

1 money and $n+1$ fiscal: testing the FTPL in Germany

Peter Claeys (Vrije Universiteit Brussel)

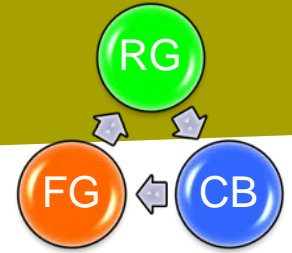
Raul Ramos and Jordi Suriñach (UB)

Fiscal policy, monetary policy and their interaction in a monetary union

ECB Public Finance Conference

Frankfurt, December 11-12th, 2014

Motivation



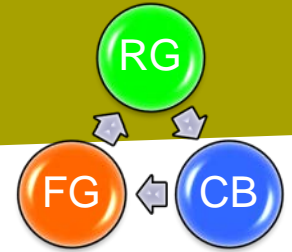
Jean-Claude Trichet

"Would it be too audacious to imagine a European Union that not only has a unified market, a common currency and a common central bank, but also a common Finance Ministry?"



Charlemagne Prize 2011

Motivation



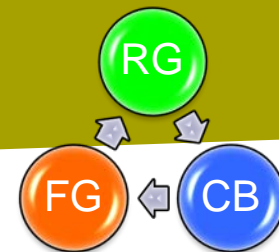
Mario Draghi

“[Thus], it would be helpful for the overall stance of policy if fiscal policy could play a greater role alongside monetary policy, and I believe there is scope for this, while taking into account our specific initial conditions and legal constraints.”



Jackson Hole conference, 2014

Summary



THEORY

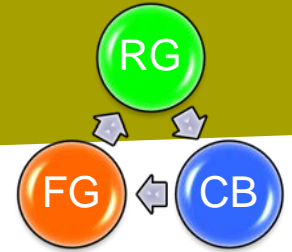
n players do collective action
(Harstad, 2008)

side-payments spur action
but not with voting

need of a player that
internalises strategic delegation

application to monetary union

Summary



THEORY

n players do collective action
(Harstad, 2008)

side-payments spur action
but not with voting



need of a player that
internalises strategic delegation

application to monetary union

EMPIRICS

test effect consolidation on
price level

FTPL test à la Canzoneri et al.
(2001)

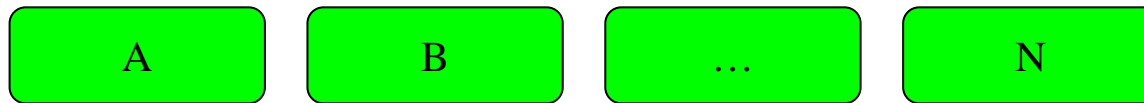
case: Germany, 1970-2005

finding: federal government
shields Bundesbank

Baseline model

Harstad (2008) JEEA

side-payments between n players
to facilitate collective action



project value is $v_i - \theta$

θ common shock $U[c-\sigma, c+\sigma]$

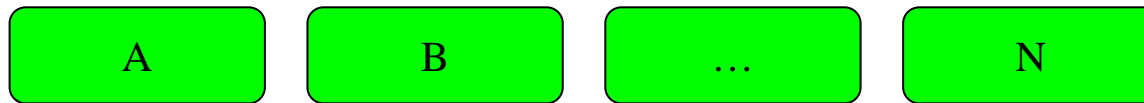
s_i side-payment between players

$$u_i = v_i - \theta + s_i$$

Baseline model

Harstad (2008) JEEA

side-payments between n players
to facilitate collective action



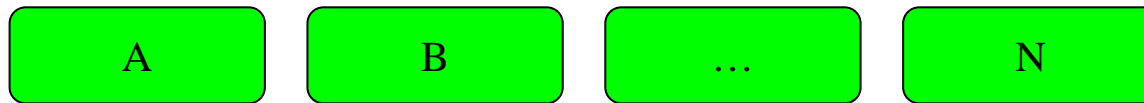
no side-payment ($s_i=0$)

project is undertaken if and only if all agents benefit from it
if just one $v_i < \theta$, no collective action

Baseline model

Harstad (2008) JEEA

side-payments between n players
to facilitate collective action



with side-payments

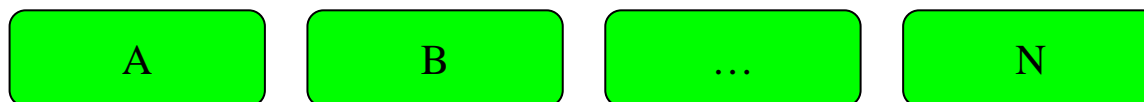
players negotiate on transfers

net winners compensate net losers

project implemented iff $\bar{v} \geq \theta$

Harstad (2008) JEEA

side-payments between n players
to facilitate collective action



side-payment, and voting

strategic delegation to representative to vote on action

appointing a reluctant representative raises chance of

getting compensation, but fewer projects are implemented

especially if n , σ , and \bar{v} are large and c is small

call players regions

side-payment paid by taxes → transfer to other region



region A

region B

...

