Monetary Versus Macroprudential Policies:

Casual Impacts of Interest Rates and Credit Controls in the Era of the UK Radcliffe Report*

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* The views expressed in this paper of those of the authors and not necessarily those of the Bank of England

Motivation

- We are now in a world of conjoined monetary and macroprudential policies
  - Countercyclical capital buffer, sectoral risk weights, loan to income and loan to value restrictions

- Empirical evidence for the effects of this policy mix is sparse

- We attempt to help fill this gap by analysing the UK's three-decade long experiment with using credit policy tools alongside interest rates, which ended in 1982

Our Research Questions

- Historical perspective
  - How were these instruments used and why?
  - What were there effects on macroeconomic variables?
  - Did policymakers understand their effects?
  - What was their contribution to macroeconomic outcomes in the 60s and 70s?

- Relevance to today: credit policy instruments are similar to those under consideration by macroprudential policymakers
  - What were the effects on variables associated with build-up of systemic risk?

Our Main Findings

- Credit policies were varied systematically over the period in response to developments in the macroeconomy
- Changes in Bank Rate are correlated with changes in credit policies, although not perfectly
- Credit policy actions had a robust, significant impact on bank lending and on the credit-to-GDP ratio
  - Evidence of supply-side impact
- Bank Rate had a robust significant impact on GDP and inflation
  - Casts doubt on the Radcliffe Report's scepticism about the efficacy of monetary policy

Historical Context

RADCLIFFE REPORT

- The Report of the Committee on the Working of the Monetary System (1959)

- Wide-ranging survey of the structure and operation of UK monetary and financial system

Cyril John Radcliffe, 1st Viscount Radcliffe GBE, PC, QC

- Key messages:
  - Don't trust monetary policy to achieve the objectives of full employment, stable prices and external balance
  - Use instruments which work more directly on lending alongside Bank Rate

Monetary Policy Scepticism

- Radcliffe Report:
  - *But, when all has been said on the possibility of monetary action and of its likely efficacy, our conclusion is that monetary measures cannot alone be relied upon to keep in nice balance an economy subject to major strains from both without and within. Monetary measures can help, but that is all.*

UK Macroeconomic Context

- Exchange rate regime:
  - Bretton Woods until 1972, but ongoing exchange rate trouble along the way, including 1967 devaluation
  - Floating from 1972, but exchange rate concerns still important factor in policy
  - Increasing capital mobility as the period progresses

- Banking system regime:
  - Very conservative banking system cartel until 1971
  - Competition from non-banks increasing in late 1960s
  - Competition and Credit Control reform in 1971 – eliminated cartel, loosened other restraints and led to a boom in lending
  - Banking crisis in 1973-75

- Public debt to GDP ratio:
  - Very high after WWII and a major, but decreasing, concern
  - Bank of England responsible for debt management

International Context

- Many countries pursued similar credit policies during this period:
  - Elliott, Feldberg and Lehnert (2013) discuss the United States' experience with credit policies from the 1920s. They find such policies had a contractionary impact on consumer lending
  - Monnet (2014) finds that French credit policies had similar effects to estimates of monetary policy found elsewhere in the literature
  - Monnet (2014) summarises the use of credit policies in European countries

Which Instruments Were Used and How?

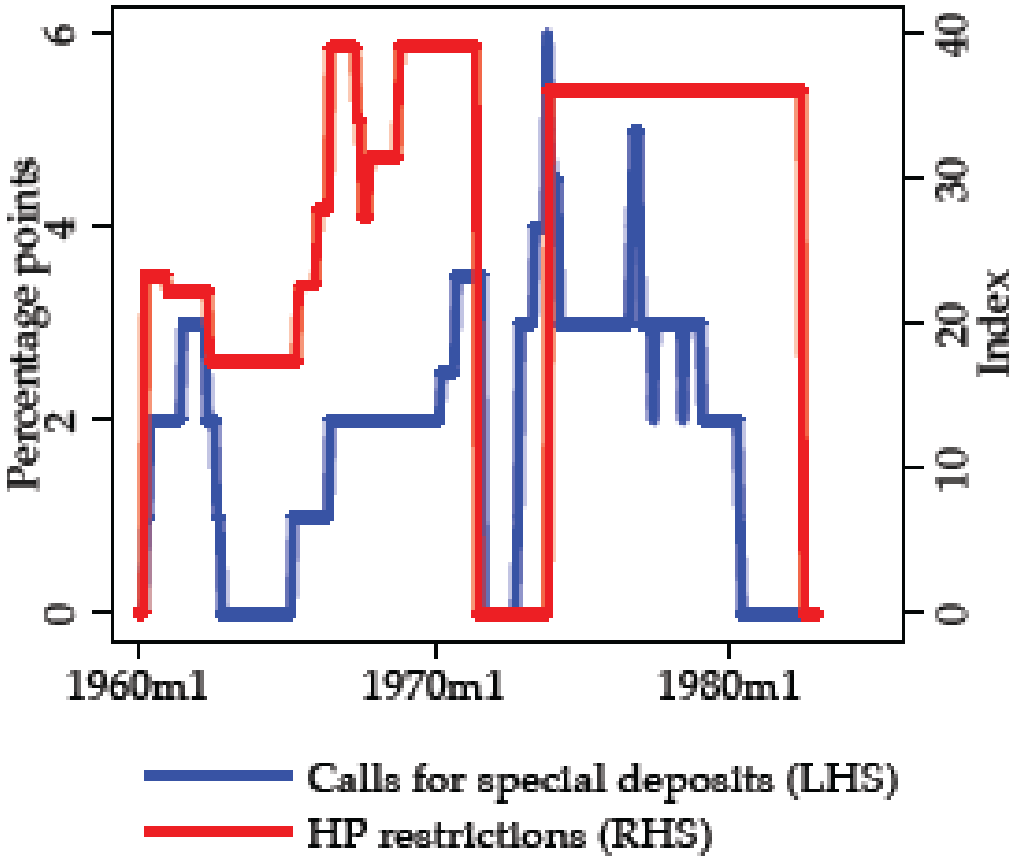
Credit Controls

Policy instrument	Description	Responsible Authority	Scope	Usage
Special Deposits	Interest-bearing deposits at the BoE	BoE	Clearing banks	First used April 1960; frequent usage thereafter
Supplementary Special Deposits (The 'Corset')	Non-interest bearing deposits at the BoE, amount increasing in growth rate of deposits	BoE	All listed banks	1973, 1976, 1978
Credit Ceilings	Short-term qualitative and quantitative ceilings on level of credit	BoE	Clearing banks; letters also sent to finance, acceptance, and discount houses	Various times throughout period
Hire-Purchase Restrictions	Restrictions on terms of instalment credit	Board of Trade (UK government)	Market-wide	Various times; last used in 1982

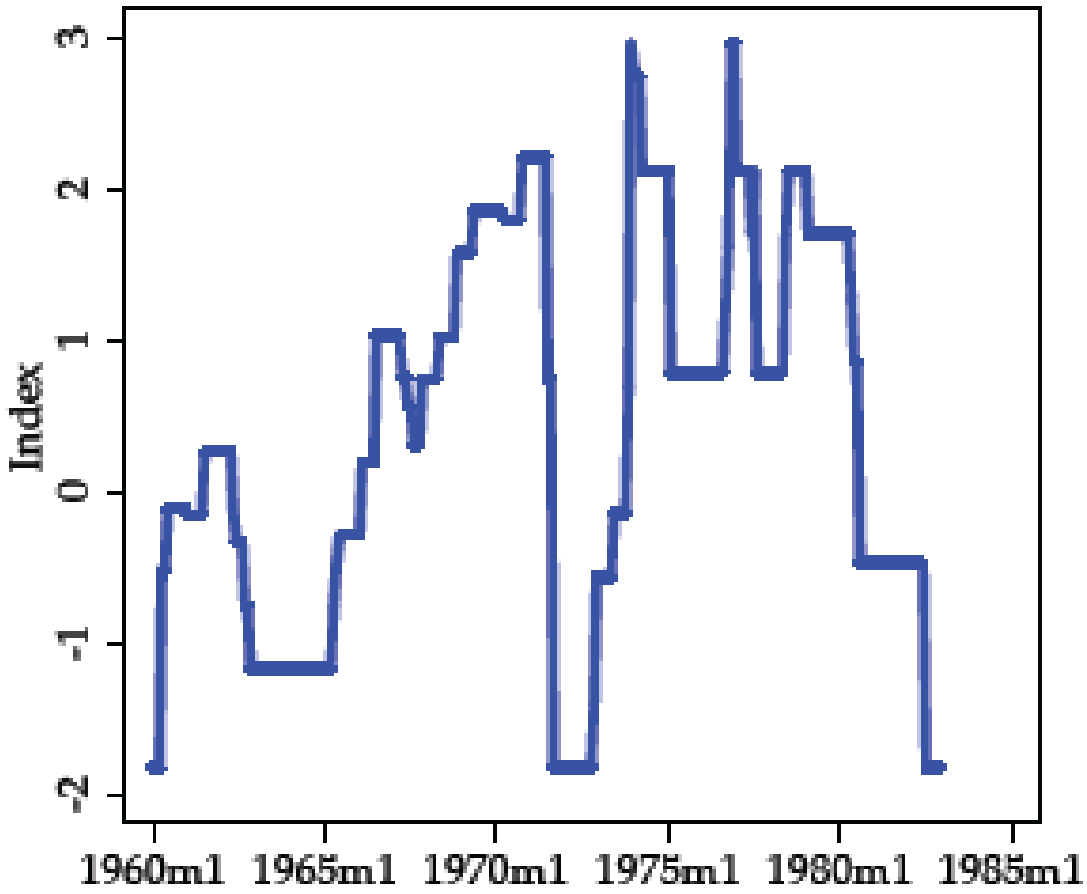
Creating a Credit Policy Index

- Two-step approach:
  - Create credit policy sub-indices that characterise the stance of each of the four tools individually
  - Define the aggregate credit policy index by the first principal component of these four time series
  - This is the key explanatory variable we use in our analysis

