

Modelling Northern Ireland within the context of the All- Ireland Economy

Adele Bergin, Hailey Low, Stephen Millard,
Akhilesh Kumar Verma



Introduction

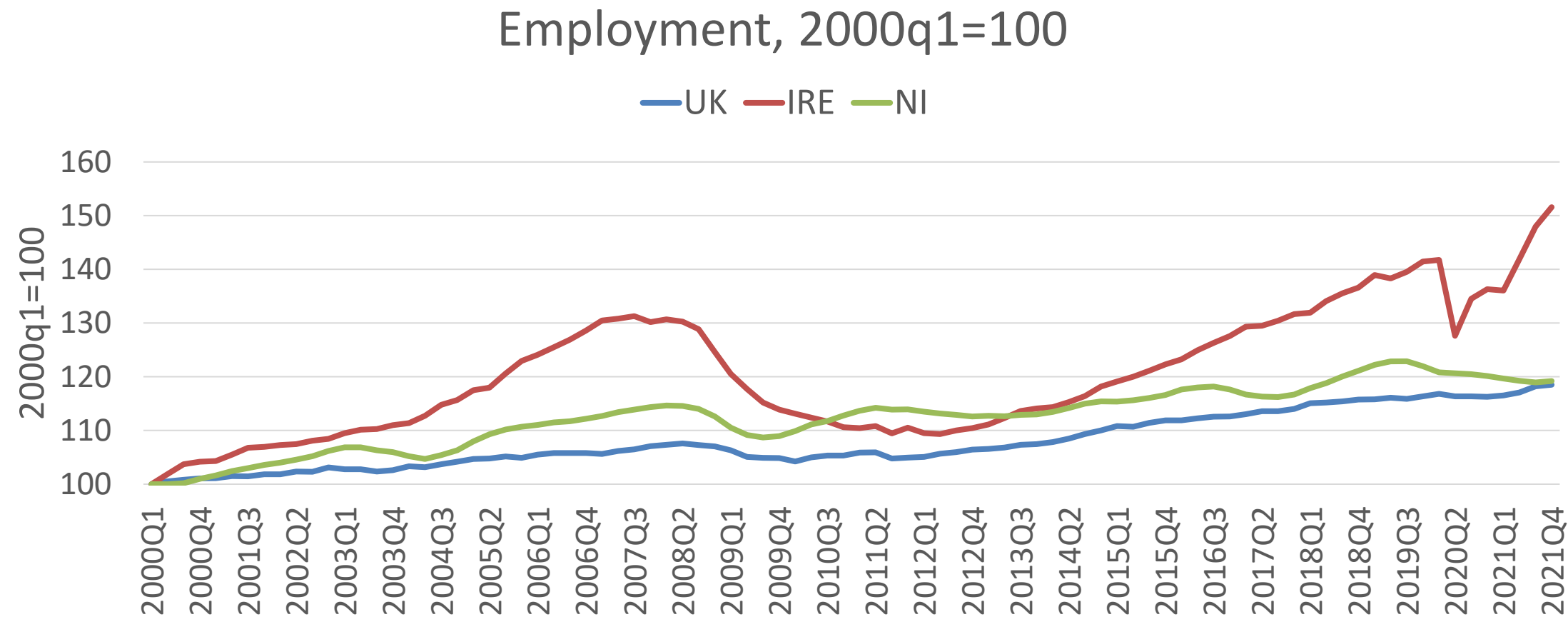
NI in a unique position following Brexit and Windsor Framework

Need to better understand the evolution of NI & how it functions within all-island economy, so have developed a macroeconomic model for NI

Research overseen by a steering committee including Ibec (chair), researchers from ESRI, NIESR and representatives from the NI business and academic community

Why build a model for NI?

NI macro data typically more volatile than UK but less volatile than IRE



Structural differences with IRE & UK: lower productivity, investment, smaller private sector etc.

Given these differences, would expect NI to react differently to shocks

Introducing AMNIE: A Macro-model of the Northern Ireland Economy

*Accompanying Technical paper 'A Macro-model of the Northern
Ireland Economy' available on ESRI and NIESR websites*



Macroeconomic Models

Medium-term projections and scenario analysis

Provide insight on the impact of economic issues (e.g. budgetary decisions) and to assess the potential impacts of shocks

Some examples:

- Economic impact of Brexit, Covid-19, war in Ukraine
- COSMO (IRE) and NiGEM (UK & international) models regularly used for this type of analysis

Model Structure

- Households consume (which depends on real personal disposable income and financial and housing wealth) and supply labour
- Corporate sector/firms produce, employ and invest
- Pricing decisions depend on costs, mark-ups and capacity
- Labour market (wages depend on productivity and the unemployment rate)
- Interest rates and exchange rates set at UK level

Model Structure

- Fiscal Block: Revenues (block grant and devolved revenues) and government spending on consumption and investment
 - Also includes income tax, corporation tax and transfers to households so can run fiscal shocks
- External/foreign sector: exports depend on world demand and competitiveness, imports depend on aggregate demand and import prices
- In the long run, output (GDP) is determined by productive capacity of economy, determined by demand in the short run ($C+I+G+ X-M$)

Database

Need detailed and consistent long time series for NI (e.g. national accounts, labour force survey etc.)

Issues/Challenges:

- Some series available for limited period, or not at all, or have gaps
- Develop processes to deal with data gaps, missing data etc
- Consistency of data over time (and across sources)

Constructed a database (mostly back to 1990):

- Main sources: Office of National Statistics (ONS), National Ireland Statistics and Research Agency (NISRA), Economic Statistics Centre of Excellence (ESCOE), EuroStat