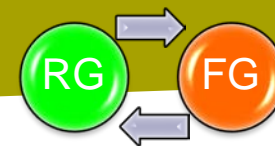
region N

regions raise taxes to finance project + side-payment (transfer)

Harstad (2008) JEEA: EU Council

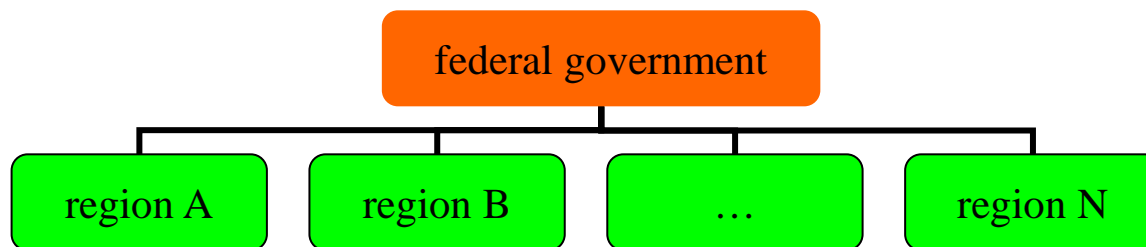
Claeys and Martire (2014) EPC: avoid secession

Extension



call players regions

add a federal government



federal government internalises strategic voting (full information)

can use tax/transfer to compensate between regions

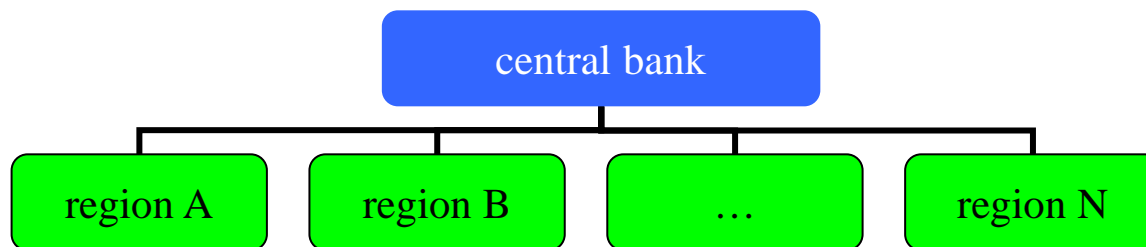
back to simple equilibrium with side-payments

with debt, could finance even more projects

Extension

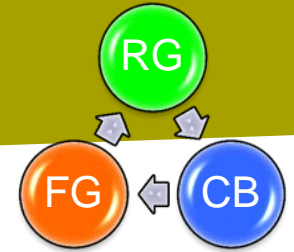


call players regions
add a central bank

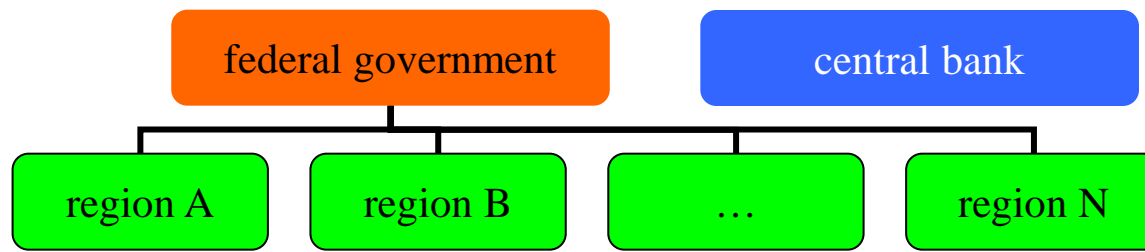


central bank can internalise the strategic voting
but no tax/transfer tool
via monetary tools

Extension



add a federal government + central bank

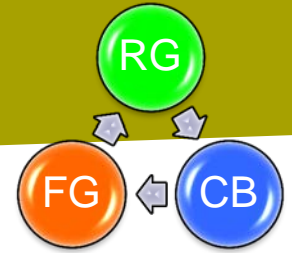


federal government internalises strategic voting

collective action

central bank free

but with debt of federal government, risk



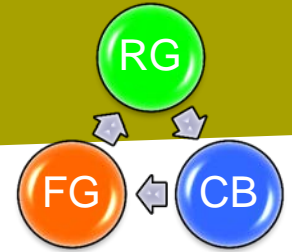
fiscal discipline may be in danger when different government levels are involved

1) devolution to regional policies

→ political problem: check fiscal power

spending rises, taxes are cut → debt

→ soft budget constraints (bail out)
(Rodden et al. 2003)



fiscal discipline may be in danger when different government levels are involved

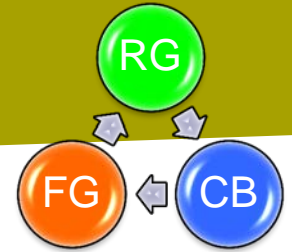
2) supra-national levels: monetary union, EMU

free riding → debt → bail out
monetary financing (and inflation)
Chari and Kehoe (2004); Beetsma (1999)