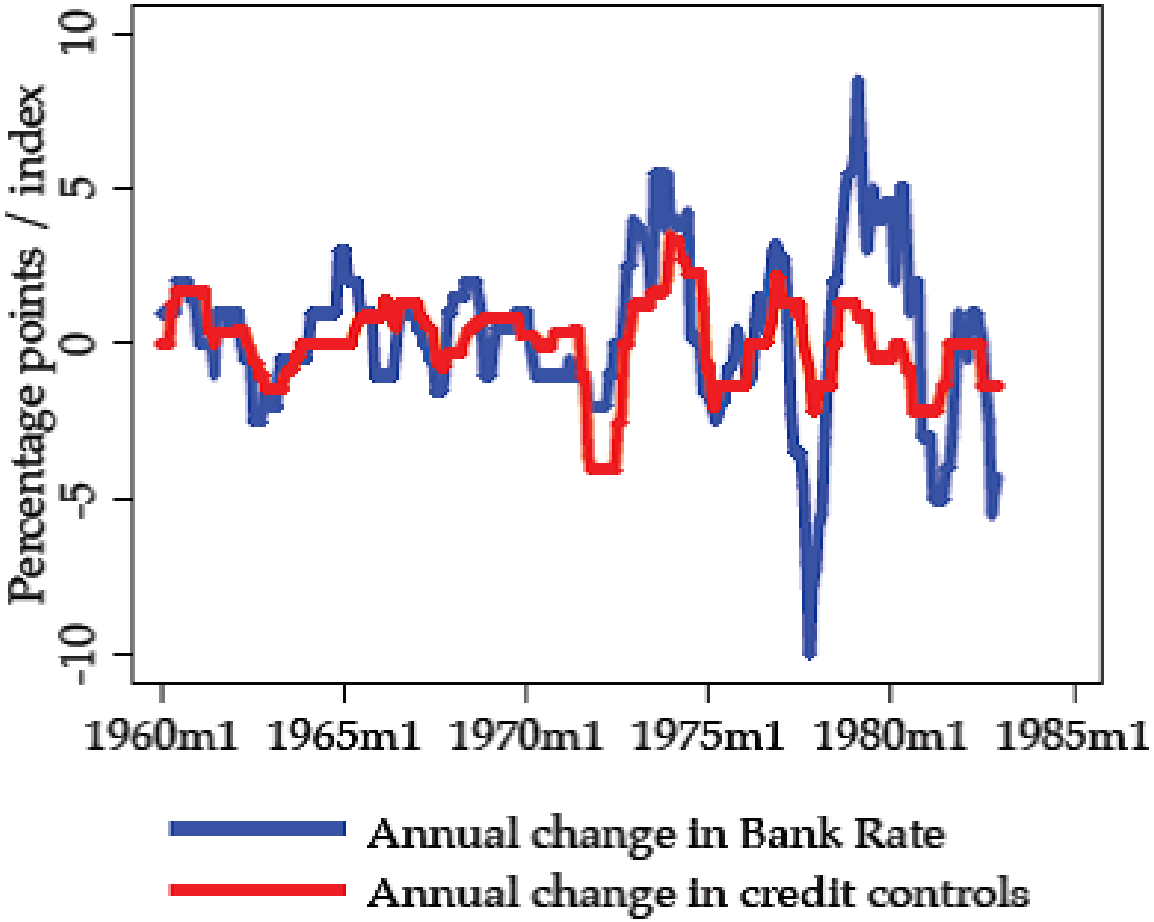
Sub-Indices: Special Deposits and Hire-Purchase Restrictions



Aggregate Credit Policy Index



Co-movement of Monetary and Credit Policies



What Was Their Impact on the Macroeconomy?

IDENTIFICATION STRATEGY: FALP

- Challenge: Policymakers act in response to prospective movements in output, lending etc.
- Romer and Romer (2004), Cochrane (2004): use forecasts to overcome omitted variable bias
- Bernanke *et al* (2005): use factors as proxies for forecasts
- Our approach: do both (virtue out of necessity)
  - *Factor-Augment Local Projections* (FALPs)
  - We don't have forecasts for every policy decision
  - Factors contain additional information

IDENTIFICATION STRATEGY: FALP

- Combine with local projections (Jorda, 2005) – more flexible approach to estimating IRFs than VARs

- We estimate local projections at each horizon, regressing our response variables on policy variables and conditioning on forecasts and factors:

$$\Delta y_{i,t,t+h} = \alpha_{i,h} + \beta_{i,h}\Delta\text{policy}_t + \gamma_{1,i,h}\Delta\text{policy}_{t-1} + \gamma_{2,i,h}\Delta\text{policy}_{t-2} + \sum_{j=1}^{J}\gamma_{i,h,j}E_t[\Delta y_{j,t}] + \sum_{k=1}^{K}\sum_{l=1}^{L}\eta_{i,h,k,l}F_{i,k,t-l} + \zeta_{i,h}\text{month}_t + \epsilon_{i,h,t}$$

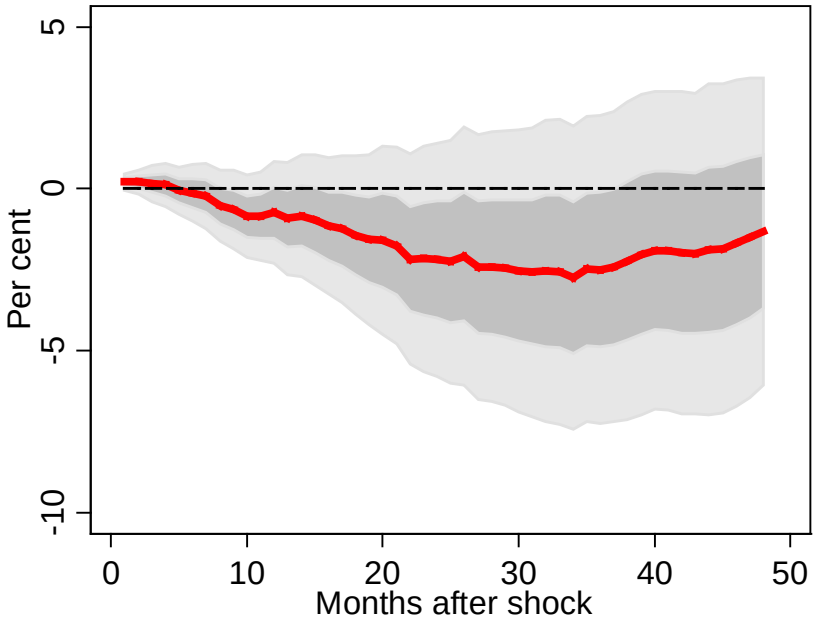
- Our baseline results are based on three factors and one lag

DATASET: 1960-1982

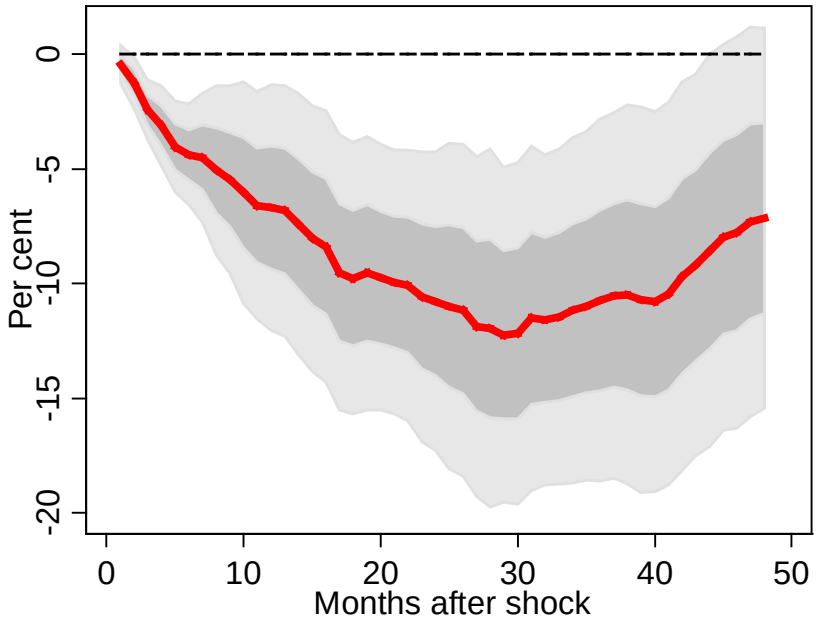
- **Credit policies:**
  - Hand-collected data on special deposits, credit ceilings, the corset, and hire purchase regulations
- **Macroeconomic variables:**
  - Bank lending, manufacturing output, consumer price inflation and the trade balance-to-GDP ratio
- **Forecasts:**
  - New hand-collected dataset of forecasts of UK GDP, inflation and the current account
  - HM Treasury supplemented by National Institute of Economic and Social Research (following Cloyne and Huertgen, 2014)
- **Factors:**
  - Extracted from a new monthly macroeconomic dataset of 67 variables