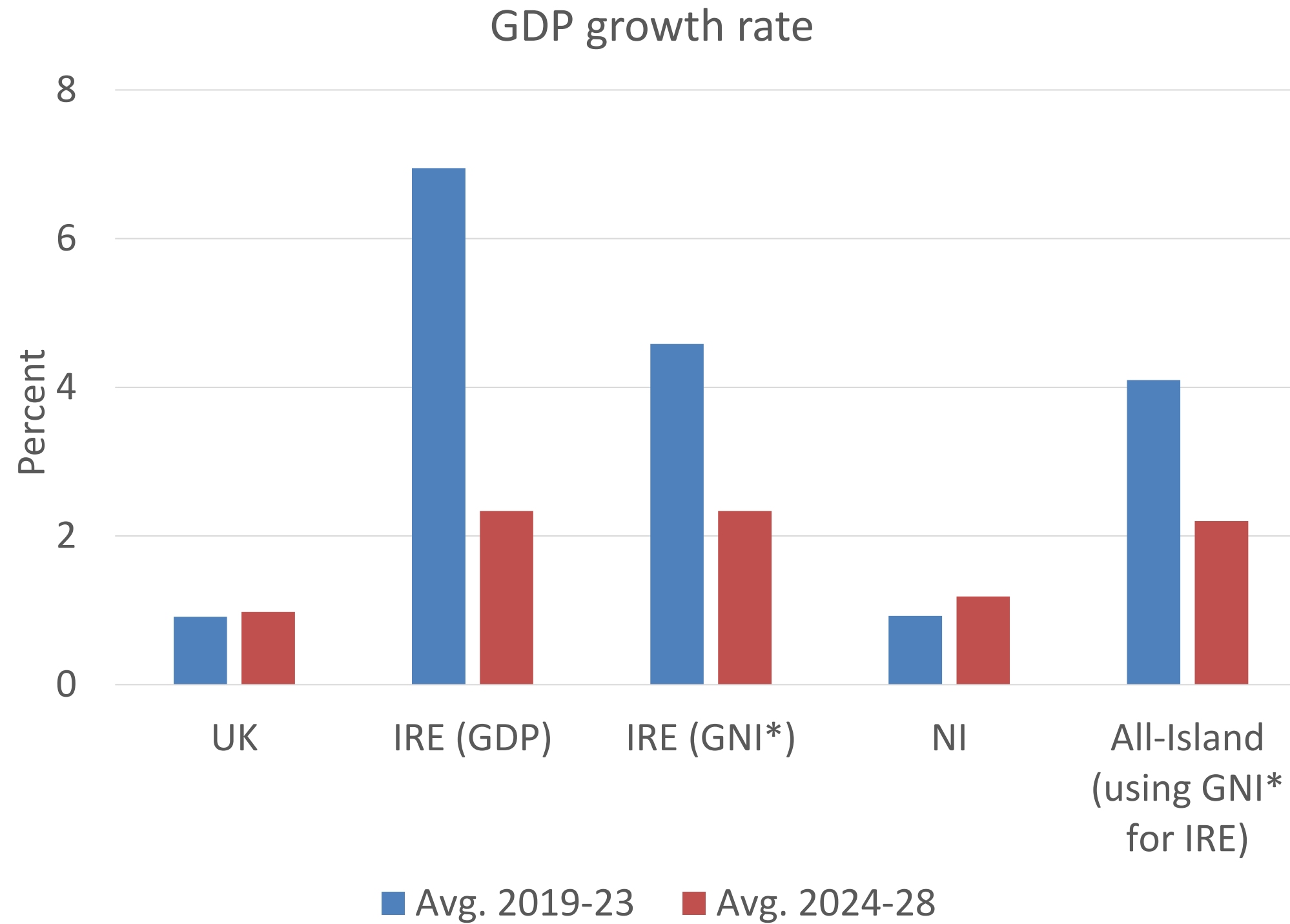
Baseline Projections



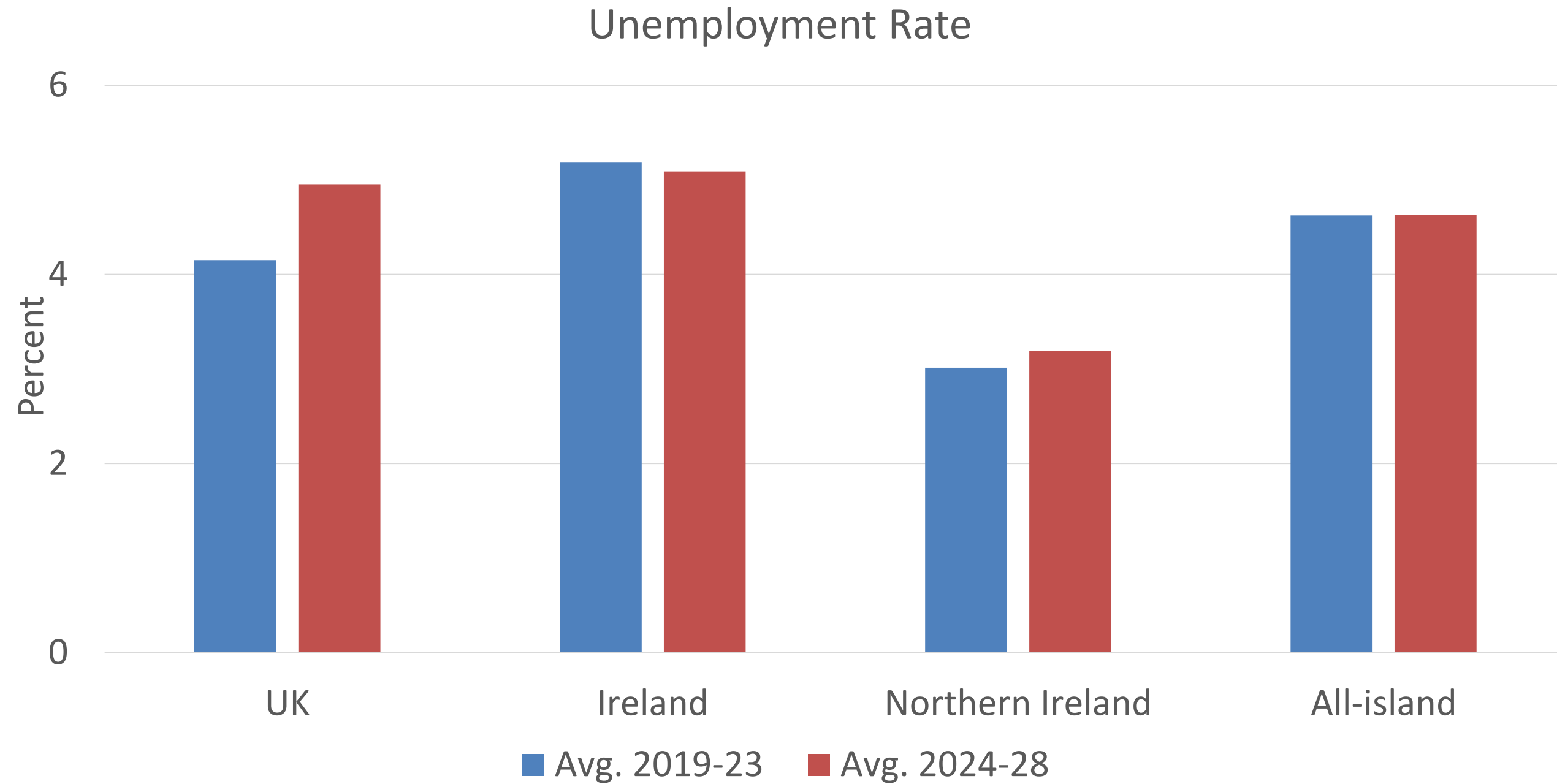
Northern Ireland

Column1	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
GDP growth	-8.7	7.9	1.3	1.2	0.7	1.7	1.4	1.2	1.0	0.9
Per capita GDP growth	-8.9	7.7	0.6	0.6	0.2	1.2	1	0.8	0.7	0.6
CPI Inflation, rate	0.6	2.2	7.9	6.9	2.2	2.4	2.5	2.7	2.4	2.2
Real Personal Disposable Income, growth	-1.0	2.2	-3.9	-0.8	1.4	1.7	1.6	1.3	1.3	0.8
Unemployment Rate, per cent	3.1	4	2.8	2.4	2.9	3.1	3.2	3.4	3.4	3.4

