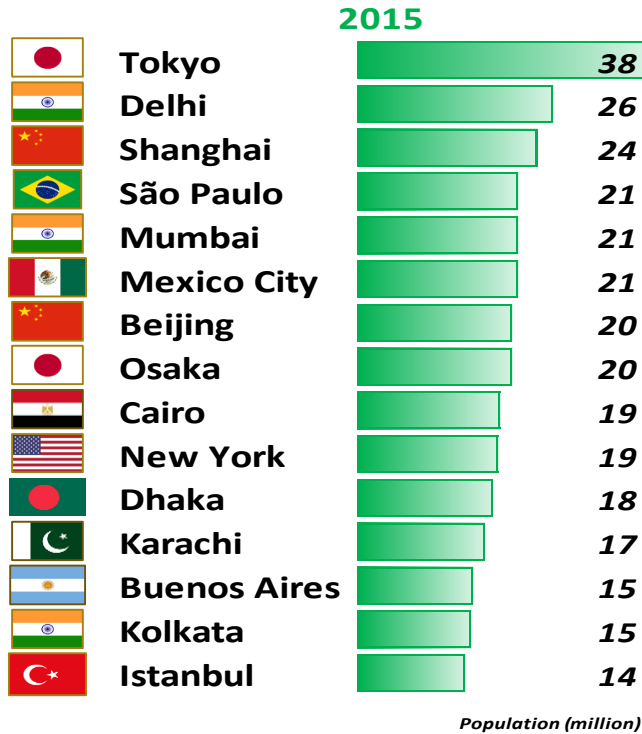


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# Globalisation and urbanisation



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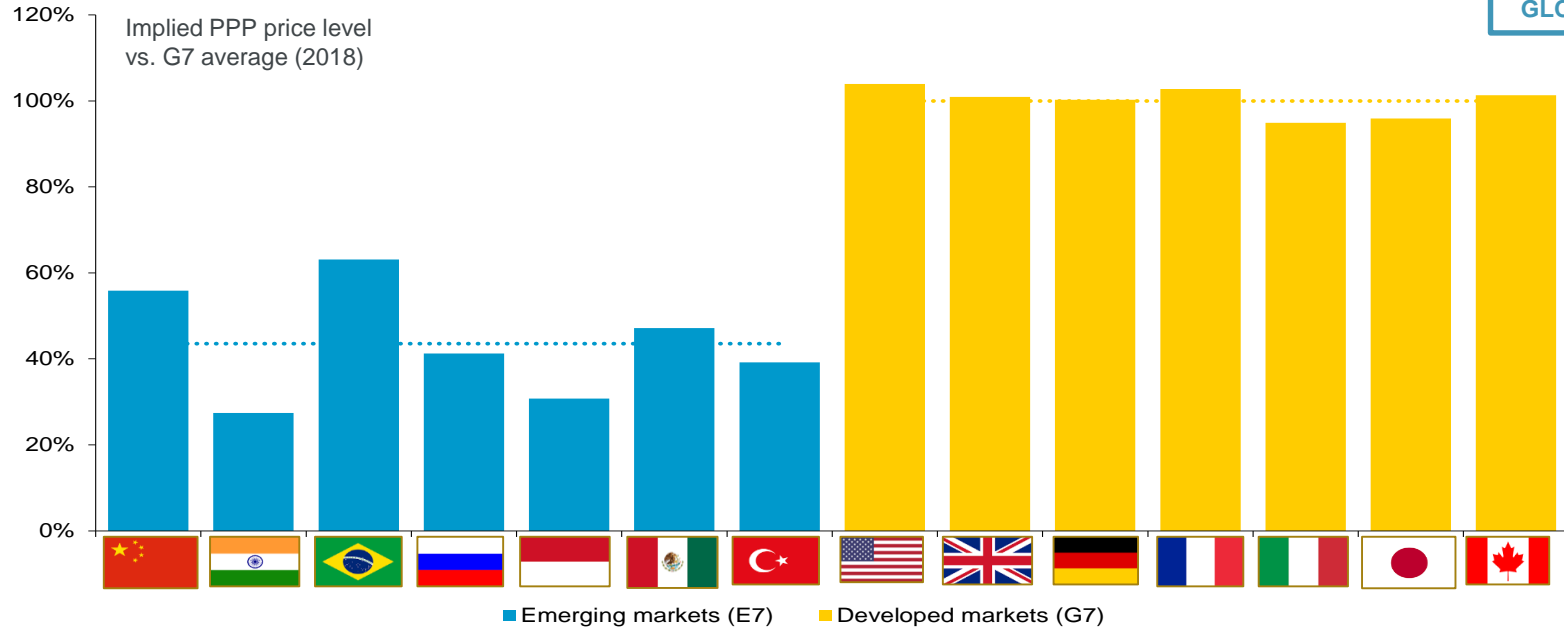


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# The cost advantage in emerging markets is hard to ignore



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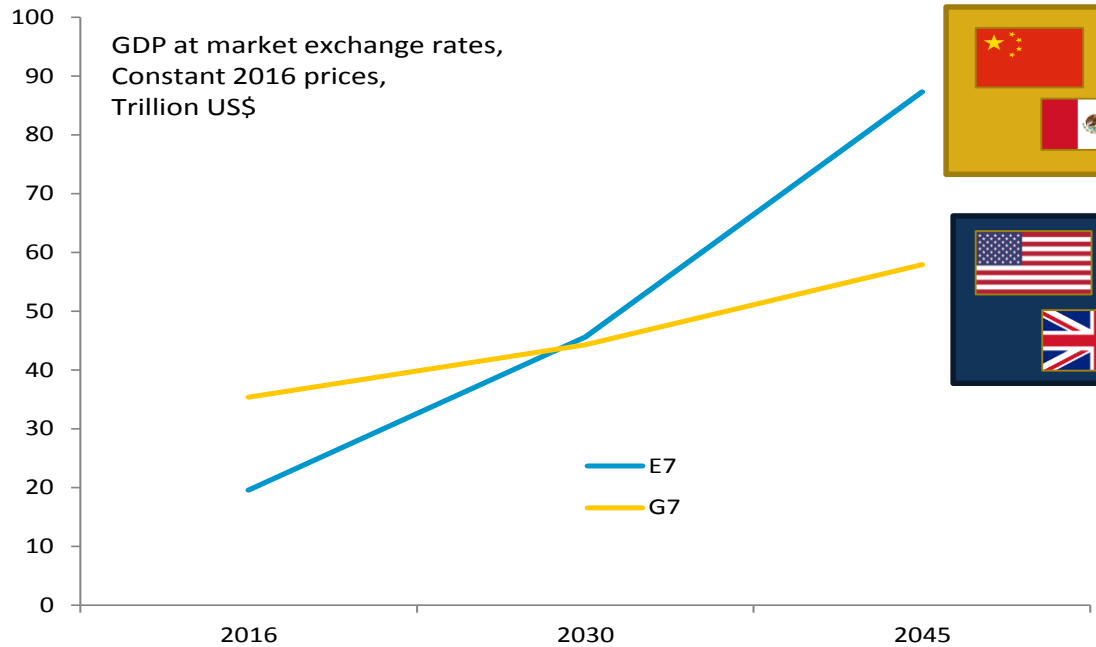


# Catch-up of emerging markets



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The future's bright ... the future's emerging



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# Energy... a scarce resource or a technology?



