Società Italiana degli Economisti, Bologna, 25-27 October 2018
Regional Effects of International Trade and Global Value Chains

The Consequences of Trade Disintegration: The Case of Brexit

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Based on:

The Economic Consequences of Brexit: Trade Effects

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Introduction

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  -Promised Referendum on EU membership if Conservative Party won 2015 election.

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- May 2015 Conservatives win outright majority.

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  -Promised Referendum on EU membership if Conservative Party won 2015 election.
  -Tactical attempt to reduce threat of populist right wing UKIP (Nigel Farage) taking votes from Conservative Party.
- May 2015 Conservatives win outright majority.
- June 23rd 2016 "Leave" 51.9% vs. "Remain" 48.1%
  $\rightarrow$ Cameron resigns & Theresa May becomes PM.
  March 2017: by invoking Article 50 May starts (up to 2 year) process of leaving EU.

How will Brexit effect UK economy?

- Centre for Economic performance put together a team of economists to think about economic impacts of Brexit.
- Consider different methodological approaches (e.g. structural static CGE vs. reduced form dynamic approach).
- Look at different post-Brexit scenarios ("Hard Brexit" vs. "Soft Brexit").

How will Brexit effect UK economy?

- We focus on medium/long-run effects after Brexit has occurred (i.e. post conclusion of Article 50);

  Abstract from short-term costs of uncertainty & transition.

- **Key Finding: Brexit economic costs outweigh benefits.**

  Rise in trade costs with EU which accounts for about 1/2 of all UK trade.

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- Pre-Referendum "Debate" was acrimonious...

Secretary of State for Justice: Michael Gove

- Compared us to Nazi scientists:

Michael Gove compared the Remain campaign's reliance on experts to Nazi denunciations of Albert Einstein
REUTERS

Michael Gove urged the UK not to rely on the opinions of experts warning against Brexit yesterday, comparing their interventions to how the Nazis forced scientists to denounce Albert Einstein in the 1930s.

Roadmap

- UK options outside the EU.
- Conceptual framework [very brief].
- Brexit estimates:
  1. Static trade model;
  2. Reduced form analysis ("Dynamic effects").
- FDI.
- Distributional consequences.

What is the European Union

- Today, 28 countries.
- Began in 1951 to improve co-operation after WW2 (6 countries).

- UK joined in 1973.
- Expanded South in 1980s and East in 2000s.

What is the European Union

- "Single Market" since 1992.
- Free movement of goods, services, capital & labor.
- Zero tariffs/quotas;
  But more important is reduction of trade barriers through harmonizing regulation.
- Largest market in world:
  \$19 trillion GDP ($\approx$ 500m people).

Payments to the EU

- **Max net fiscal saving ($\approx$ 0.53% of GDP)**.
- Leave campaign claimed figure twice as big, "£350m per week".
  -Ignored "Thatcher" rebate & contributions of EU to science, small business, regional aid, etc.

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- Actual savings likely to be even smaller as non-EU countries make contribution for Single Market access.

  -Norway pays $\approx$ 83% of UK per capita
  (= net saving of 0.09% of GDP).

  -Switzerland pays about $\approx$ 40% of UK costs.

UK Options

- Outcome is uncertain.
- Trade-off is clear and the same faced within the EU:
  Economic benefits from integration
  vs.
  Political cost of giving up control of some areas of policy.

UK Option 1: "Soft Brexit" - Norway Case

- Single market membership.
- But rules of origin requirements
  $\rightarrow$ higher NTB's.
- Payment to the EU still needed
  Norway pays only 17 % less than the UK in p.c. terms.
- Still needs to abide to EU economic rules.

UK Option 2: Bilateral Trade Agreements

- The UK and the EU negotiate a free trade agreement: similar to Switzerland & Canada.
- No tariffs but higher NTB's due to the introduction of border measures.
- No free movement of people or free trade in services; No passporting rights - Swiss financial institutions often serve the EU through subsidiaries based in London.
- More flexibility on choosing the EU initiatives in which it choose to participate.
- Payment to the EU still needed Switzerland pays 60 % less than the UK in p.c. terms.

