Deflation Forces and Inequality

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Summary

Short yield ZLBs and global declines in long yields now challenge advanced economy, inflation targeting central banks.

Deflation forces (causing stronger demand for money than goods) have at least matched inflation forces.

In this paper global modelling is used to link inequality to deflation via its effects on long yields, portfolio expansion and rebalancing.

Shocks are automation, lower capital taxation and immigration, causing long yields to fall 2% /yr.

Anchored CPI expectations with these shocks alone require added money demand growth of 3 %/yr.

So macro stabilisation and distributional policy are intertwined, as are policy solutions.

Paper downloadable from:
https://cama.crawford.anu.edu.au/publication/cama-working-paper-series/12352/deflation-forces-and-inequality

Taxonomy of Inflation (deflation) forces

Any force that causes P^C to rise (fall) ***if*** *the central bank holds* M^S *constant*;

P^C is the exchange rate between money and goods: rises if money relatively abundant and goods relatively scarce.

Inflation

- ***In****flation expectations:* π^e, rises → real money demand, m_D, falls → excess money → P^C, π rise;
  - ***Opt****imism*: expected real disposable income, $y_D{}^e$, rises → *C* rises, *S* falls, *r* rises → m_D falls, → P^C, π rise;
  - *Fiscal deficit: G rises, crowds out investment via rise in r* → m_D falls, → P^C, π rise;

Deflation

  - ***De****flation expectations:* π^e, falls → real money demand, m_D, rises → deficient money → P^C, π fall;
  - ***Pess****imism*: expected real disposable income, $y_D{}^e$, falls → *C* falls, *S* rises, *r* falls → m_D falls, → P^C, π fall;
  - *Income concentrating shocks*: the rich save so *S* rises, , *r* falls → m_D rises, → P^C, π fall;

Redistributive and deflationary forces in advanced economies

Considered:

- Automation – choice of technique that favours capital and skill over low-skilled workers;
- Race to the bottom in capital taxation;
- Immigration.

Other, less redistributive, deflationary forces:

- Pessimism about real future disposable incomes due to poor governance, impending cold war;
- Deflationary expectations due to lack of trust in central banks' ability to control price level – proximity of ZLB;
- Value chains raising intermediate transactions demand.

Inflation and deflation demerits

Inflation

- Weakens store of value role of currency and so raises transaction costs;
- Redistributes real income away from those on fixed nominal incomes;

Deflation

- With nominal wage rigidity causes unemployment;
- Causes “hoarding of money” (Keynes), rise in portfolio money (Tobin) so reduces investment in returning assets;
- Raises real purchasing power of investor repayments and so starves investment;
- Defers consumption and so reduces current aggregate demand;

Deflation the greater evil (Keynes) and so Central Banks seek to avoid it most.

Problem:

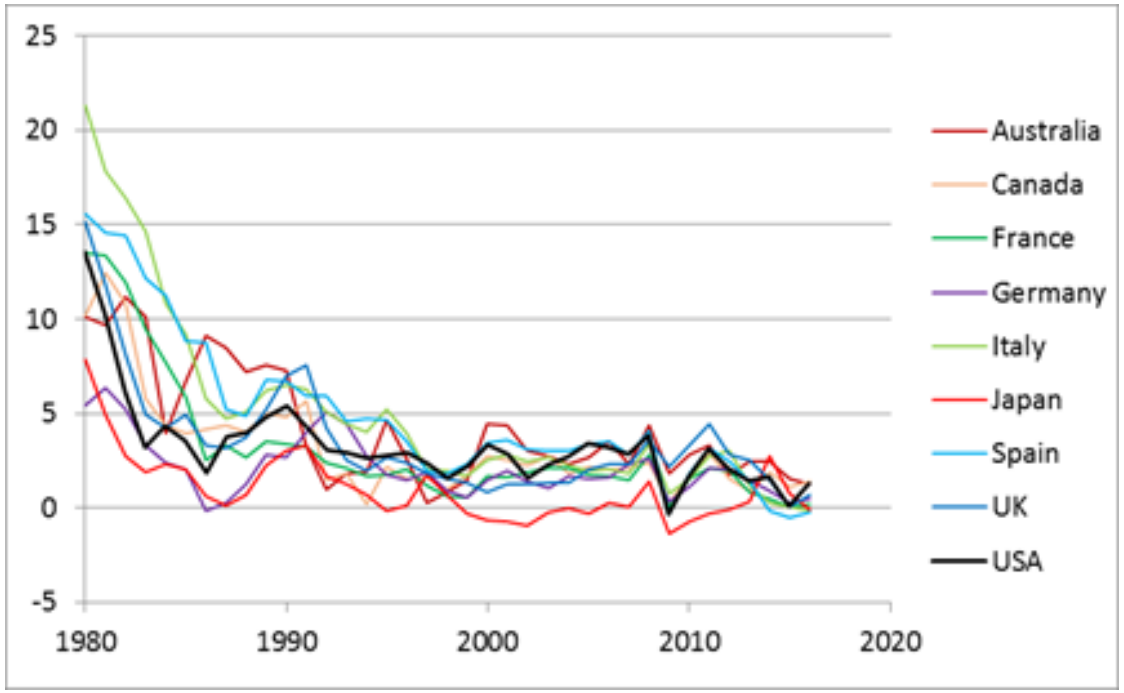
deflation forces strong, productivity is low and inequality is rising

- Inflation rates in advanced economies have been declining since the 80s;
- Short maturity and real long maturity “equilibrium” yields have also declined in that period;
- Across the advanced economies investment and productivity growth rates have declined;
- Low rates have caused rising debt and property bubbles, risking new financial collapse;
- Short nominal rates near ZLB leave no conventional scope for defensive monetary expansion.;
- Measured inequality is on a continuously rising trend.

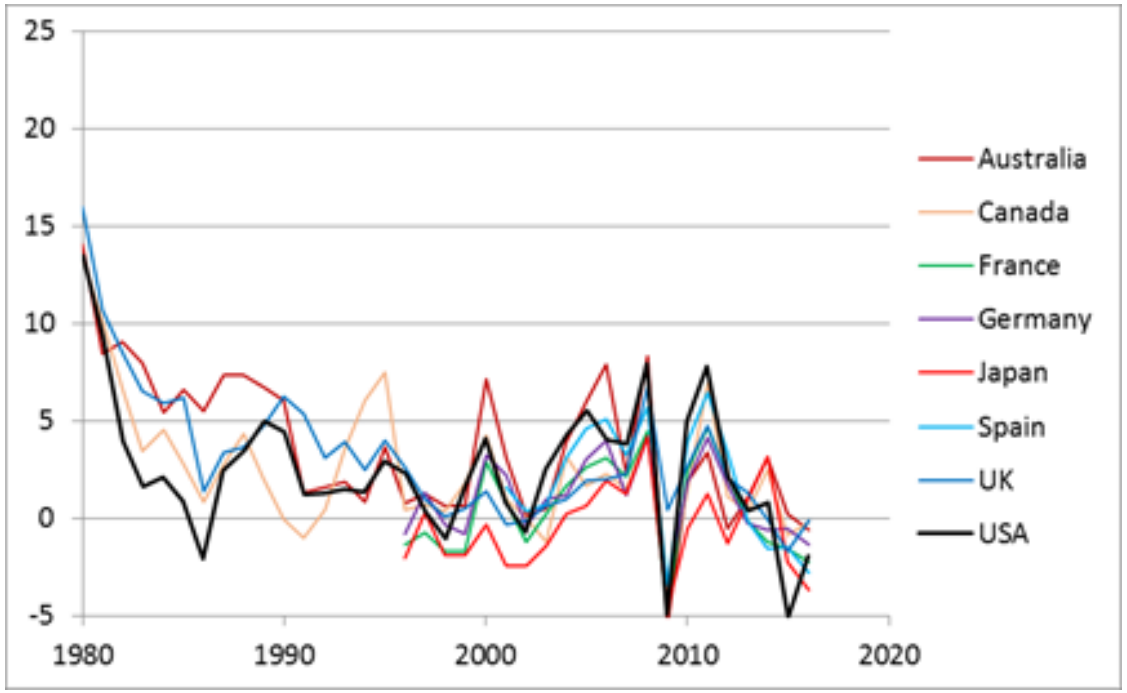
Some key drivers of deflation are associated with rising inequality – but how much do they contribute?