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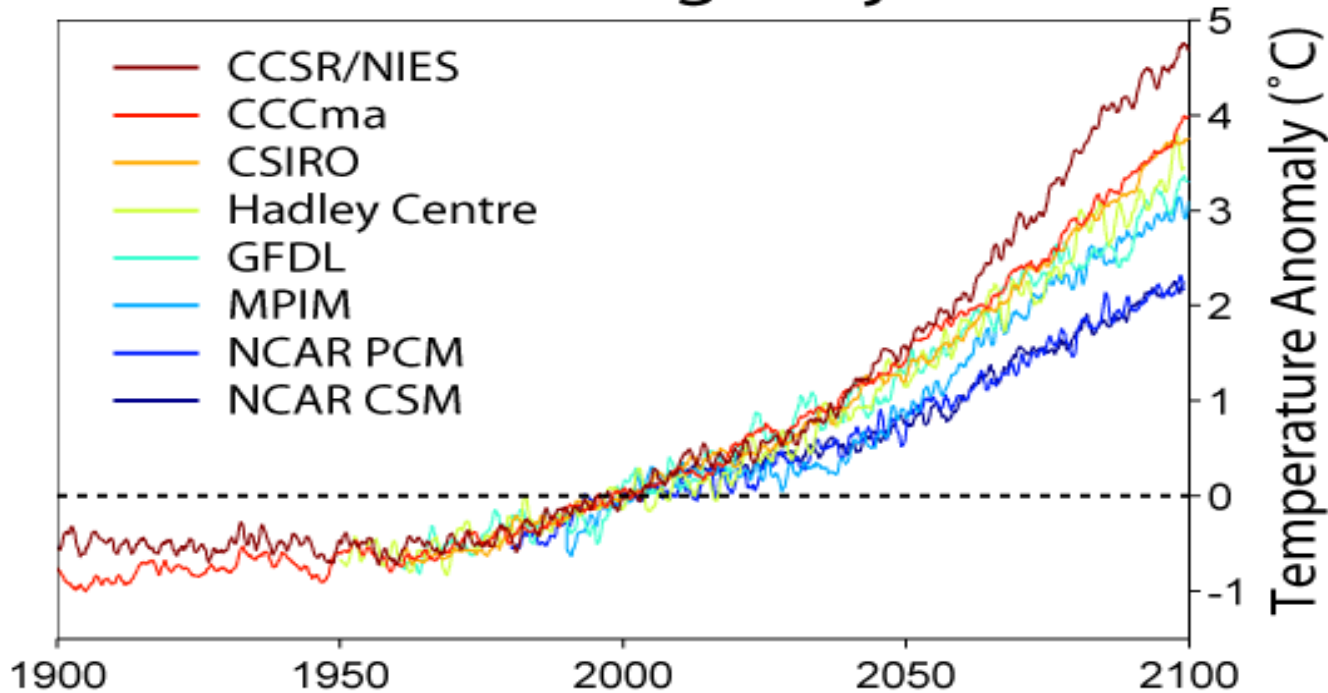


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# Global warming...

Massive changes needed to limit global temperature rise

## Global Warming Projections



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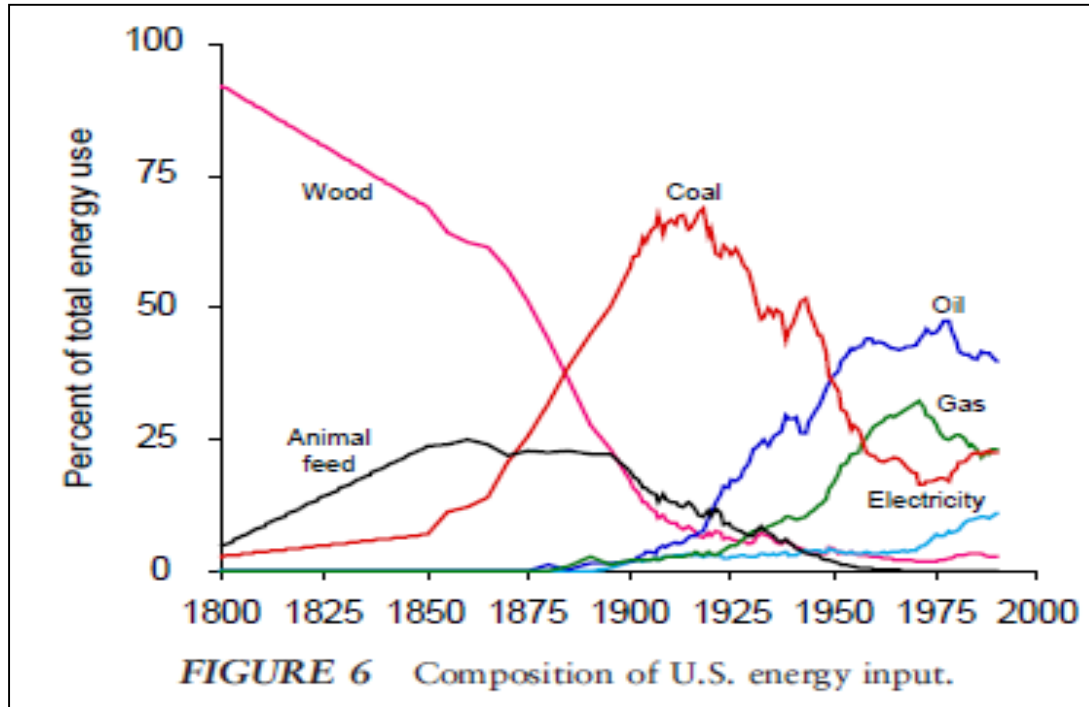
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# Energy mix revolution...

Has been done before...coal, wood, animals



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# Solar and battery prices

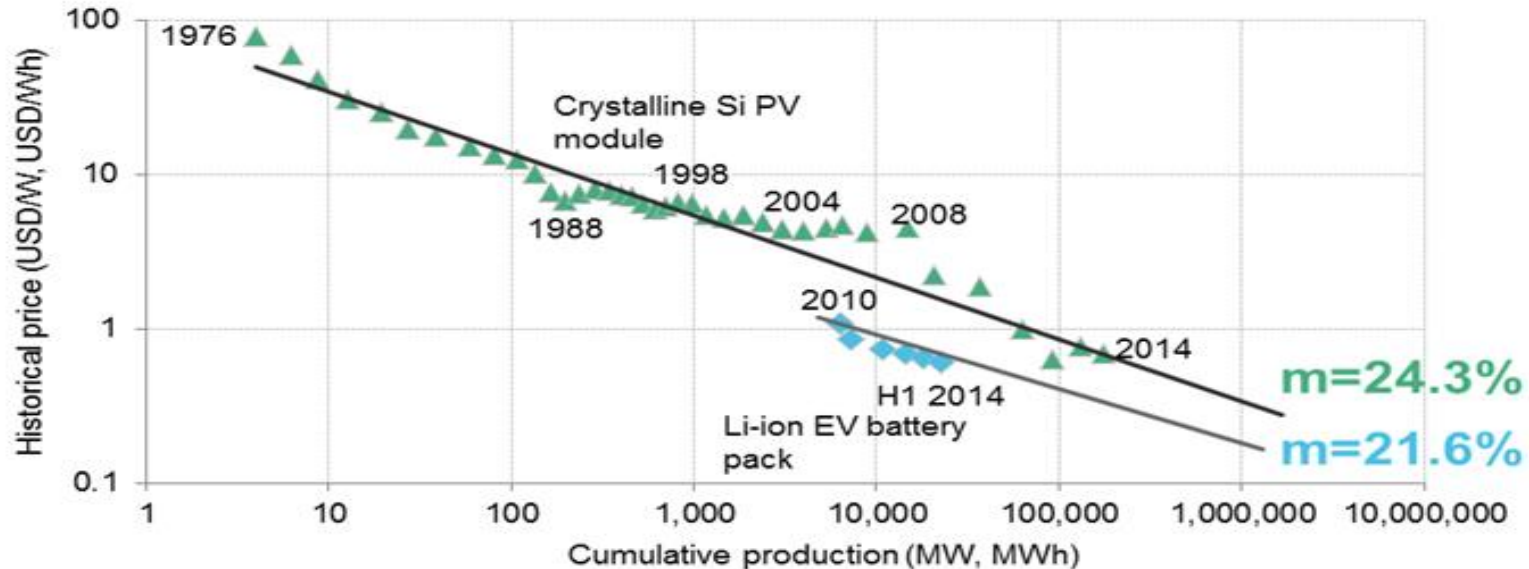
Trend decline in prices due to technological improvement



## LITHIUM-ION EV BATTERY EXPERIENCE CURVE COMPARED WITH SOLAR PV EXPERIENCE CURVE

Bloomberg  
NEW ENERGY FINANCE

TECHNOLOGY



Note: Prices are in real (2014) USD.