→ political problem: check fiscal power

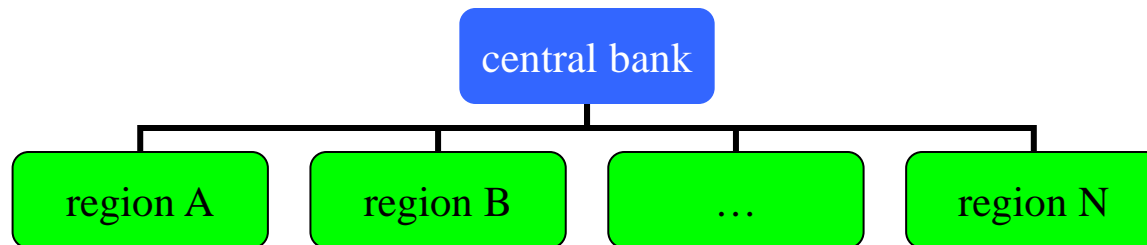
transfers between regions to offset budget constraint
Bergin (2000), Sims (1997) not politically viable?
→ but that is different in a political federation

Comparison



Chari and Kehoe (2004)

model of free riding in a monetary union



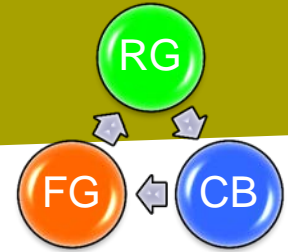
main result

if the central bank cannot commit, regions free ride and expand budget. Fiscal policy is non-Ricardian.

The Nash equilibrium is suboptimal (deficit and inflation too high).

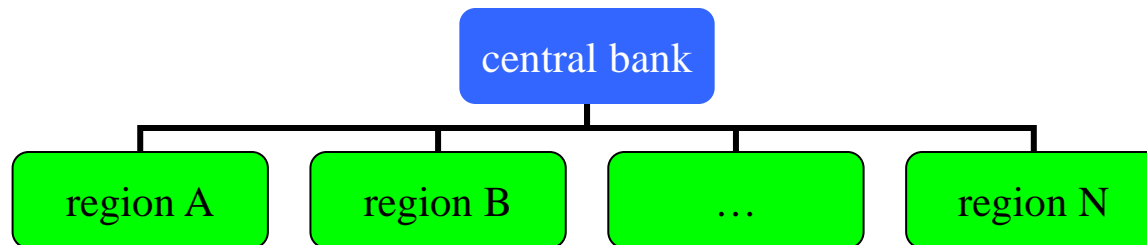
In monetary union, the insolvency of a single government is sufficient to make the price level indeterminate (Bergin, 2000)

Comparison



Chari and Kehoe (2004)

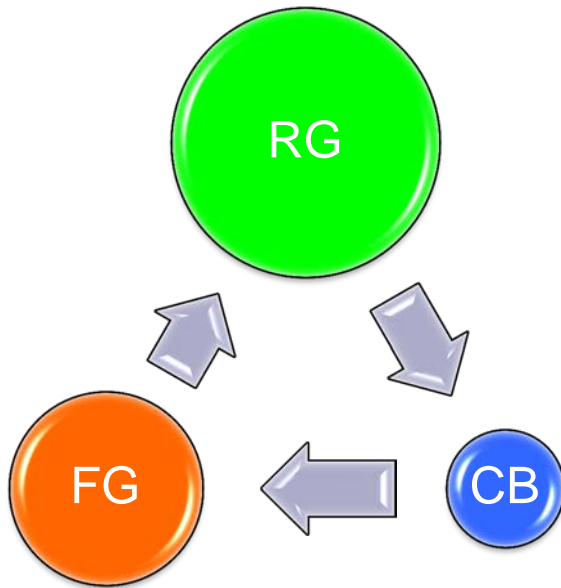
model of free riding in a monetary union



when do we **not** get the Nash equilibrium?

- 1) fiscal rules on regions
- 2) central bank can commit
- 3) price level exactly right for all regions
- 4) transfers between regions offset the budget constraint
 - is this politically viable?
 - Bergin (2000), Sims (1997) **NO**
 - but that is different in a political federation

