

# Asymmetric Shocks in a Currency Union with Monetary and Fiscal Handcuffs

Christopher J. Erceg and Jesper Lindé

Federal Reserve Board

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- The rise in sovereign spreads in a number of European countries since late 2009, especially in those countries with high government debt and/or deficit levels, has spurred plans for substantial and accelerated fiscal consolidation
  - Perceived as prerequisite for restoring confidence of bond markets, and for drawing on European financial assistance package announced in May

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  - Reflecting the fact that monetary policy essentially leaves interest rates unchanged for a small periphery country in a currency union, while reducing interest rates considerably in the case of a concerted shock hitting several countries
  - According to this logic, Greece and Portugal would be better off if e.g. Germany and France cut spending at the same time

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- We define a liquidity trap as a situation where nominal interest rates cannot be lowered for a protracted period due to the zero lower bound constraint
- In this environment, the impact of shocks in the periphery (and core) depends on agents' perceptions of long the liquidity trap would last in the absence of additional shocks, and the severity of the associated recession

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  - This result obtains because monetary policy is constrained by the ZLB
- Moreover, if shock hits both periphery and core, then effects strongly enhanced on both periphery and core
  - For instance, in the case of a coordinated aggressive fiscal spending cut of 1% to baseline GDP, output contraction so large (-2.8%) that government debt to output ratio increases for a 4(3) year period in periphery(core)

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- In this framework, the marginal impact on currency union GDP of asymmetric shocks in the periphery grows with the size of the asymmetric shock
  - For example, a spending cut of 1% in a large periphery has an impact multiplier slightly above unity (for large periphery), but a spending cut of 3% in large periphery is associated with a multiplier of 1.5 (again, for large periphery), reflecting that the larger cut extends the duration of the liquidity trap by two quarters

# Discussion outline

- Model
- Parameterization of model
- Effects of fiscal shocks
- (Effects of financial shocks)
- Sensitivity analysis
- Concluding remarks

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- Financial accelerator mechanism following BGG (1999) and CMR (2007)

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- **Note: The consumption and investment goods are composite of the domestically-produced good and the imported good (in different combinations)**

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- We assume that a fraction  $\zeta$  of households are purely “Keynesian” and do not save so that:

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- The Hand-to-mouth (HM) households set their wage at the average wage of the optimizing households, and since they face same labor demand curve, they work the same amount as optimizing households in equilibrium

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- Producers of the aggregate domestic good bundle the continuum of intermediate goods, and take prices as given in input and product markets
- Distributors purchase both the domestically-produced good and imported goods, and resell the final consumption and investment goods to households (CES). Face quadratic costs of changing the composition of imported to domestic goods

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- **Hebden, Lindé and Svensson (2009): Perfect foresight solution**



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  - Policy rule more aggressive to inflation than standard Taylor rule ( $\gamma_\pi = 2.5$ )

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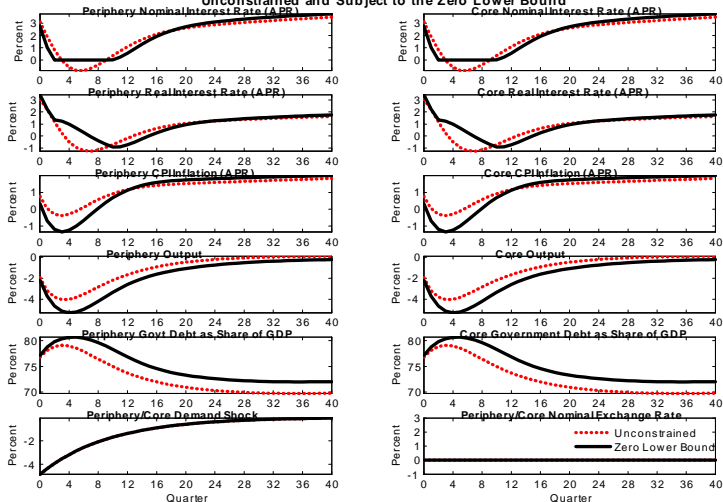
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  - Note: With symmetric calibration and symmetric shock, baseline identical for small and large periphery calibration

# Baseline Scenario in model

Solution when interest rates are unconstrained and subject to ZLB

Figure 1: Baseline Scenario When Monetary Policy is Unconstrained and Subject to the Zero Lower Bound