Source: Bloomberg New Energy Finance, Maycock, Battery University, MIT

Michael Liebreich, New York, 14 April 2015

@MLiebreich

#BNEFSummit

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# Battery technology

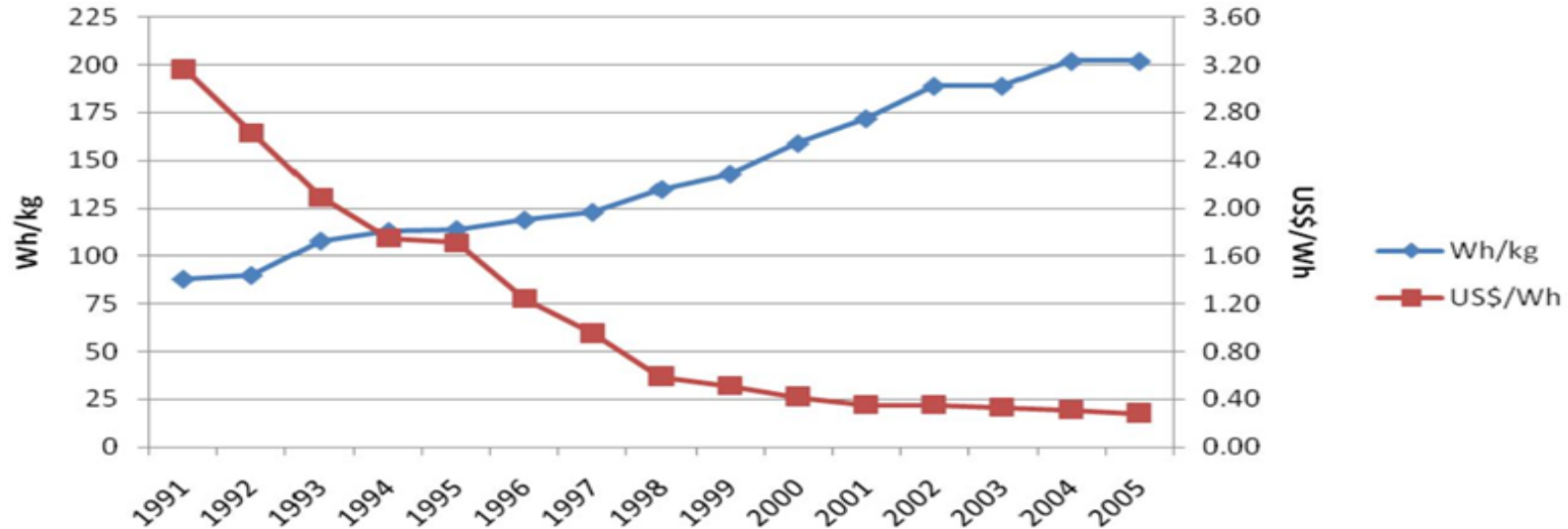
Inverse relationship between density and price



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## Li-Ion Pricing and Energy Density, 1991-2005

Adapted from Buchman (2005)



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# Other technology prices falling too

Collapse in data storage -> big data -> AI-> autonomous driving



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An IBM 14-in HDD from the early 1980s next to today's highest capacity 3.5-in HDD. The 14-in HDD holds 200MB; the 3.5-in HDD from Western Digital holds 10TB of data or more than 50,000 times the amount of data.



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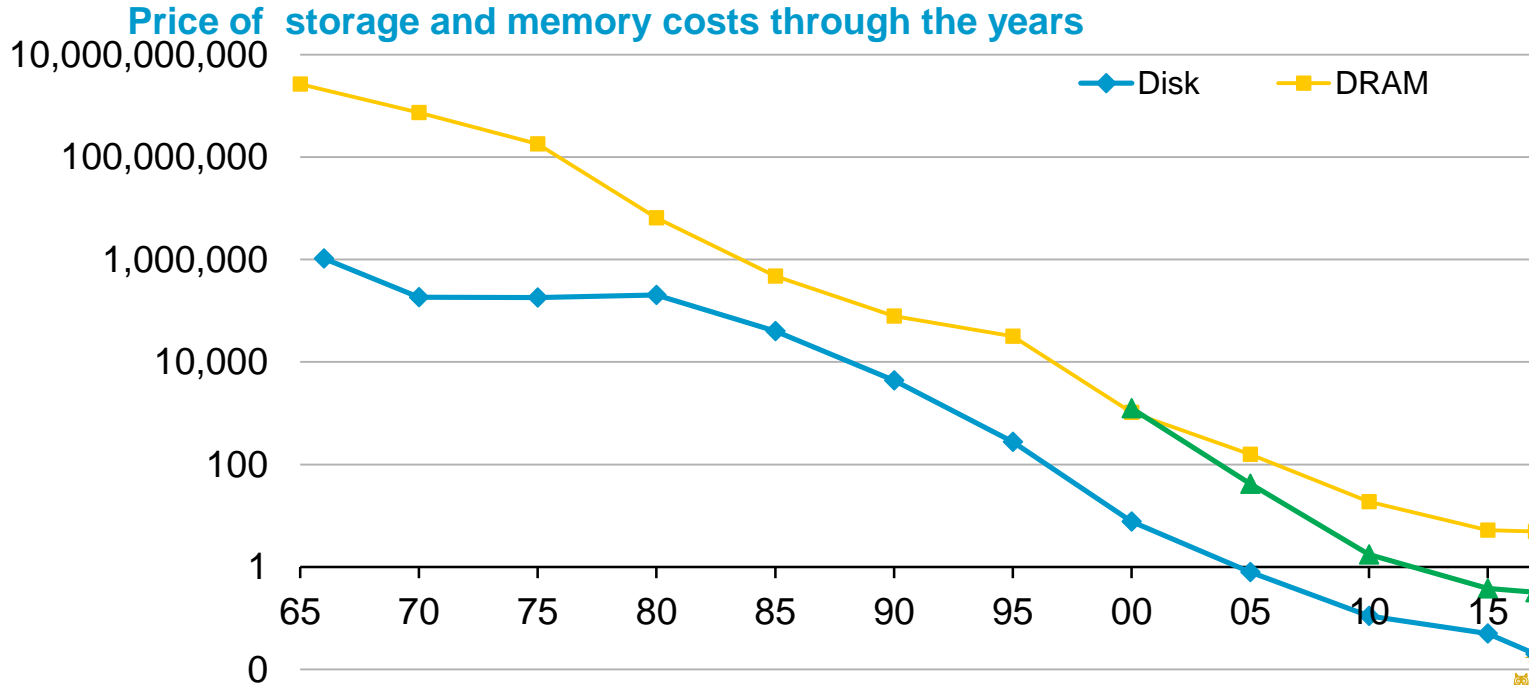
# Disruption from falling data storage prices

Will the robots destroy all the jobs?