Case studies

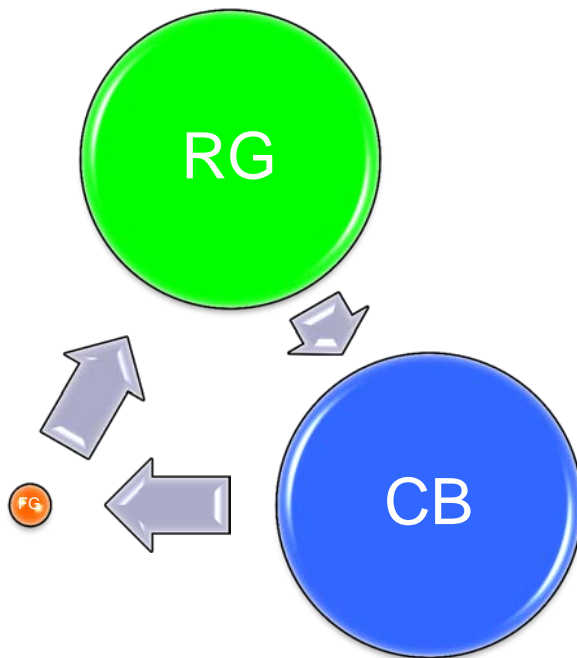


Argentina, 2001

- 1991 link of peso to US dollar
→ currency board
finance minister Domingo Cavallo
- 1990s macroeconomic stability
- 1998 emerging market crisis
- 2001 fiscal crisis provincias
→ position of Domingo Cavallo
collapse of currency board
→ hyperinflation
→ partial default

lack of fiscal discipline at provincial level
fiscal laws of 80s not adjusted
strong opposition of governors to government

Case studies

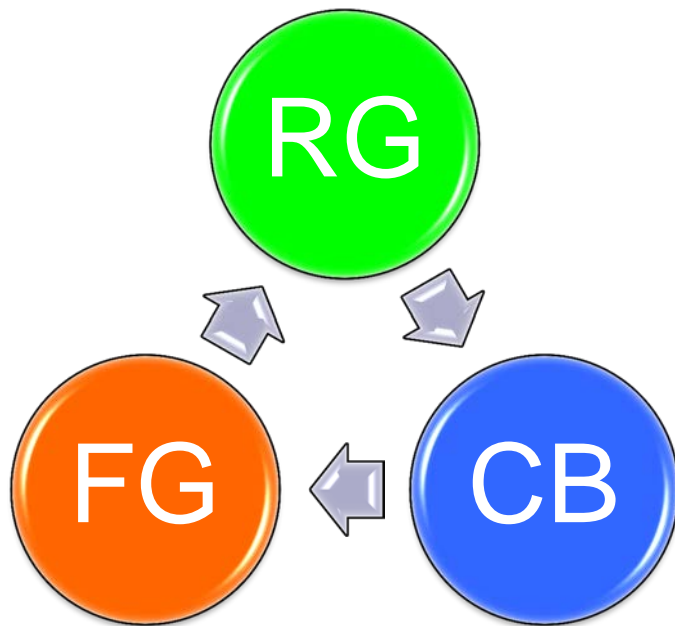


EMU

Member States	expansion in 2008 Fiscal Crisis fiscal austerity
EC	Juncker Plan?
ECB	LTRO, CBPP, SMP, ... QE?

Case studies

Germany

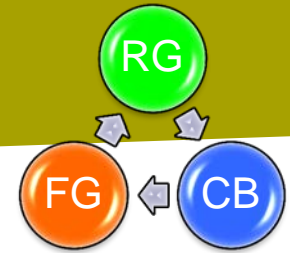


“Länderfinanzausgleich”
fiscal equalisation scheme

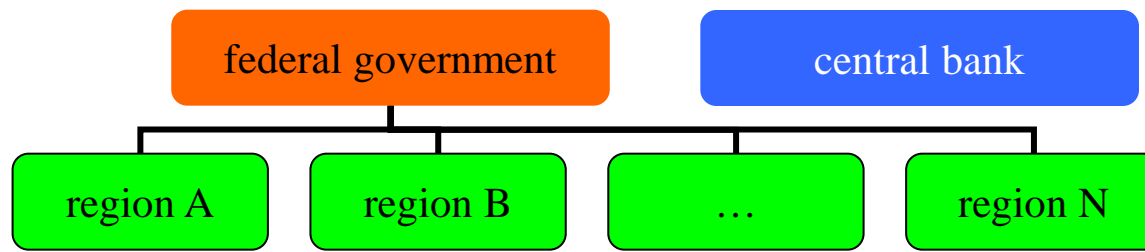
50/50 share in spending
system of vertical and horizontal transfers

bail-outs of Bremen and Saarland
fiscal trouble in Berlin
debate net contributors

Test – fiscal consolidation



add a federal government + central bank

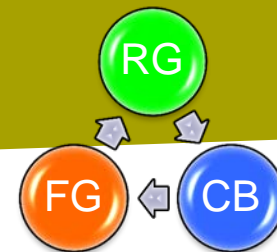


regions do too little consolidation

federal government (over)compensates with a tight budget

central bank does not suffer inflationary consequence

➔ test whether the federal government compensates



flow budget constraint

$$b_t \equiv (1 + r_t)b_{t-1} + s_t$$

intertemporal budget constraint

$$b_t \equiv \lim_{n \rightarrow \infty} E_t \left[\prod_{j=1}^n \left(\frac{b_{t+n}}{1 + r_{t+j}} \right) \right] + \sum_{n=0}^{\infty} E_t \left[\prod_{j=1}^n \left(\frac{s_{t+n}}{1 + r_{t+j}} \right) \right]$$