Observed decline in inflation rates

Consumer price growth



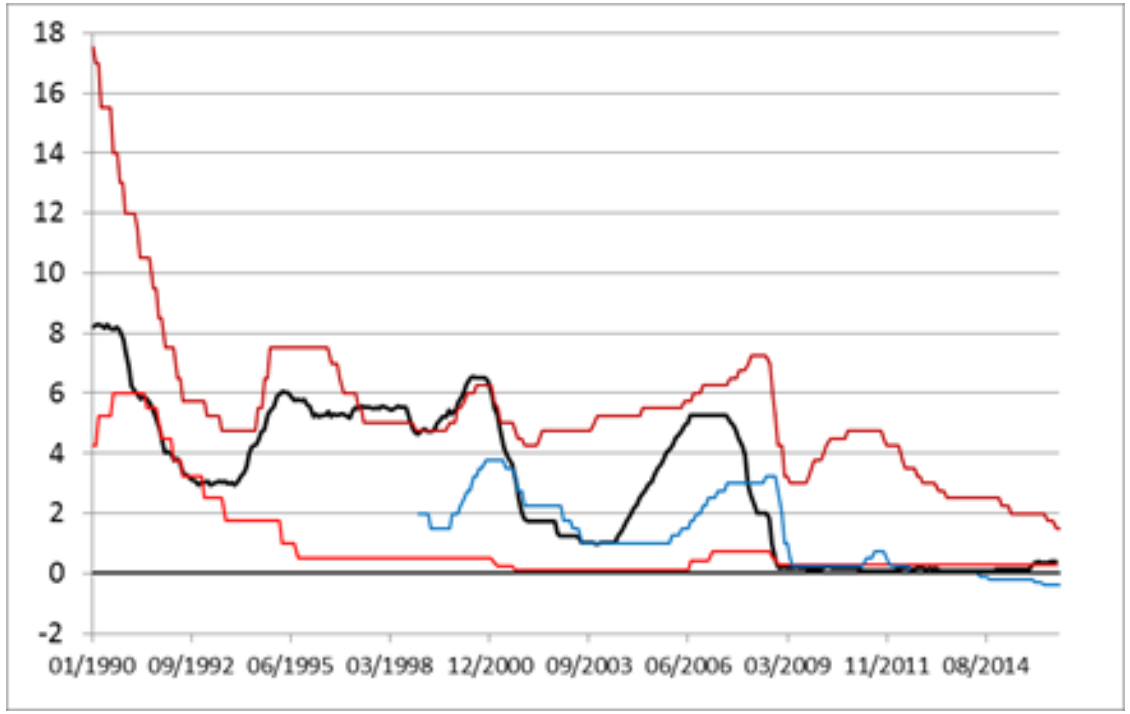
Producer price growth



Sources: Source: Federal Reserve Bank of St Louis Database (FRED), IMF World Economic Outlook, October 2017.

Nominal Bond yields

3 months

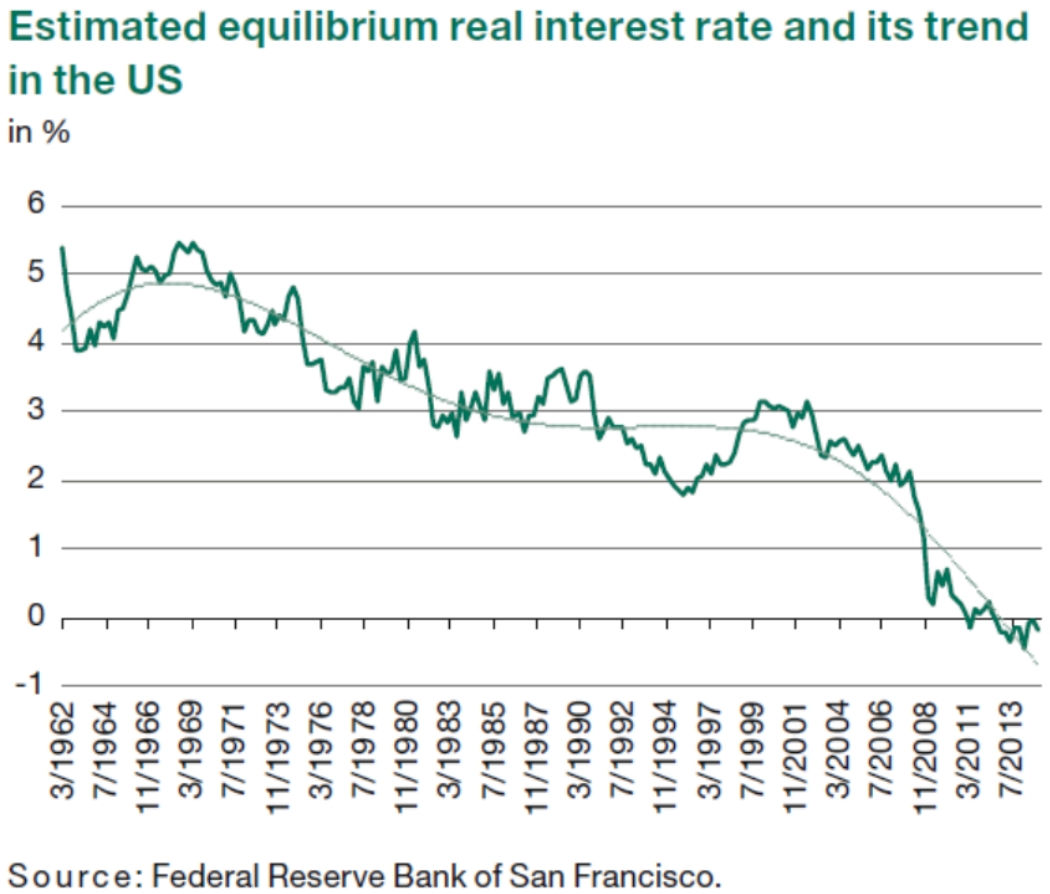


10 years

Sources: Sources: US rate from FRB of St Louis (FRED), European rate from European Central Bank (sdw.ecb.europa.eu), Australian rate from the RBA (rba.gov.au/statistics), Japanese rate from ECB (sdw.ecb.europa.eu).