RESPONSE OF BANK LENDING

*Response of bank lending to a 100 basis point **Bank Rate** shock*

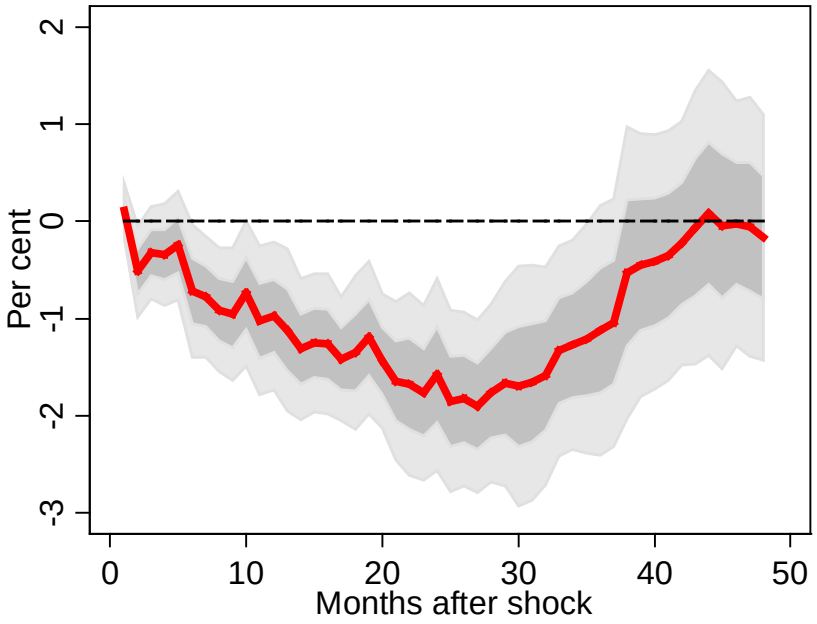


*Response of bank lending to a 100 basis point **credit policy** shock*

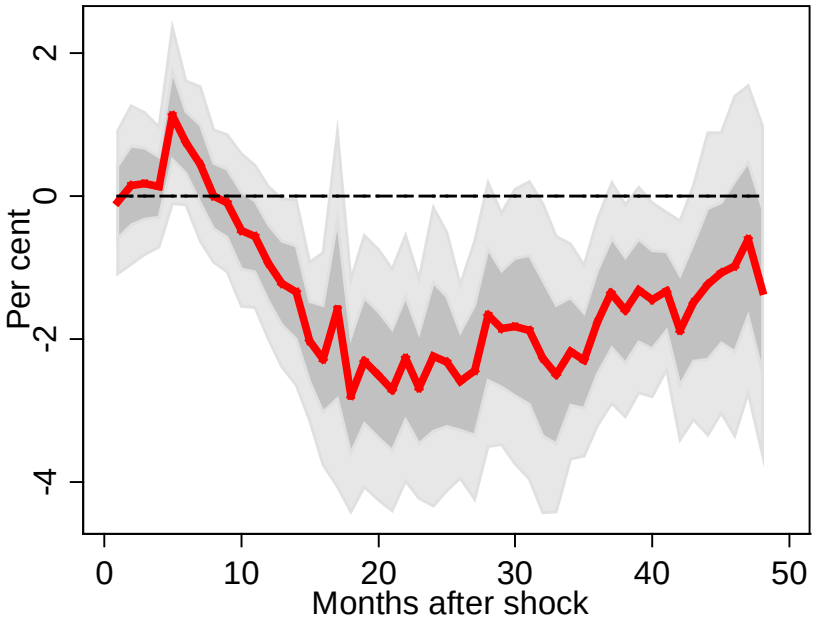


Response of Real Activity

*Response of manufacturing output to a 100 basis point **Bank Rate** shock*

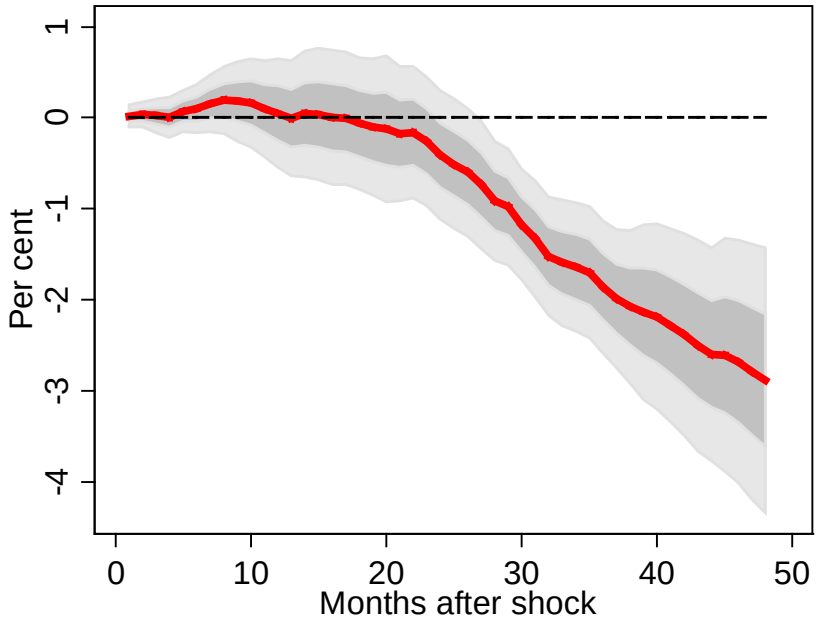


*Response of manufacturing output to a 100 basis point **credit policy** shock*

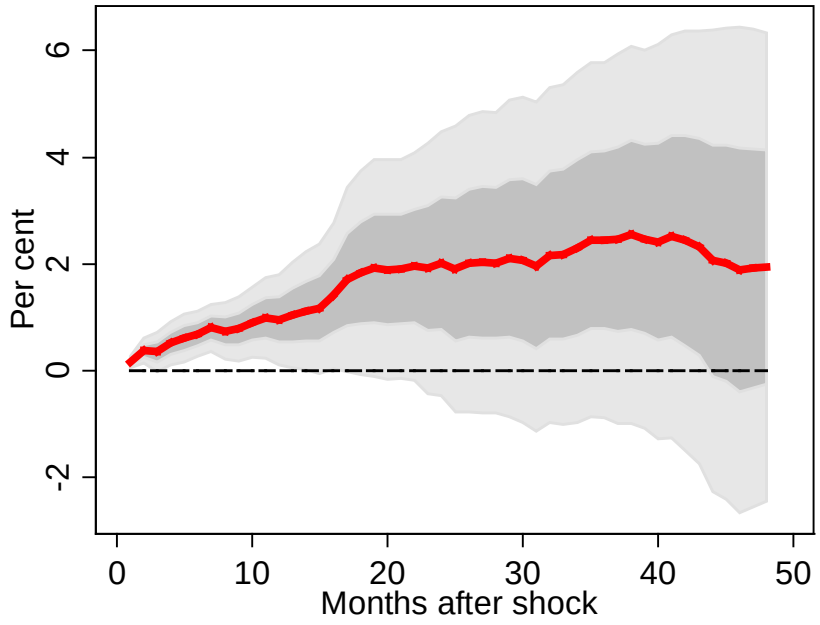


Response of Consumer Prices

Response of CPI to a 100 basis point ***Bank Rate*** *shock*

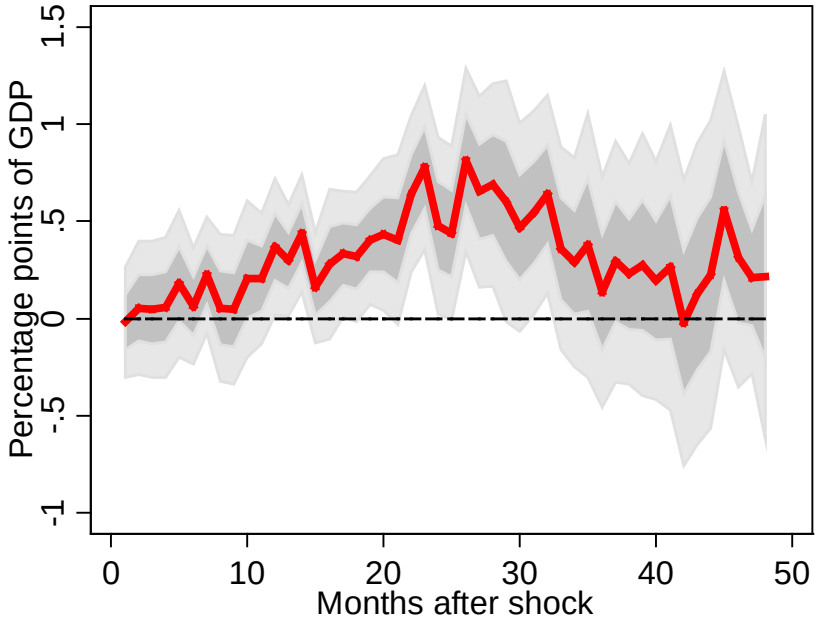


Response of CPI to a 100 basis point ***credit policy*** *shock*



RESPONSE OF EXTERNAL BALANCE

*Response of the trade balance-to-GDP ratio to a 100 basis point **Bank Rate** shock*



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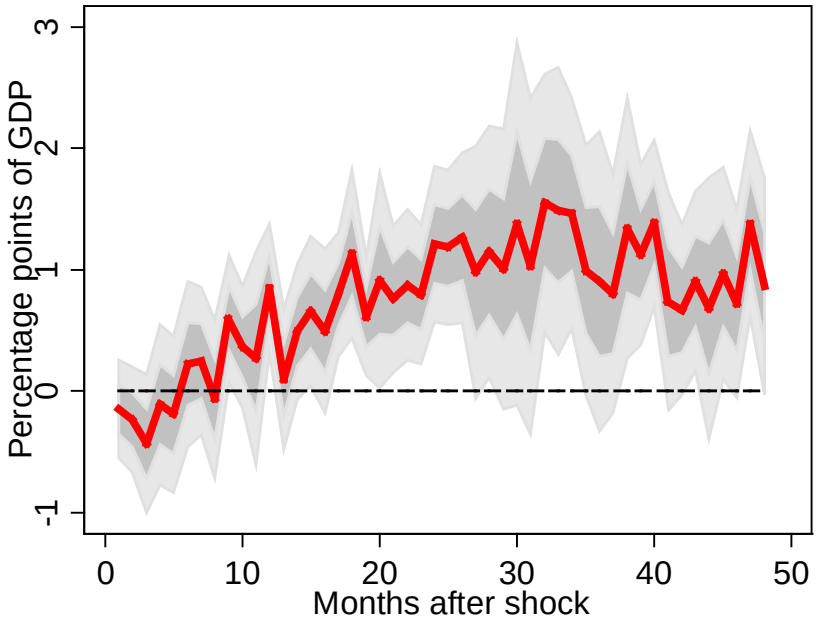


Main Results - Summary

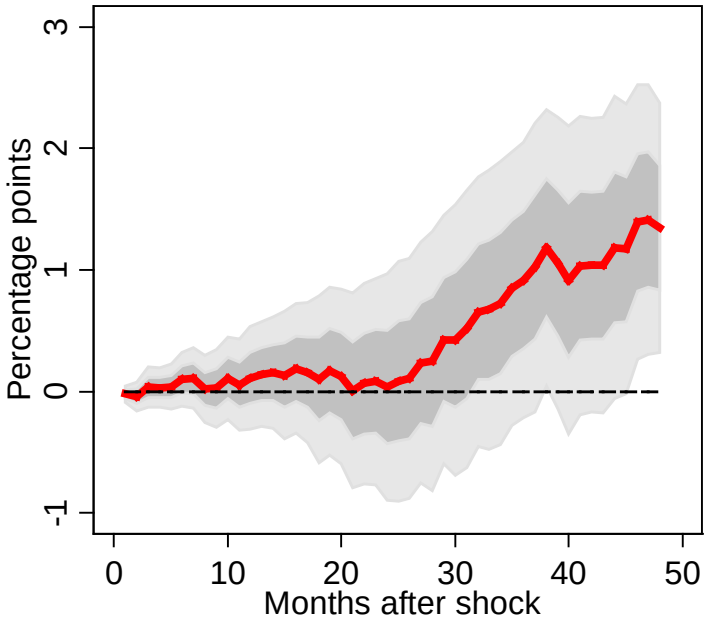
- Effects of policy tightening on macroeconomic indicators:

Policy	Output	Inflation	Credit	Trade Balance
Bank Rate	↓	↓↓	↓	↑
Credit Policy	↓	↑	↓↓	↑

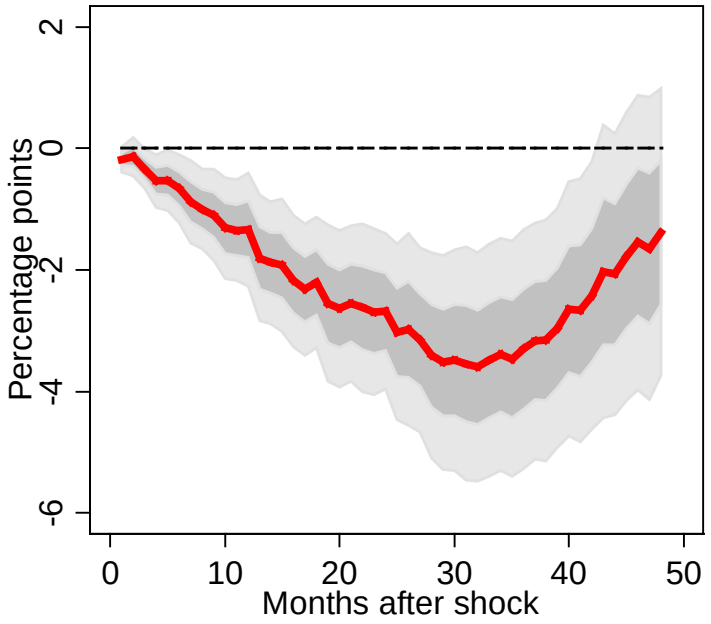
What is the Impact on Variables We Consider to be Relevant to Financial Stability?