UK Option 3: WTO Terms

- Most Favoured Nation (MFN) tariffs.
- Higher NTB's due to the introduction of border measures.
- No free movement of people or free trade in services;
  No passporting rights.
- Greater political sovereignty.
- No direct payment to the EU.

OPTIONS FOR THE UK OUTSIDE THE EU (with UK Gov's "Red Lines")

	Pros	Cons
EEA - the Norway model	1. Belong to the Single Market. 2. No longer subject to certain EU policies (agriculture, fisheries, justice and foreign policy). 3. Can negotiate trade deals independently of the EU.	1. Implement Single Market policies, without representation in EU decision making. 2. Must comply with rules of origin for exports to the EU and subject to EU anti-dumping measures. 3. Must contribute to the EU budget, Norway's per capita contribution is currently 17% lower than the UK's.
Bilateral agreements - the Swiss model	1. Free trade in goods and free movement of people with the EU. 2. Can negotiate trade deals independently of the EU. 3. A la carte approach permits opting out of EU programmes on a case-by-case basis.	1. Need EU consent for bilateral agreements. 2. Adopt EU rules without representation in EU decision making. 3. No agreement with the EU on trade in services. 4. Pay a fee to participate in EU programmes, Swiss contribution is 60% lower than the UK's.
Continental Partnership	1. EEA membership with free trade in goods and services with the EU. 2. Limited autonomy in setting immigration quotas for EU migrants. 3. Consultative voice in EU decisions.	1. Need EU consent for immigration quotas. 2. Adopt EU rules without voting rights in EU decisions. 3. Must contribute to EU budget.
Liechtenstein/Brussels model	1. EEA membership with free trade in goods and services with the EU. 2. Safeguard measure to control EU immigration or denial of access to public services for EU immigrants without a job.	1. Need EU consent for safeguard measures. 2. Adopt EU rules without voting rights in EU decisions. 3. Must contribute to EU budget.
EFTA	1. Free trade in goods with the EU. 2. Can negotiate trade deals independently of the EU. 3. Not required to adopt EU policies and regulations. 4. No obligation to contribute to the EU budget.	1. No freedom of movement of people with the EU. 2. No right of access to EU markets for services. 3. Goods exported to the EU must meet EU product standards.
WTO	1. Can negotiate trade deals independently of the EU. 2. Not required to adopt EU policies and regulations. 3. No obligation to contribute to the EU budget.	1. Trade with EU subject to MFN tariffs and any non-tariff barriers that comply with WTO agreements. 2. No freedom of movement of people with the EU. 3. No right of access to EU markets for services. 4. Goods exported to the EU must meet EU product standards.

Source: Dhingra, Ottaviano, Rappoport, Sampson and Thomas. UK Trade and FDI: A Post-Brexit Perspective. Centre for Economic Performance. London. 2017.

Conceptual Framework: Summary

- We use a quantitative trade model that maps trade data to welfare.
- We build on Costinot and Rodríguez-Clare (2014).
- Focus on perfect competition $\rightarrow$ Eaton and Kortum (2002). Conservative approach: Lower bound for welfare effects (Dhingra and Morrow, 2012).
- Multiple sectors and tradable intermediate inputs and product differentiation.
- International trade is driven by cost/productivity differences across countries mediated by geographical distance and trade barriers.
- We use simple relationships from this model to compare the present value of future real consumption between two counterfactuals: remain ('*In*') and leave ('*Out*').

Conceptual Framework: Summary

- Following Sampson (2016), we measure the welfare effect of Brexit (δ_j^{Brexit}) as:

$$\ln \delta_j^{Brexit} = (1-\rho) \sum_{t=0}^{\infty} \rho^t \left(\ln \widehat{c}_{j,t}^{Out} - \ln \widehat{c}_{j,t}^{In} \right),$$

  where $\widehat{c}_{j,t}^{In} = c_{j,t}^{In}/c_{j,0}$ and $\widehat{c}_{j,t}^{Out} = c_{j,t}^{Out}(1+g_j)/c_{j,0}$ are the changes in real consumption in period t in the two scenarios.

- g_j is the percentage change in the net fiscal transfer received by country j after Brexit. For example, if the UK made a lower transfer:
  $g_j > 0$ for the UK;
  $g_j < 0$ for the remaining EU countries (fill the budget hole left by the lower UK contribution).