Long Run Equilibrium Yield, US %/year

Demary and Huther 2015

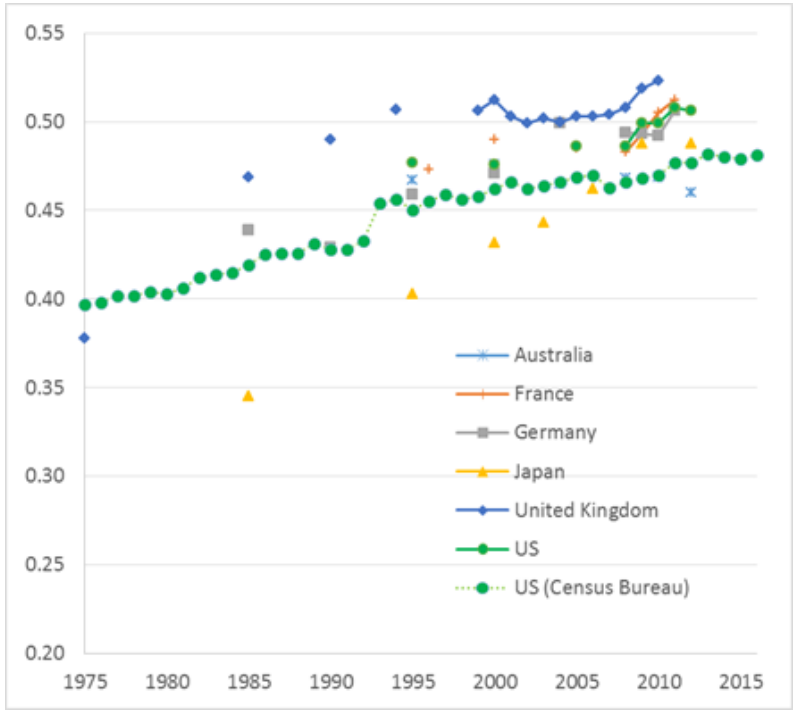


Source: Federal Reserve Bank of San Francisco.