Response of Credit-to-GDP Ratio

*Response of credit-to-GDP to a 100 basis point **Bank Rate** shock*



*Response of credit-to-GDP to a 100 basis point **credit policy** shock*



Main Results - Summary

- Effects of policy tightening on macroeconomic indicators:

Policy	Output	Inflation	Credit	Trade Balance
Bank Rate	↓	↓↓	↓	↑
Credit Policy	↓	↑	↓↓	↑

- Effects of policy tightening shock on financial stability indicators:

Policy	Credit-to-GDP	Loan-to-Deposits	Debenture spread
Bank Rate	↑	↓	↑
Credit Policy	↓↓	↓	↑

Main Results - Summary

- Effects of a contractionary shock on macroeconomic indicators:

Policy	Output	Inflation	Credit	Trade Balance
Bank Rate	↓	↓↓	↓	↑
Credit Policy	↓	↑	↓↓	↑

- Effects of a contractionary shock on financial stability indicators:

Policy	Credit-to-GDP	Loan-to-Deposits	Debenture spread
Bank Rate	↑	↓	↑
Credit Policy	↓↓	↓	↑

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Policy	Output	Inflation	Credit	Trade Balance
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- Effects of a contractionary shock on financial stability indicators:

Policy	Credit-to-GDP	Loan-to-Deposits	Debenture spread
Bank Rate	↑	↓	↑
Credit Policy	↓↓	↓	↑

Individual Credit Controls

- Effects of policy tightening on macroeconomic indicators:

Policy	Output	Inflation	Credit	Trade Balance
Special deposits	↓	↑	↓	↓
Credit ceilings	↓	None	↓↓	↑
Corset	None	None	None	None
HP regulation	↓	↑	↓	↑

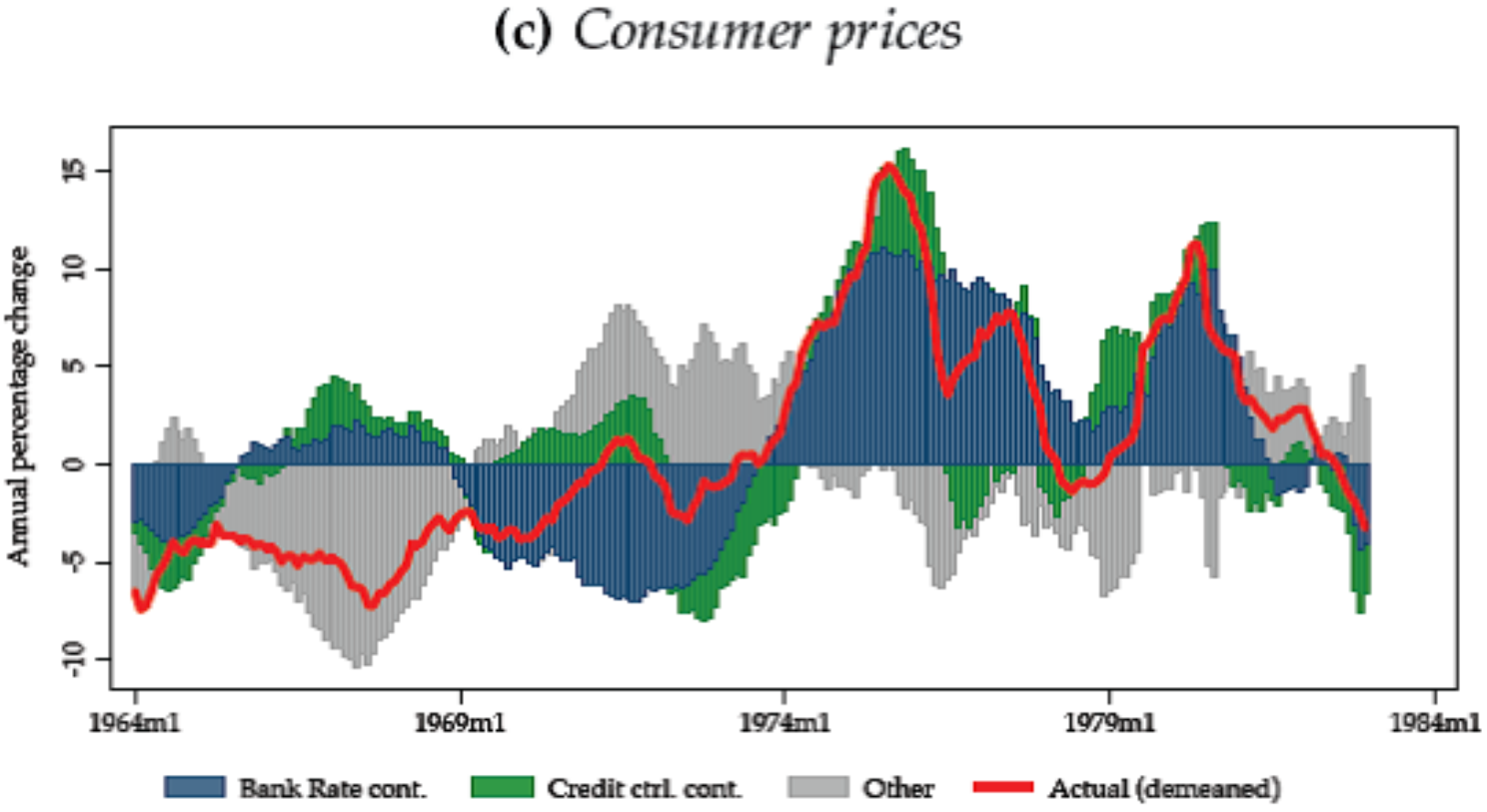
Individual Credit Controls

- Effects of policy tightening on financial stability indicators:

Policy	Credit-to-GDP	Loan-to-Deposits	Debenture spread
Special deposits	↓	↓	↑
Ceilings	↓↓	↓↓	None
Corset	↓	↑	None
HP regulation	↓↓	↓	None

Impact on Evolution of the Economy

CONSUMER PRICES



CONCLUSIONS

CONCLUSION

- Credit policies act in a different space to monetary policy
  - Credit policies act strongly on credit and credit-to-GDP ratios so may be better suited for financial stability objectives
  - Monetary policy acts strongly on inflation and growth

- Monetary and credit policies both important in this part of UK economic history

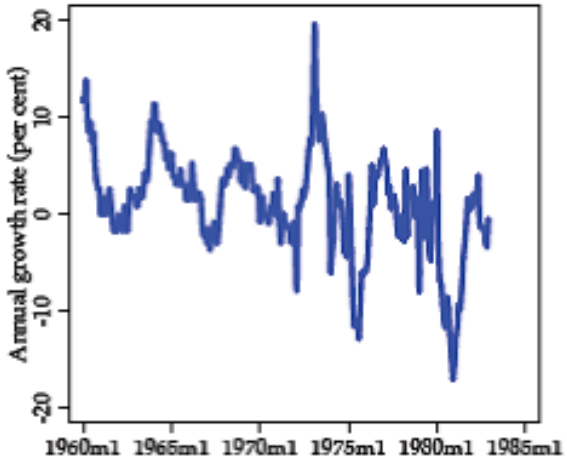
- Future research:
  - Understanding impact of credit policy on prices
  - Focus on Great Inflation in the UK

Additional Slides

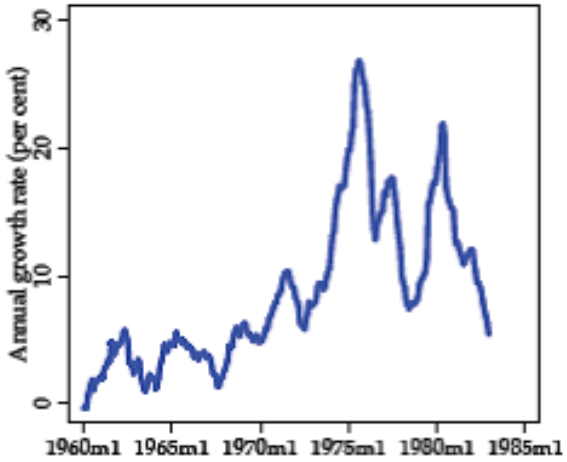
Figure 3: *Behaviour of key macroeconomic variables over the period*

The figure presents time series of four macroeconomic indicators over our sample period.