Fiscal Theory of the Price Level

the constraint is an equilibrium condition, not a constraint

if fiscal policy satisfies the constraint

monetary policy determines prices

→ Ricardian

if not, fiscal policy determines prices

→ non-Ricardian

Test

test for FTPL

runs in an identification problem

Canzoneri et al. (2001)

distinguish Ricardian from non-Ricardian regimes by looking at response of liabilities to shocks in the surplus

- | | | | | |
|----|--------------------|---------------------------|--------------------------------|---------------|
| 1. | surplus \uparrow | liabilities \uparrow | if serial correlation positive | Ricardian |
| 2. | surplus \uparrow | liabilities \rightarrow | | |
| 3. | surplus \uparrow | liabilities \downarrow | if serial correlation negative | non-Ricardian |

Test

VAR [b_t s_t α_t] cholesky order

data

Germany

1970-2005

general

OECD

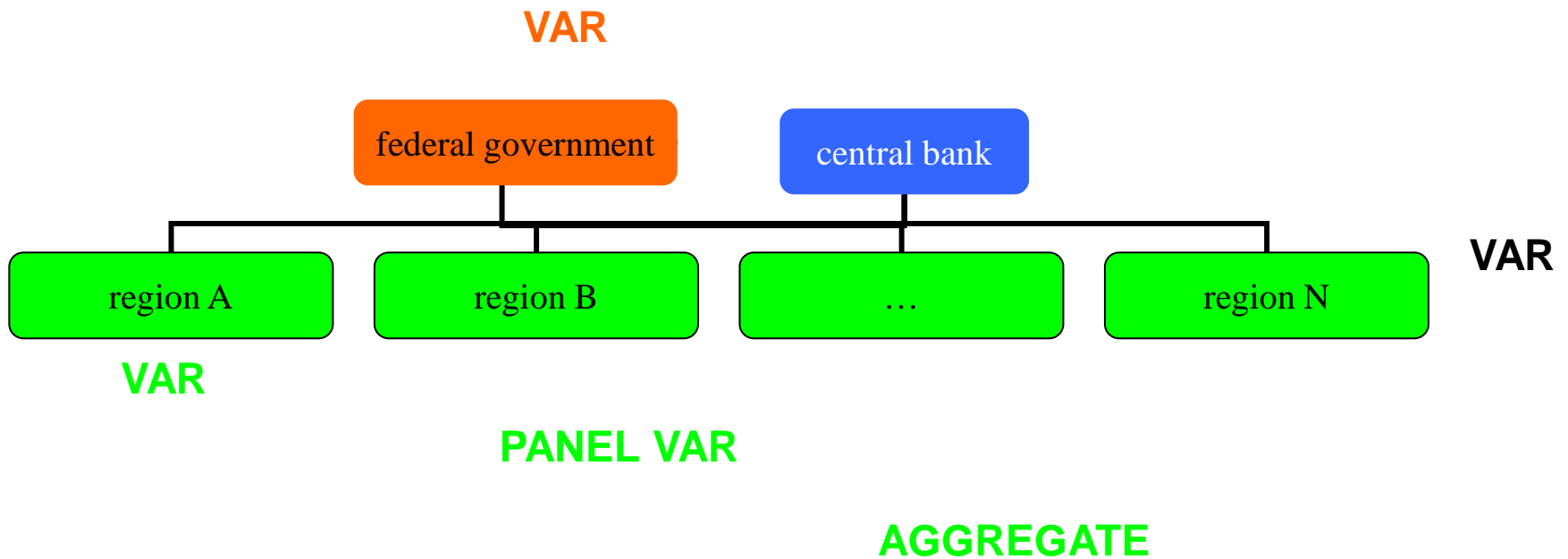
federal, Länder

Statistisches BundesAmt

state (consolidated)

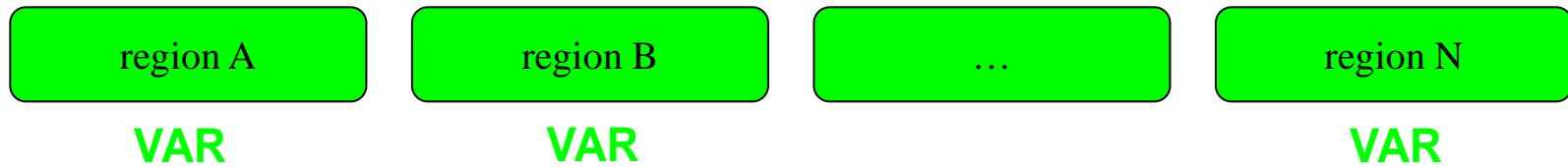
Bundesfinanzministerium

Steps



Thams (2006) Germany – general government: Ricardian
Bajo-Rubio et al. (2009 EJPE) – EU countries, not aggregate