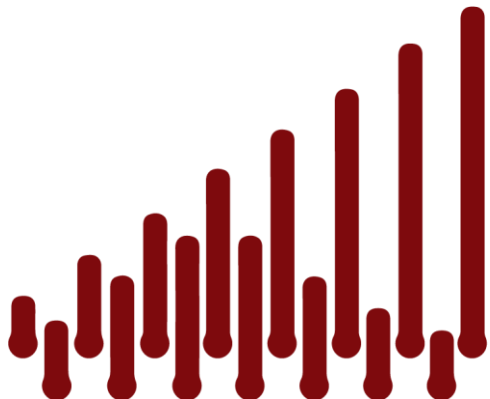
All-Island



All-Island



Shocks and Scenarios



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Scenarios

Model is an analytical tool that can be used to examine “what if” questions

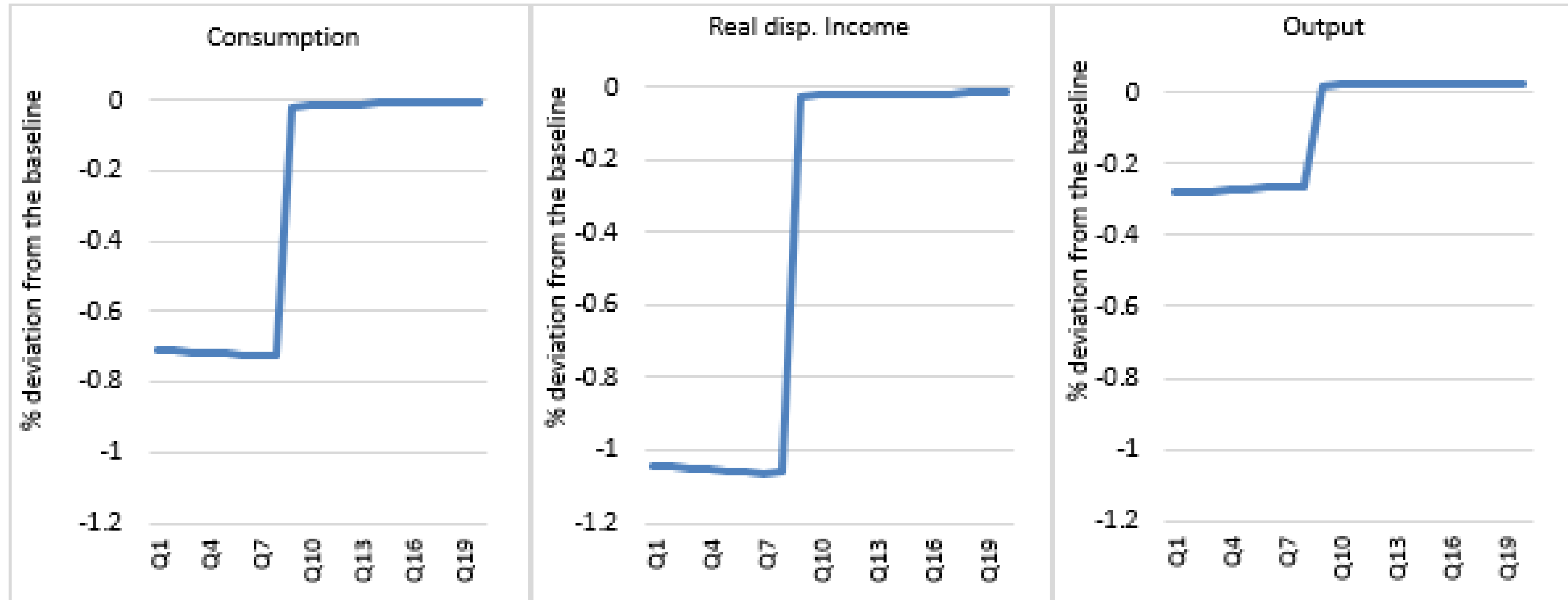
- Baseline projection provides an anchor to explore alternative policy scenarios, shocks etc.

To illustrate the capacity of the modelling framework, report considers a range of shocks including:

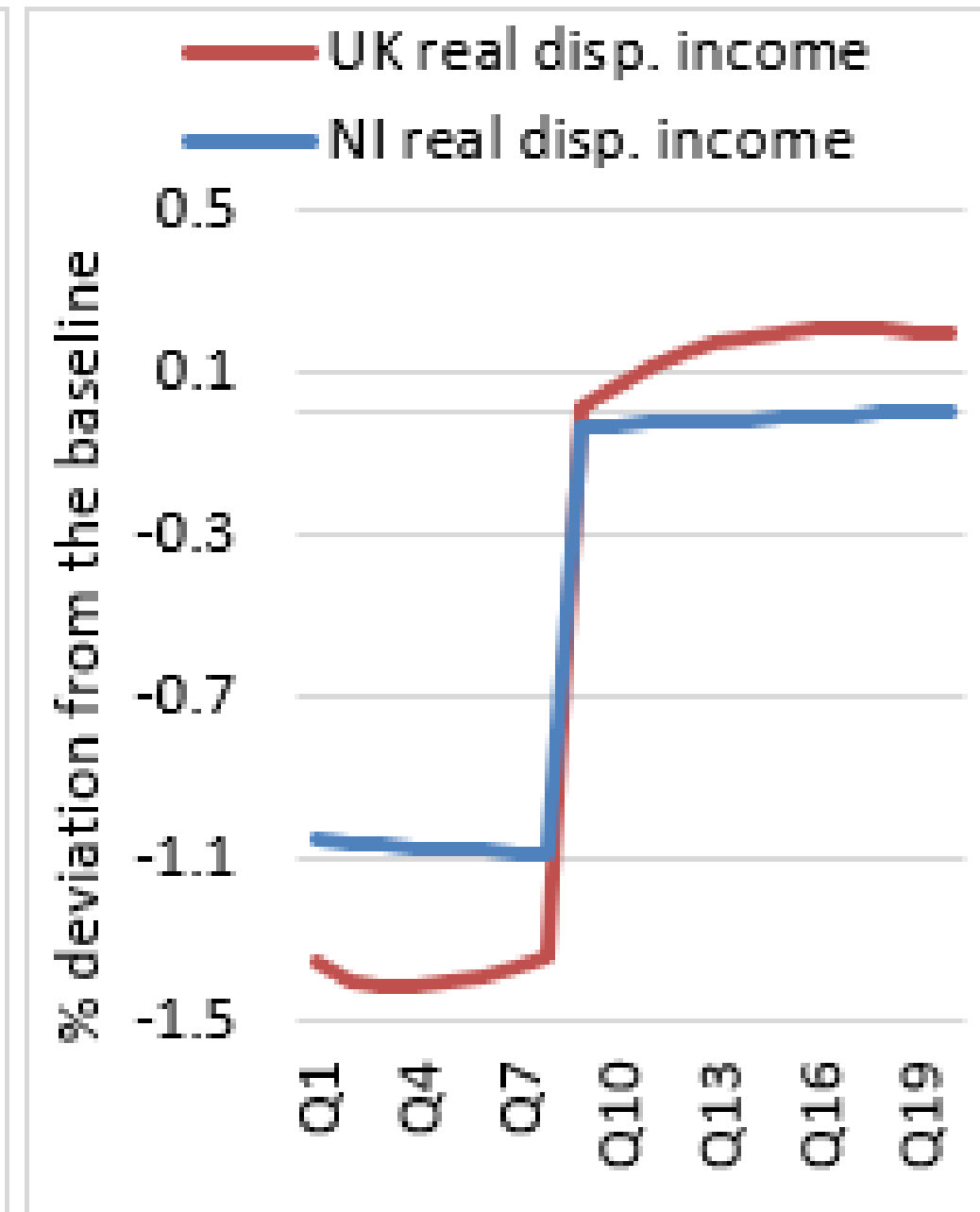
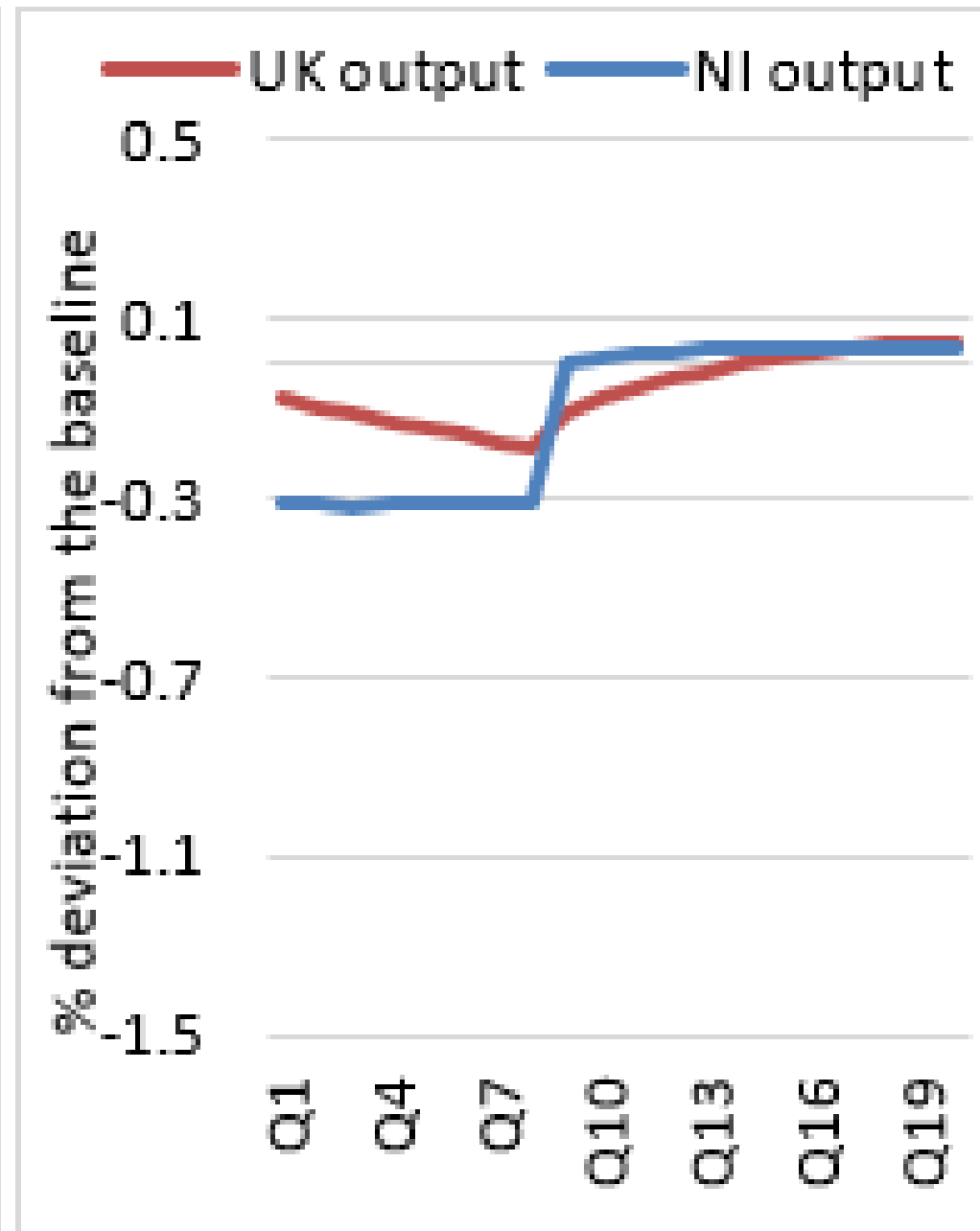
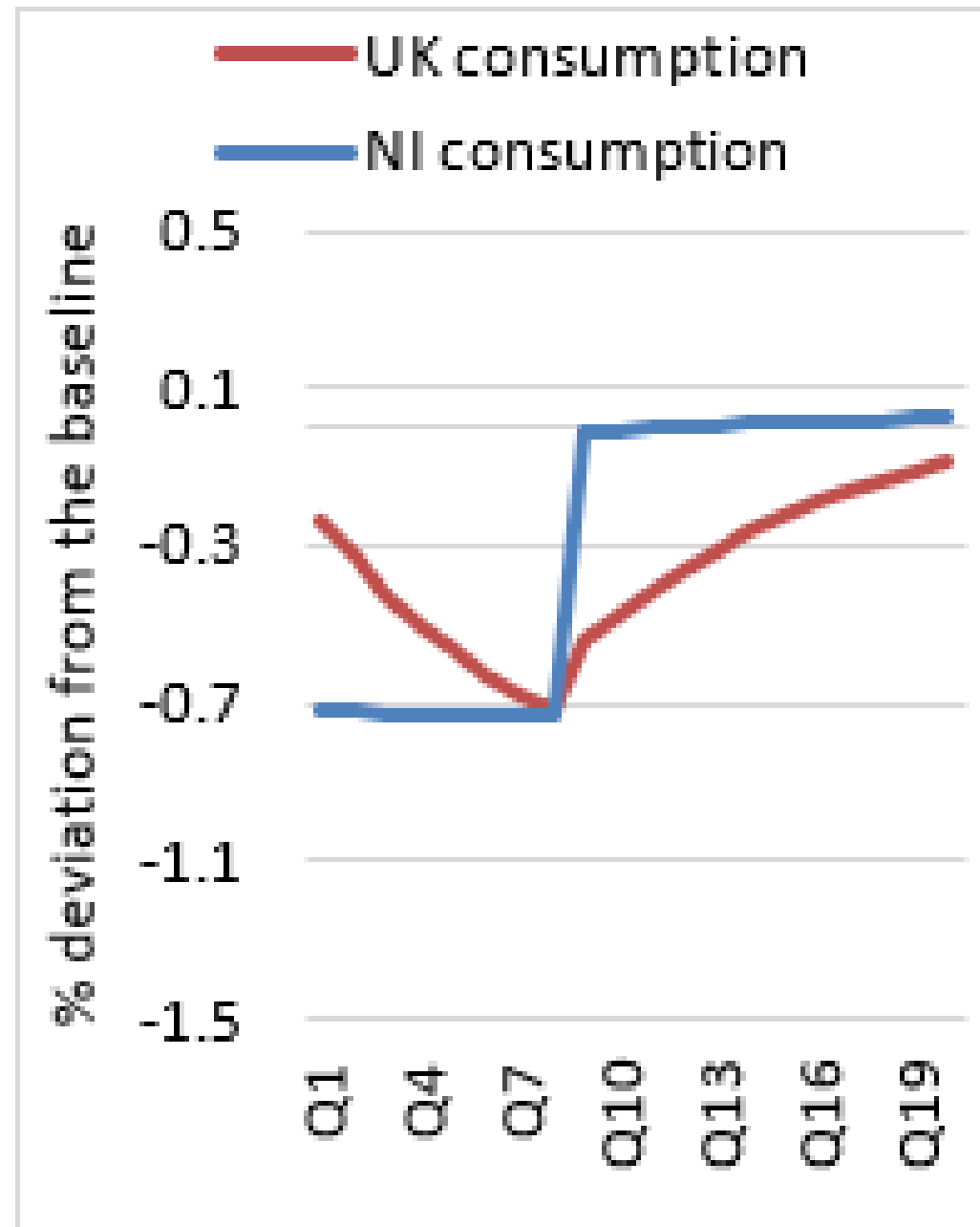
- 1a.** A 1pp increase in income tax rate in NI for two years, same shock for UK for comparative purposes
- 1b.** Examine hypothetical case where NI Executive receives associated revenue which can be used for spending or investment
- 2.** A 50 basis point increase in the policy rate of the Bank of England for two years
- 3.** A 1% positive shock to Irish exports – spillover effects on Northern Ireland’s economy and impact on all-island economy