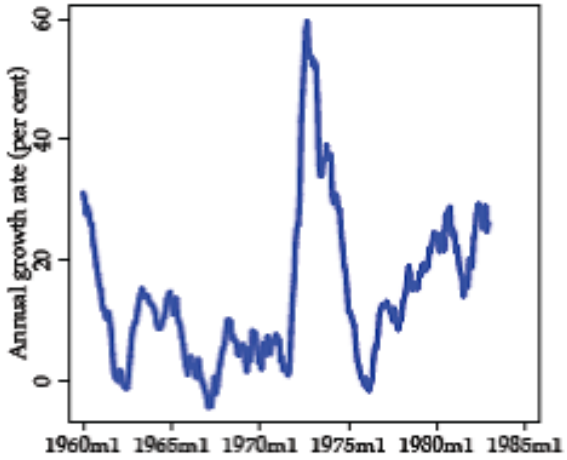
(a) *Manufacturing output*



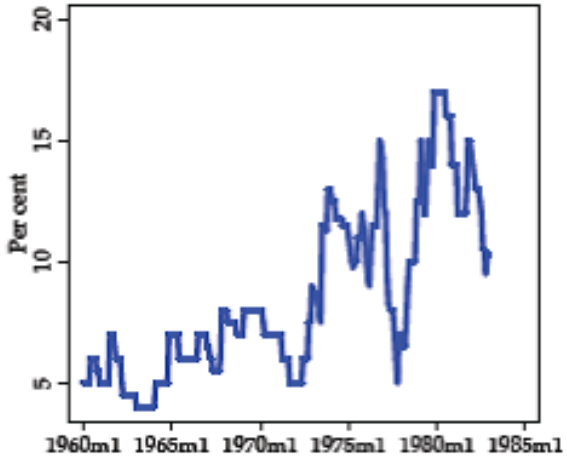
(b) *Consumer prices*



(c) *Bank lending*

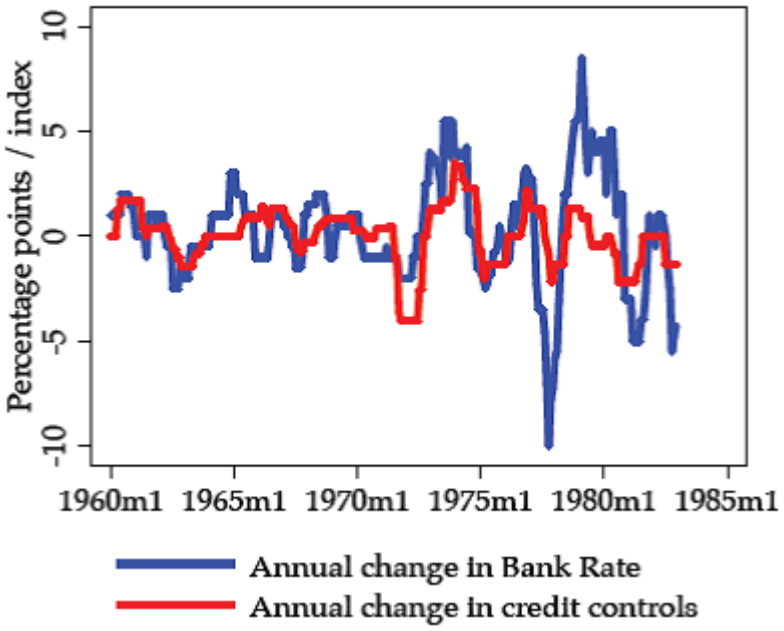


(d) *Bank Rate*

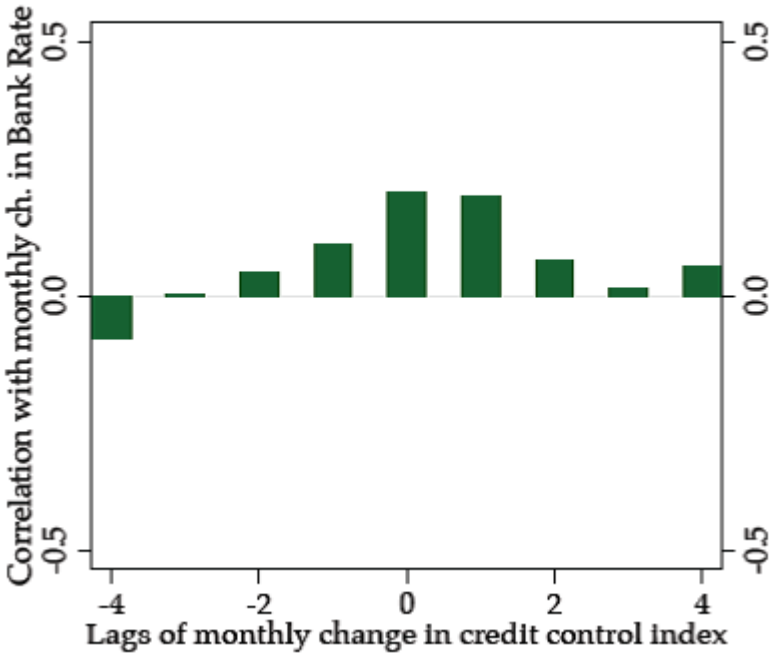


Co-movement of Monetary and Credit Policies

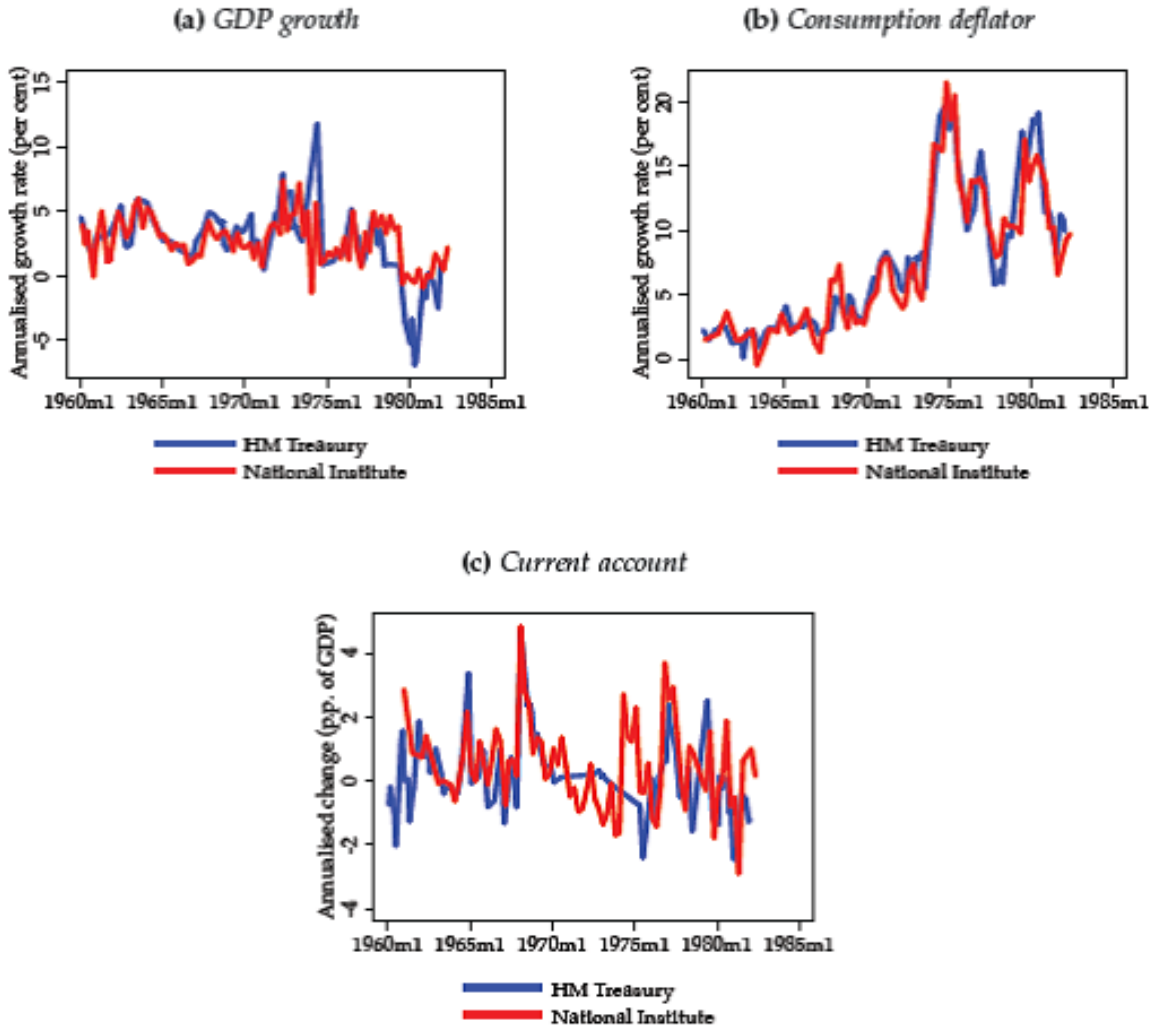
(a) *Bank Rate and the aggregate credit policy index*



(b) *Lead-lag relationship between Bank Rate and credit policy index*



The figure presents time series of the forecasts of GDP growth, the consumption deflator, and the current account produced by HM Treasury and the National Institute for Economic and Social Research (NIESR). Each forecast is the sum of the nowcast and the one- and two-quarter ahead forecasts and we have annualised them for ease of interpretation.



Notes: Missing data are interpolated. See text.

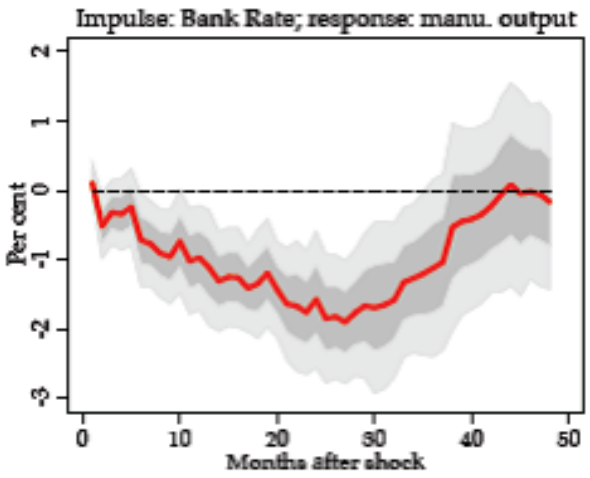
Main Results

- We characterise the responses of output, inflation, credit and the trade balance to monetary and credit policy shocks

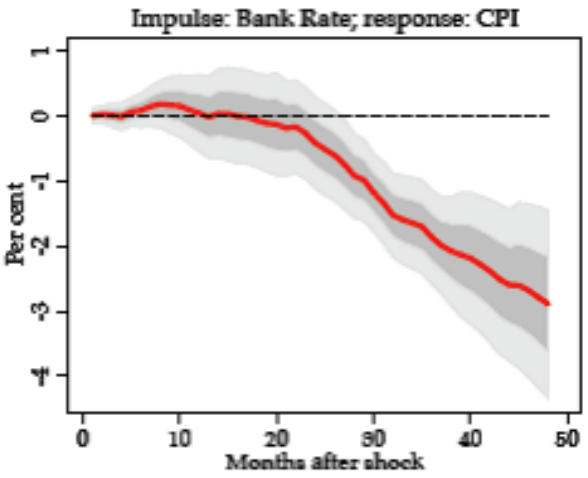
- We subject all our results to a battery of robustness tests, including
  - Number of factors / lag length combinations
  - Pre- vs post- 1971 sub-samples
  - Only factors, only forecasts

