Discussion

Expectations and the neutrality of interest rates
by John Cochrane

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BIS 22nd annual conference

Basel,

23 June 2023

What is this paper about?

1. About the standard monetary model?
2. About coordination between monetary and fiscal policy?
3. About the assessment of current policy regime?

1. The discussion about the model

Monetary and fiscal policy in the New Keynesian model

- The central question in John's paper is whether and how higher interest rates lower inflation, without a change in fiscal policy → what can CBs do on their own?
- Conclusion: Not much!

Main remark: this is an odd question to ask

- Odd for two reasons:

1. it assumes that "interest-rate policy" means fixing a target path for a nominal interest rate, that is independent of what happens to endogenous variables (including the inflation rate)
2. it assumes that fiscal policy should determine a path for the real primary surplus that is independent of what happens to endogenous variables (including the path of government debt and the amount of interest that must be paid on that debt), so that "unchanged fiscal policy" is taken to require that there be no change in the path of the real primary surplus.

Why are these assumptions “odd”/ non standard?

- Assumption (1) means that something like a Taylor rule doesn't count as "interest-rate policy"
- Assumption (2) means that continuing to follow a fiscal rule that keeps the debt/GDP level below some upper bound doesn't count as an example of "unchanged fiscal policy" after a change in interest-rate policy.

- Of course, it is legitimate to ask, as John does, what should happen under a policy regime that has both properties (1) and (2).
- But neither of these properties correspond to the conventional understanding of how monetary and fiscal policy typically work.
- Monetary and fiscal policies respond to changes in the endogenous variables
- More interesting to ask what kind of monetary and policy regimes will deliver price stability

This can be analyzed through the standard NK model (e.g. Woodford, 1996)

This is a model with the three equations (IS curve, Phillips curve and monetary rule) plus a log linear equation for the dynamic of budget constraint.

- What does that *standard* model say?

a. Monetary policy has fiscal effects (because it affects the real value of outstanding government debt and real debt servicing costs)

b. Fiscal policy matters for inflation even when the monetary policy rule does not involve any explicit dependence on fiscal policy
   - Fiscal shocks affect the private sector budget constraint and therefore aggregate demand
   - These effects are neutralized only if primary surplus adjusts as neutralizers for any sequence of such shocks

What the standard model says and does not say …

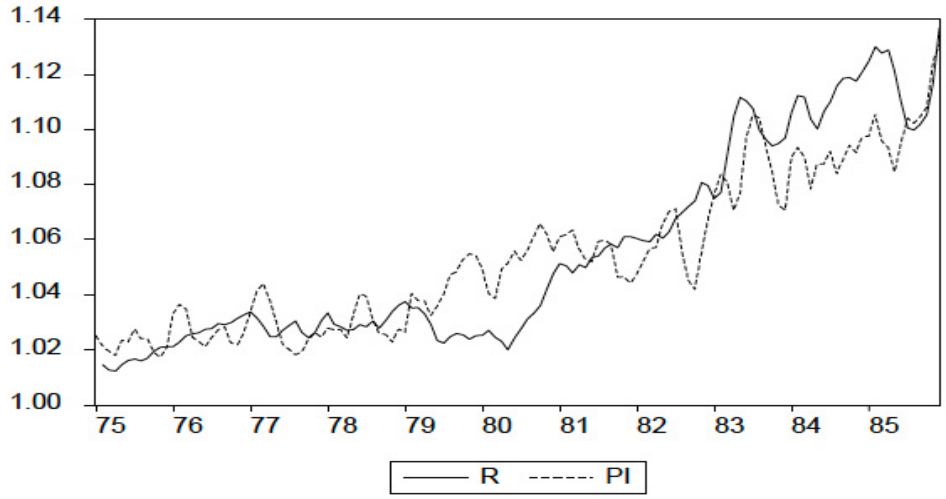
- Nothing in the model says that fiscal and monetary policy are independent.
- Indeed, the model can be used to study alternative policy regimes characterized by different monetary and fiscal rules
- The model implies that the Taylor rule is not sufficient to ensure a stable and low equilibrium rate of inflation
- Many examples have been discussed in the literature
- The point of these examples is that there are many ways to design monetary and fiscal rules, including non-Ricardian fiscal rules, so as to achieve a low and stable inflation equilibrium

2. Monetary and fiscal regimes - examples

Example 1. Brazil in the 1980s: RE equilibrium exists but involves explosive path for inflation despite Taylor principle (Loyo, 1997)

- Inflation stable in throughout the late 1970s but grows progressively in the early 1980s and degenerates in hyperinflation by 1985
- Interpretation: this was due to a shift towards interest rate policy in 1980 leading to sharp increase in interest rate. Under the assumption that fiscal expectations remained non Ricardian before and after the change, it is possible that the pre 1980 equilibrium was stable while post 1980 was not

Figure 1
Interest Rates and Inflation

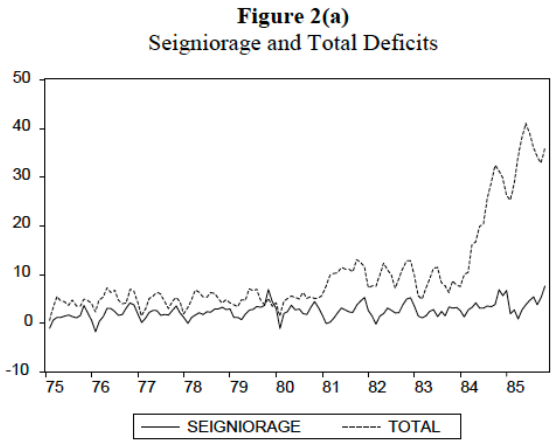


The mechanism

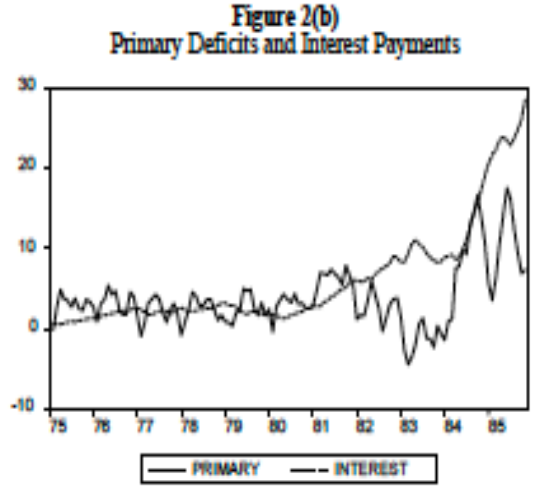
- Fiscal policy non-Ricardian
- Monetary policy applies the Taylor principle and raises interest rate in response to inflation
- Higher interest rate implies higher nominal financial wealth via the household budget constraint (or higher expected fiscal transfers). Households regards government debt as wealth since Ricardian equivalence is violated.
- Inflation then needs to go up or otherwise (by the IGBC) the real value of debt would increase and households would consume more relatively to the endowment
- Notice that in this story the increase in inflation has nothing to do with an increase in seignorage

No increase in seignorage but increase in government deficit

Seignorage and total deficit



Primary deficit and interest payments



Example 2. US Interest rate peg 1940s – another example of a stable violation of the Taylor rules (discussed in several Woodford's papers in the 1990s)

- Bond-price support regime in the US 1940s
  - Government set taxes regardless of the level of government debt until extreme regions of the state space are reached (locally non Ricardian fiscal policy)
  - Inflation is stable because fiscal expectations are stable
  - This is an example of a determinate equilibrium which violates the Taylor principle
- This equilibrium can last (it did last in the late 1940s) but it is precarious.
- The regime breaks when expectations on future primary surplus change
- With the Korean war, expected primary surplus declined and expectations shifted. The regime became inflationary
- Indeed in 1951 the monetary-fiscal regime was change with the Fed Accord

More examples …

- Fiscal commitment to avoid deflationary trap
- EU fiscal rules as a case of implicit coordination between active monetary policy and Ricardian fiscal commitment
  - Empirically, difficult to establish whether de facto the EMU can be characterized by Ricardian fiscal policy
  - Still, can study how the key variables appearing in the intertemporal budget constraint adjust to exogenous monetary policy shocks
  - BIS paper 2 years ago

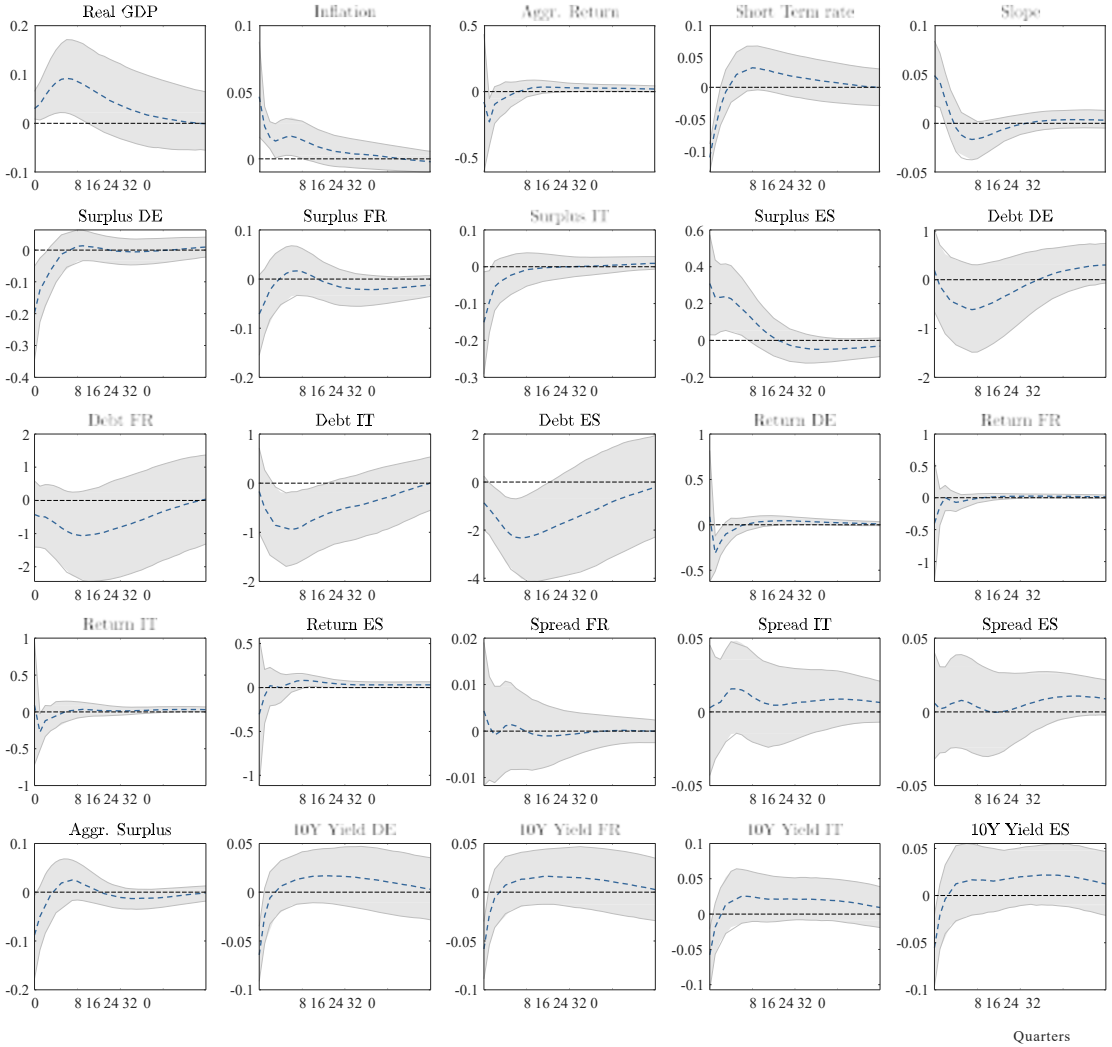
Empirical work on the euro area (BIS 2 years ago)