All results presented as deviations from baseline

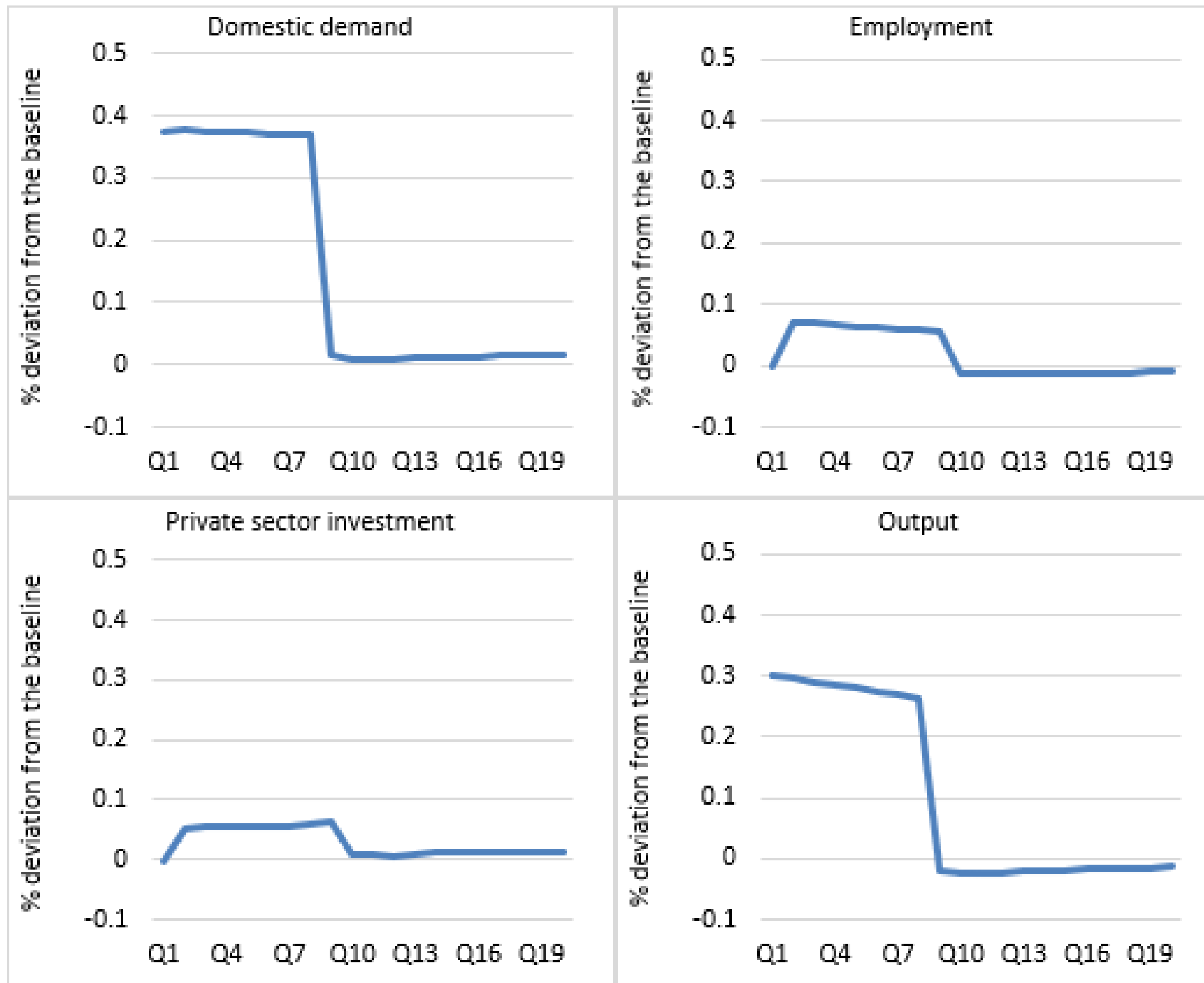
1a: A 1pp increase in income tax rate in Northern Ireland



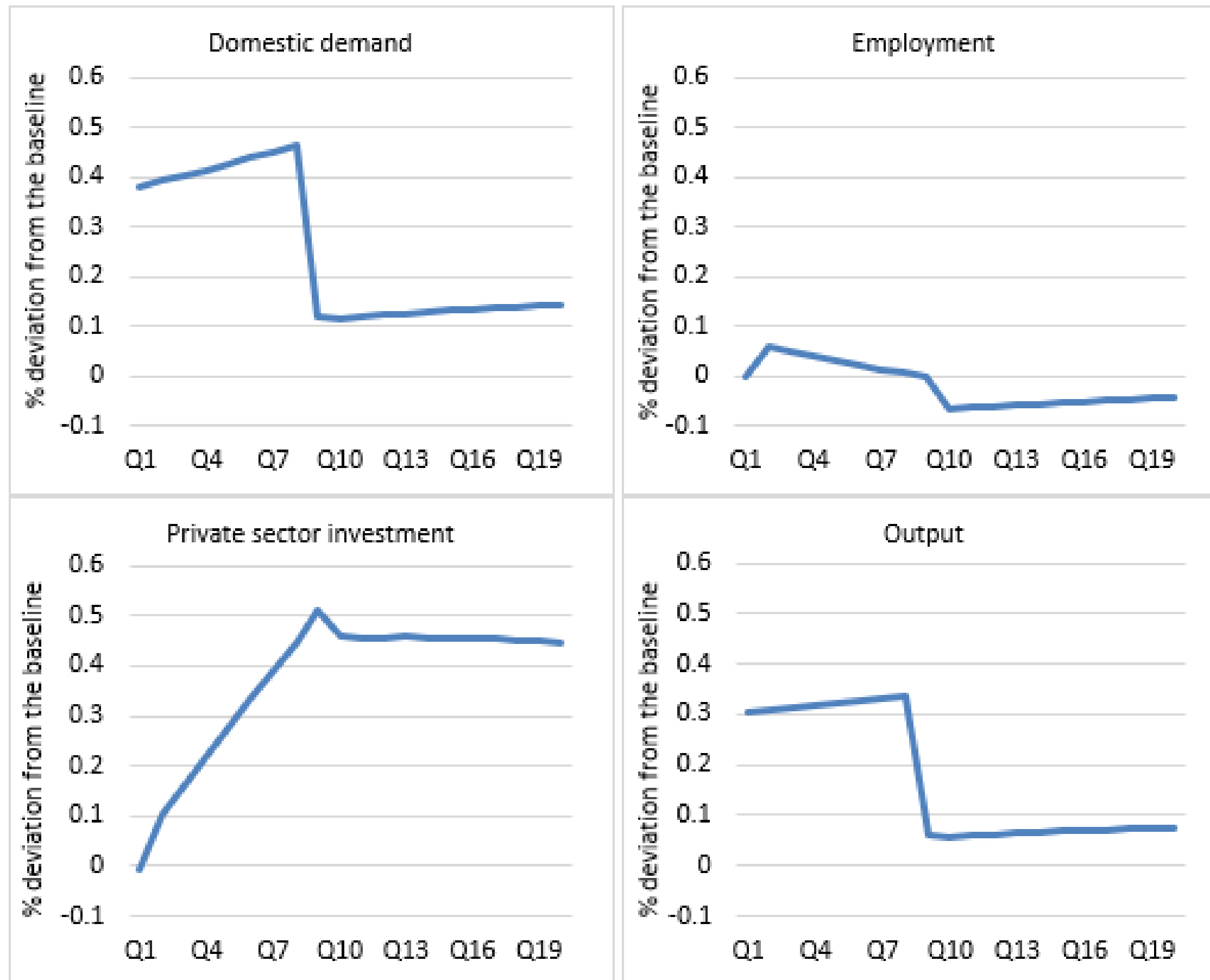
(Comparison: A 1pp increase in income tax rate in UK)