Responses of Key Variables to a Bank Rate Shock

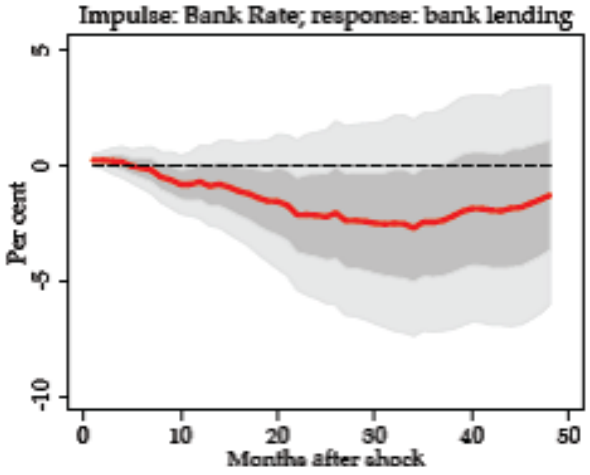
(a) *Response of manufacturing output*



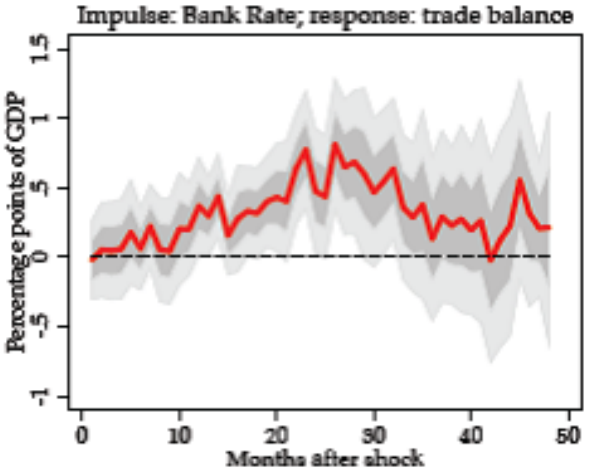
(b) *Response of CPI inflation*



(c) *Response of bank lending*

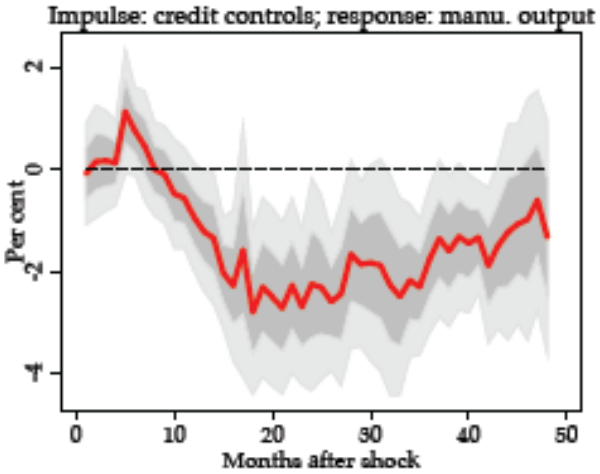


(d) *Response of trade balance*

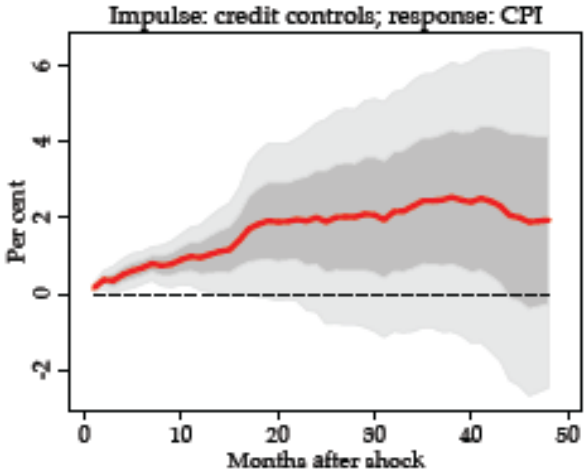


Responses of Key Variables to a Credit Policy Shock

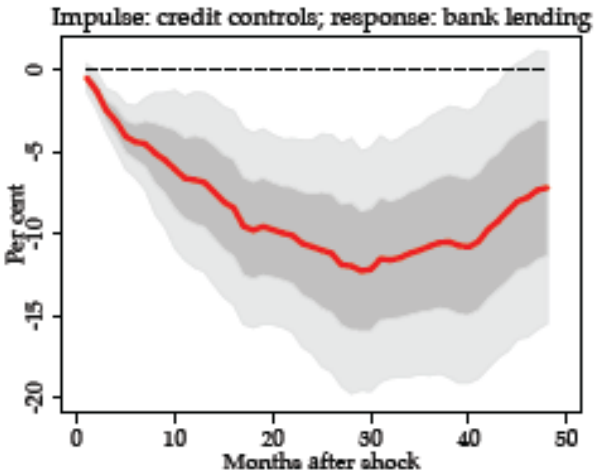
(a) *Response of manufacturing output*



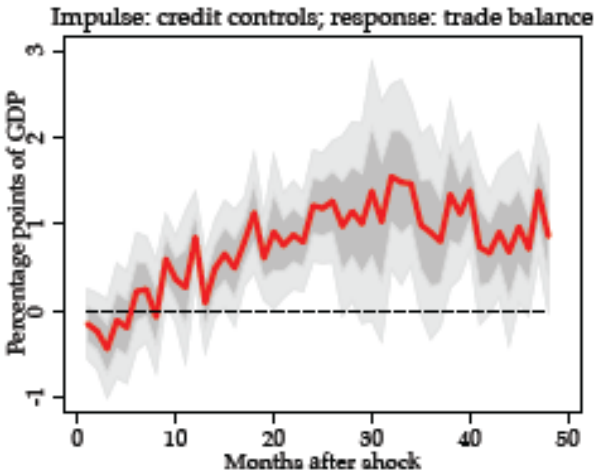
(b) *Response of CPI inflation*



(c) *Response of bank lending*

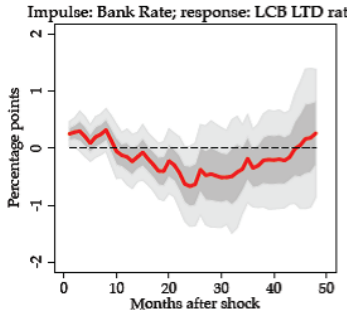


(d) *Response of trade balance*

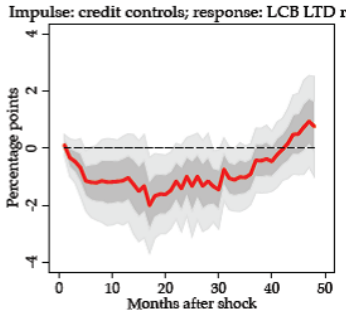


Impact of policies on Financial Stability Risk Indicators

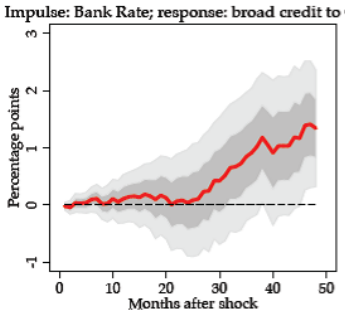
(a) *Bank Rate on loan to deposit ratio*



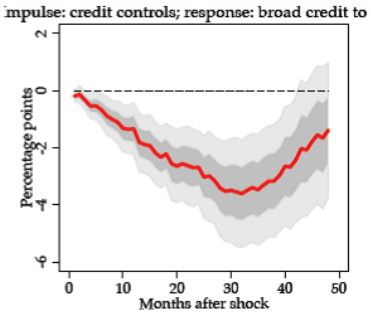
(b) *Credit policy on loan to deposit ratio*