Step 1 – regional government



Step 1 – regional government

shock to surplus ratio

accumulated IRF of debt ratio

in black : Ricardian

in red : non-Ricardian

<i>years after the shock</i>	<i>2y</i>	<i>5y</i>	<i>8y</i>
Baden-Württemberg	-0.0015*	-0.0050*	-0.0089*
Bayern	-0.0013*	-0.0037*	-0.0059*
Hessen	-0.0002	0.0035	0.0092
Niedersachsen	-0.0120*	-0.0345*	-0.0565*
Nordrhein Westfalen	-0.0034*	-0.0136*	-0.0267*
Rheinland Pfalz	-0.0037*	-0.0100*	-0.0163*
Saarland	-0.0065*	-0.0258*	-0.0495*
Schleswig Holstein	-0.0053*	-0.0178*	-0.0315*
Berlin	-0.0176*	-0.0648*	-0.1270*
Bremen	-0.0030	-0.0199	-0.0442
Hamburg	-0.0005	-0.0024	-0.0048
Brandenburg	-0.0084*	-0.0181*	-0.0249*
Mecklenburg Vorpommern	-0.0021*	-0.0104*	-0.0192*
Sachsen	-0.0078*	-0.0188*	-0.0302*
Sachsen-Anhalt	-0.0117*	-0.0438*	-0.0873*
Thüringen	-0.0014*	-0.0051*	-0.0092*

Step 2 - region

region A

region B

...