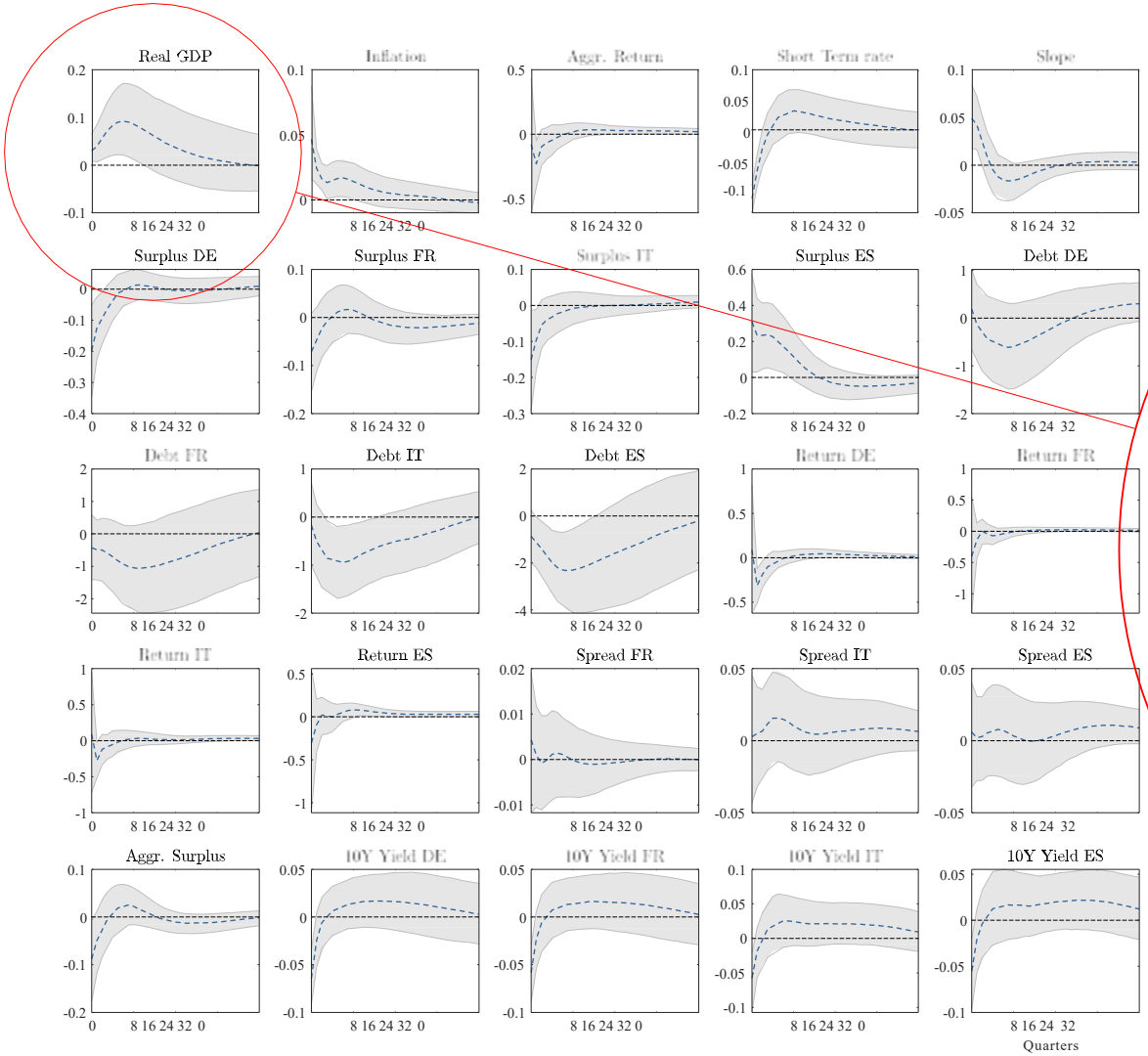
- **Fiscal dataset** for Germany, France, Italy and Spain including market value of public debt, returns and fiscal primary surpluses
- Sample 1991q2 to 2019q4
- Dogmatic prior on the steady state of the VAR, consistent with our linearization:
- VAR identification combining narrative and sign restrictions

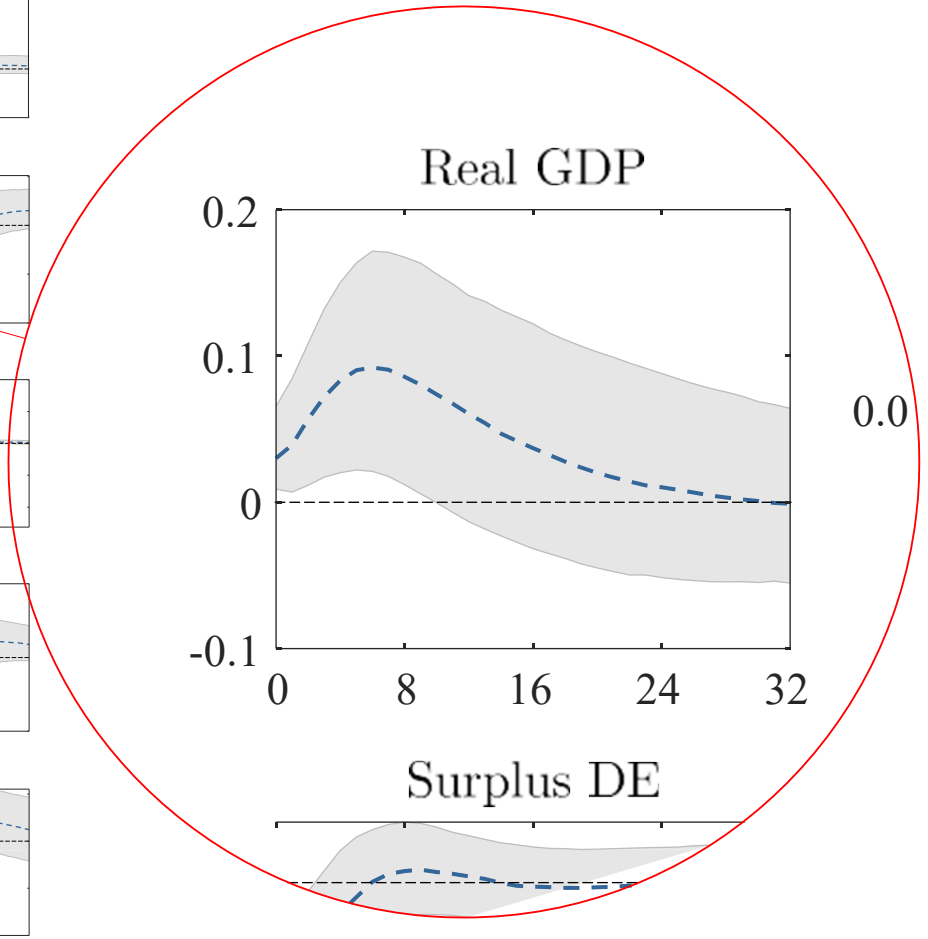
Two results:

- Fiscal surplus declines as a response to conventional interest rate easing in both the short and long-run. This implies a small increase in the price level in the long-run
- The cumulated aggregate primary surplus' response to Quantitative Easingis positive in the long run due to the idiosyncratic behaviour of Germany
  - ► Cumulative response of inflation is twice smaller than in the Conventional MP case

Conventional Monetary Policy Shock - easing




Real GDP
Inflation
Aggr. Return
Short Term rate
Slope
Surplus DE
Surplus FR
Surplus IT
Surplus ES
Debt DE
Debt FR
Debt IT
Debt ES
Return DE
Return FR
Return IT
Return ES
Spread FR
Spread IT
Spread ES
Aggr. Surplus
10Y Yield DE
10Y Yield FR
10Y Yield IT
10Y Yield ES
Quarters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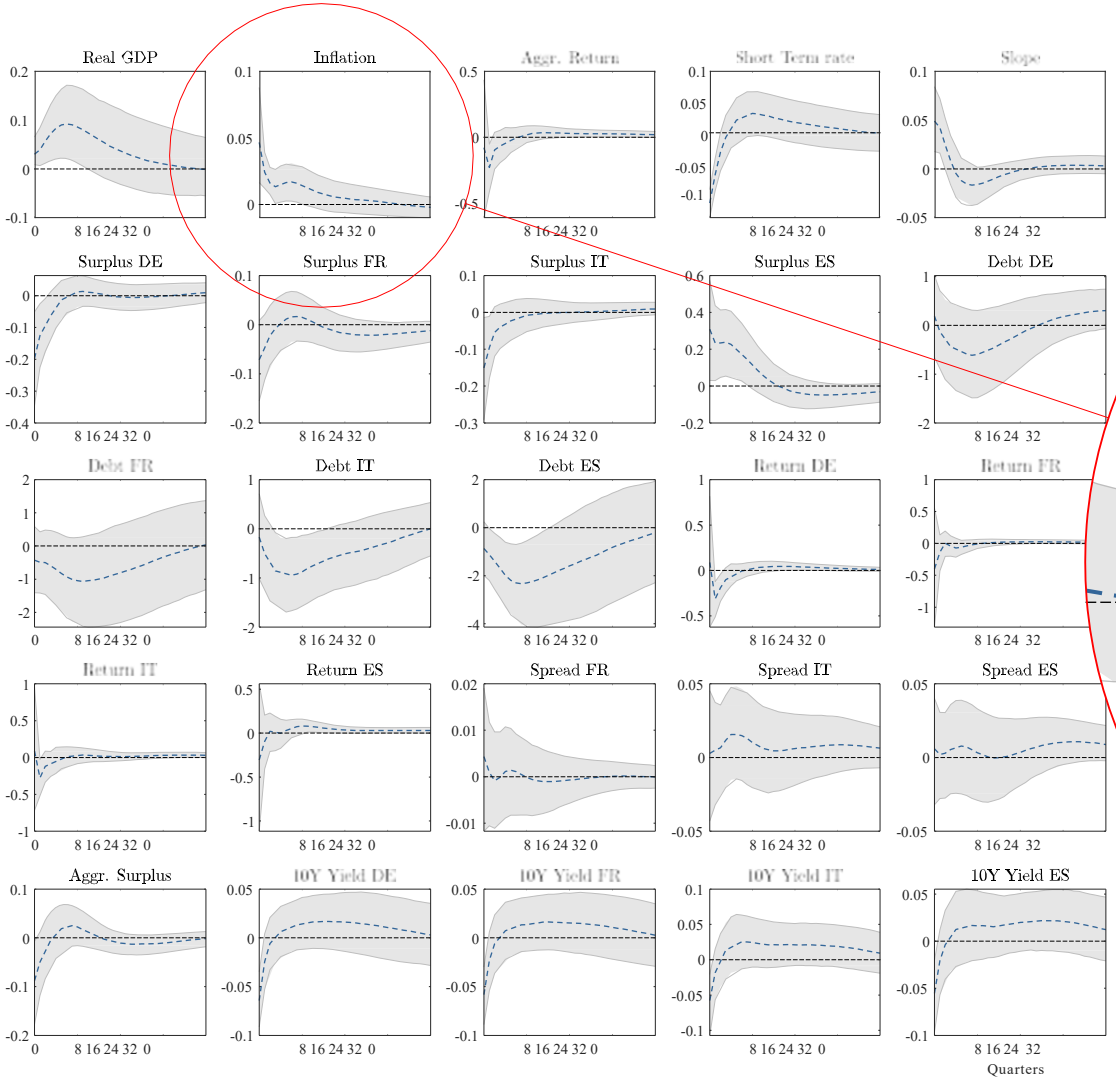
Surplus DE