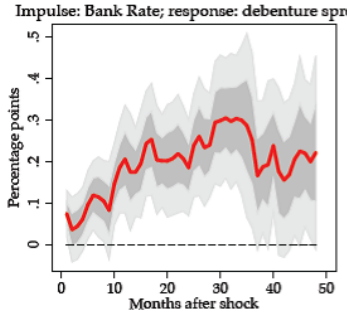
(c) *Bank Rate on credit-GDP ratio*



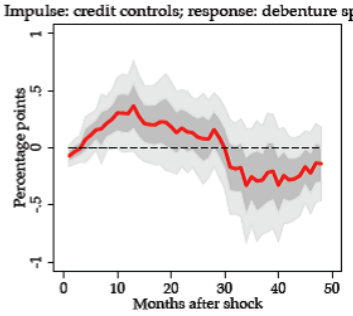
(d) *Credit policy on credit-GDP ratio*



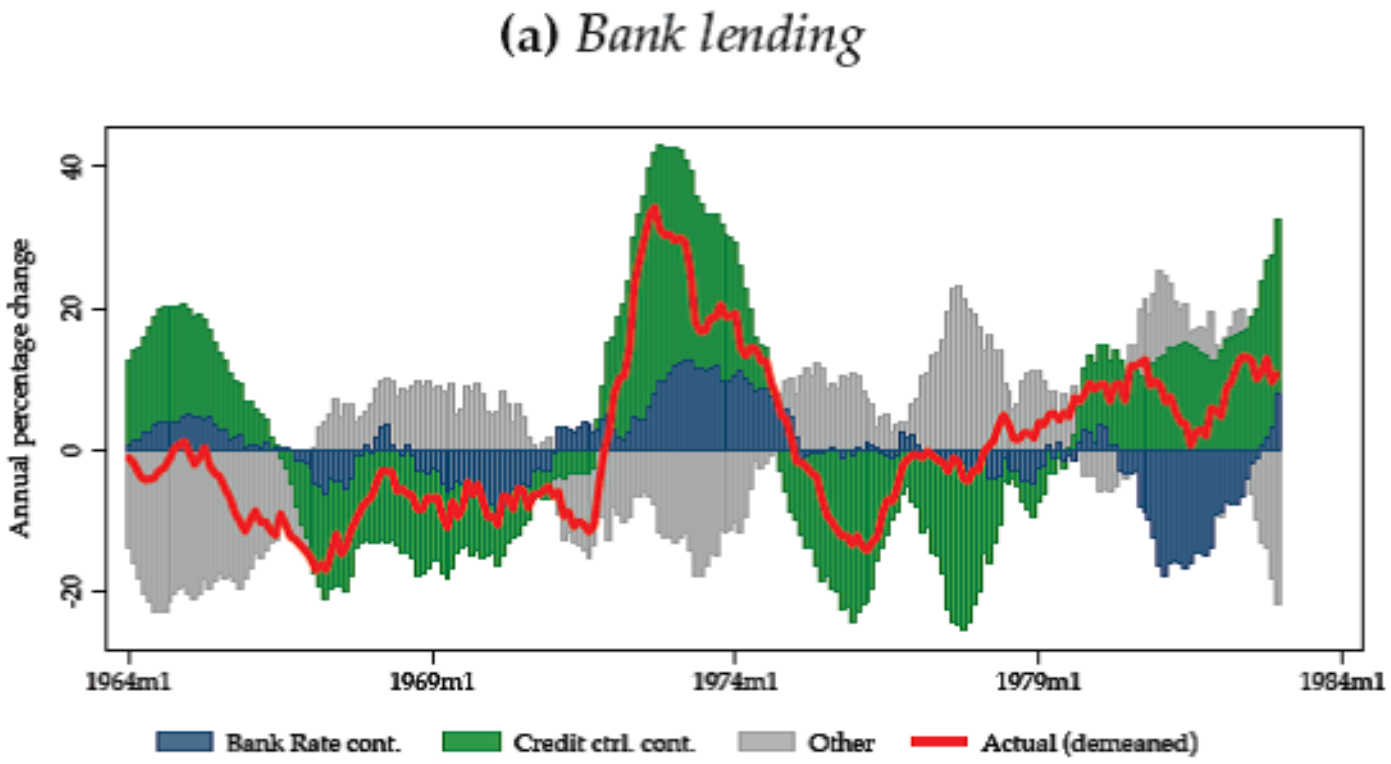
(e) *Bank Rate on debenture spread*



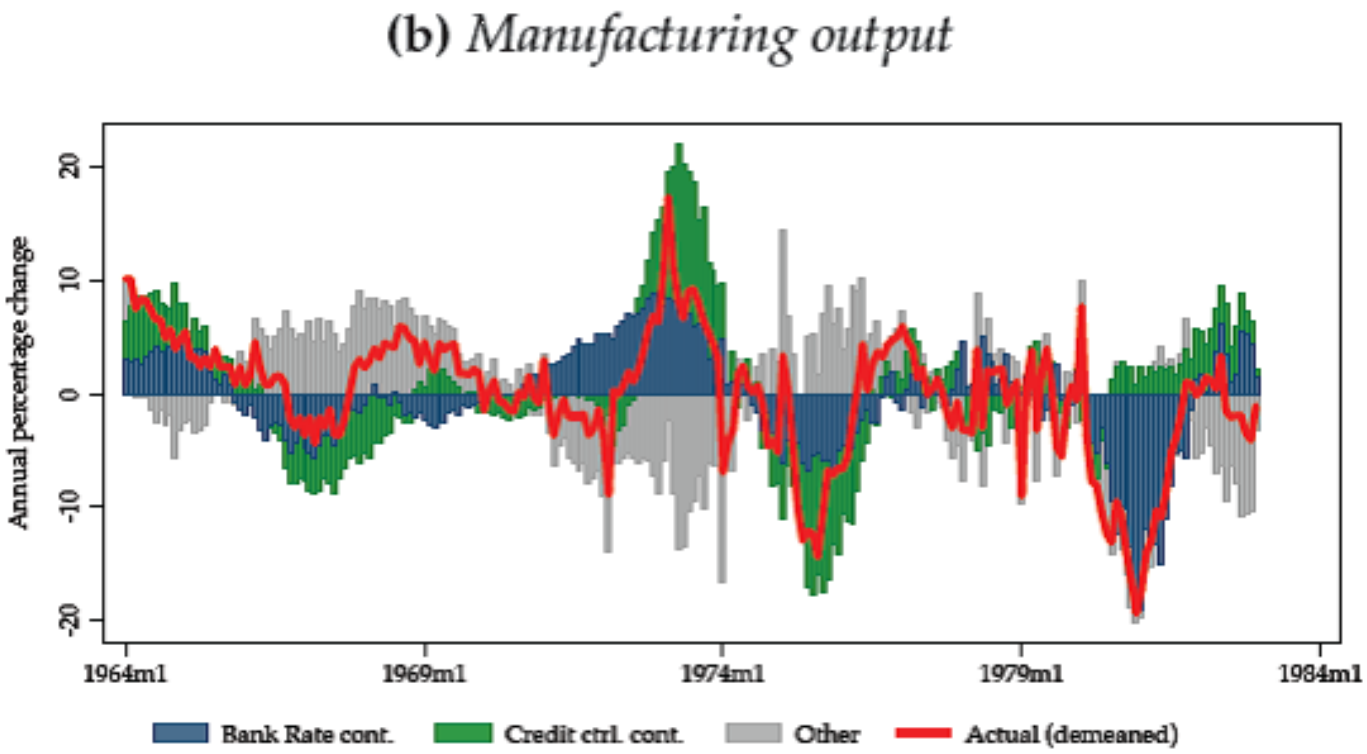
(f) *Credit policy on debenture spread*



Historical Shock Decompositions



Historical Shock Decompositions



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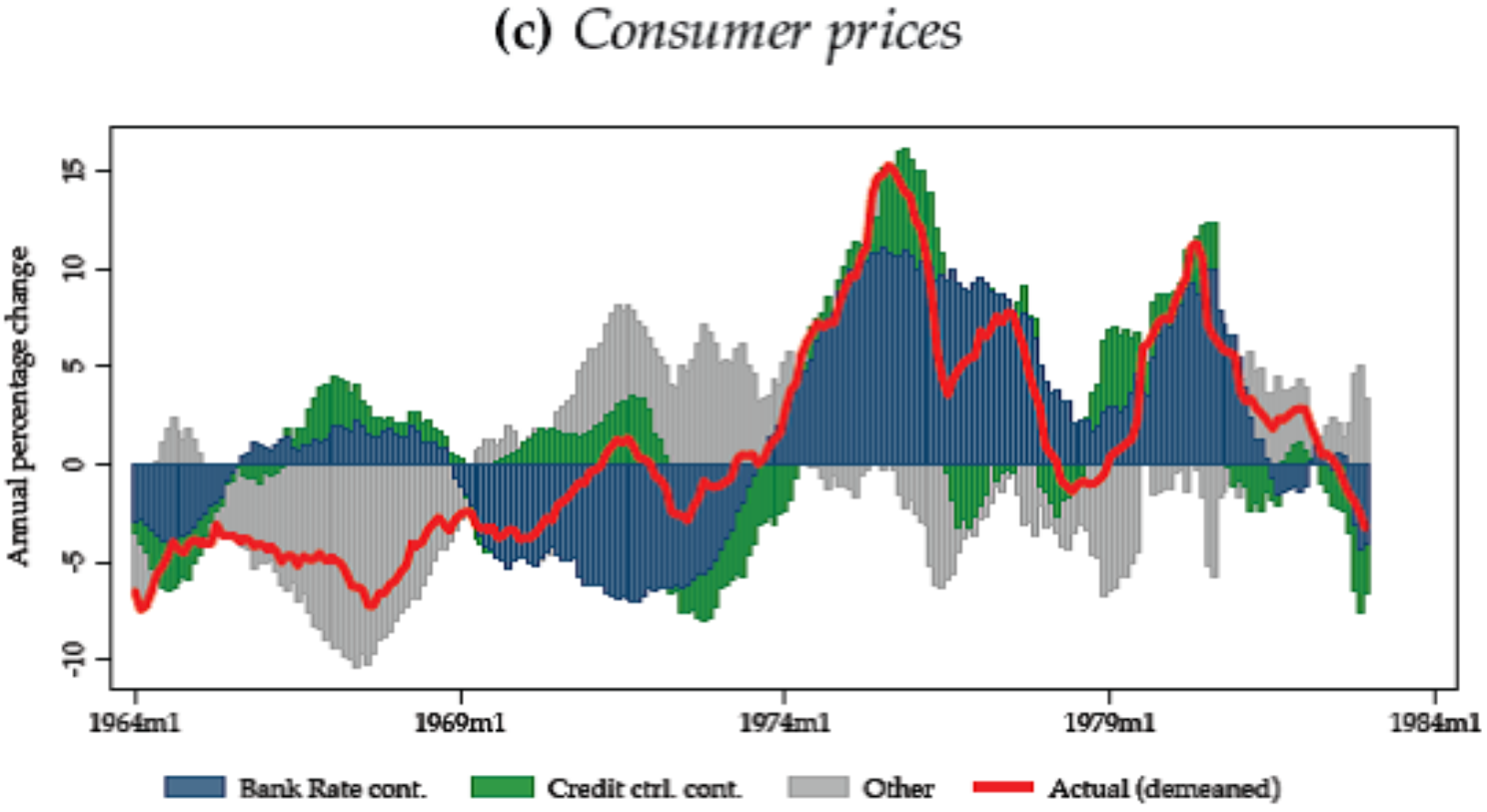

Summary Statistics on the Usage of Policy Tools

		Full sample	Pre-1971	Post-1971
Bank Rate	Standard Deviation	3.5	1.2	3.2
	# of tightenings	33	9	24
	# of loosenings	62	16	46
Credit Policy Index	Standard Deviation	1.3	1.1	1.4
	# of tightenings	25	14	11
	# of loosenings	22	10	12
Both tools	# of moves in same direction	15	5	10
	# of moves in opposite direction	8	6	2

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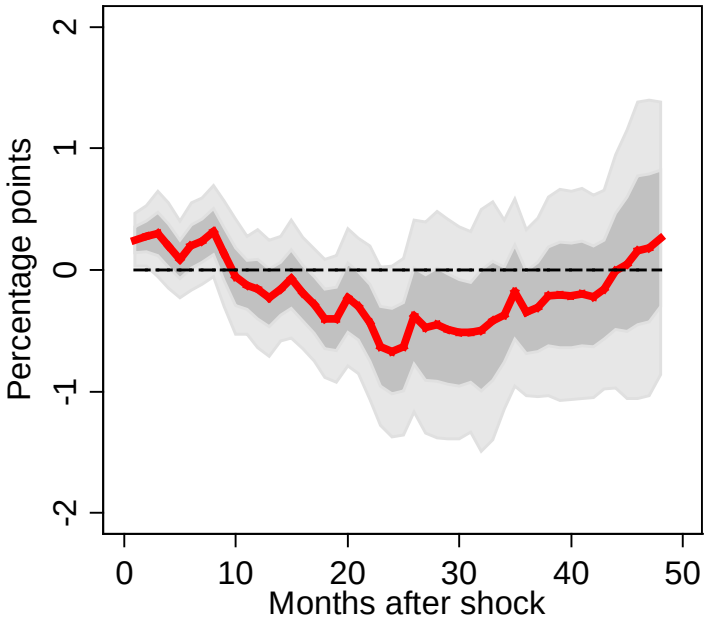
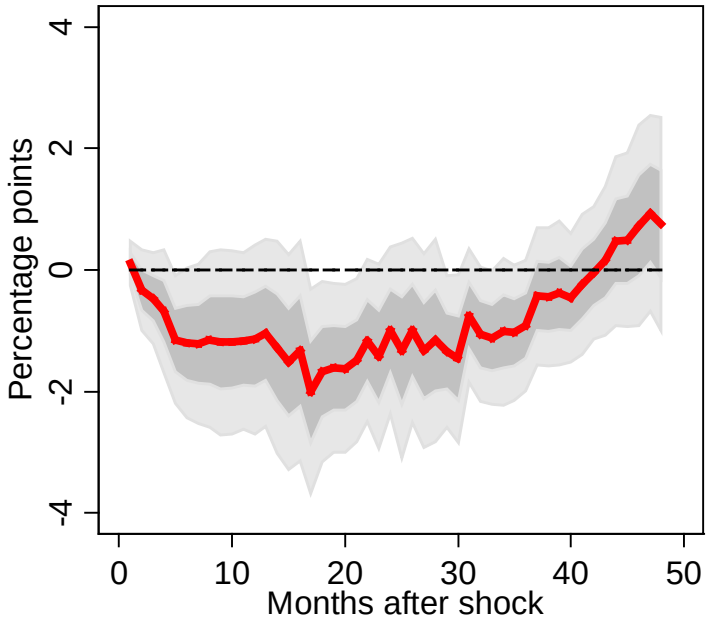
Response of Loan-to-Deposit Ratio