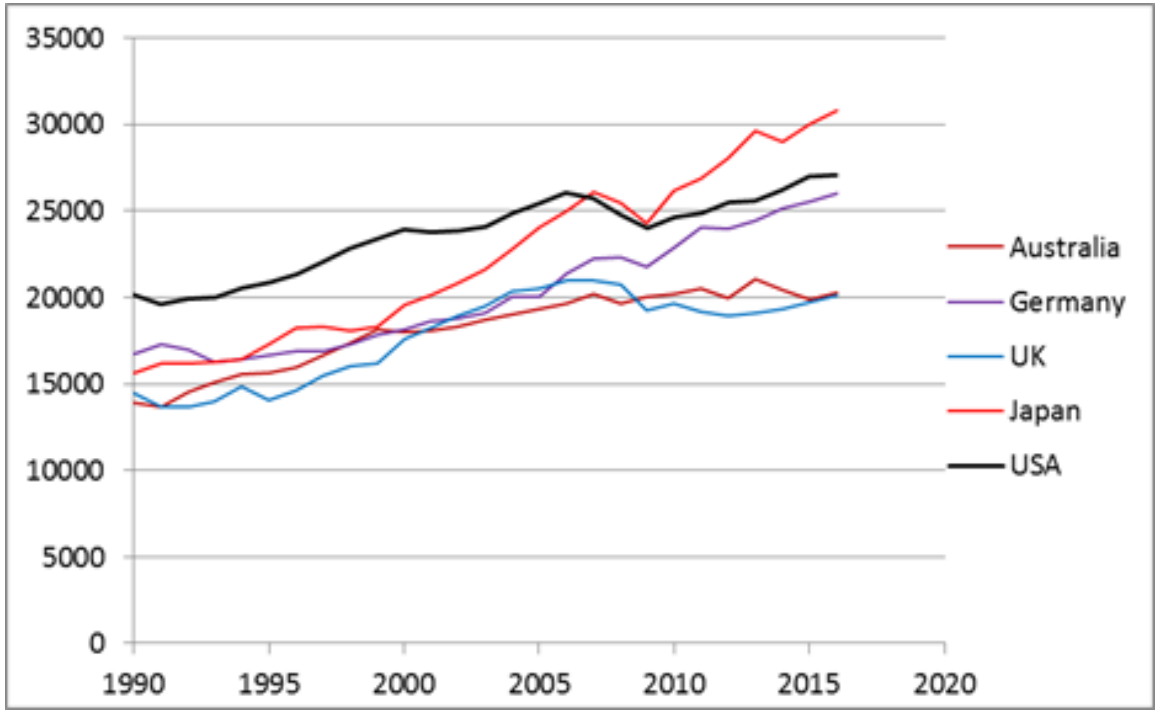
Current Fed SF Series

Inequality and Performance

Gini Coefficients in OECD

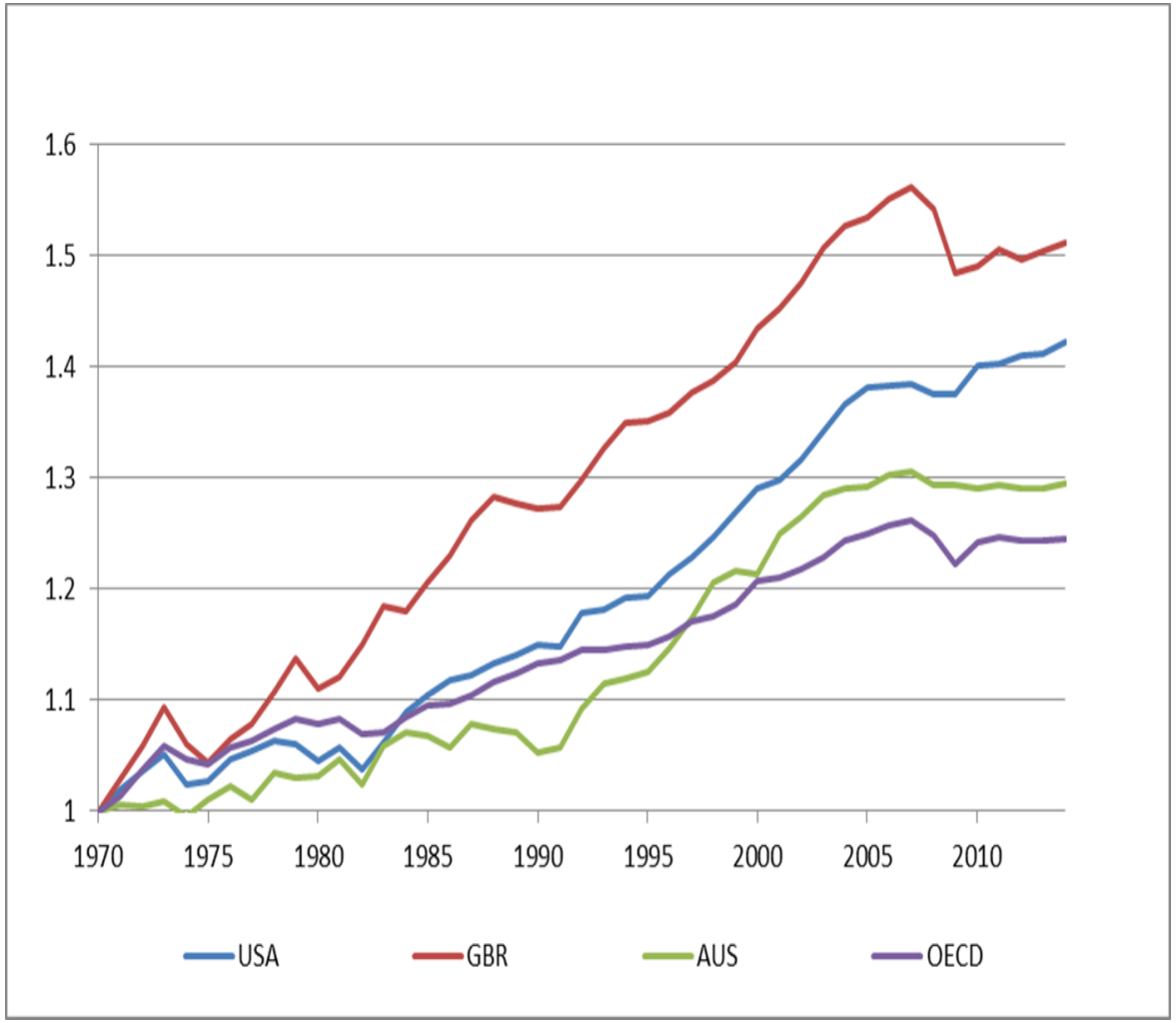


Real NNP per capita



Sources: Unless otherwise stated, OECD Income Distribution Database (OECD 2015). The single continuous series is from the U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements. Deflation of NNP is by CPI from IMF: World Economic Outlook. NNP values are from the OECD: National Accounts Statistics.

Total factor productivity (TFP) in the OECD



Source: TFP is the portion of output change not explained by the quantities of inputs used in production and is reported at constant national prices (2011=1). We normalize the data to set TFP in 1994 at unity for China and in 1970 for the OECD countries.

Research results

- Global macro and general equilibrium model on six regions ;
- *Prospective* deflationary and income-concentrating forces examined are:
  automation, *capital tax rate declines* and *immigration*;
- All three forces, taken together, are estimated to cause:
  worker-capital income gap to expand by 3 % per year;
  reduce long run real equilibrium interest rates by 2% per year;
  increase the growth rate of money demand by 3 % per year.
- Macro and distributional policies are therefore intertwined;

Implications

- The low interest rate, low inflation, low productivity environment may be persistent

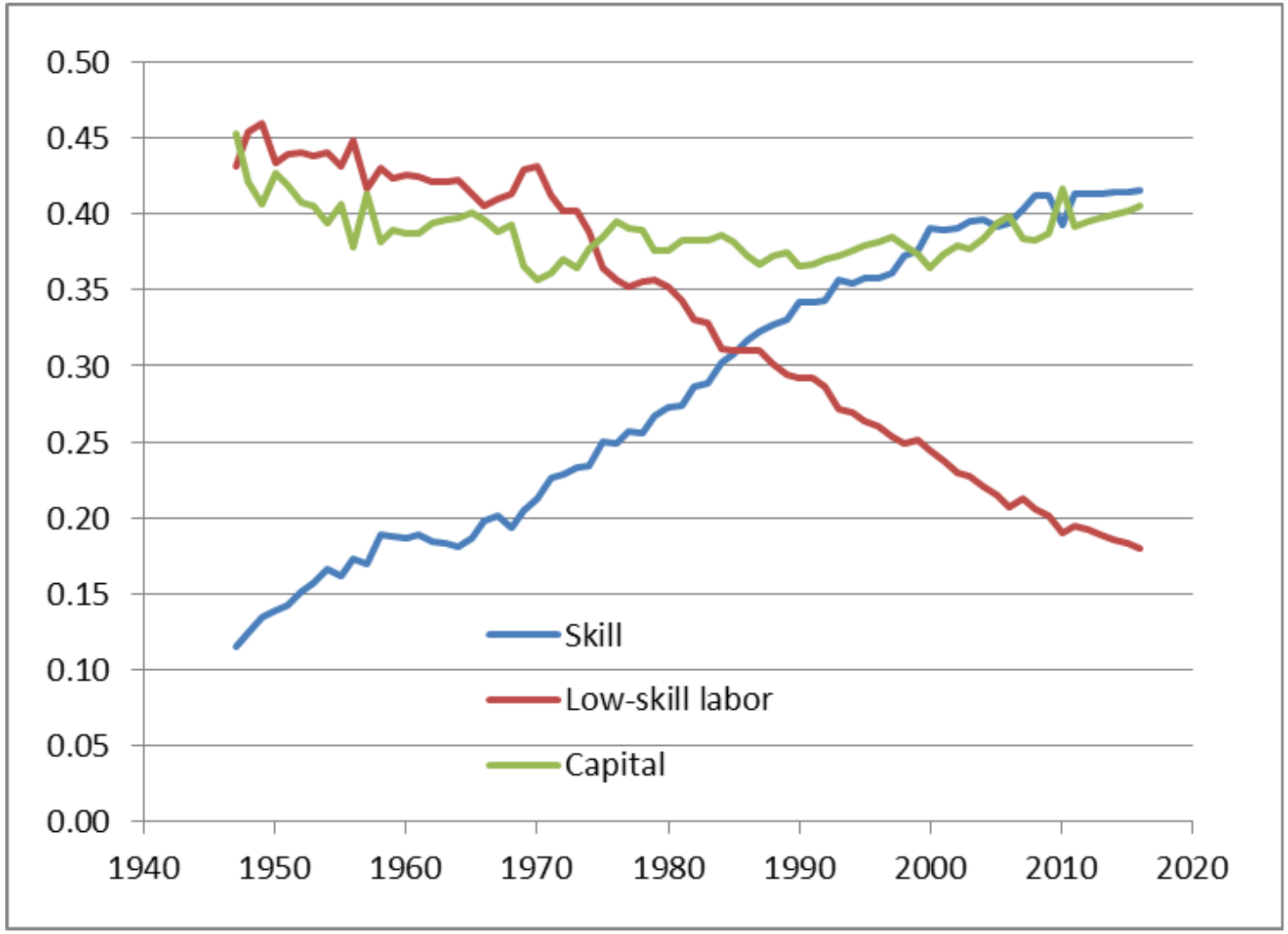
- Policies that will help:
  - Transfers to low-skill households, best via “earned income tax credits”;
  - “Inclusive” innovation that engages people rather than robots;
  - Slower immigration, particularly in Australia.