Real GDP
Inflation
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Short Term rate
Slope
Surplus DE
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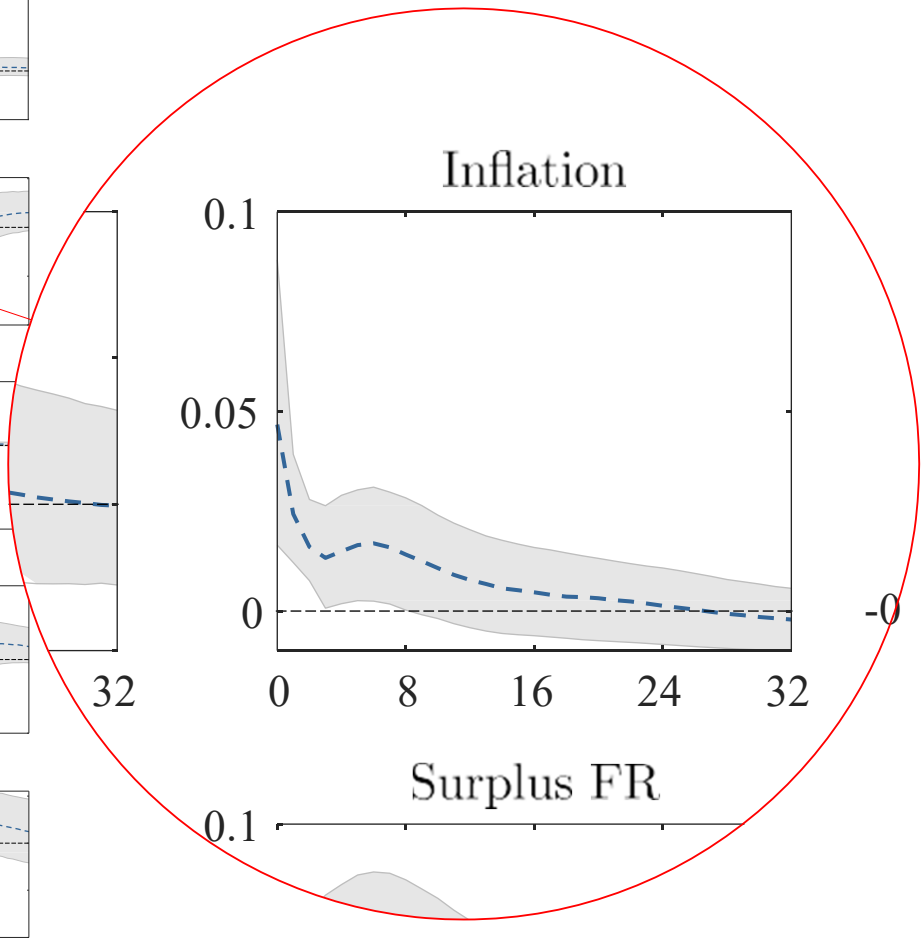
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16
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Surplus FR
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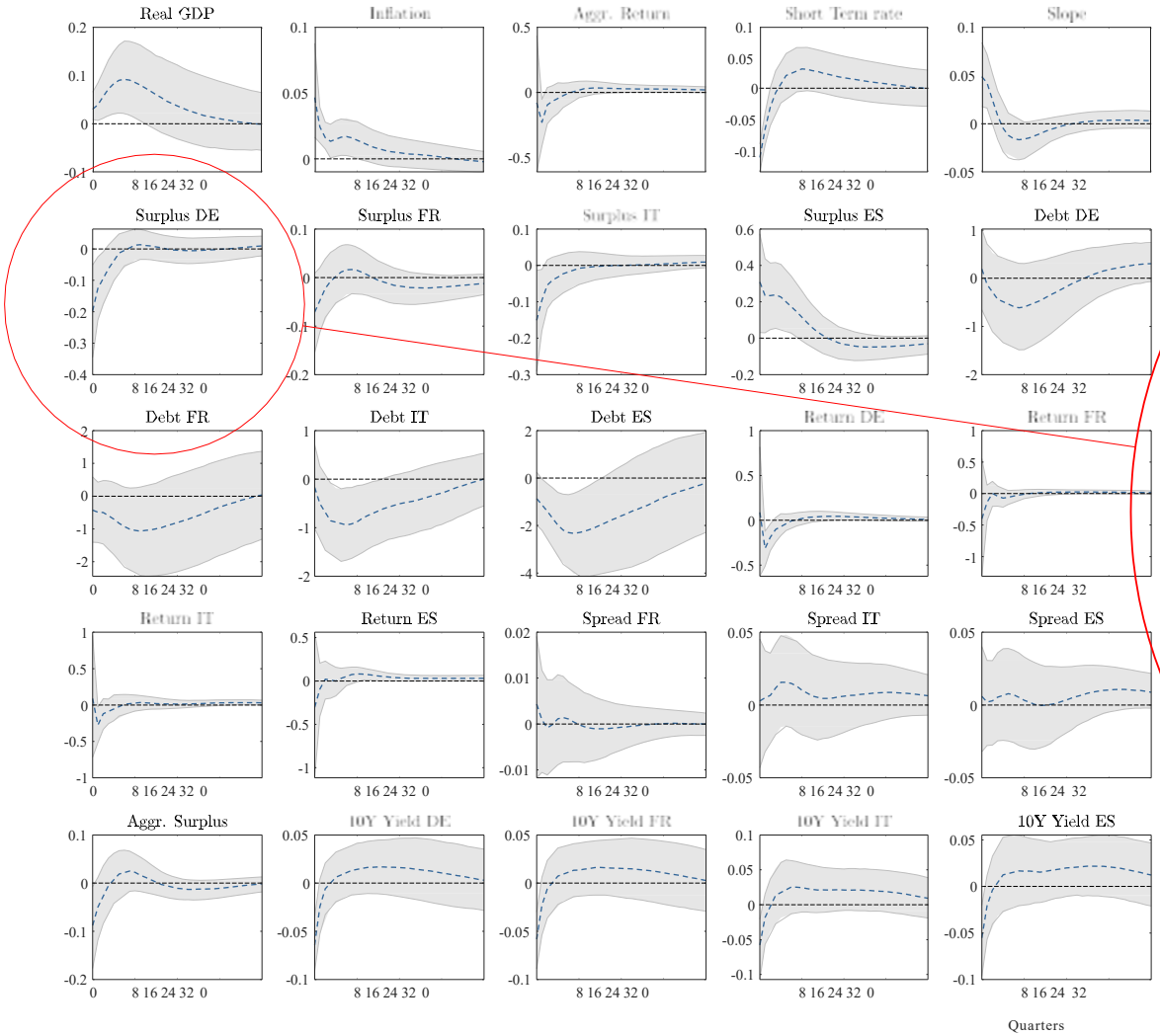
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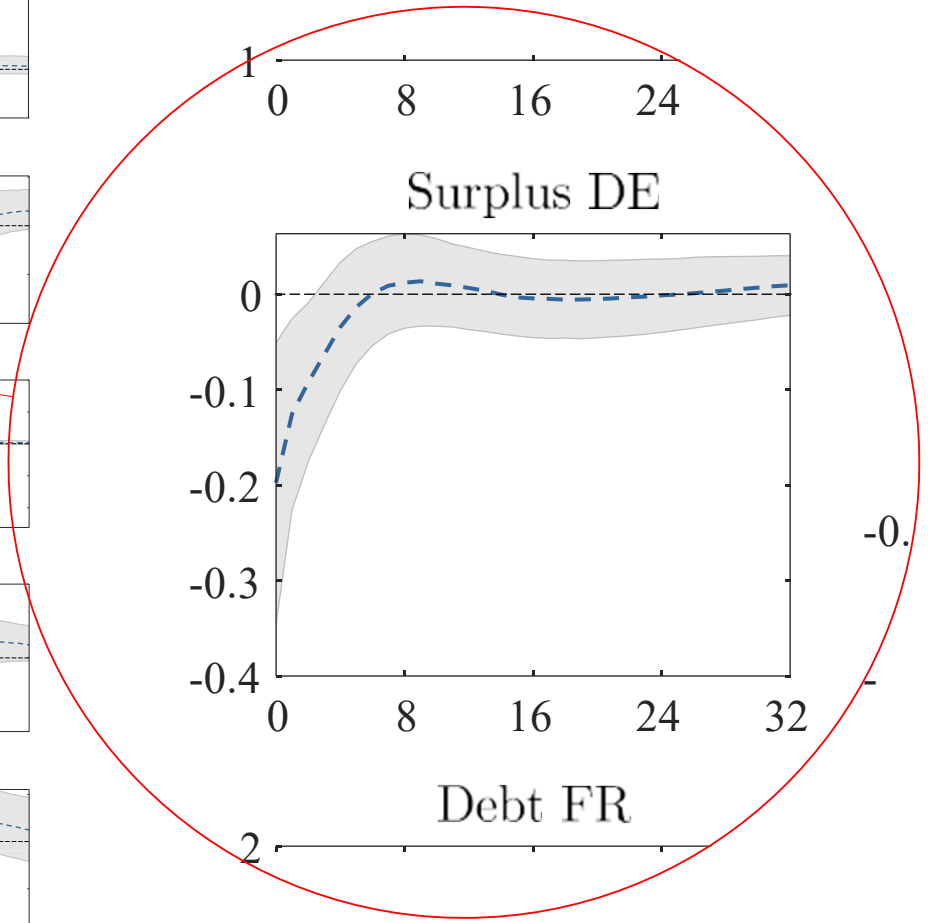
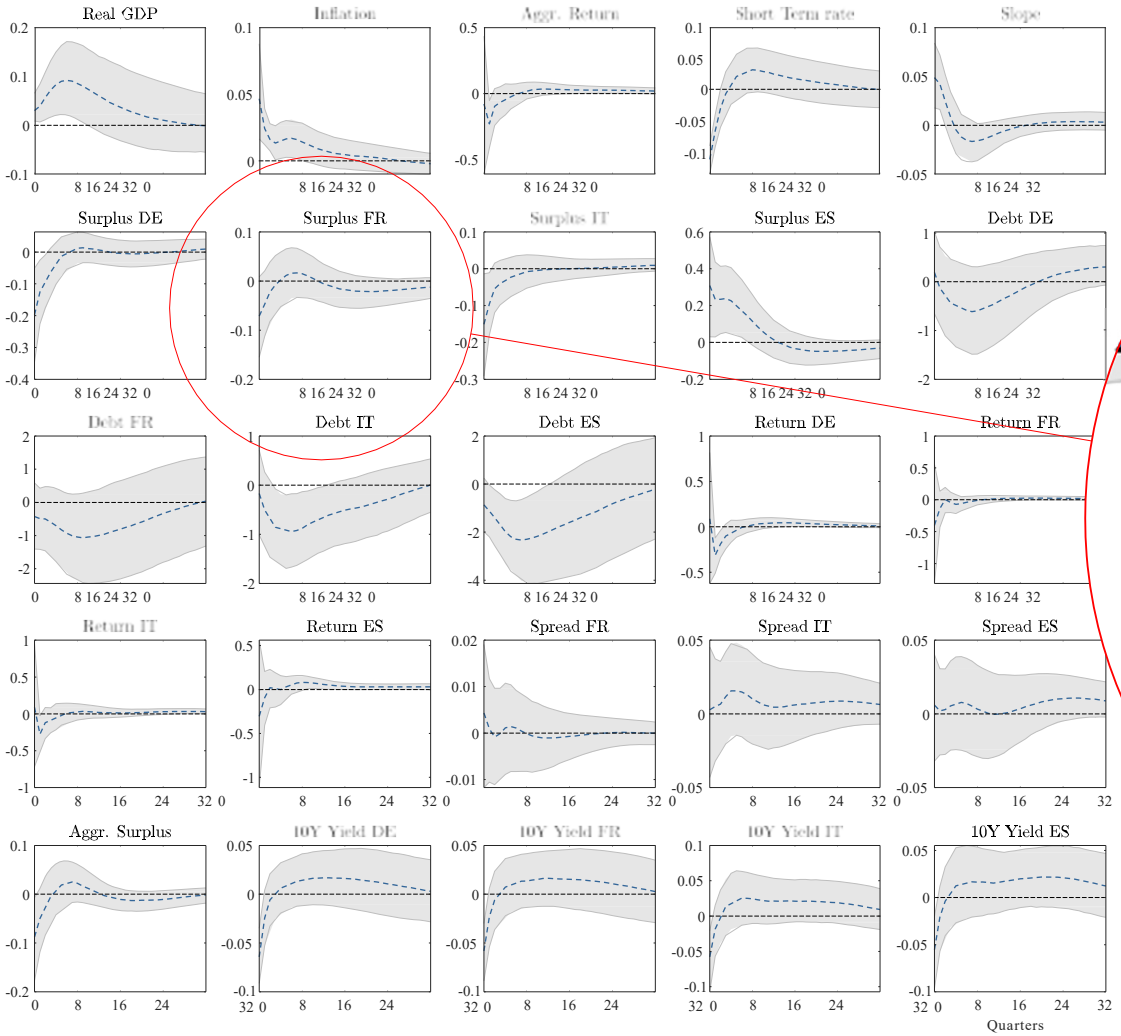