( Nand Flash = SD card, DRAM = computer memory )



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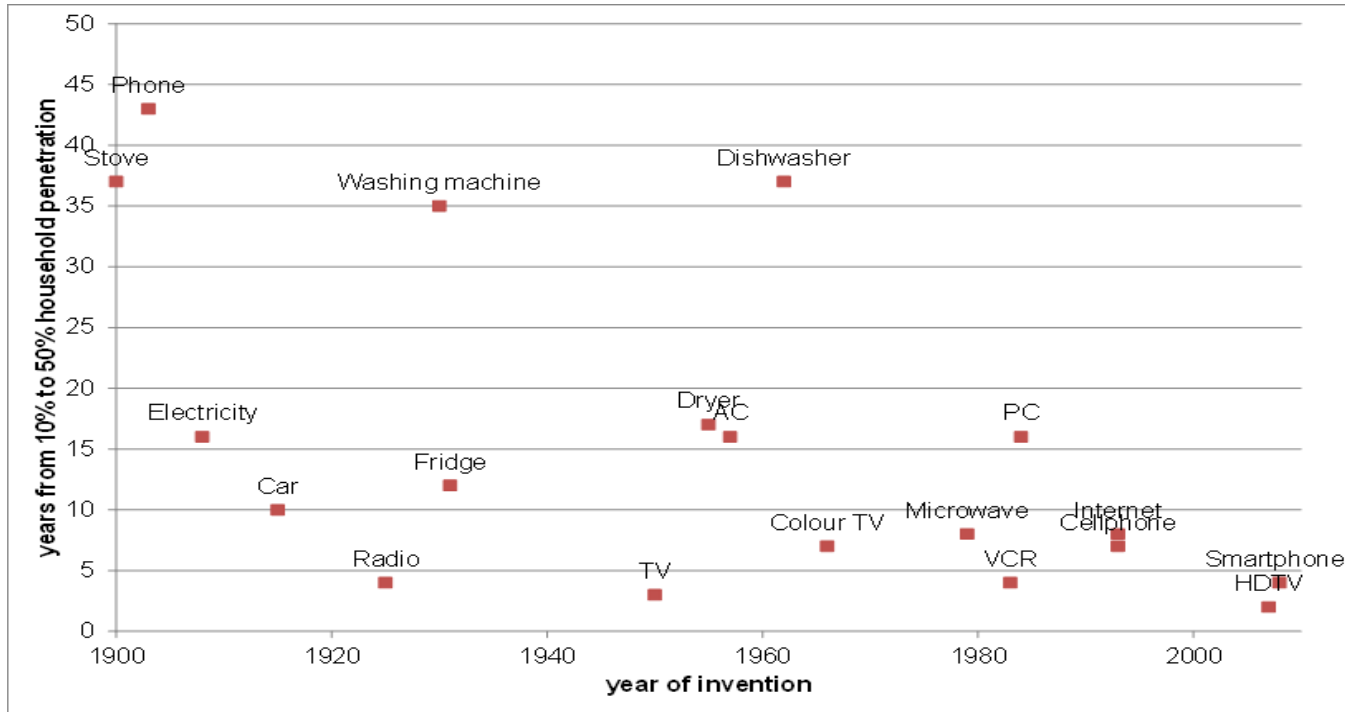


# Disruption is happening quicker?

Smartphone 4 years, computer 16 years, phone 43 years



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# Don't underestimate the potential for technological change



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“The telephone has too many shortcomings to be seriously considered a means of communication”

**William Orton, Western Union President, 1876**

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“There is a world market for maybe five computers”

**Thomas Watson, IBM Chairman, 1943**

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“There's no chance that the iPhone is going to get any significant market share”

**Steve Ballmer, Microsoft CEO, 2007**

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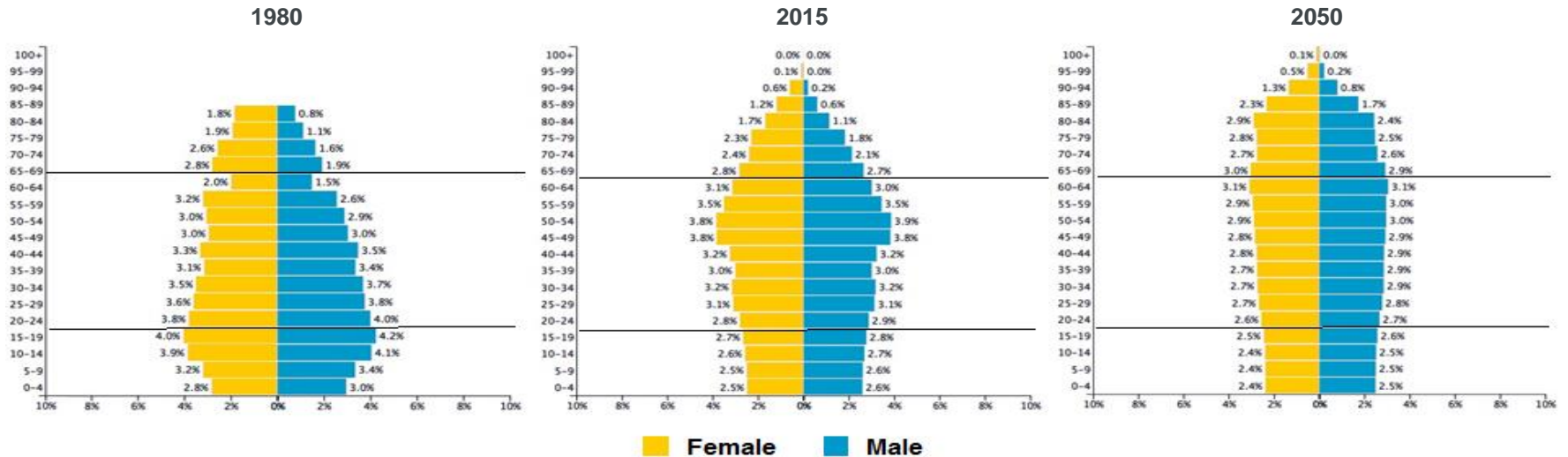
# Demographics – Population Pyramid Scheme

Running out of workers!



DEMOGRAPHICS

## Western Europe Population Pyramids



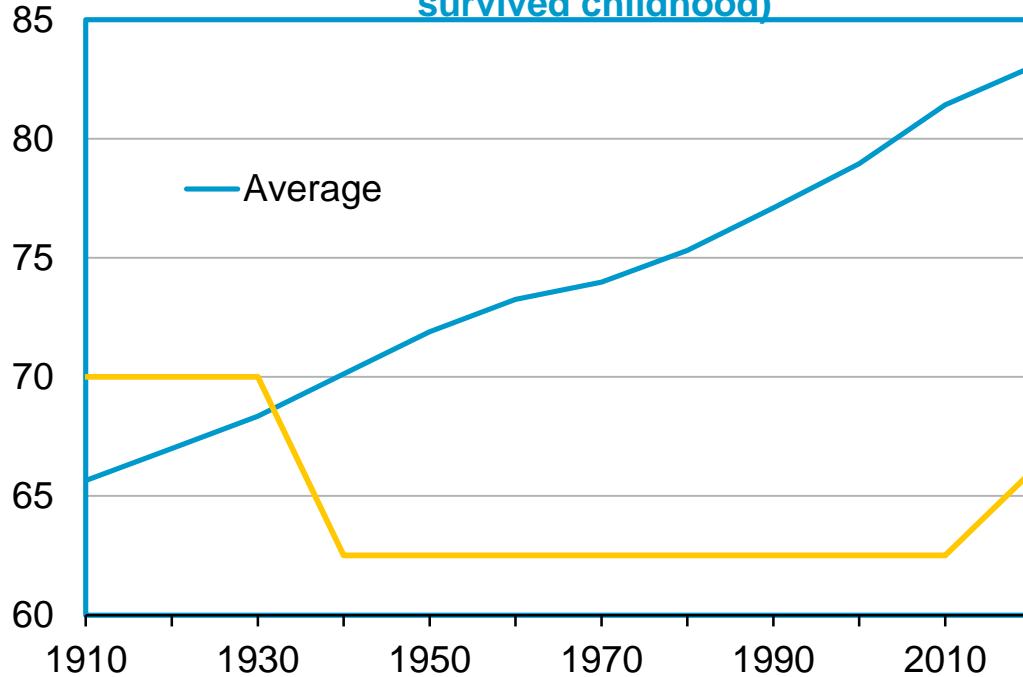
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# Population Pyramid Scheme – Rising life expectancy



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Average life expectancy of a 20-year old (i.e. survived childhood)