region N

PANEL VAR

Step 2 – region

shock to surplus ratio

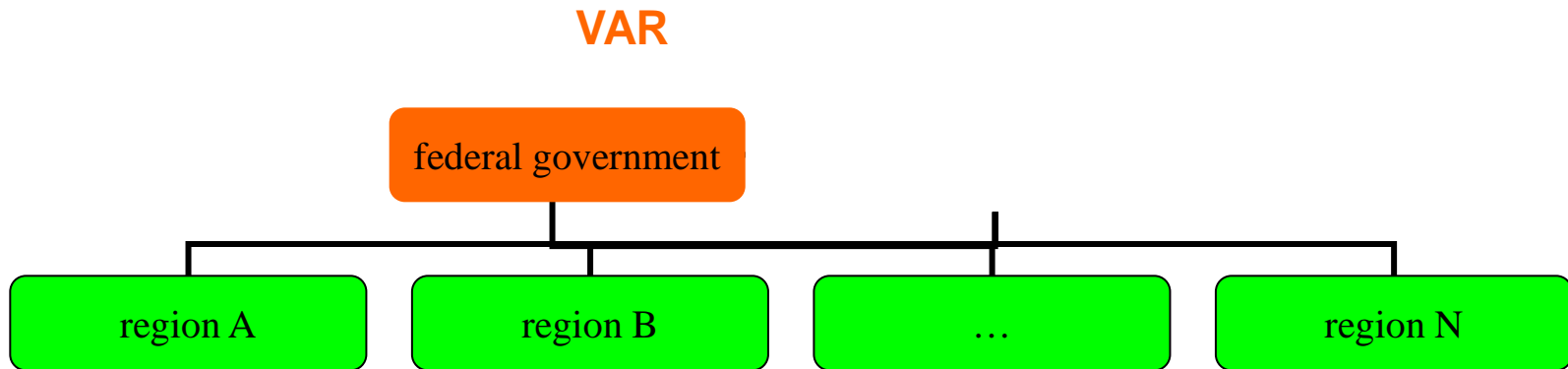
accumulated IRF of debt ratio

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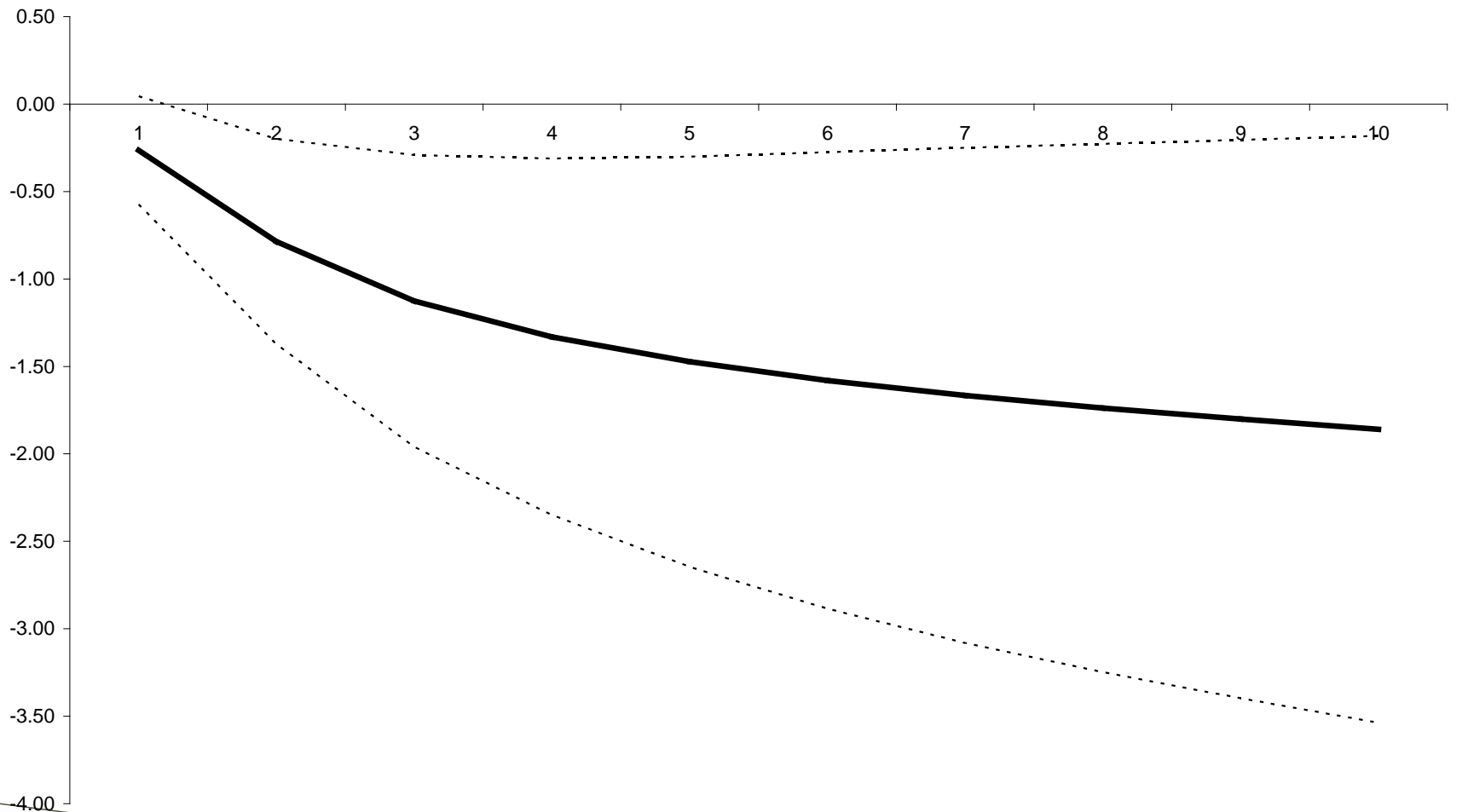
in red : non-Ricardian

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Thüringen	-0.0014*	-0.0051*	-0.0092*
panel VAR	0.0143	-0.0068*	-0.0445*
regional government	0.0067	0.0208	0.0352