- Policies that won’t work:
  - Unconventional monetary policy (raising Central Bank long asset portfolios)
  - “Normalisation” (pushing up short rates without other reforms)

- Hoped for saviour: rising pure TFP (less desirably, a trade war)

Factor Shares of Value Added in the US

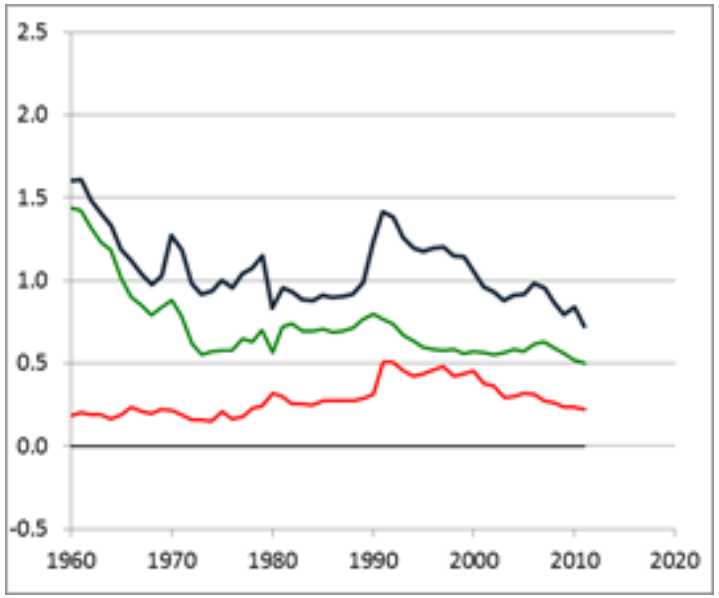
(Indices 1990=100)



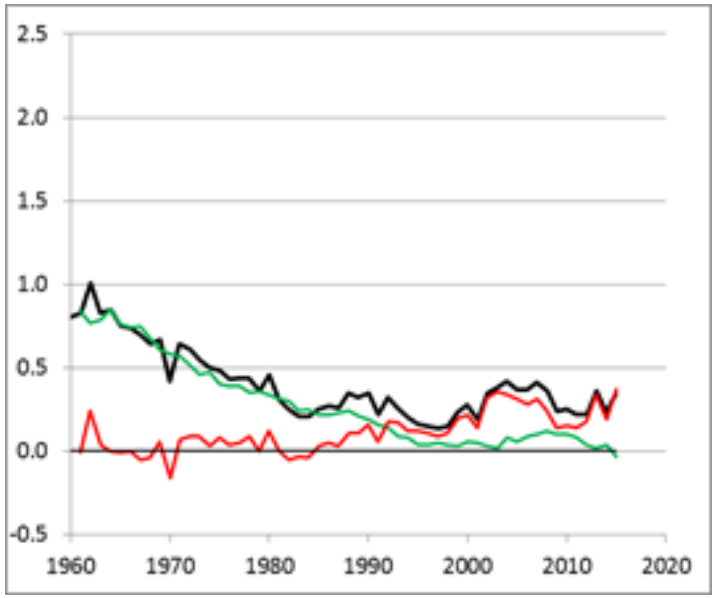
Source: World Input Output Database, extrapolated from 2010 using labour share from national accounts.

Population Changes and Immigration Contributions

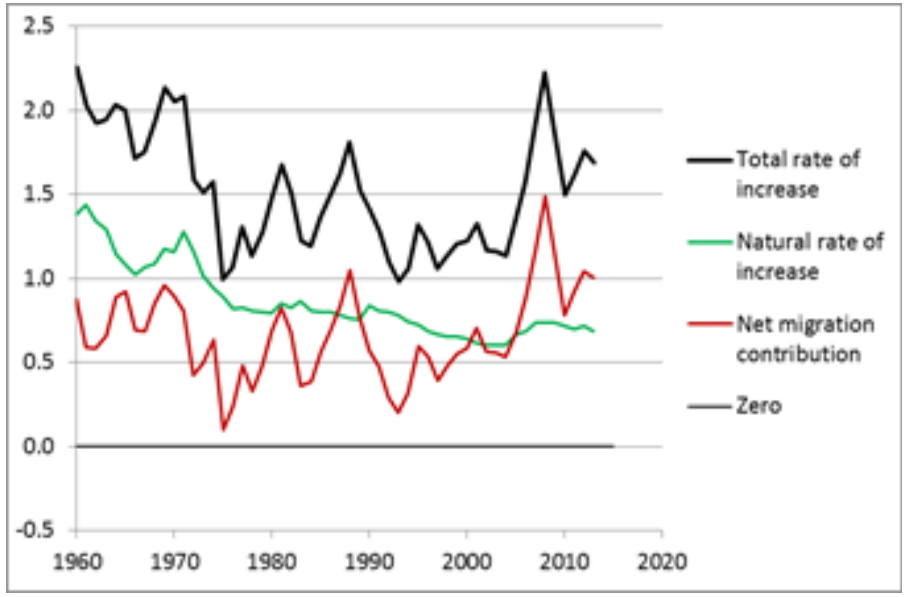
USA



Europe



Australia



Source: European Commission, Eurostat Population and Population Change Statistics.

The model

Global general equilibrium with money and financial asset markets

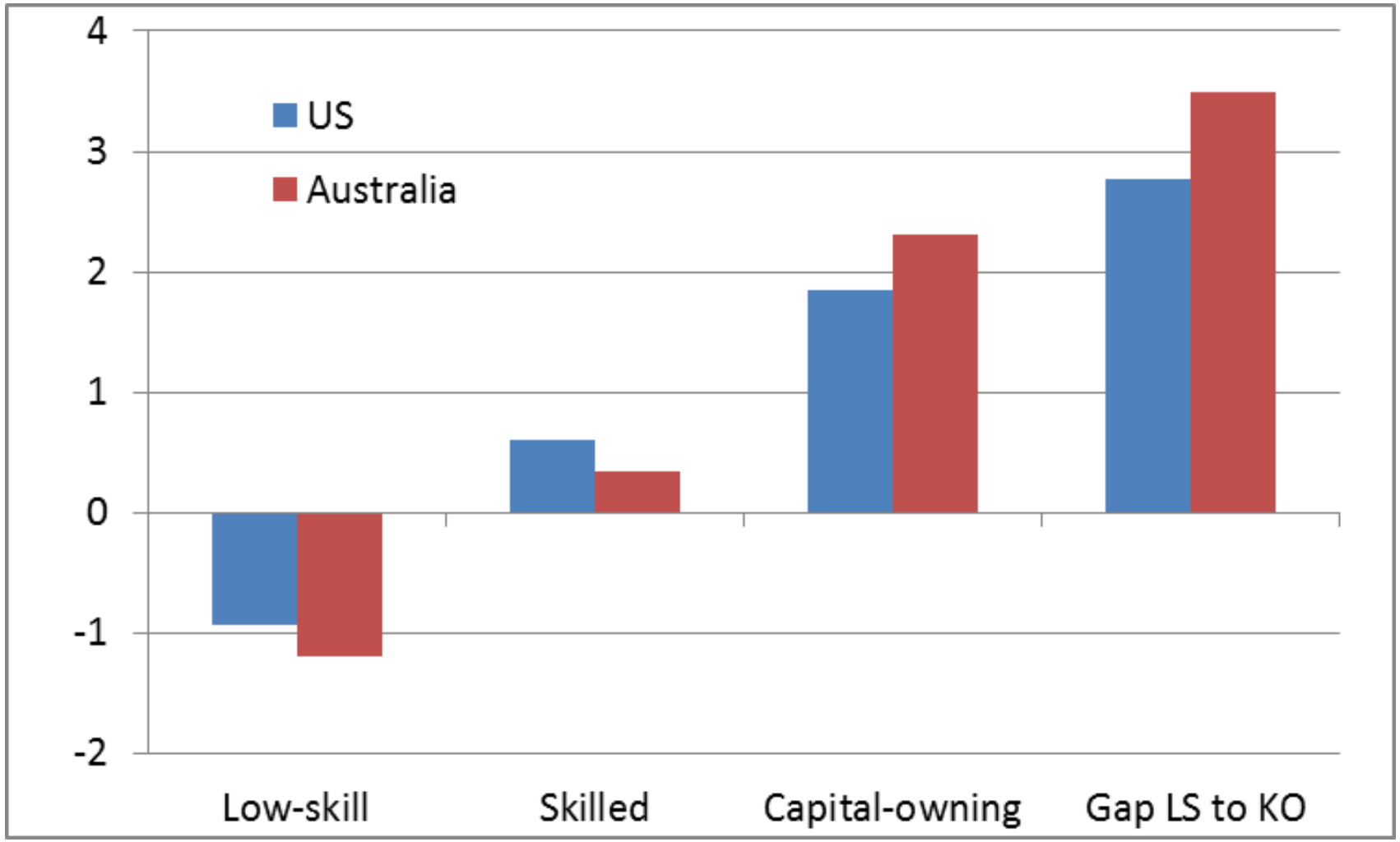
- technology Cobb Douglas *in relative quantities* to separate TFP from factor share changes;
- taxation on labor, capital incomes, consumption, imports and exports;
- three household groups: low-income, professional and capital-owning
- regions: US, EU, Japan, China, Australia, Rest of World.