Surplus DE
Debt FR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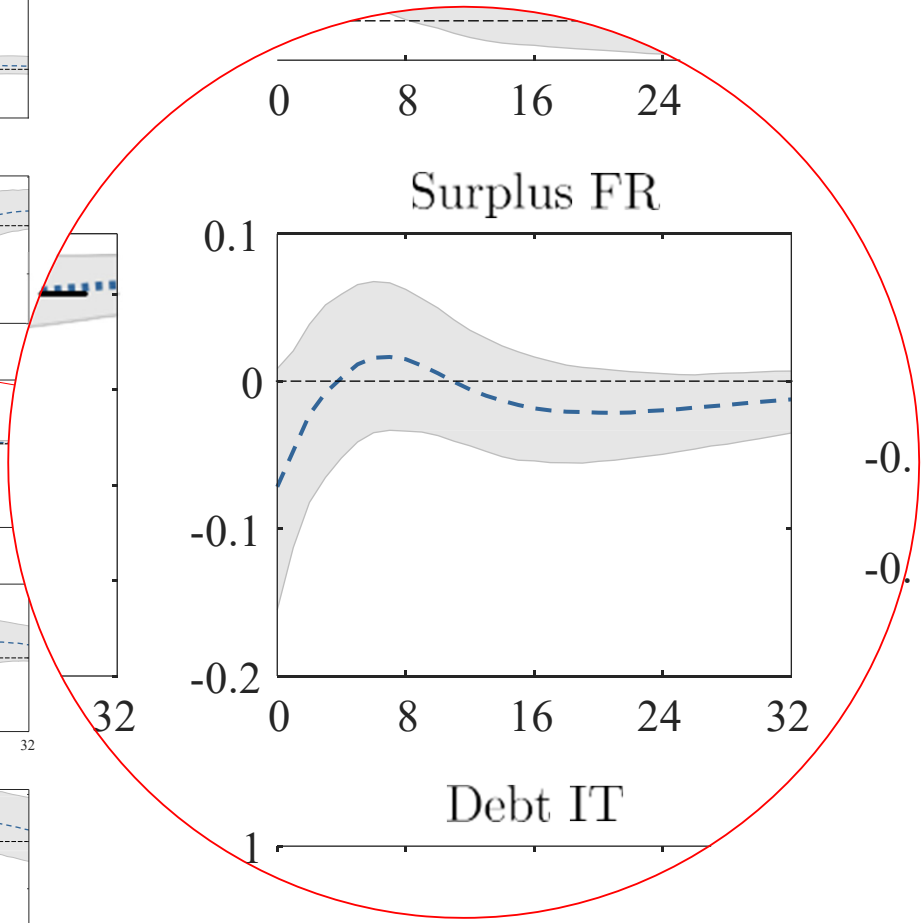
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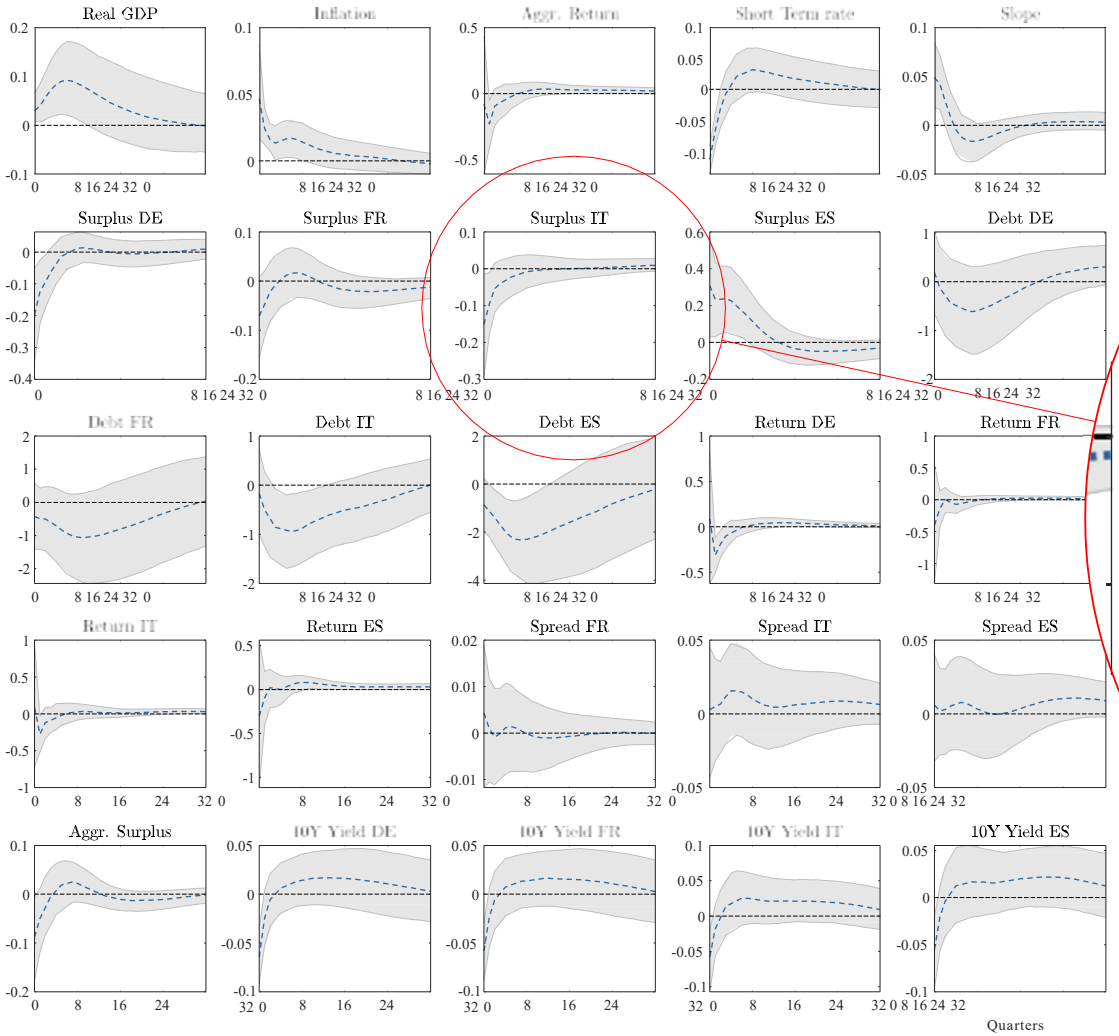
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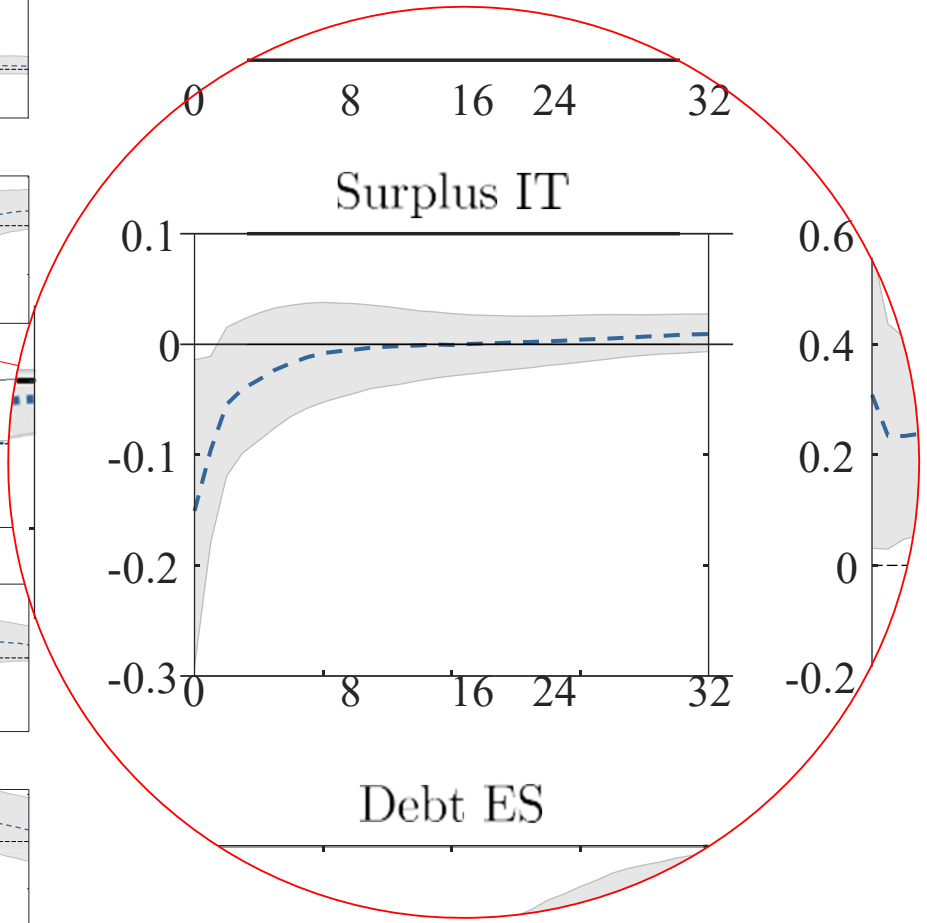