CGE Model Analysis: Implementation

- Data:
  - WIOD: 35 regions & 31 sectors; full bilateral trade matrix with intermediates.
  - WTO: MFN Tariffs.
- Counterfactuals:
  - Forward looking policy simulations:
    Consider different tariff & non-tariff barriers depending on Brexit negotiations.
  - Changes in tariff barriers:
    Hard Brexit = trade a la WTO vs Soft Brexit (e.g. EEA Norway, EFTA Switzerland).
  - Changes in non-tariff barriers (e.g. Rules of Origin).
  - Also consider future changes in non-tariff barriers.

CGE Model Analysis: Net of Fiscal Transfers

1. Optimistic "Soft Brexit" (EEA Norway).

2. Pessimistic "Hard Brexit" (WTO).

Real Consumption Changes: Net of Fiscal Transfers

Optimistic "Soft Brexit" Scenario	
Total Welfare Change	*-1.34%*
Income change per household	*-£893*

Notes: The Optimistic scenario assumes: Increase in EU/UK Non-Tariff Barriers (2.8%) + exclusion from future fall in NTB within EU (-5.6%), saving of 17% of 0.53% lower fiscal transfer.

Real Consumption Changes: Net of Fiscal Transfers

Optimistic "Soft Brexit" Scenario	
Total Welfare Change	*-1.34%*
Income change per household	-£893

Pessimistic "Hard Brexit" Scenario	
Total Welfare Change	*-2.66%*
Income change per household	-£1,773

Notes: The Optimistic scenario assumes: Increase in EU/UK Non-Tariff Barriers (2.8%) + exclusion from future fall in NTB within EU (-5.6%), saving of 17% of 0.53% lower fiscal transfer.
Pessimistic scenario: MFN Tariff + increase in EU/UK Non-Tariff Barriers (+8.3%) + exclusion from future fall in NTB within EU (-12.7%), saving of 0.31% net fiscal transfer.

CGE Model Analysis: Net of Fiscal Transfers

1. Optimistic "Soft Brexit" (EEA Norway): - **1.34% welfare loss**
2. Pessimistic "Hard Brexit" (WTO): - **2.6% welfare loss**
3. WTO & unilateral liberalization (Economists for Brexit):
4. Swiss Alternative:
5. Big-bang scenario:
6. Other countries:

Alternative Scenarios: Net of Fiscal Transfers

Alternative Scenarios

	Swiss Alternative	Big-Bang
Total Welfare Change	*-1.44%*	*-3.84%*

Notes: The Swiss Alternative: Increase in EU/UK Non-Tariff Barriers (2.8%) + exclusion from future fall in NTB within EU (-5.6%), *saving of 60% of 0.53% lower fiscal transfer.*
Big-bang: MFN Tariff + *increase in EU/UK Non-Tariff Barriers (+11.1%) + exclusion from future fall in NTB within EU (-15.7%), saving of 0.31% net fiscal transfer.*