Financial market structure

- Regions maintain global asset portfolios with augmentation from new saving and rebalancing to maximize portfolio rates of return;
- Savers are influenced by the market rate, current disposable income and expected future disposable income
- Government deficits are bond financed with large fiscal deficits raising an interest premium

Inequality: all forces combined

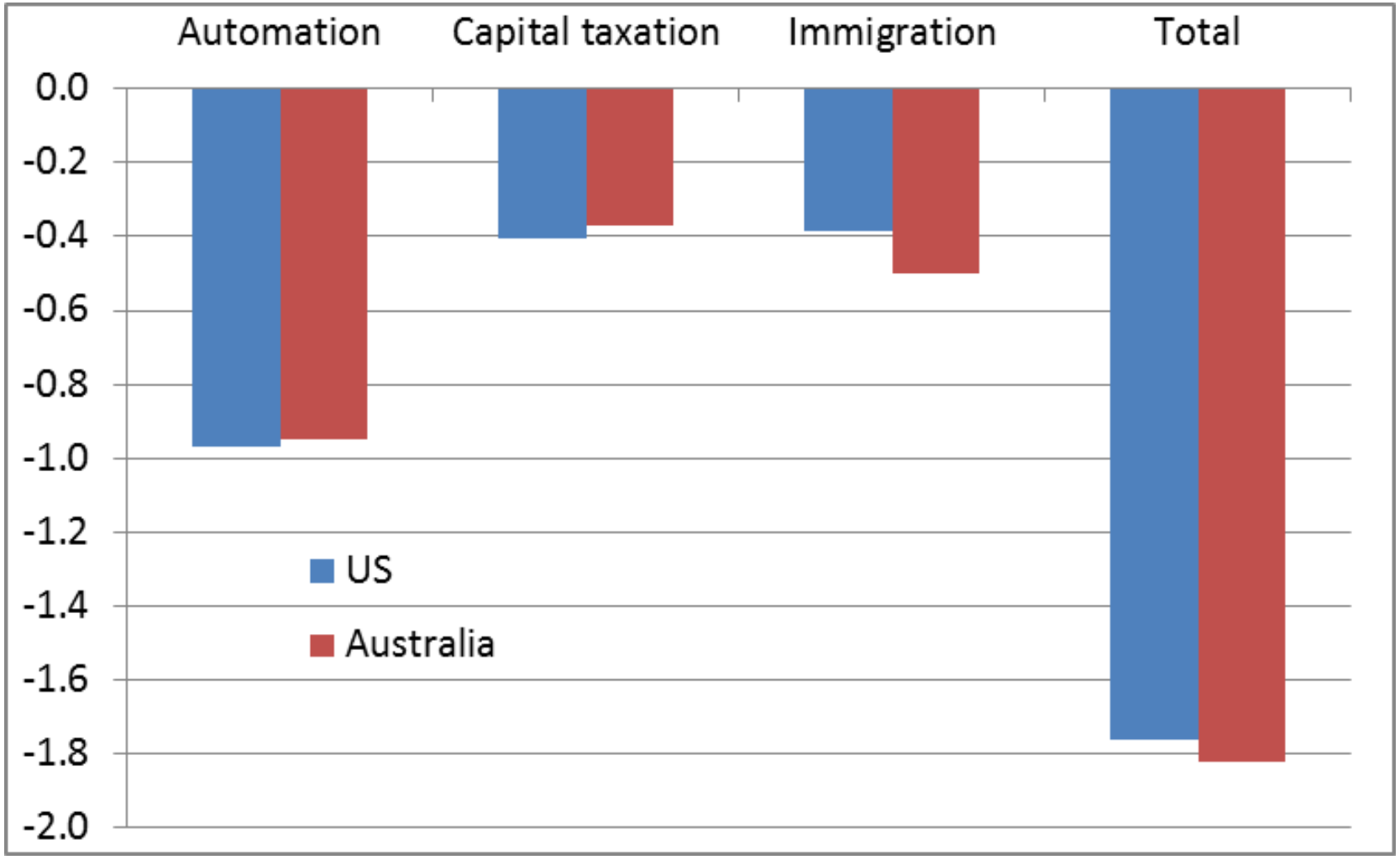
(Prospective annual % changes in real per capita disposable income, current policies)



Source: Model simulations, average annual responses to decade long run shocks.