- In 1908, life expectancy was BELOW pension age
- In 1940s, the gap was 7 years
- Today, the gap is 17 years



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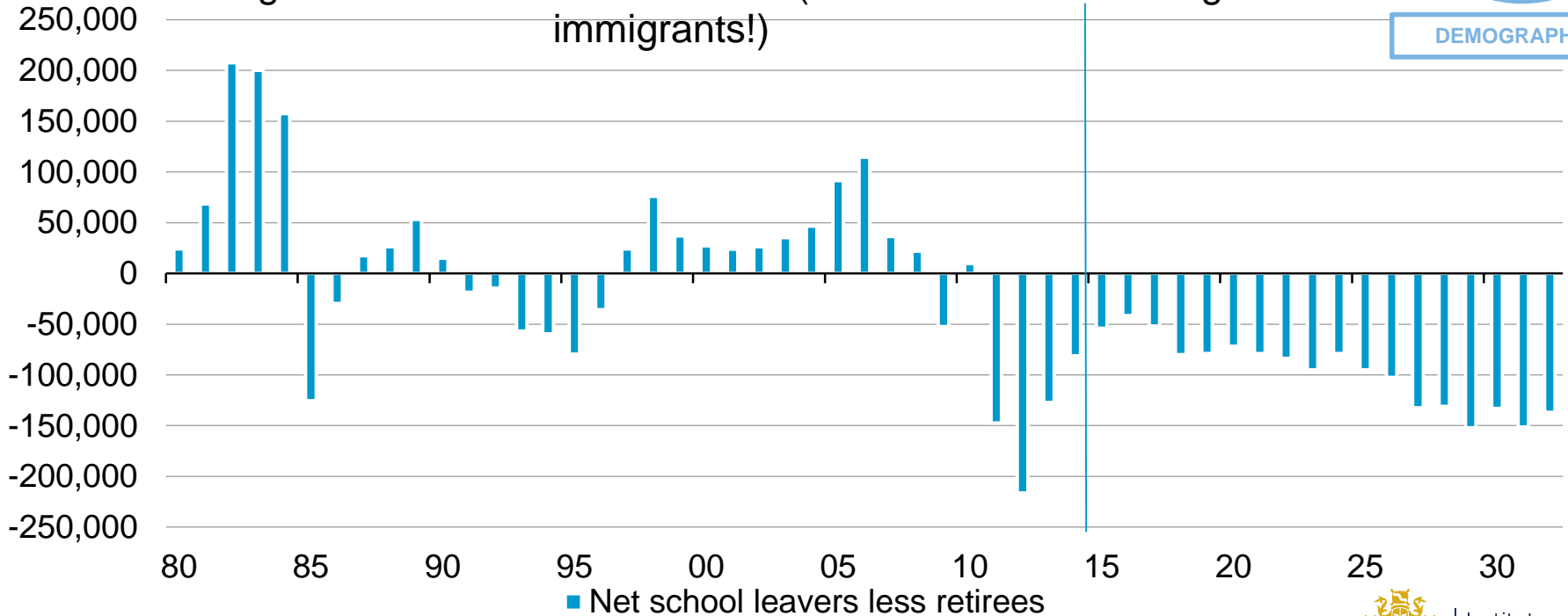
# More retirees than school leavers!

Net effect = shrinking domestic born workforce

Net change in domestic-born workforce (nb this excludes retiring immigrants!)



DEMOGRAPHICS



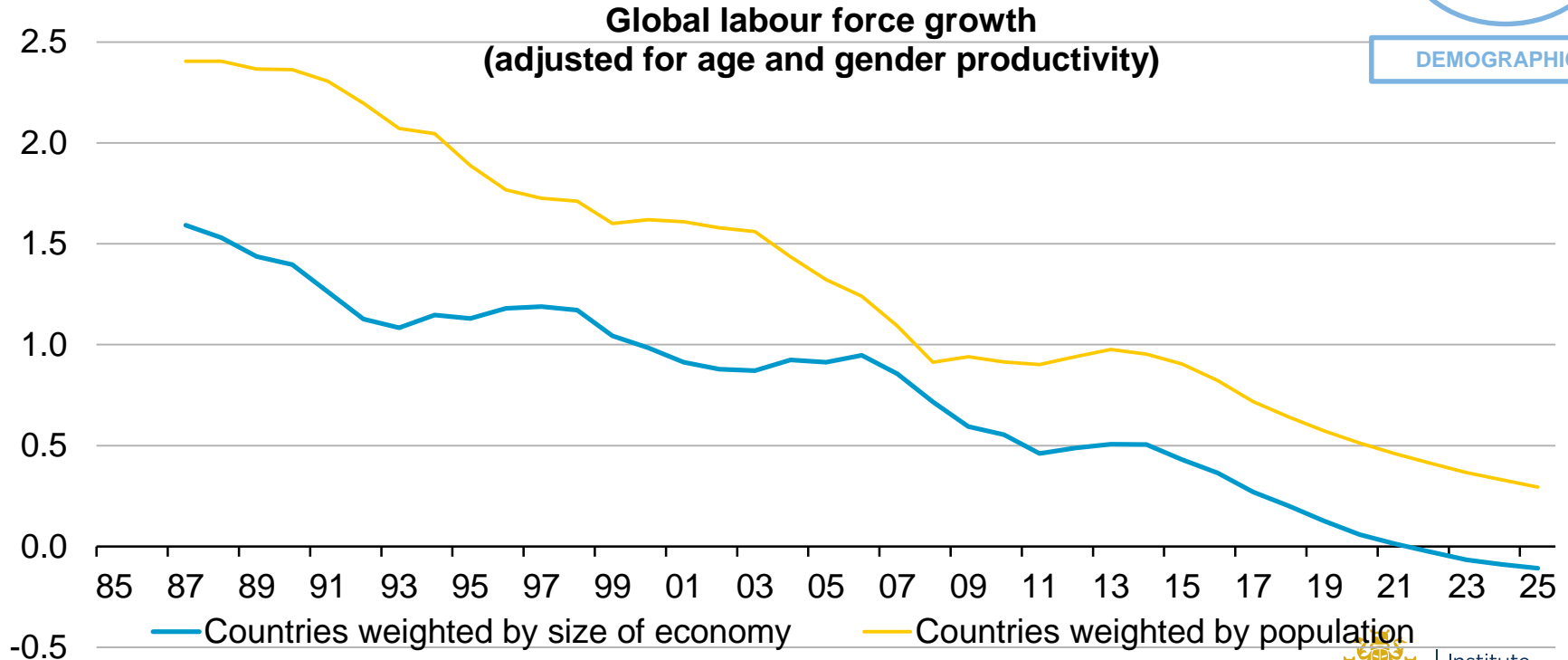
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# UK story the same globally...