Alternative Scenarios: Net of Fiscal Transfers

Alternative Scenarios

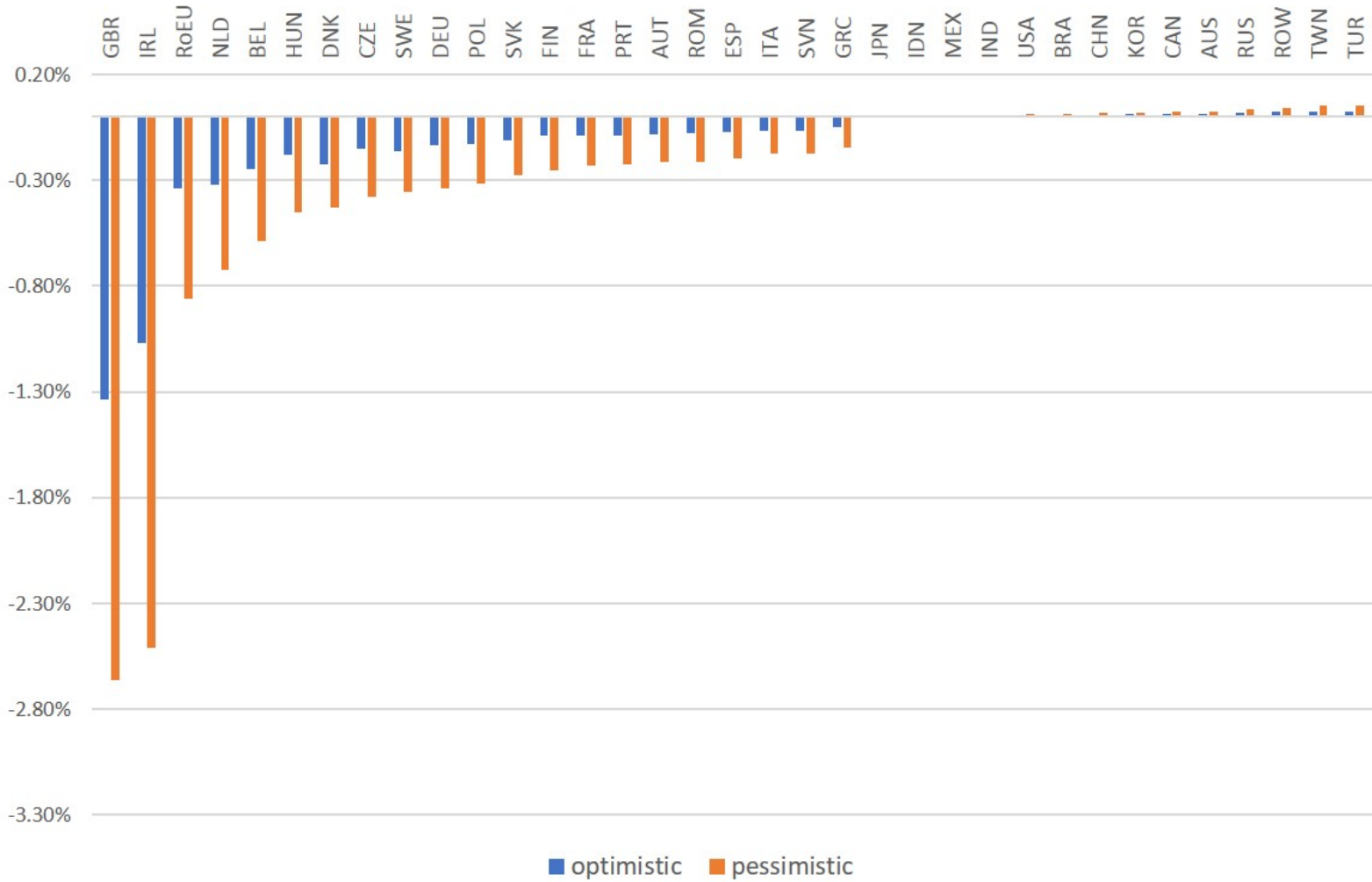
	Swiss Alternative	Big-Bang
Total Welfare Change	*-1.44%*	*-3.84%*

UK Unilateral Liberalization

	Optimistic "Soft-Brexit"	Pessimistic "Hard-Brexit"
Total Welfare Change	*-1.05%*	*-2.34%*

Notes: The Swiss Alternative: Increase in EU/UK Non-Tariff Barriers (2.8%) + exclusion from future fall in NTB within EU (-5.6%), *saving of 60% of 0.53% lower fiscal transfer.*
Big-bang: MFN Tariff + *increase in EU/UK Non-Tariff Barriers (+11.1%) + exclusion from future fall in NTB within EU (-15.7%), saving of 0.31% net fiscal transfer.*
UK Unilateral Liberalization: UK imposes zero tariffs on all imported goods.

Welfare Effects on Other Countries



Notes: We assume that the other EU countries have to fill the budget hole left by the UK proportionally to their GDP. This brings them a net fiscal loss of 0.015% in the optimistic case and 0.051% in the pessimistic case.