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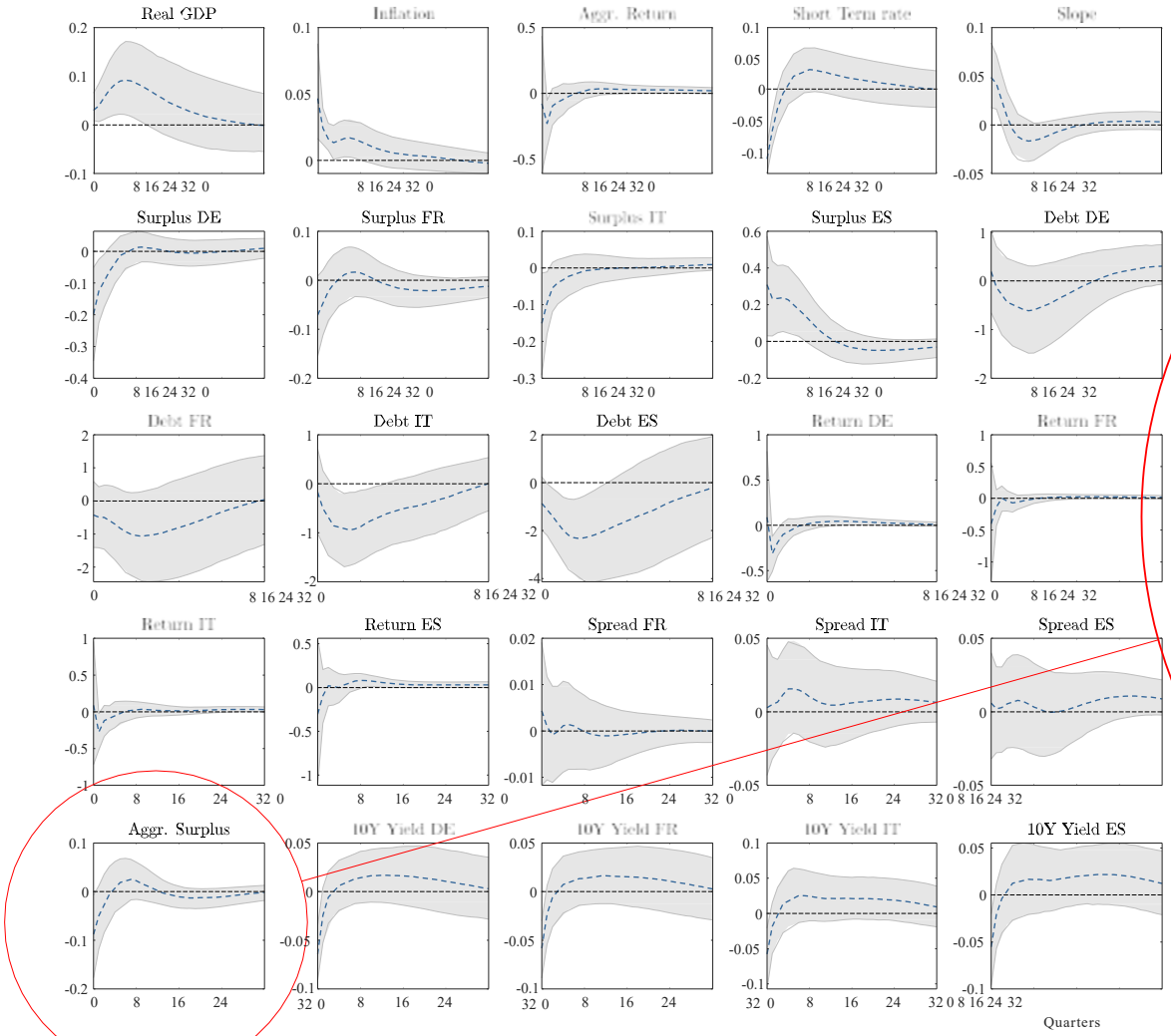
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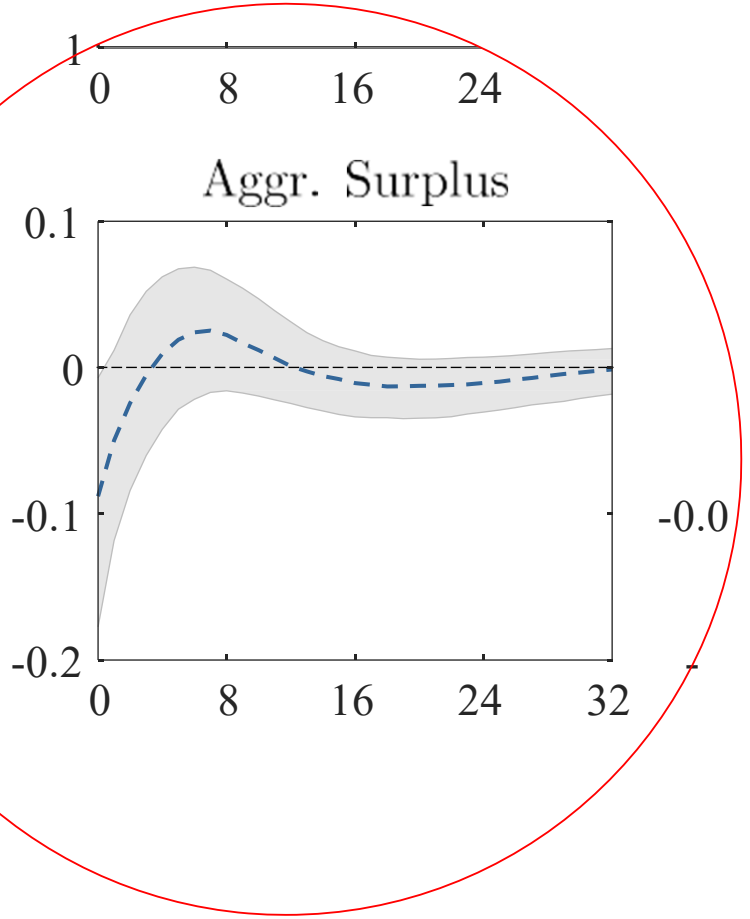
Aggr. Surplus
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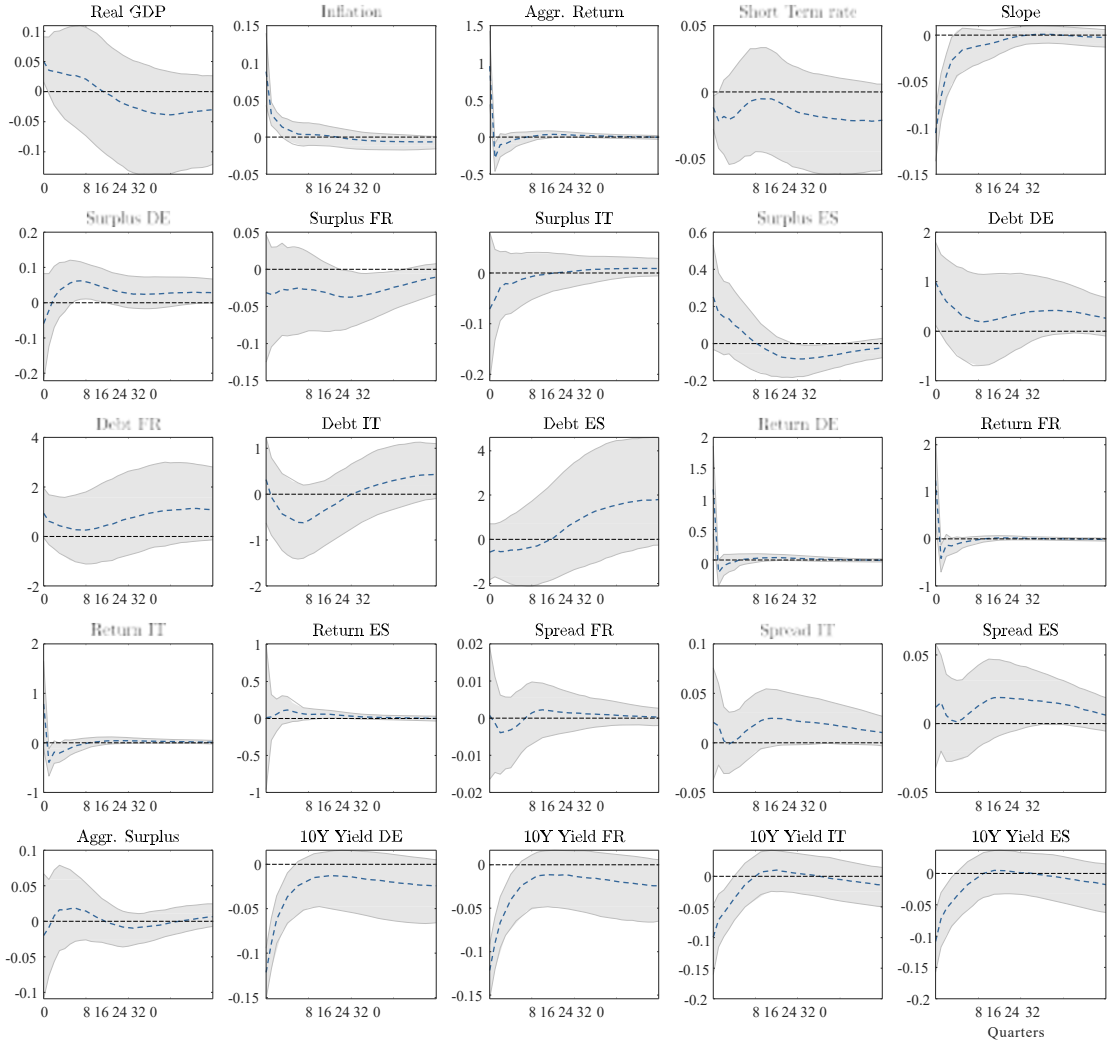
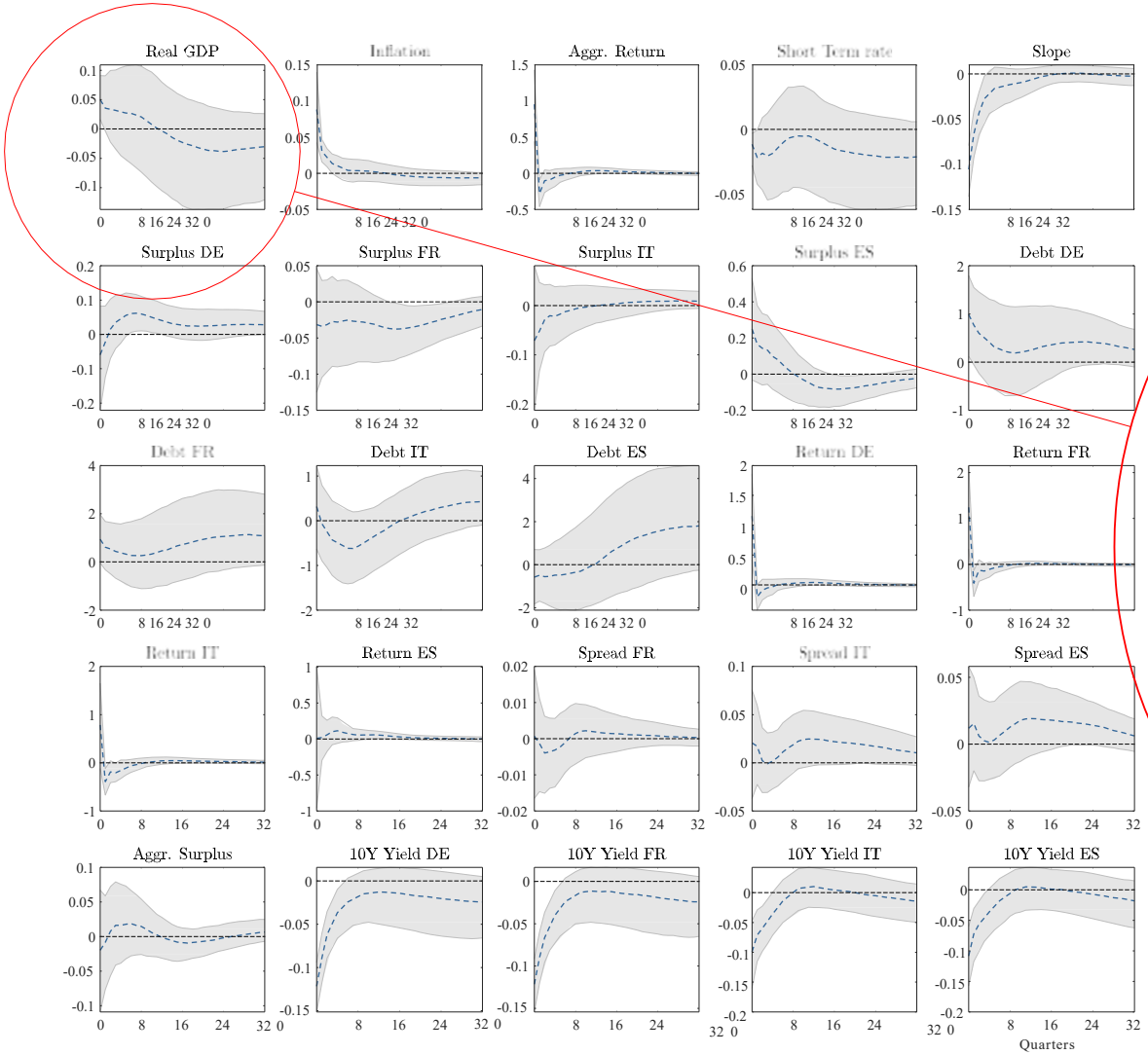
32