1b: Revenue used to Increase Government Consumption in Northern Ireland



1b: Revenue used to Increase Government Investment in Northern Ireland



Income Tax Scenarios

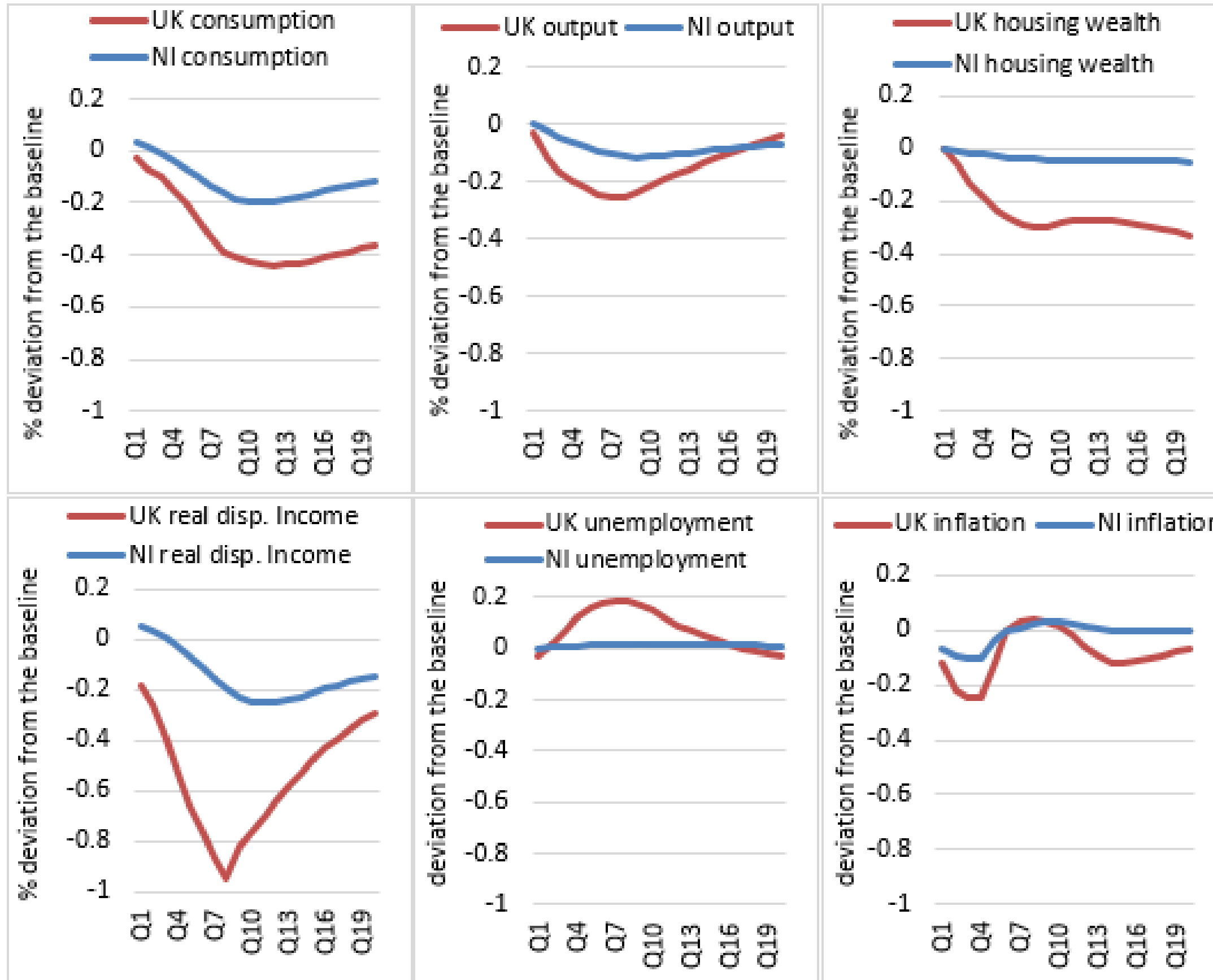
Increase in income tax (alone) has a negative effect on output, as income and demand end up below where they otherwise would have been

In hypothetical scenario where associated revenue is available to NI Executive, overall impact is to raise output above baseline level

Increase in NI government spending or investment tends to have a positive effect on private investment ('crowding-in').

Impact on output is stronger and permanent in the case of higher investment compared to higher spending highlighting the importance of how the revenue is spent