CGE Model Analysis: Net of Fiscal Transfers

1. Optimistic "Soft Brexit" (EEA Norway): - **1.34% welfare loss**
2. Pessimistic "Hard Brexit" (WTO): - **2.6% welfare loss**
3. WTO & unilateral liberalization (Economists for Brexit): up to - **2.3% welfare loss**
4. Swiss Alternative: - **1.4% welfare loss**
5. Big-bang scenario:- **3.8% welfare loss**
6. Other countries: Other EU countries also lose, trade diversion gives (small) benefits to non-EU countries.

Reduced-form Analysis: Dynamic Effects

- Static approach ignores how trade has positive effects on productivity, innovation, management, etc. (e.g. Bloom, Draca and Van Reenen, 2016; Sampson, 2016)
- Harder to incorporate this in quantitative theoretical models $\rightarrow$ we take a simpler "reduced-form" approach.
  1. Empirical effects of EU on trade relative to EFTA (e.g. Baier et al, 2008). Empirical Gravity model.
  2. Empirical effects of lower trade costs on GDP (Feyrer, 2009, natural experiments).
- Together, imply Brexit negative effects much larger than just static losses: **6.3% to 9.5% fall in GDP p.c.**.
- Others have used much more sophisticated versions of this (HMT, NIESR, PWC, etc.) & consistent with CEP find bigger effects than static.

Great New Trade Deals?

- Note: Need to quit customs union to do this.
- Pro-Brexit argument is that UK will strike lots of new trade deals with China, India, US and others, lowering trade costs.
  - But these are complex & typically take a very long time to negotiate (e.g. EU-Canada deal 7 years).
- A Brexit benefit is that no longer have to compromise with other EU members.
- But Brexit cost is that UK under 20% of EU GDP. So much less bargaining power in negotiations.

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- A Brexit benefit is that no longer have to compromise with other EU members.
- But Brexit cost is that UK under 20% of EU GDP. So much less bargaining power in negotiations.
- Key question: Will the new trade deals be so much better than those lost from EU membership (current deals & those negotiated in the future)?

Foreign Direct Investment (FDI)

- UK is largest recipient of FDI in EU:
  Access to EU Single Market one factor in this success.
- About 45% of FDI stock in financial services:
  Potential loss of "passporting" rights & access to financial infrastructure.
- Bruno et al. (2016) estimate new gravity model of FDI (implies a -22% fall due to Brexit).

  Dhingra et al (2016) combine this with Alfaro et al (2004) to estimate impact: 3.4% GDP fall.
- Structural model of car sector (gravity + FDI choice) Head & Mayer (2015).

Distributional Consequences

Immigration

- Free movement of labor a condition of deep access to Single Market (Norway & even Switzerland in EFTA).
- Compared to UK born, EU immigrants are on average better educated, more likely to work, less likely to claim welfare, younger:
  Hence, they make a net fiscal contribution to reducing budget deficit (Dustmann & Frattini, 2014).
- What is the impact of EU migration on the labor market?
  - Evidence suggests no negative impact on native jobs or wages (Wadsworth et al, 2016).
  - Even at unskilled end, effects seem limited to earlier cohorts of immigrants (Manacorda et al, 2011).
  - Earlier studies mainly on pre-Great Recession data. Wadsworth et al confirmed this on 2008-2015 data.