Unconventional Monetary Policy Shock - easing

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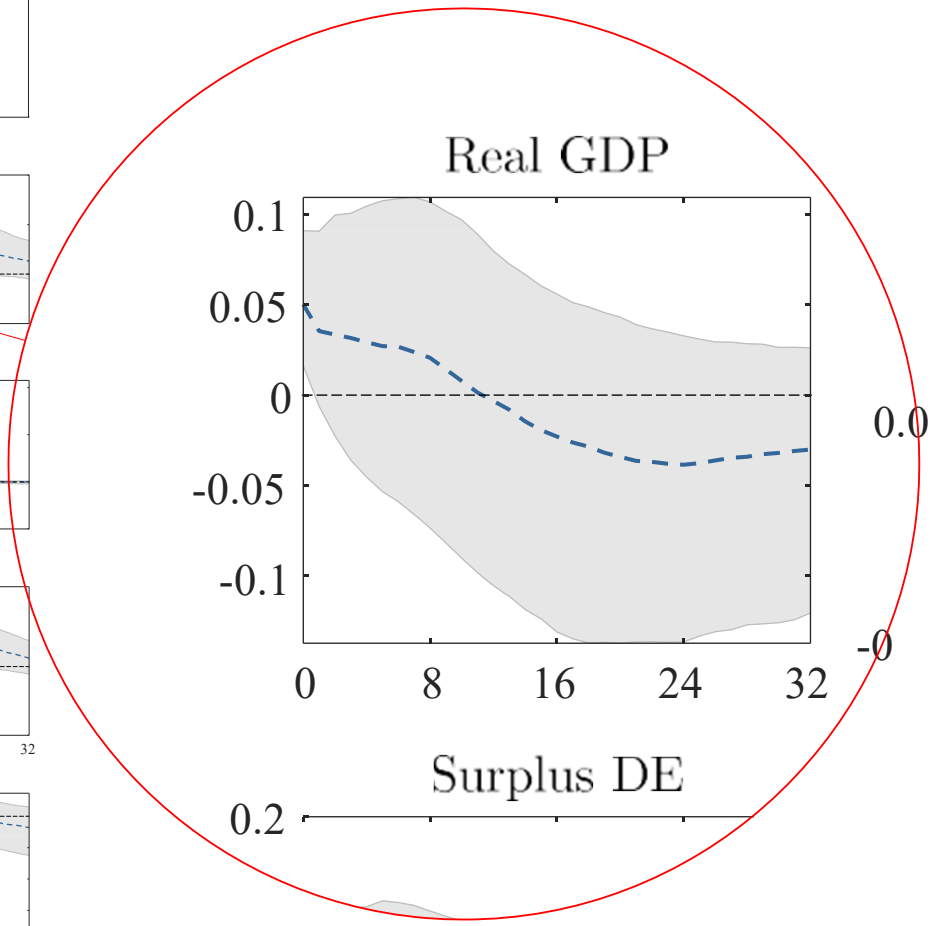
Real GDP
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Surplus DE
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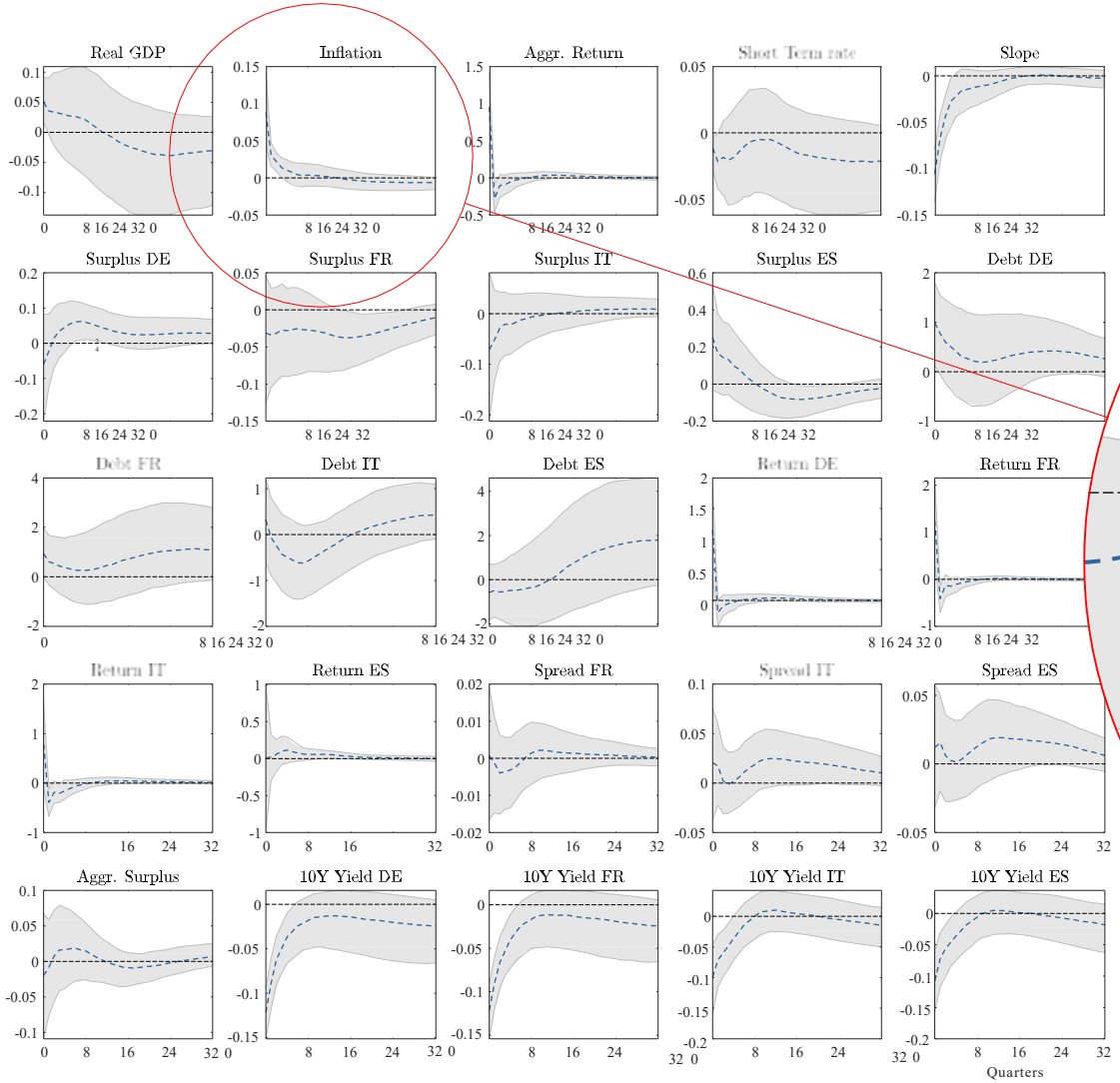
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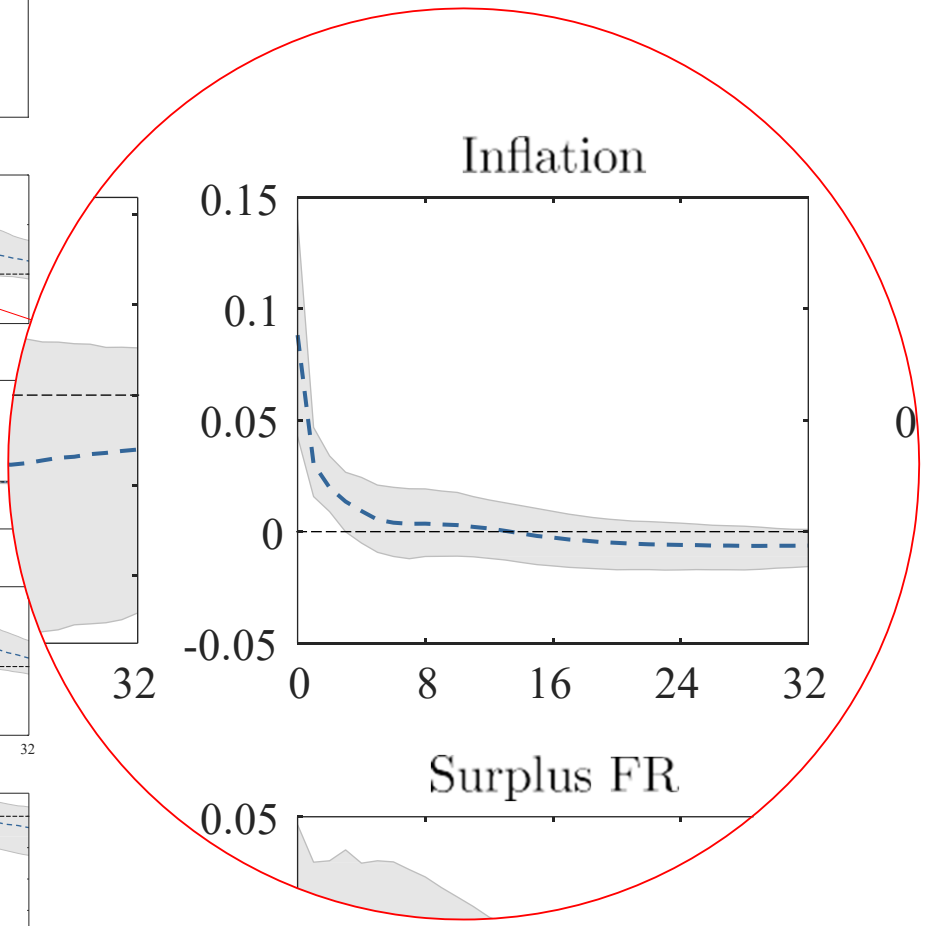
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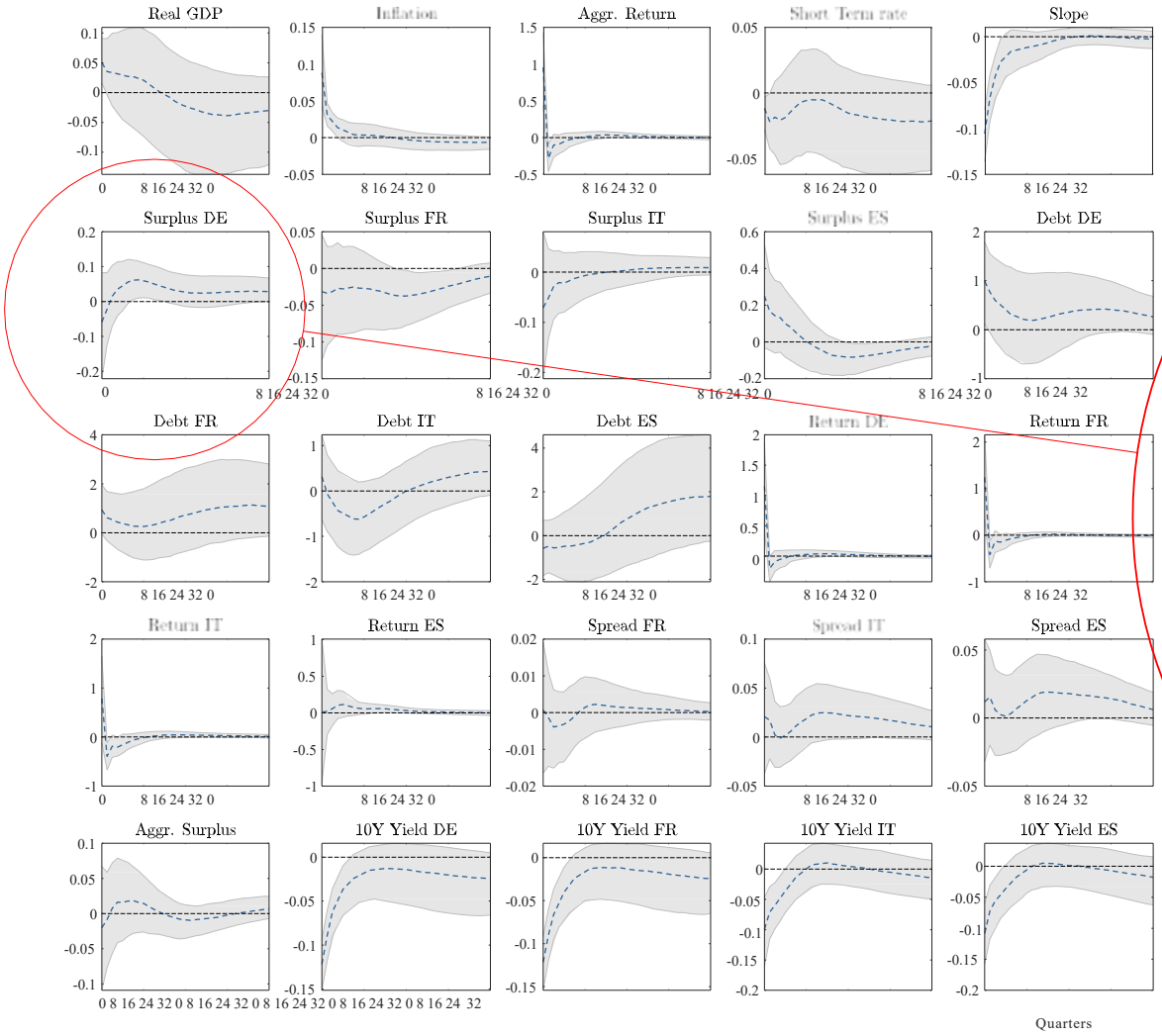