Long Run Equilibrium Real Interest Rate Effects

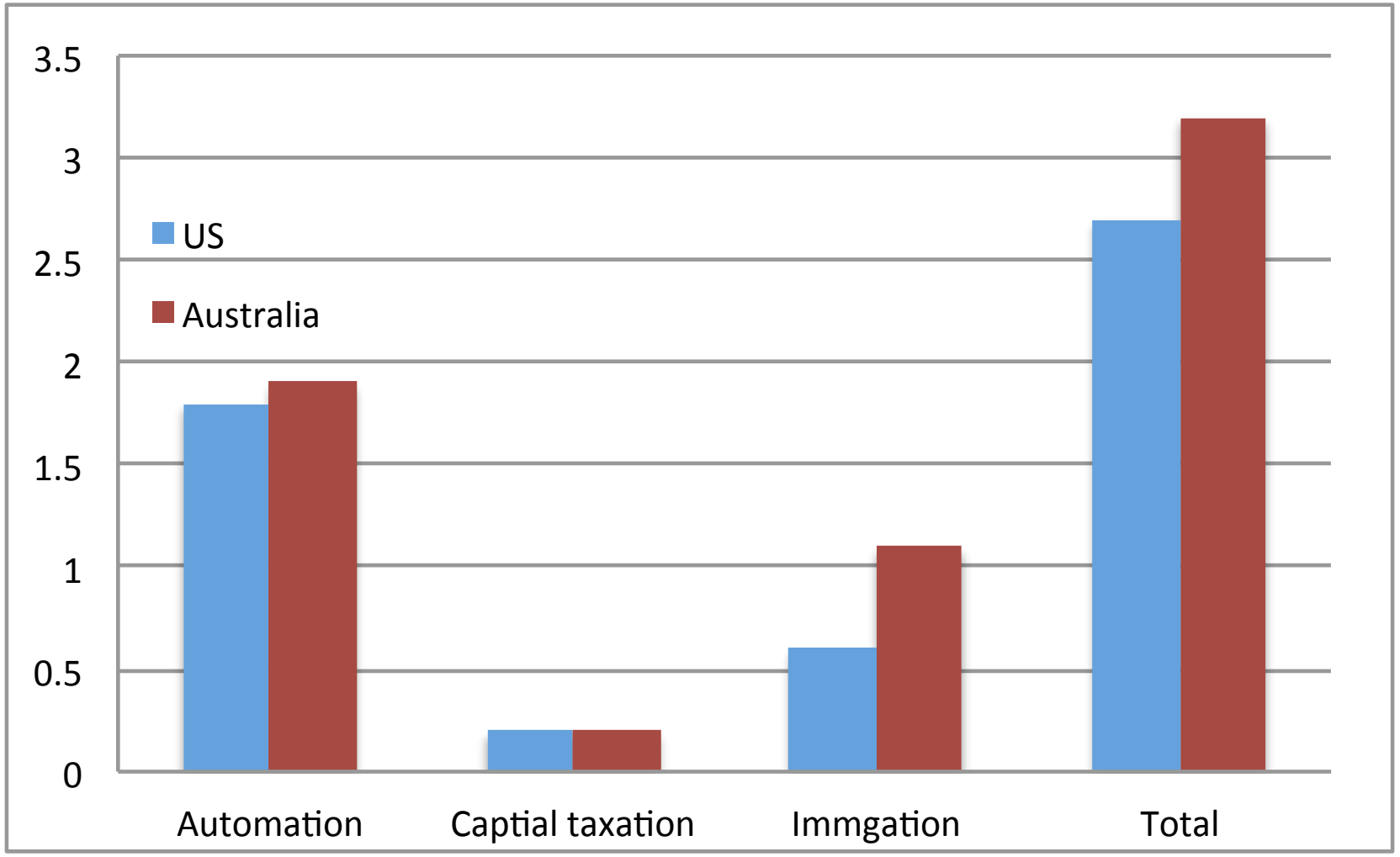
(Annual % changes, current policies)



Source: Model simulations, average annual responses to decade long run shocks.

Changes in Money Demand

(Annual % changes, current policies)

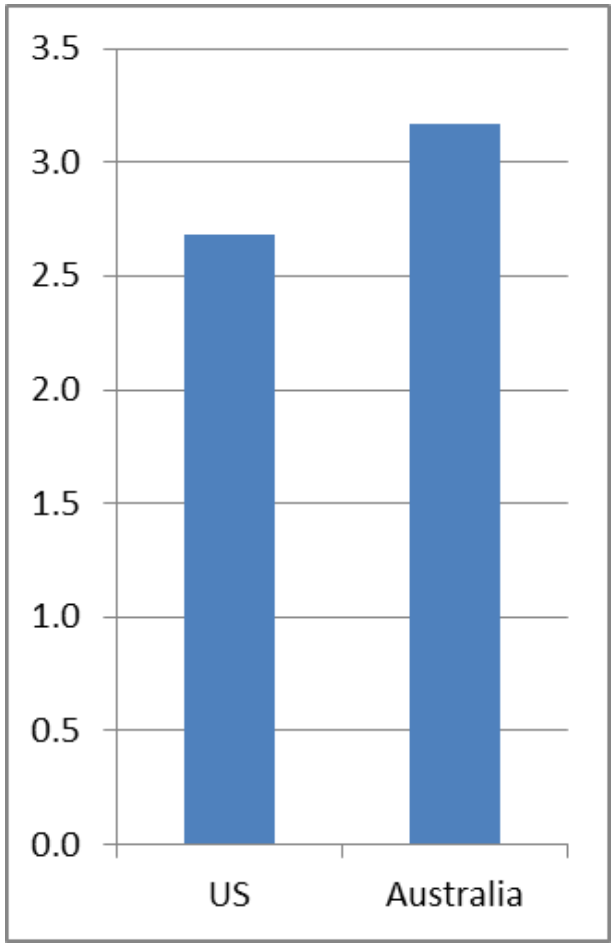


Source: Model simulations, average annual responses to decade long run shocks.

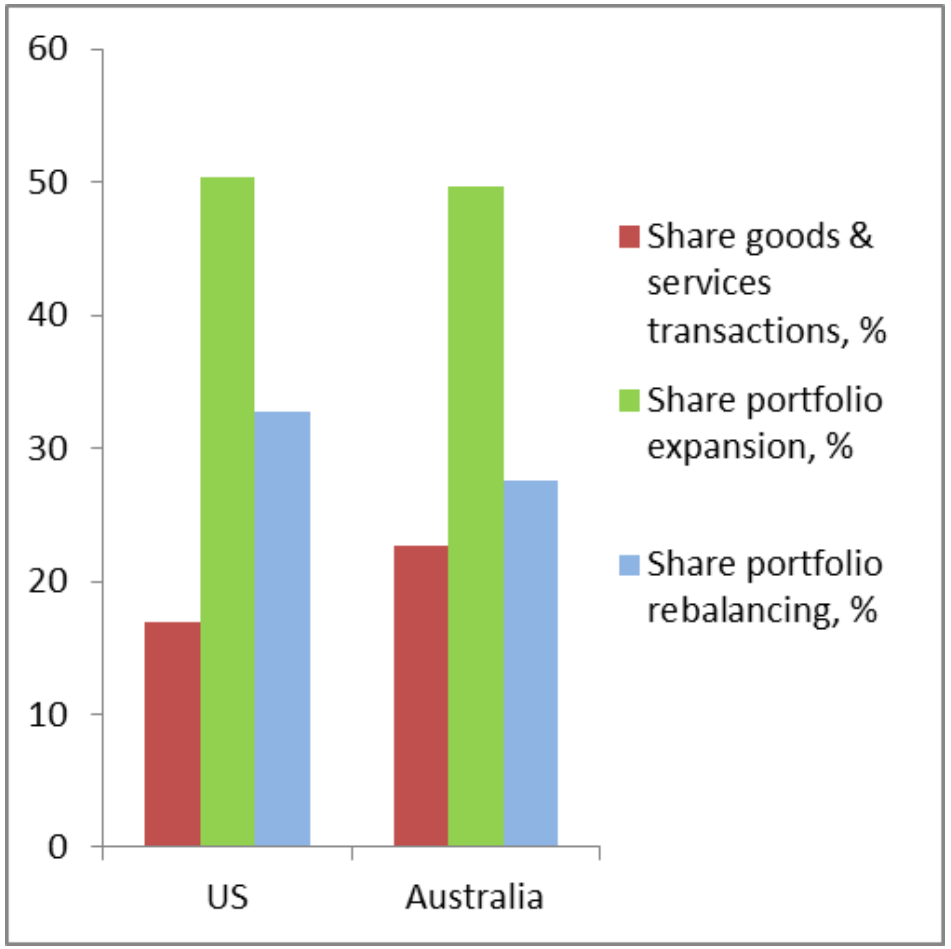
Money Demand Growth

(Annual % changes and % shares, due to distributional shocks alone with inflation expectations anchored at zero CPI target)