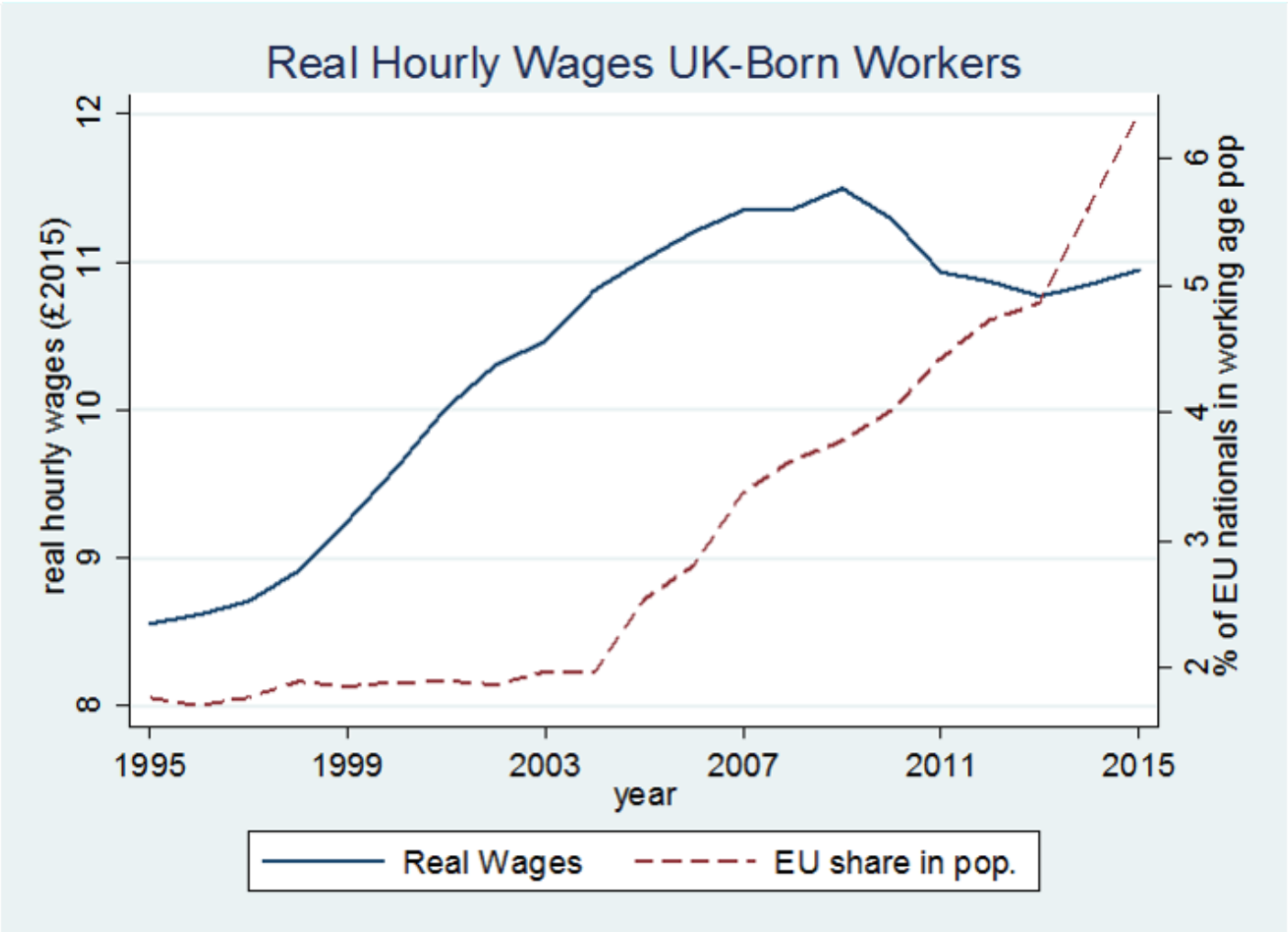
Distributional Consequences

Wages

- Unlike in the US, median real wage growth was healthy in UK 1979-2008.
- But since Great Recession median real wages fell by about 9% (as bad as inter-war Great Depression).
- Fuelled Brexit anger against "elites".

Distributional Consequences

Wages



Source: Wadsworth et al (2016).

Distributional Consequences

Wages

- EU is a relatively rich, high skilled bloc much like the UK.

  Only a small share of the UK-EU trade with eastern European countries (3.3%).

- Unlikely Heckscher-Ohlin effects here.

  Inequality effects more likely when changing trade barriers with countries whose factor endowments are different from the UK, e.g. China (Pessoa, 2016).

- Our own back-of-the-envelope calculations based on Costinot and Rodríguez-Clare (2014) show negligible inequality effects.