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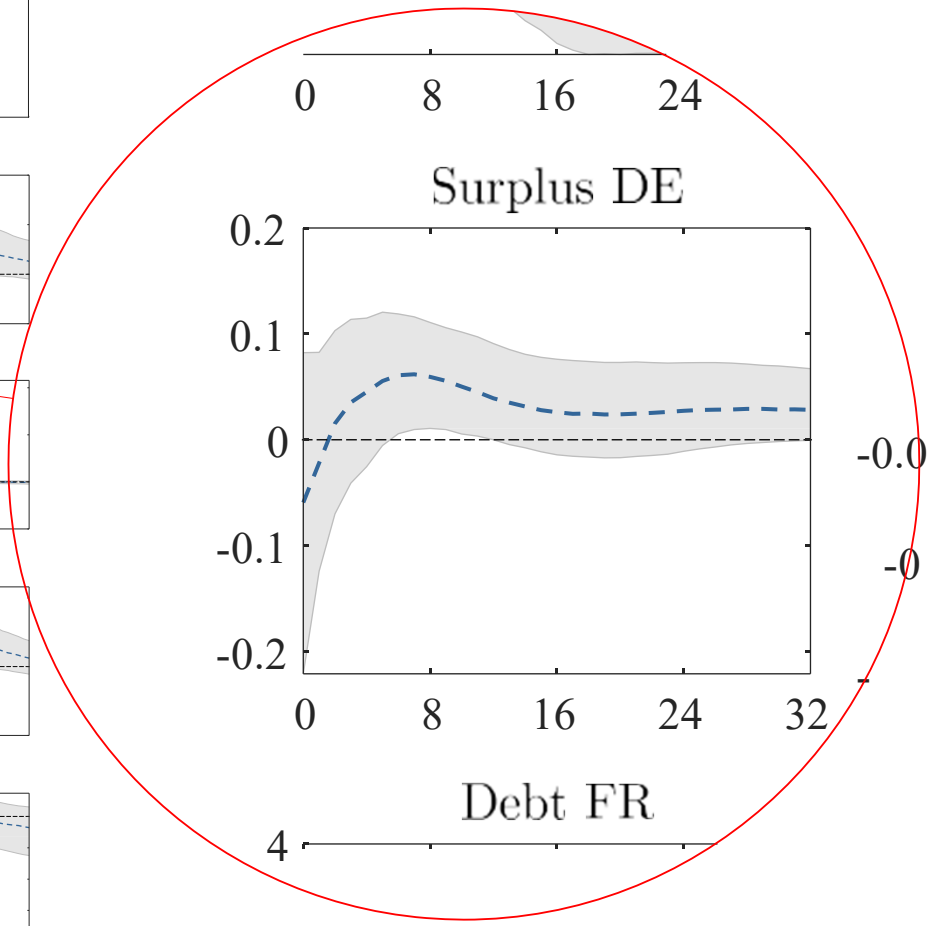
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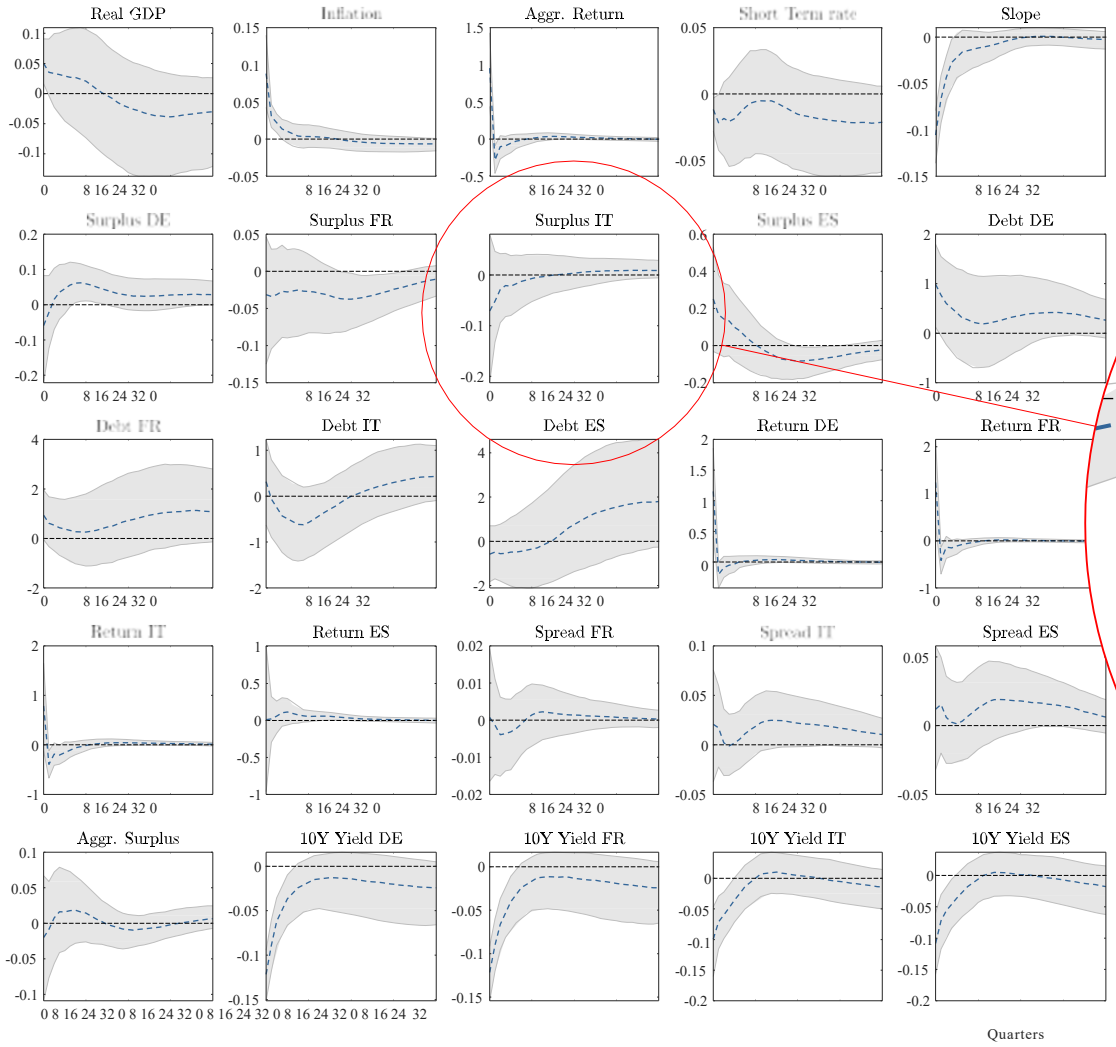
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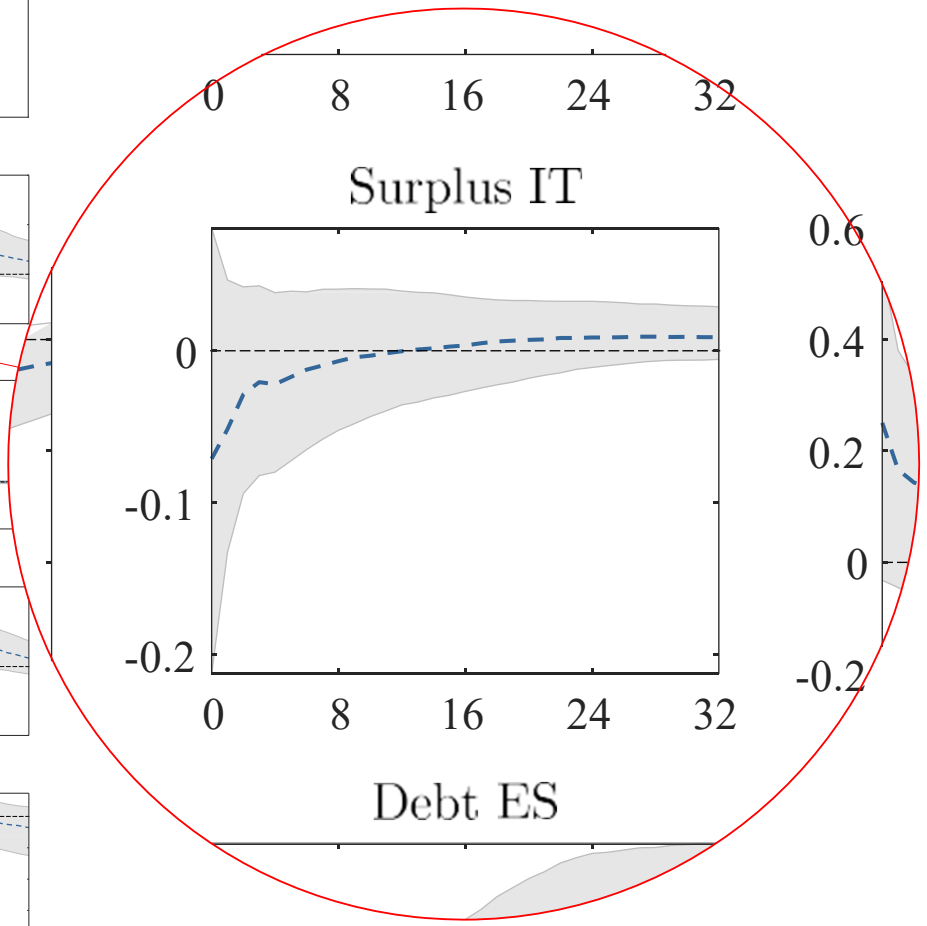
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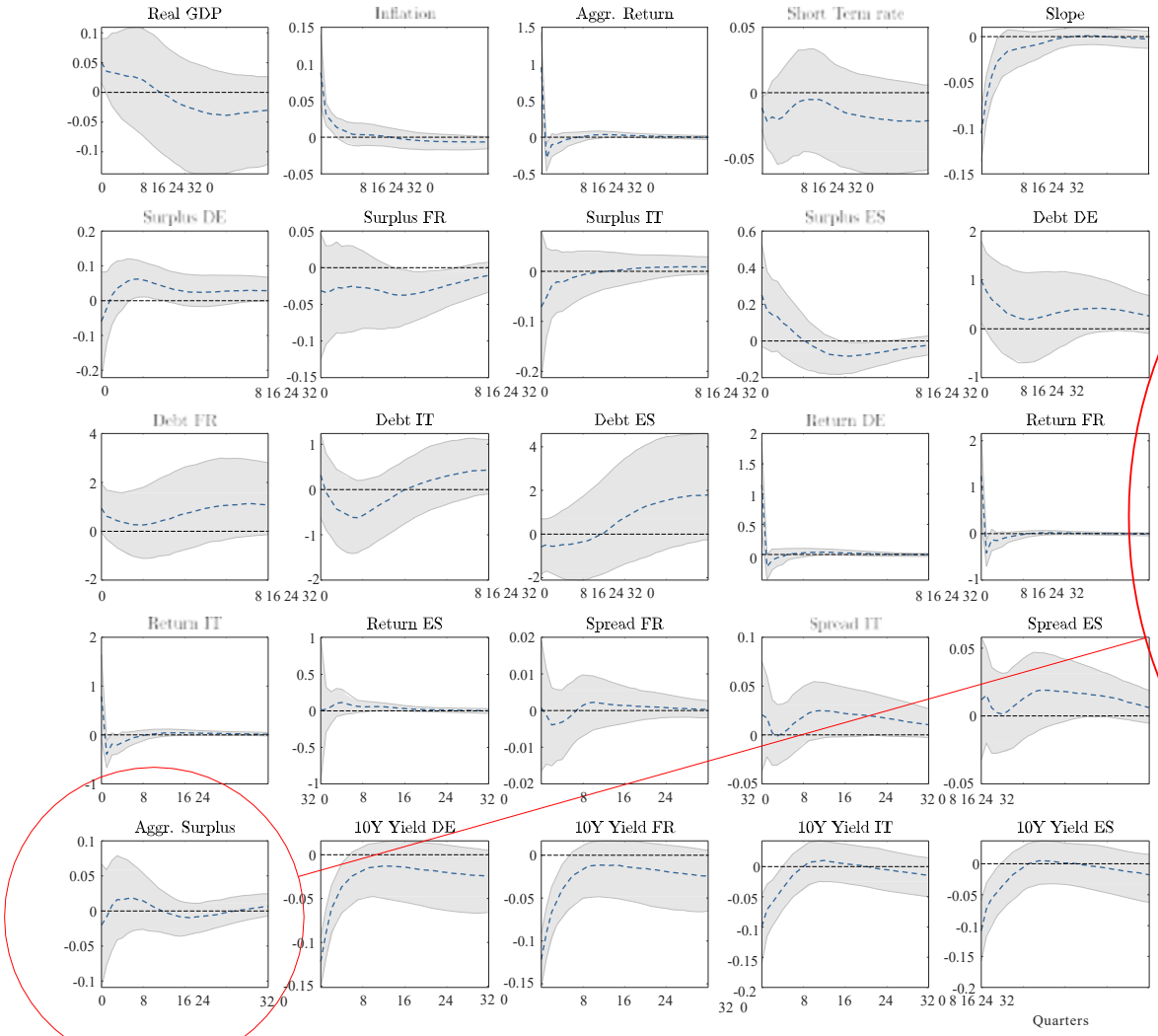
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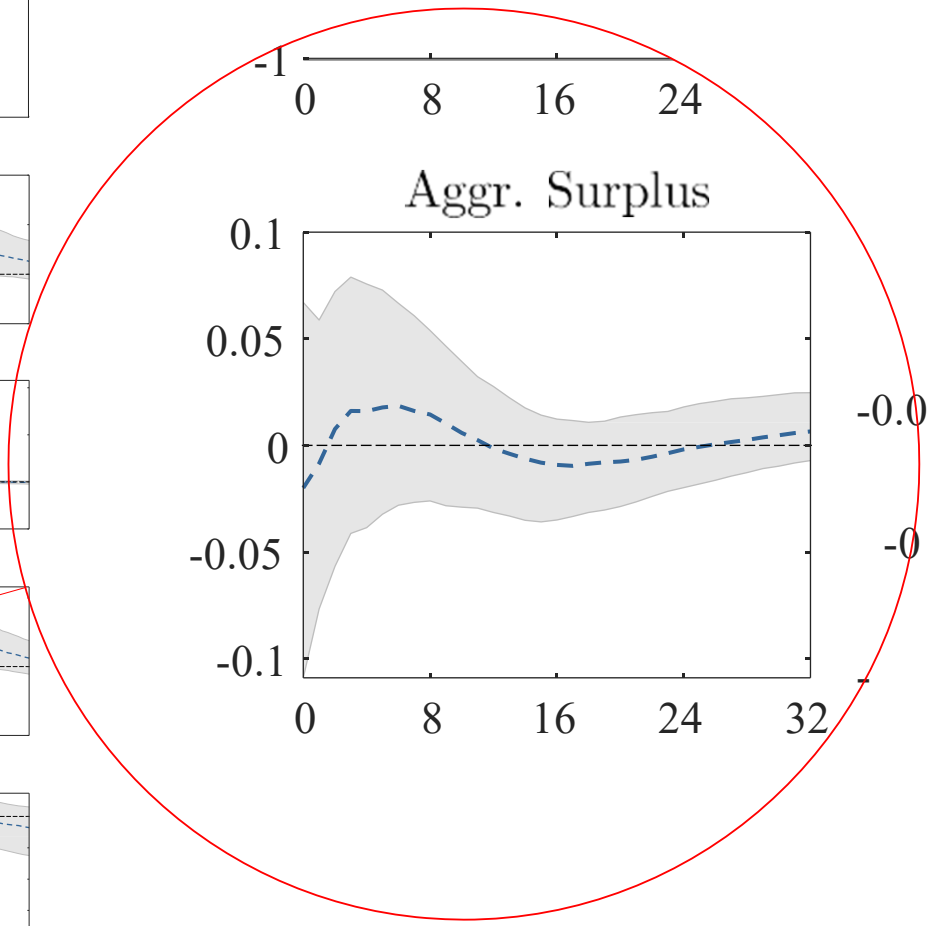