2: 50 Basis point increase in BoE Policy Rate



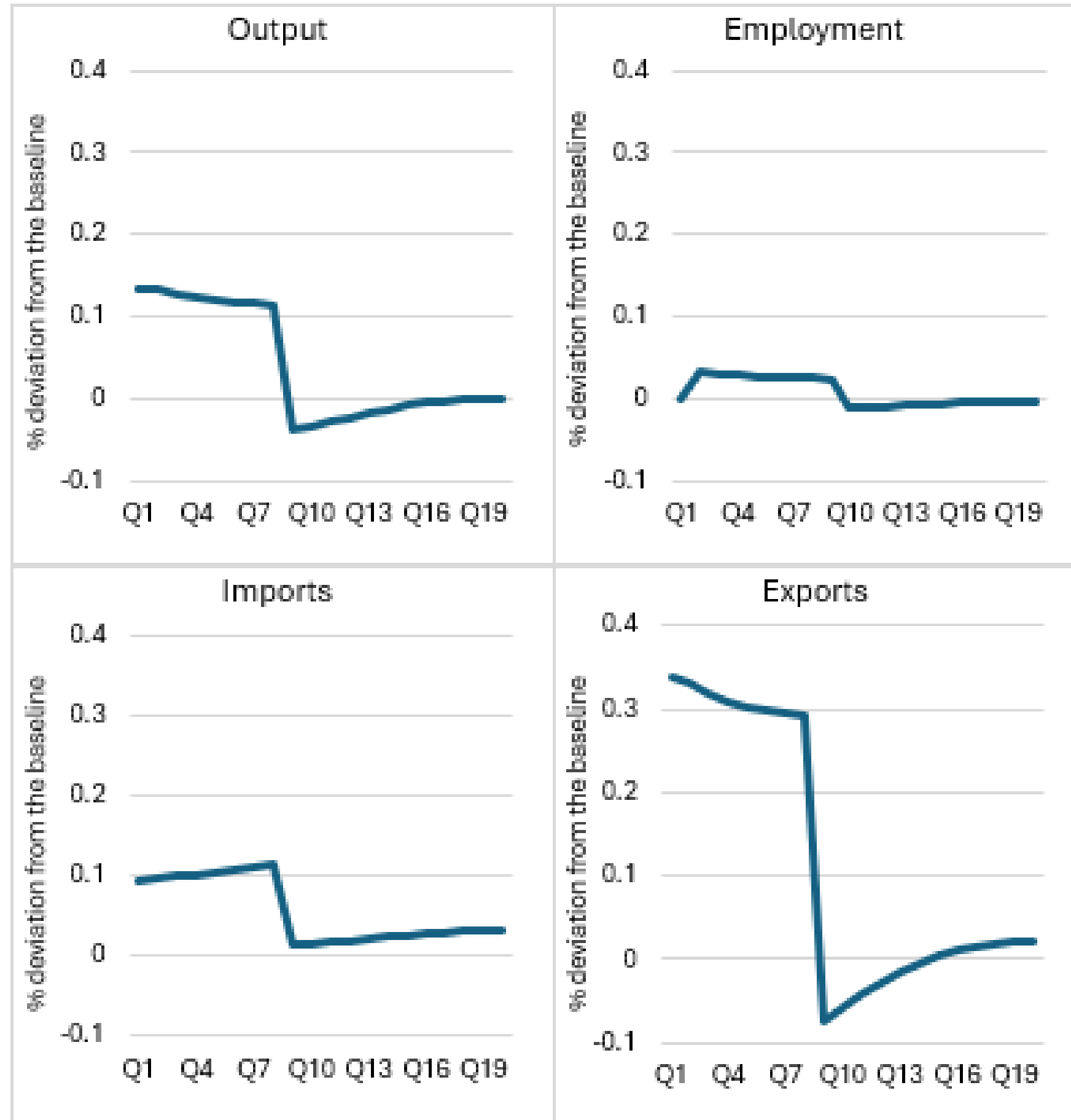
Monetary Policy shock

Higher interest rate reduces investment below baseline, lower demand eases pressure on the price level, labour demand declines below baseline with knock-on effects for wages.

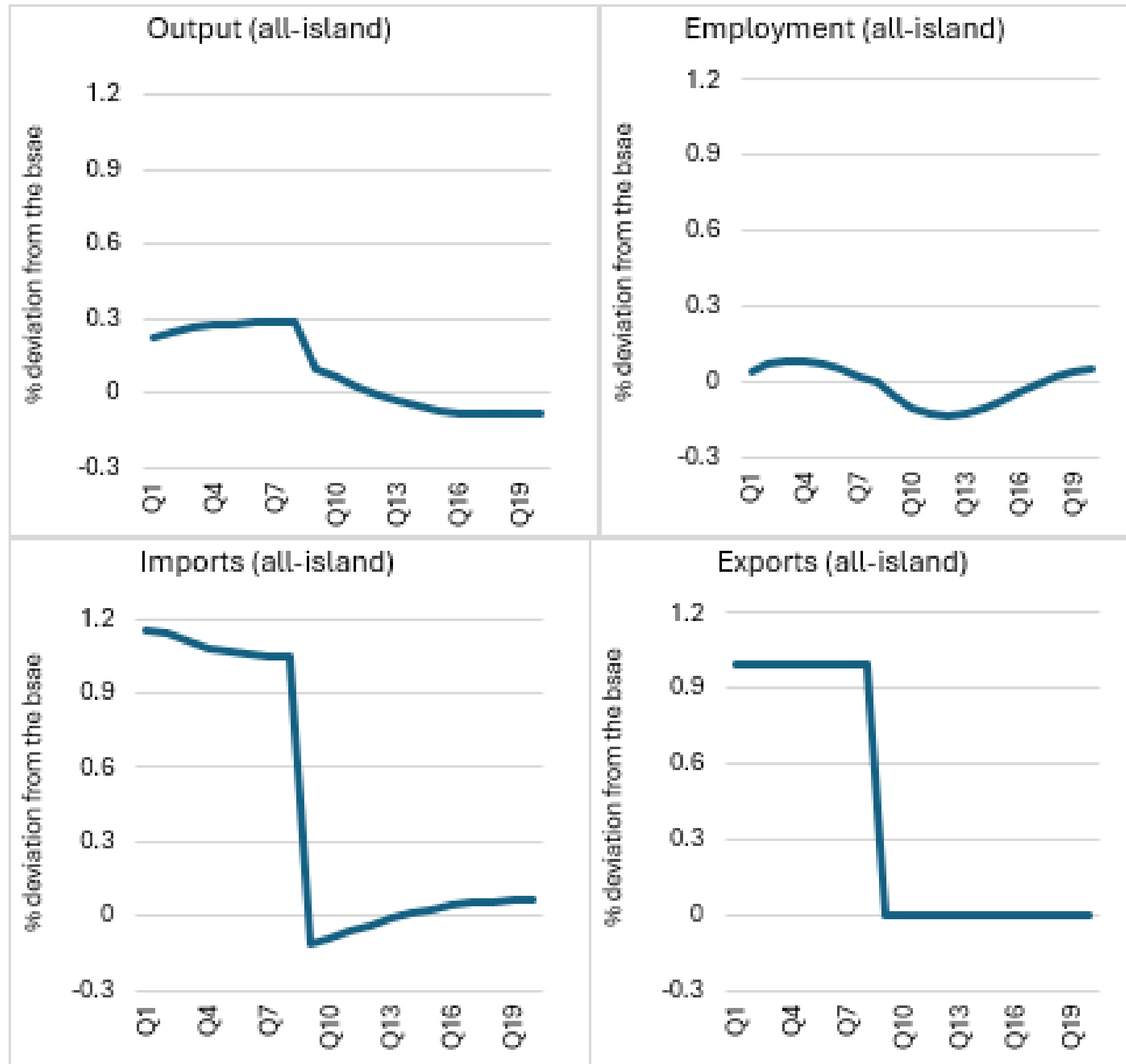
Model dynamics capture differential macroeconomic responses in NI compared to UK

Simulation results suggest Northern Ireland is less sensitive to interest rate changes than UK

3: 1% Increase in Irish Exports – spillover effects on NI



3: 1% Increase in Irish Exports – impact on All-Island Economy



Increase in Irish Exports

Positive effect on Northern Ireland's output, with knock-on impacts for demand and employment

Positive effect on all-island output which returns to baseline once the shock dissipates

Conclusions

Policy-Advice model, strikes a balance between theory and data

Framework allows us to examine the effects of economic policies and shocks – both emanating from within Northern Ireland and from the outside world – on Northern Ireland, Ireland, the all-island economy, the UK and the international economy

Contributes to our wider understanding and knowledge of how the Northern Ireland economy functions within the context of the wider all-island economy, and the UK and global economies.