*Response of the loan-to-deposit ratio to a 100 basis point **Bank Rate** shock*

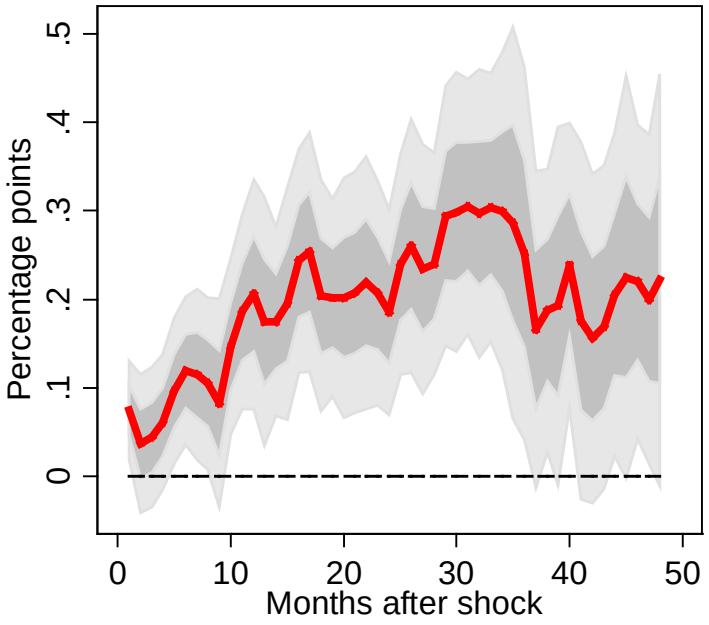


*Response of the loan-to-deposit ratio to a 100 basis point **credit policy** shock*

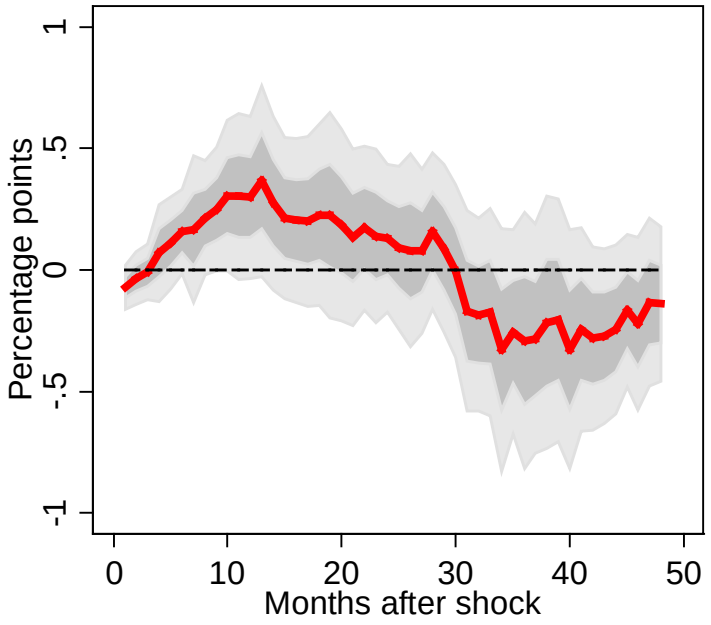


Response of Debenture Spread

*Response of debenture spread to a 100 basis point **Bank Rate** shock*

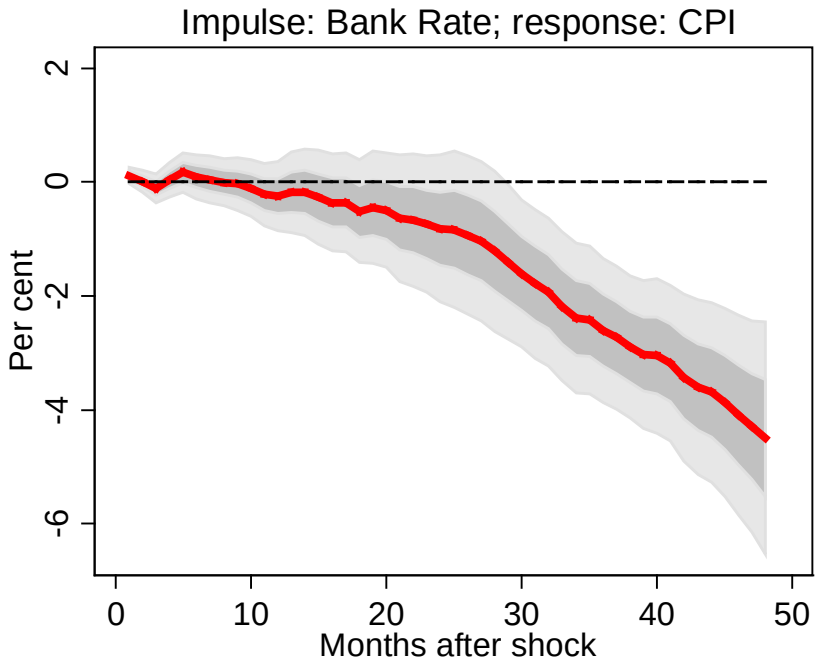


*Response of debenture spread to a 100 basis point **credit policy** shock*

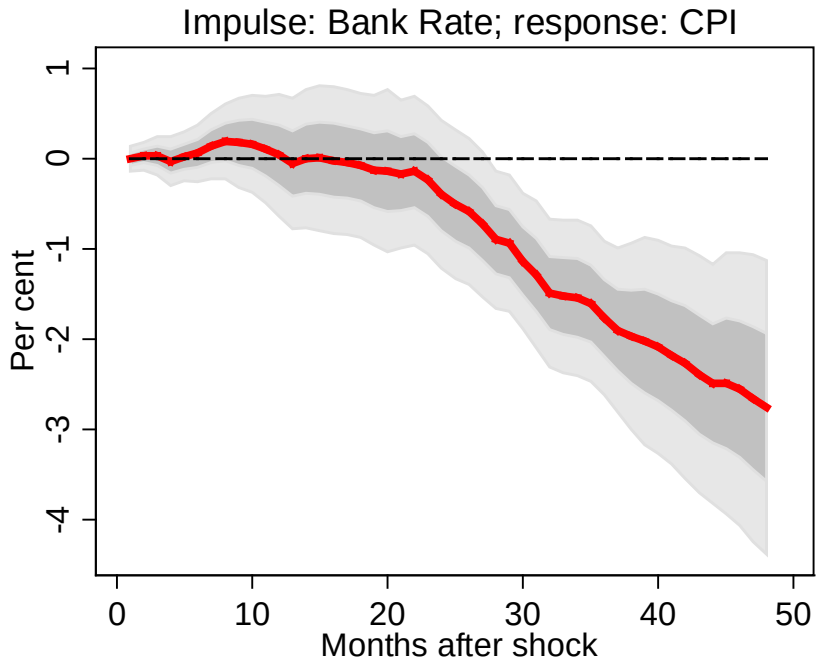


How robust are these results?

Impact of Bank Rate on CPI

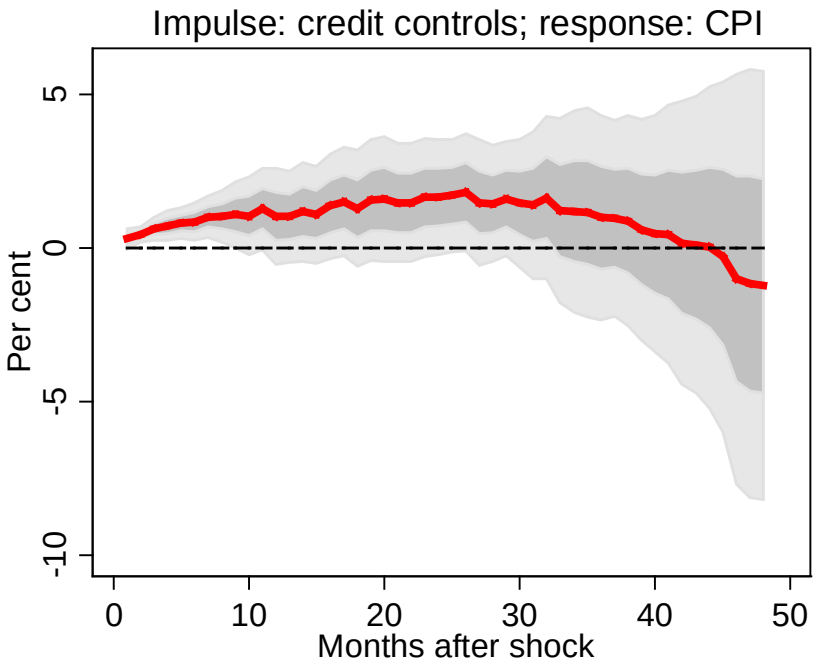


Before 09/71

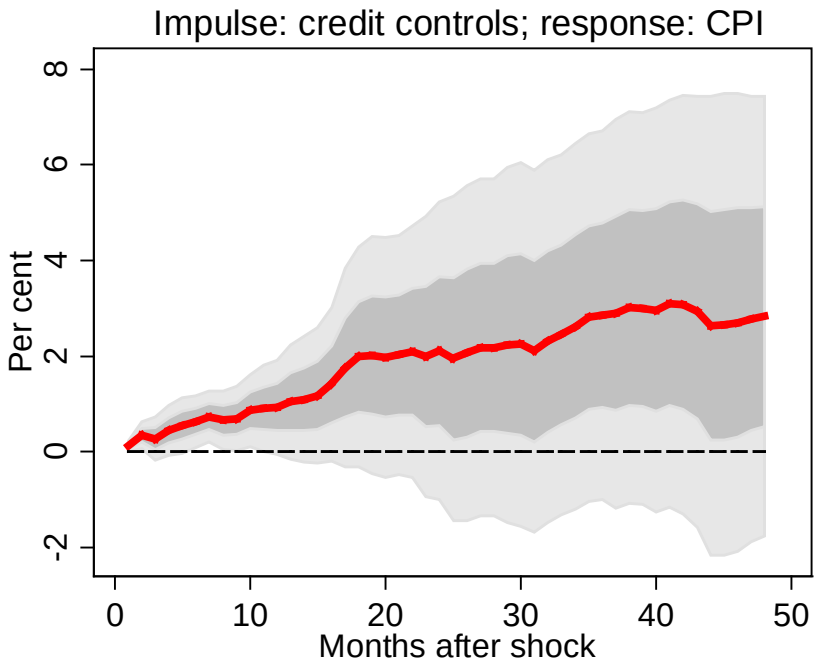


After 08/71

Impact of credit controls on CPI



Before 09/71



After 08/71