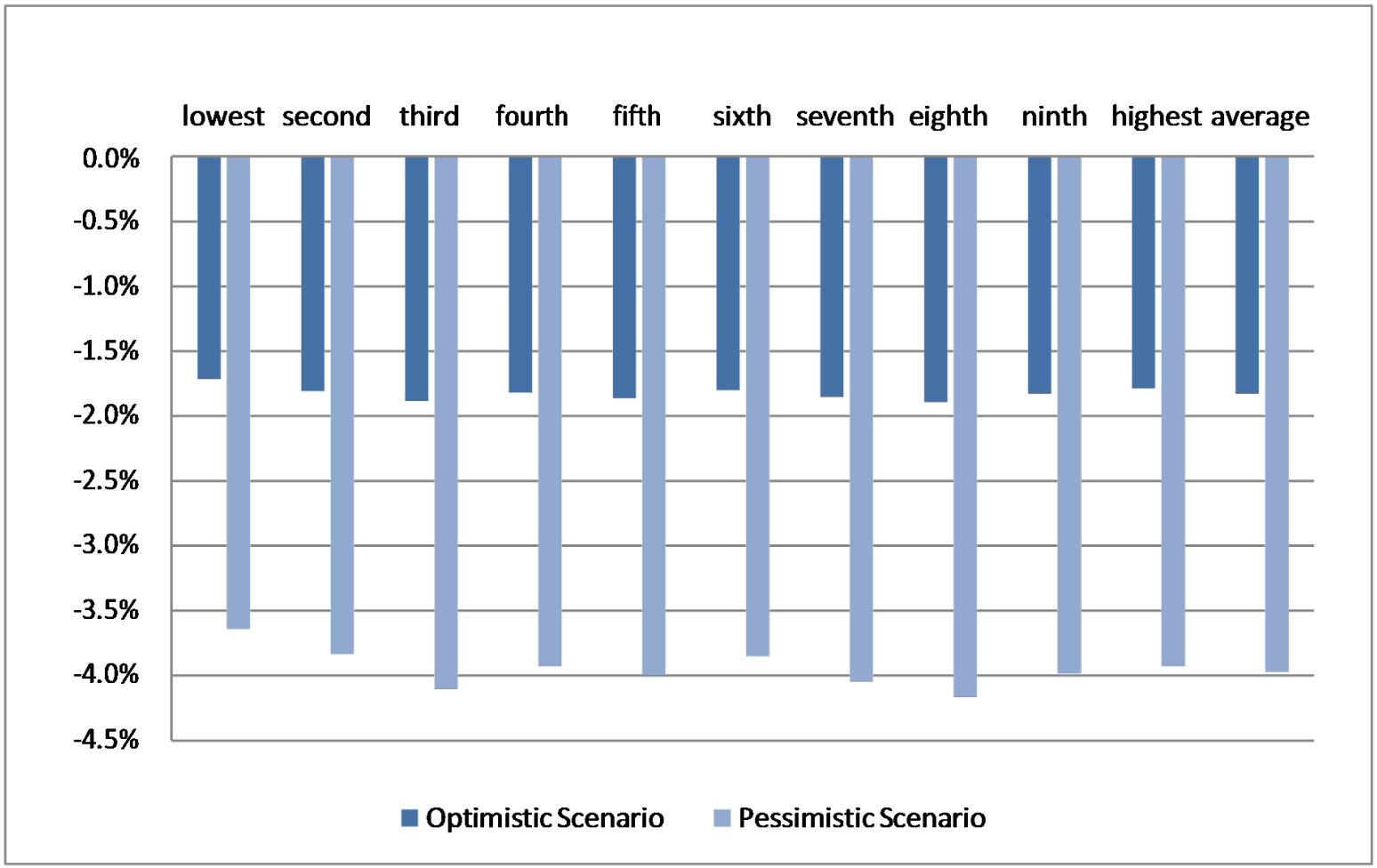
Distributional Consequences

Prices

- Breinlich et al (2016) combine our structural static model with spending patterns by household income & demographic groups.
- Pain of Brexit evenly shared. Middle income groups do a bit worse than richest & poorest deciles.