Money demand growth, %/ year



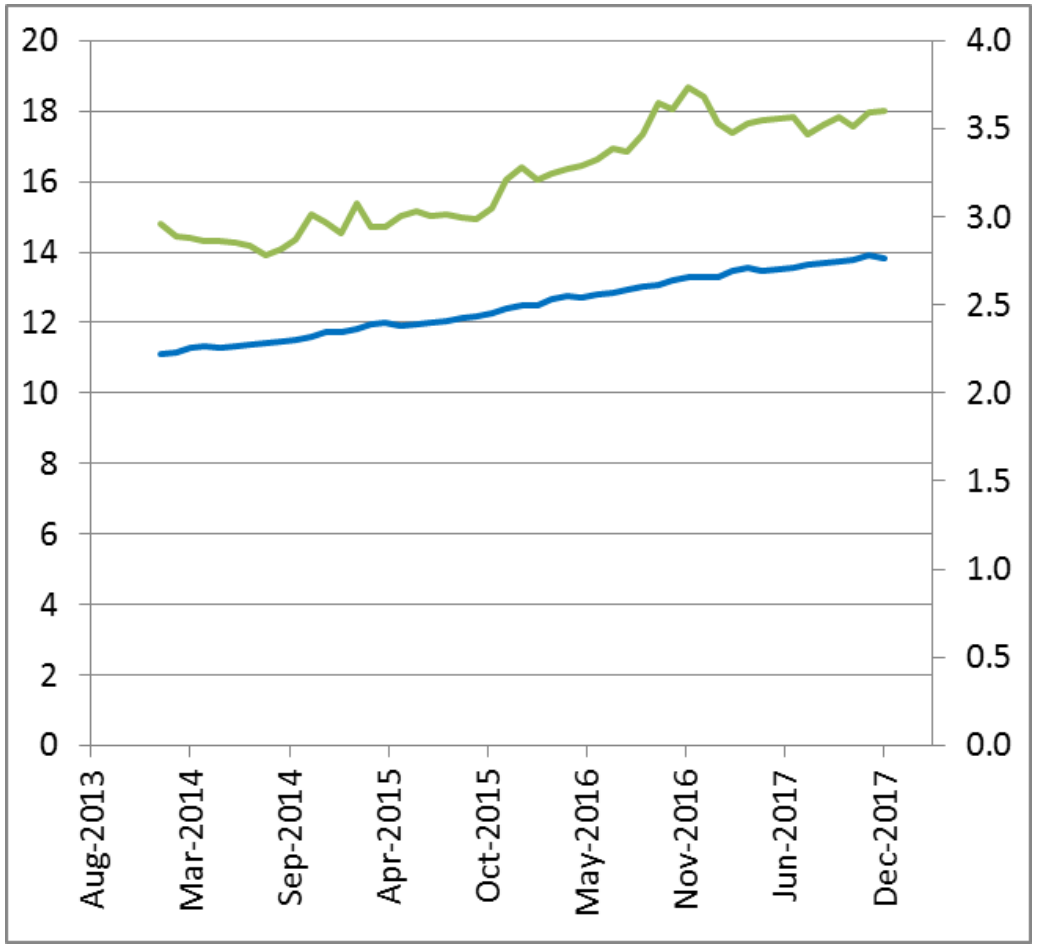
Share of growth source, %



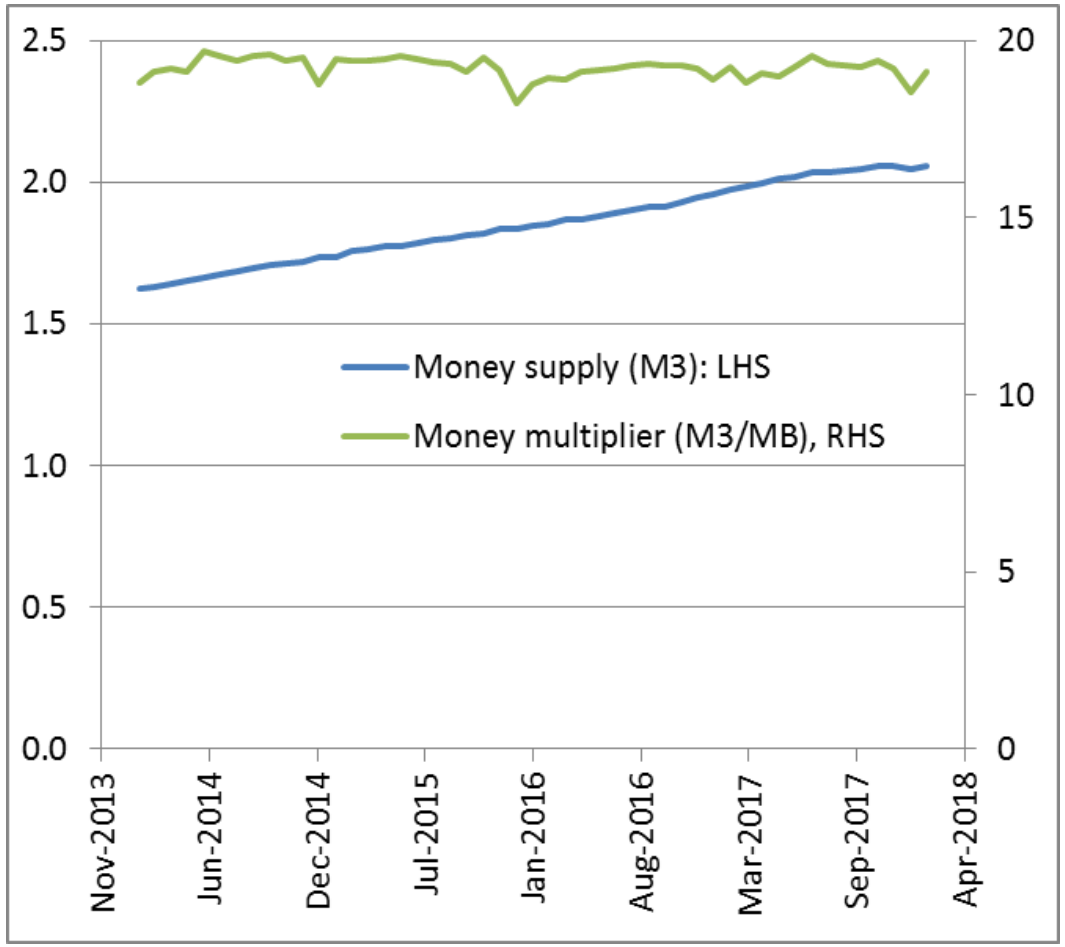
Source: Model simulations, average annual responses to decade long run shocks.

Actual Money Growth Since 2013

US M3, 5%/yr



Australia M3, 6%/yr



Source: FRED and RBA. Vertical axes: $ trillions.