Global labour force slowing



DEMOGRAPHICS



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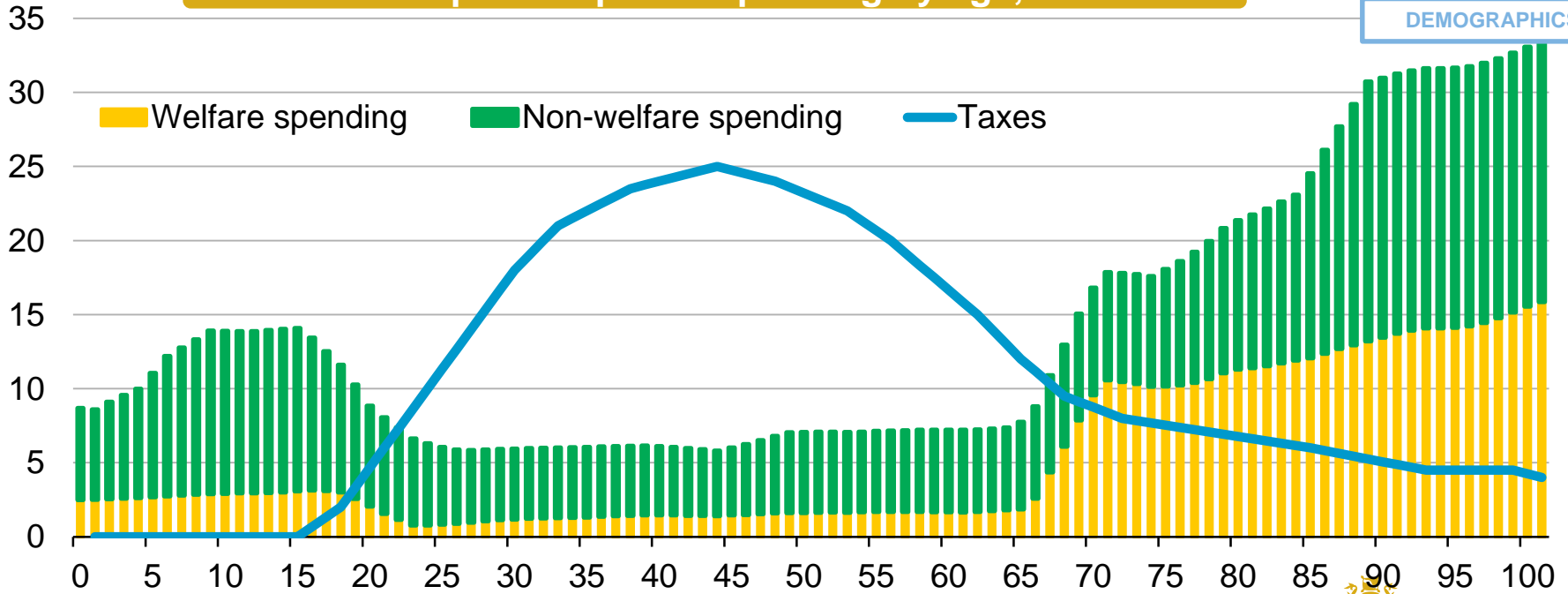
# Tax and spend