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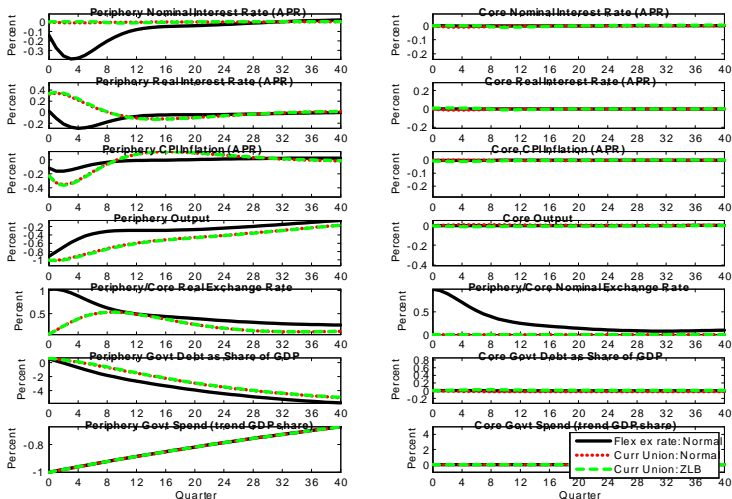
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  - Bigger effects of asymmetric shock in a currency union relative to flexible exchange rate case

# Effects of fiscal shocks

## Government spending cut in small periphery in alternative situations

Figure 2: Responses to a Front-Loaded Decrease in Government Spending in Small Periphery under Flexible Exchange Rate and in a Currency Union



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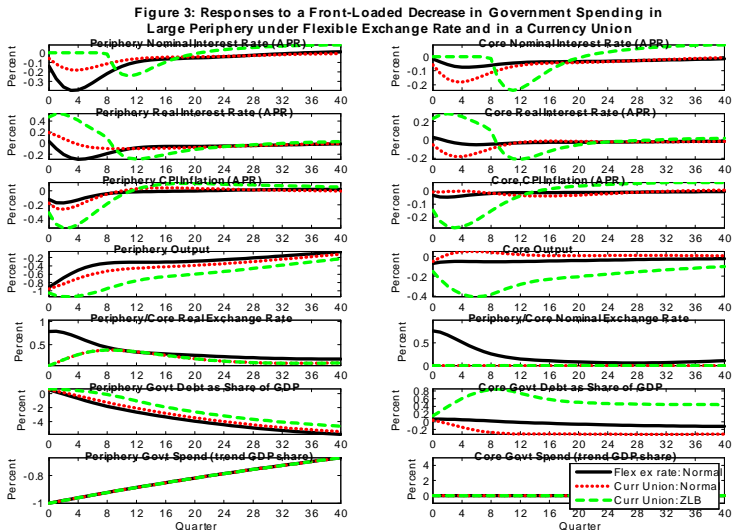
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- However, when the economy is at the ZLB, we obtain larger drop in periphery output when periphery is large,
  - Bigger effects of symmetric shocks when monetary policy is at the ZLB, in contrast to results when policy is unconstrained, contrary to conventional wisdom

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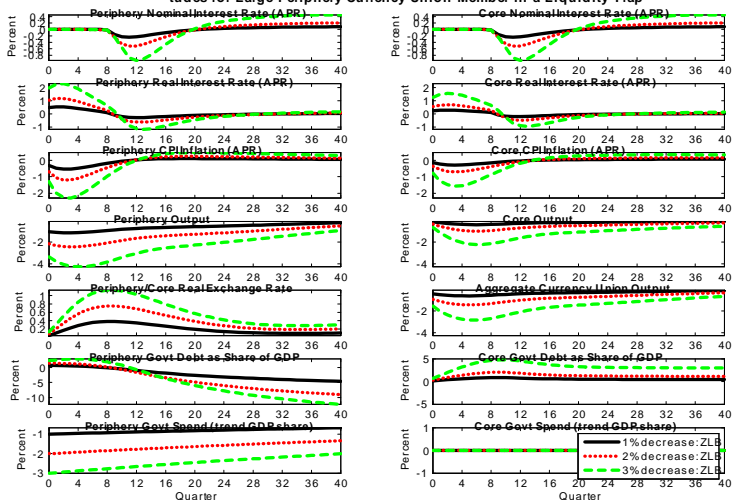
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- Since large periphery is 1/3 of total currency union, a 3% cut is equivalent to a one percent aggregate cut
  - Since aggregate currency union output fall with about 2.8 percent, the multiplier is as high as 2.8 for the largest spending cut
  - Notice also budgetary implication, larger cuts in the periphery are associated with a runup in debt in the short run for the periphery, and persistent rise in debt in core



# Effects of fiscal shocks

Different sized government spending cuts in large periphery

Figure 4: Responses to Government Spending Cuts of Different Magnitudes for Large Periphery Currency Union Member in a Liquidity Trap