Aggr. Surplus
Quarters

3. What is happening now?

Inflation and disinflation – John's story

- Origin of inflation is fiscal
- Fiscal policy non-Ricardian
- The standard model predicts that, after the Fed's increase in nominal interest rate, inflation increases. Inflation cannot fall unless there is a change in fiscal policy
- John's conclusion: the model has failed!

Inflation and disinflation – standard story

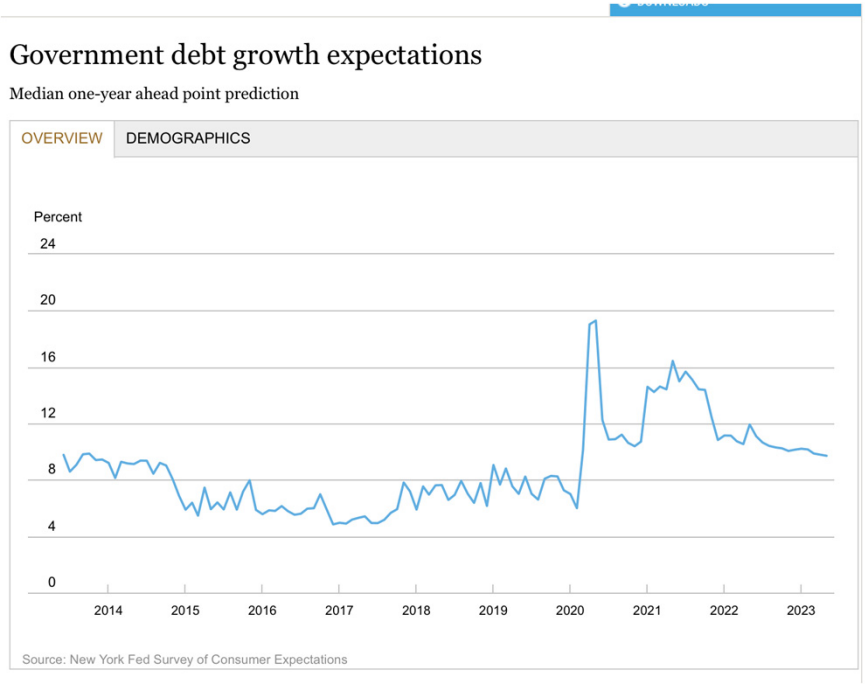
- Assume that fiscal policy is Ricardian
- As the Fed raises interest rates (and people expect real rates to be higher for a time as a result), people should expect an eventual increase in the primary budget surplus, to finance the increased cost of servicing the public debt.
- Inflation declines

The key question is to discriminate between the two stories is whether policy is Ricardian or not

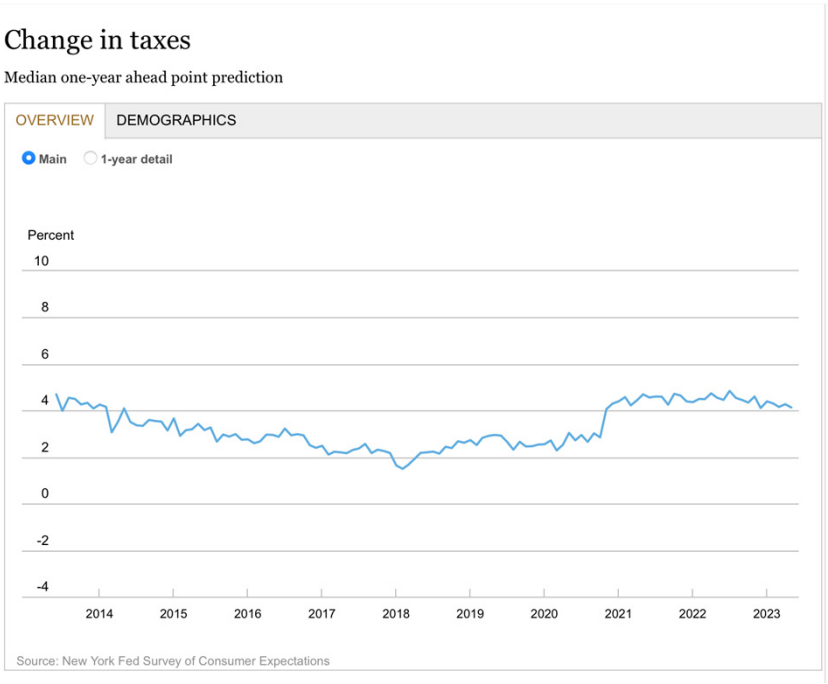
- Difficult to establish empirically
  - Assuming non-Ricardian policy means assuming that people expect a specific forward path for the real primary government budget surplus, and that in the absence of any "change in fiscal policy" they must continue to expect exactly that same path, regardless of any change in monetary policy
  - But what matters is not the announcement of a "change in fiscal policy" but rather the beliefs about fiscal policy
- So agents may be Ricardian today – need to look at expectations

Expectations of fiscal variables – 1 year ahead

Government debt growth



Changes in taxes



It is relevant to ask/understand

- Why should people be confident that there is still a commitment to Ricardian fiscal policy, given the behaviour of the US government in recent decades
- It is a puzzle that the public seems to be remarkably complacent about the issue of the sustainability of US fiscal policy ….

➢ However, unless we think that it has already been established that US fiscal policy is non-Ricardian, we e can't say that the recent events pose some new puzzle for macro theory

Today's discussion is similar to the discussion on Volcker's disinflation

- John's story: the disinflation of the 1980s was due to fiscal policy – large increase in the equilibrium value of the public debt and an increase in the expected value of primary surpluses
- Alternative story is Ricardian: exogenous monetary tightening under Volcker (shift to Taylor rule) which resulted in a windfall for bondholders which in turn required an increase in expected surpluses to pay increased debt services

Equally plausible stories

Conclusions

Conclusions

- Monetary and fiscal policy do respond to endogenous variables
- In standard model both monetary and fiscal policy matter for inflation. The theory is not bankrupt, at least not for that reason
- Many monetary-fiscal regimes are possible, both Ricardian and non-Ricardian.
- Monetary policy rules may have different consequences depending on the fiscal regime
- In some cases, explicit coordination may be desirable. Designing adequate monetary and fiscal rules is an alternative
- This has implications for the governance of central banks
- Today's inflation and disinflation may be consistent with Ricardian and non-Ricardian fiscal regime

End