Middle-aged taxpayers fund children and pensioners



**Tax receipts and public spending by age, £000s**

DEMOGRAPHICS



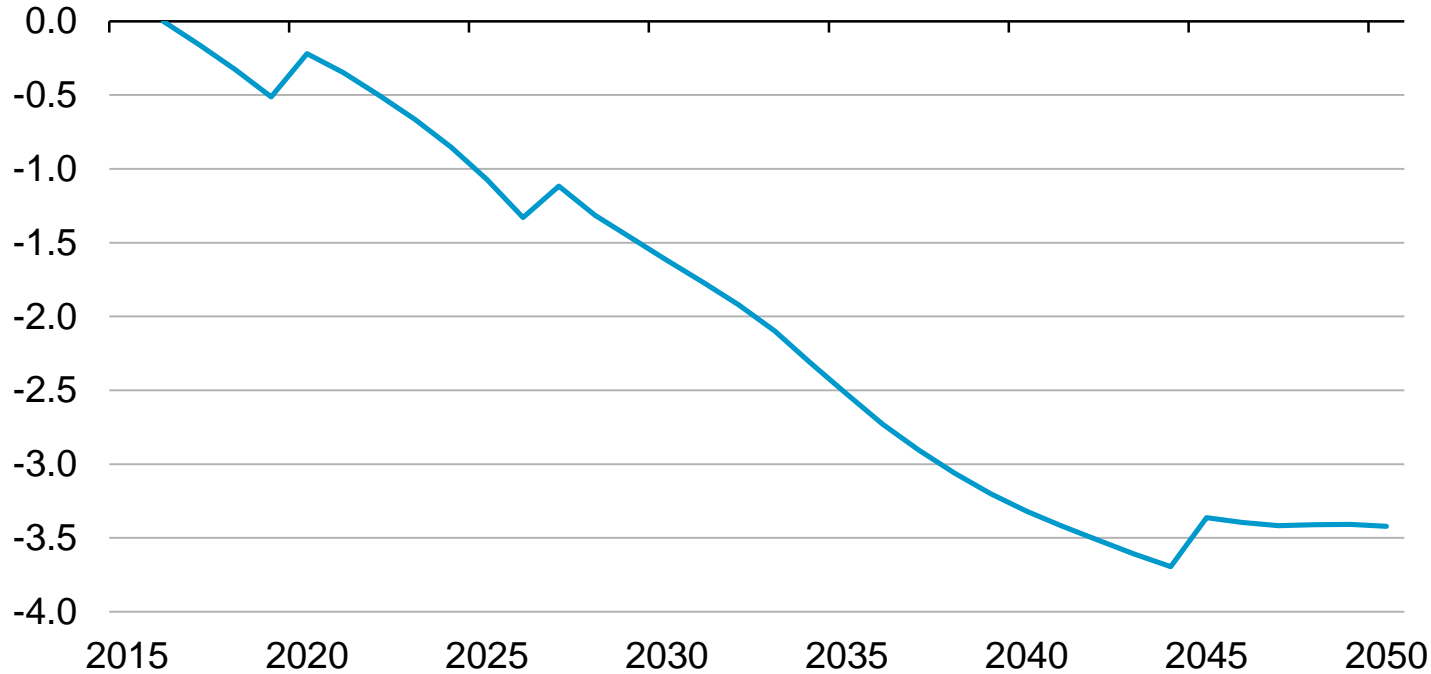
# Public finances under pressure

Lower taxes and higher health/pension costs to boost deficit



DEMOGRAPHICS

## Cumulative impact on public finances (% of GDP) from ageing



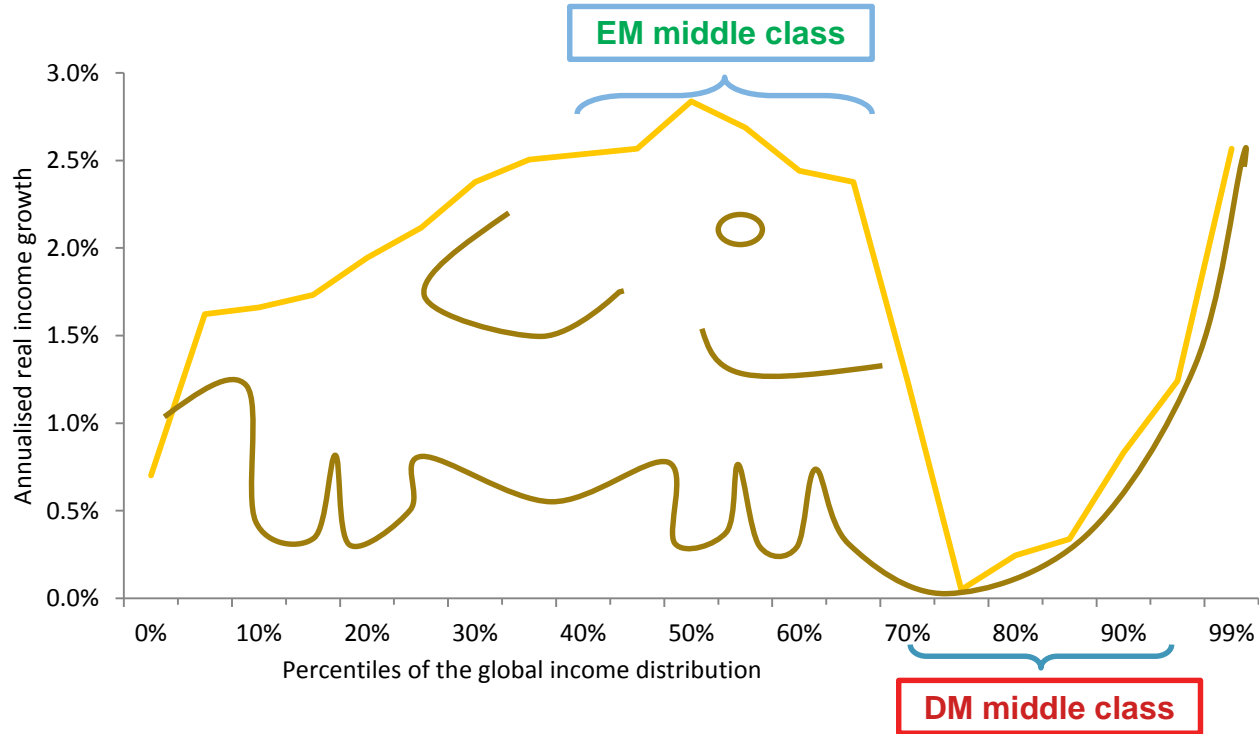


# Global inequality has fallen due to rise of China

But developed market middle class has suffered



POPULISM

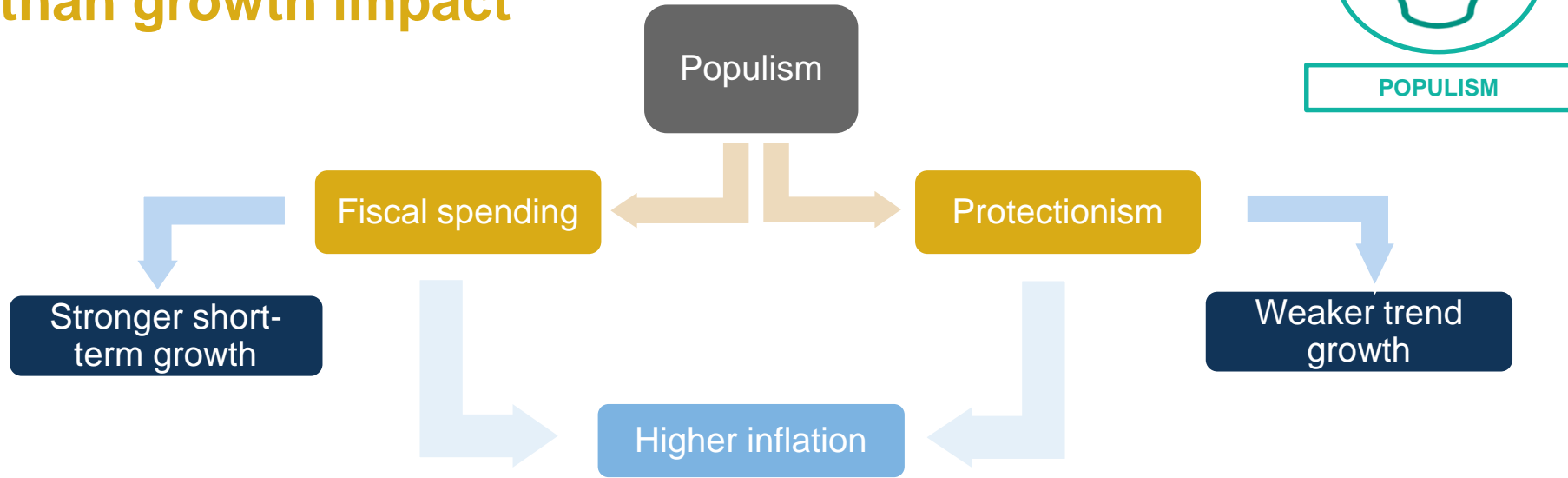


The global "elite"



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# Inflation impact of populist shift clearer than growth impact



POPULISM

**“An ideology that pits a virtuous and homogeneous people against a set of elites and dangerous ‘others’ who are together depicted as depriving (or attempting to deprive) the sovereign people of their rights, values, prosperity, identity, and voice”**

Albertazzi & Duncan (2008), Twenty-First Century Populism



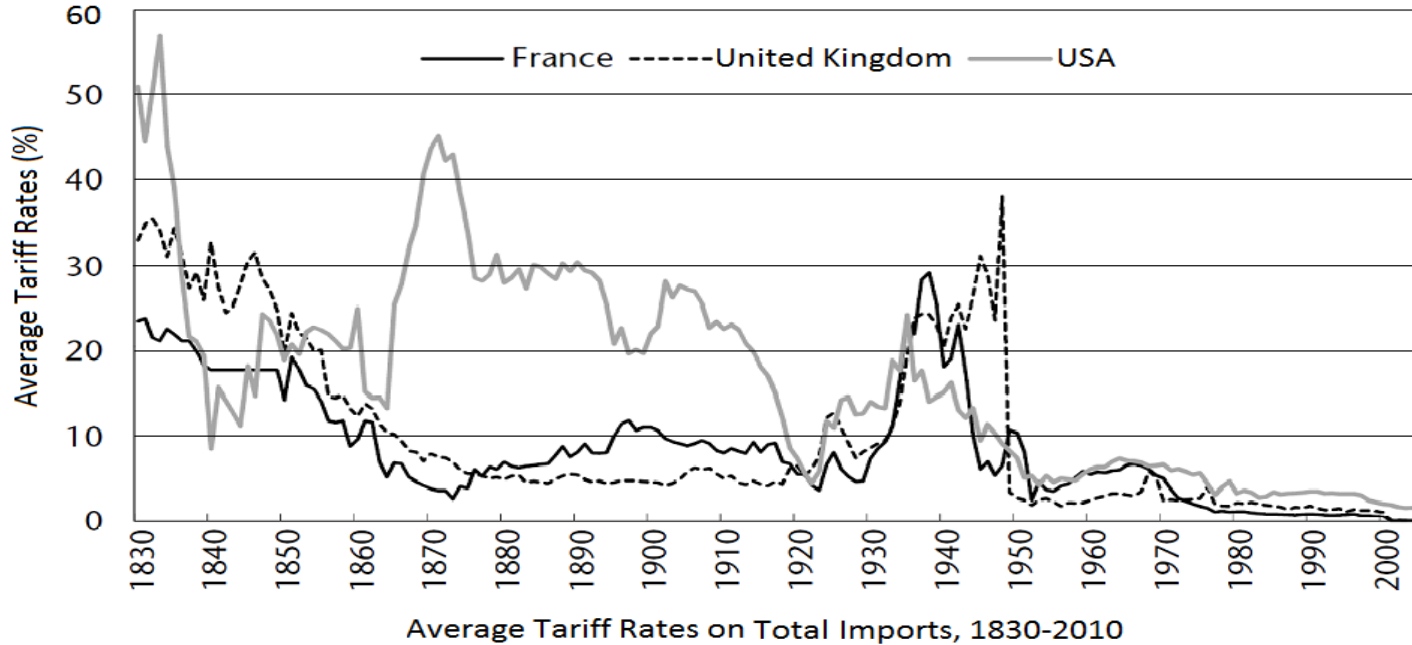
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# Trade war?

US often raised tariffs... but 1930s was first time we saw retaliation



POPULISM



Sources: Imlah, Economic Elements



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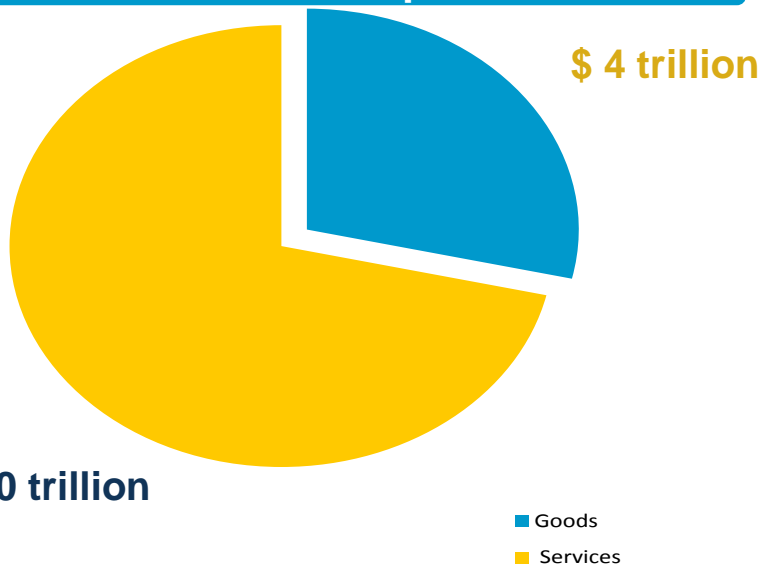
# Trade war?