# Effects of fiscal shocks

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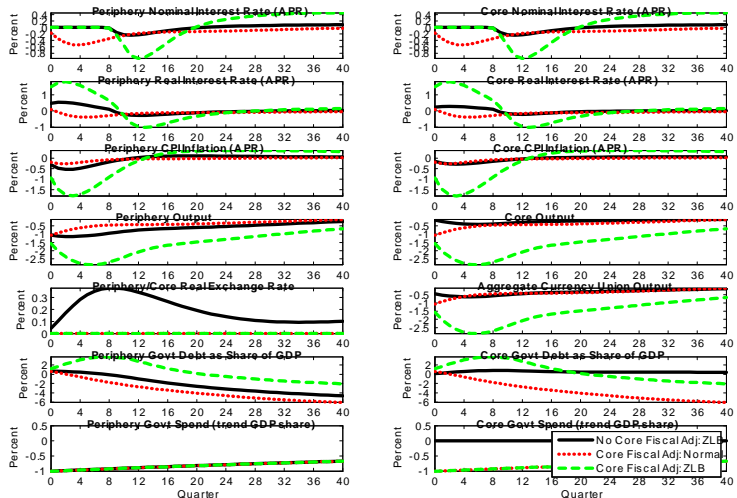
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  - **Policymakers chasing their own tail**



# Effects of fiscal shocks

## Coordinated and non-coordinated government spending cuts

Figure 5: Responses to Government Spending Cut in Large Periphery Currency Union Member With and Without Core Spending Adjustment



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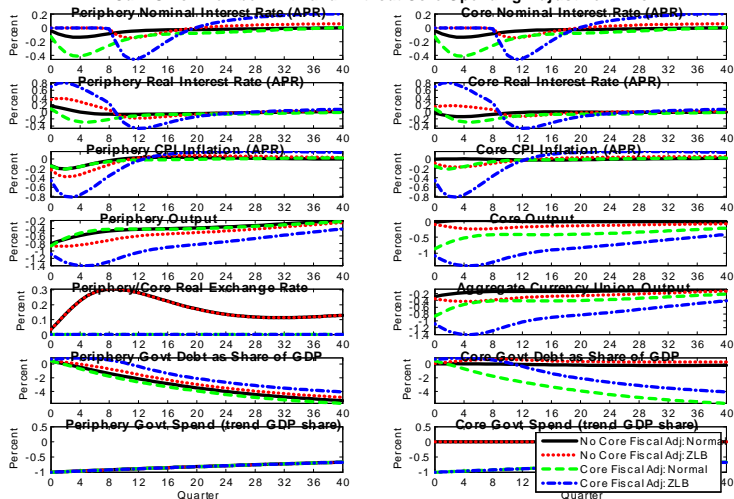
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- Qualitative aspects unchanged, but need larger cuts to see as large quantitative effects as in the model with HM households

# Sensitivity analysis

Non-coordinated and coordinated spending cuts with no HM households in model

Figure X: Responses to Government Spending Cut in Large Periphery  
Curr Union Member With and Without Core Spending Adjustment: No HM





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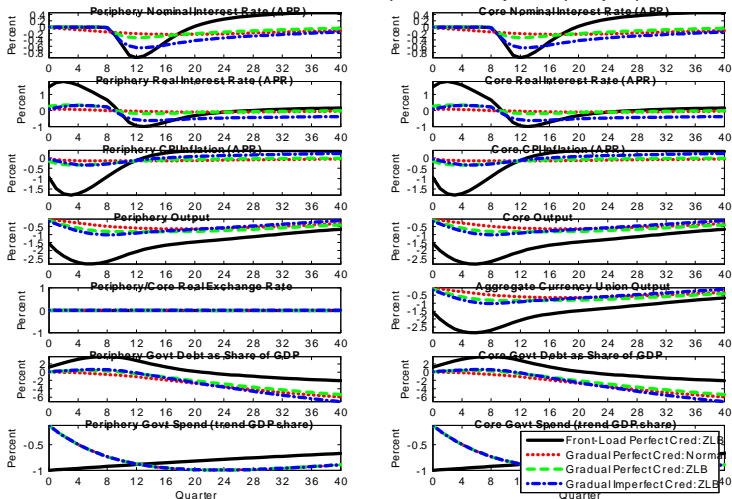
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# Sensitivity analysis

## Effects of a coordinated gradual spending decline

Figure X: Responses to Government Spending Cuts in Large Periphery Currency Union Member Under Perfect and Imperfect Credibility in a Liquidity Trap



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- From a European policy perspective, our analysis suggests that fiscal consolidation via spending cuts should be announced but come into full effect first when monetary policy is unconstrained by the ZLB
  - Economies where policy is deemed to be on a sustainable path (e.g. Germany) should not cut spending