Distributional Consequences

Prices

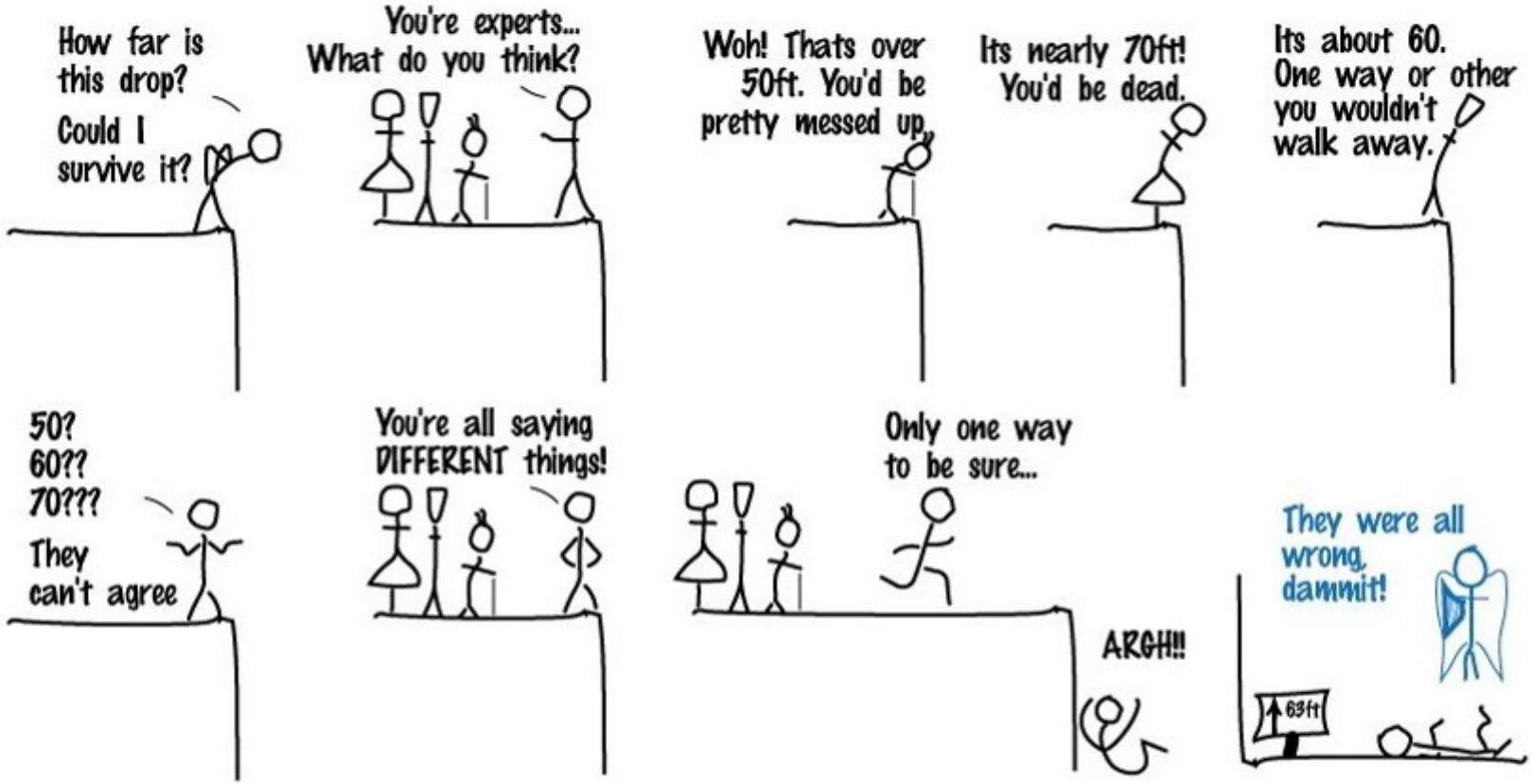


Real income losses by household income decile (%).
Source: Breinlich et al (2016).

Summary

- Brexit bad news for UK (& EU) economy.
- Robust evidence from a variety of approaches that UK will be poorer after Brexit compared to continued membership.
- Exact magnitude of Brexit effect depends on assumptions.
- Political impact on rest of world more important than pure economics.
  Role in Trump success; break-up of EU?
- Role of information & media in how people make major political decisions.

The Big Question



Experts in the Bank of England, IMF, OECD, CBI, Institute for Fiscal Studies, World Bank, Oxford Economics, Centre for European Reform, Treasury, and The LSE Centre for Economic Performance, ALL forecast a HUGE HIT if we leave the EU.

They don't agree about HOW HUGE.

There's one way to find out!