Let's keep it in context

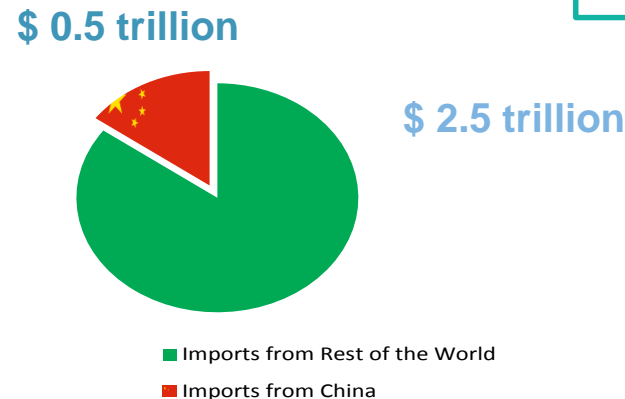


POPULISM

## US consumption



## US imports



- 10% tariff on all Chinese imports is still only an average tariff of 1.7%
- CPI impact of tariffs is small but noticeable...
- Tariffs so far amount to ¼% of GDP

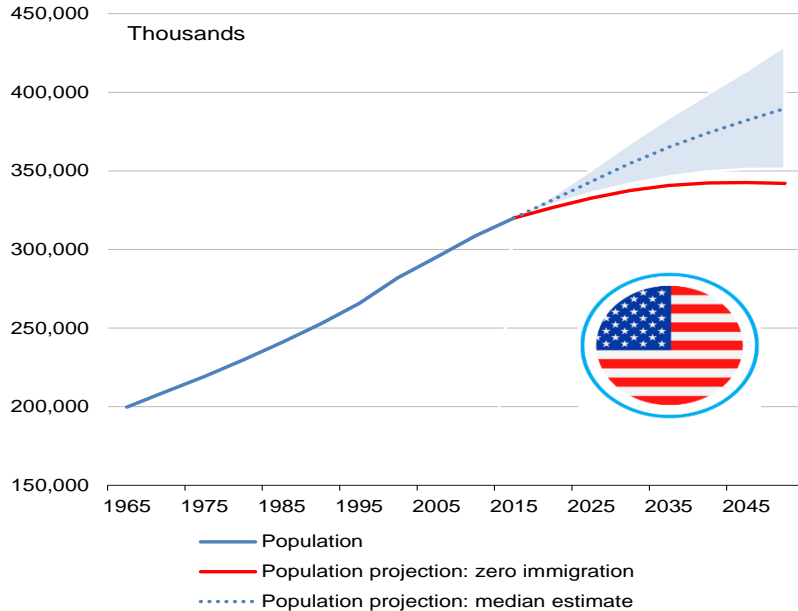


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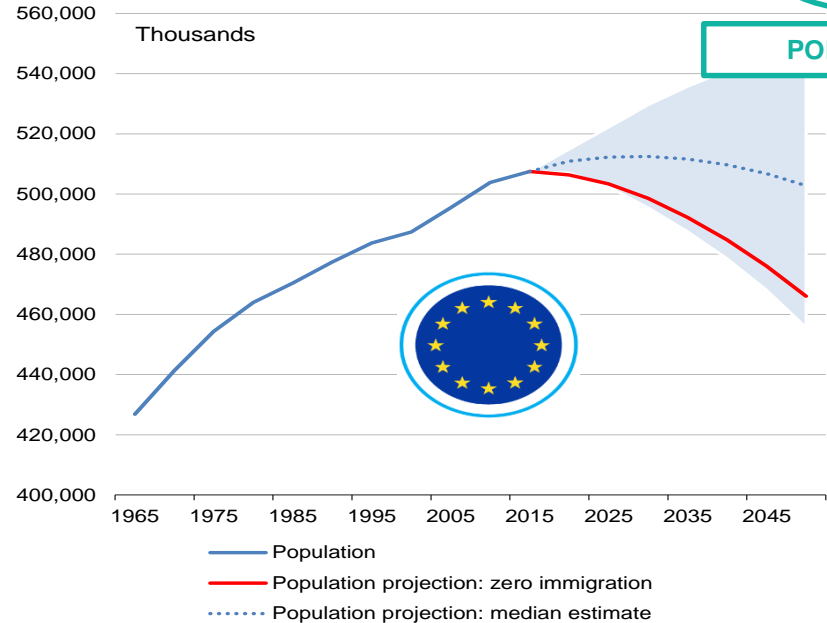
# Who needs high immigration?



US population outlook



EU population outlook



POPULISM



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# Who wants high immigration?



POPULISM

35%

of Americans described immigration as having a **“very or fairly positive”** impact on their country

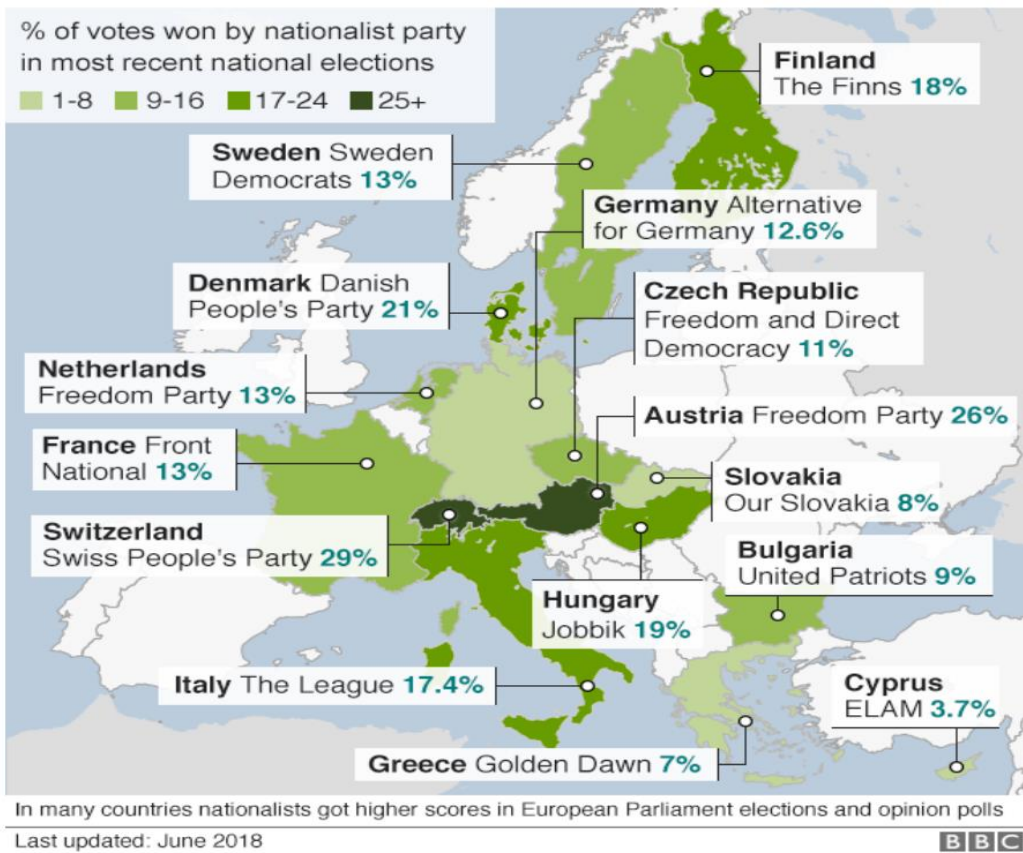
16%

of Europeans\* described immigration as having a **“very or fairly positive”** impact on their country



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# Rise of nationalism in Europe



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# So what?



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INFLATION



UK  
REAL  
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# Questions

# Comments

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