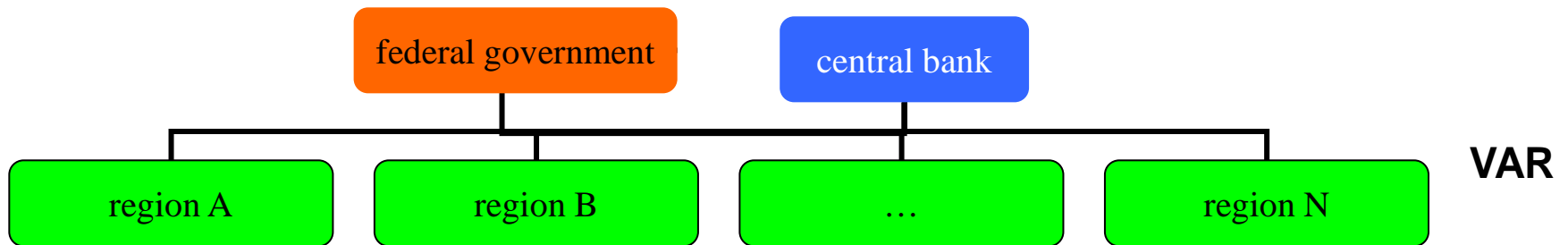
Step 3 – federal government



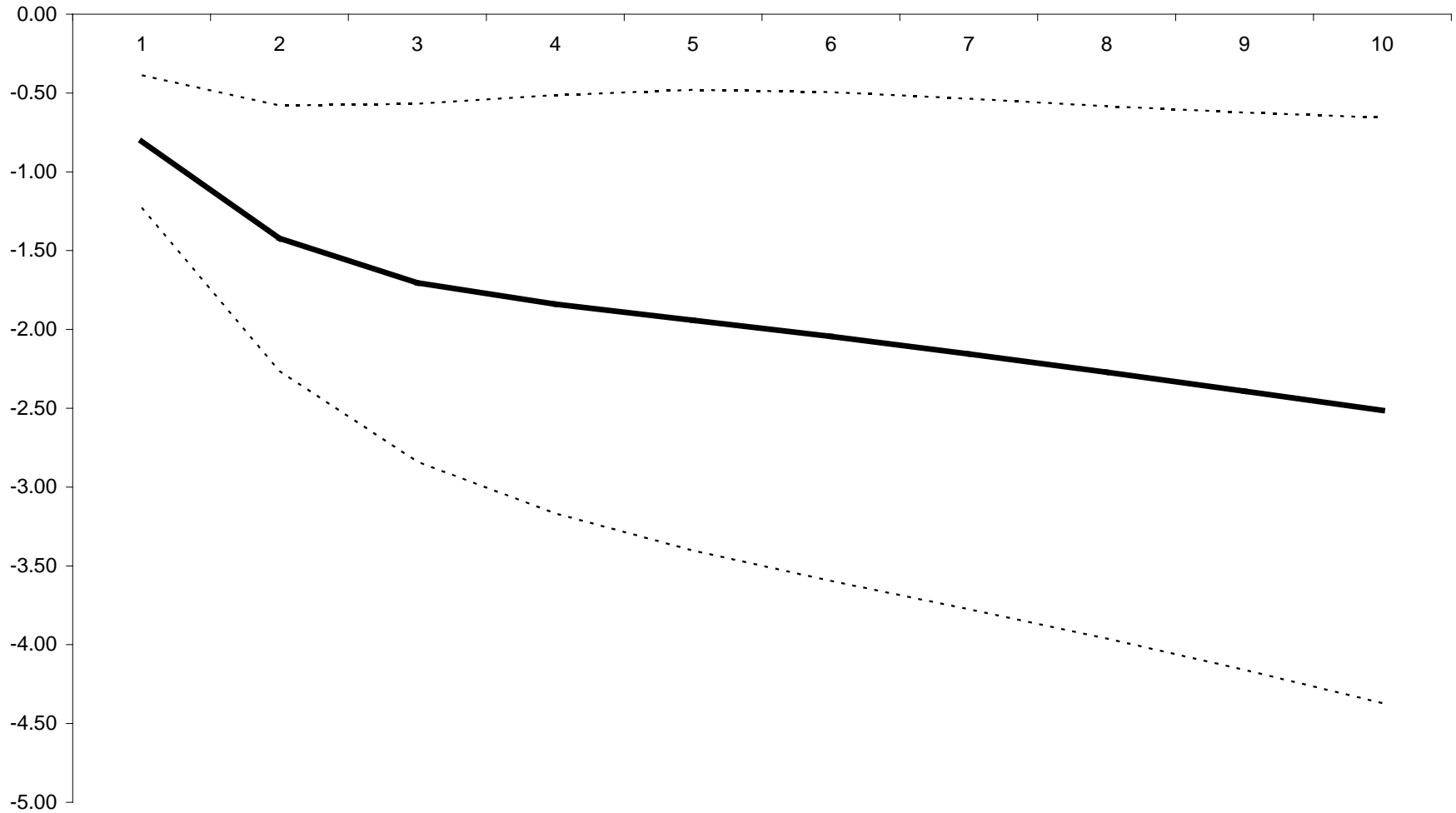
Step 3 – federal government

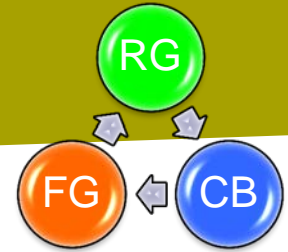


Step 4 – general government



Step 4 – general government





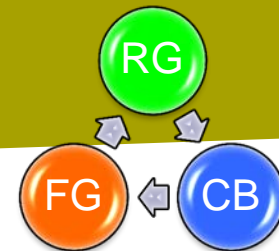
fiscal policy in Germany is Ricardian

is a mix of (a) non-Ricardian regime regionally
 (b) Ricardian regime at federal level

horizontal transfers help
but no compensation between regions

federal government overcompensates so that general
government is Ricardian, and so protects Bundesbank

Conclusion



model of collective action

inefficiently low because of voting
restore with agent that internalises effects

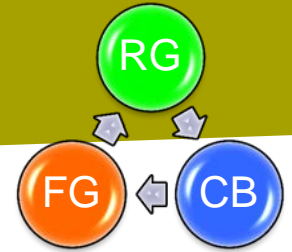
application to monetary union in a fiscal federation

federal government internalises spillover
this shields central bank from lack of action by regions

empirical evidence

fiscal consolidation
Germany, 1970-2005

Policy implications



case studies

in fiscal literature: Germany, Argentina, Brazil, ...

in monetary literature: EMU

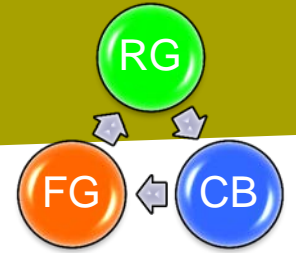
design of EMU: do we have sufficient collective action?

role of SGP? control fiscal policy

but negative coordination only

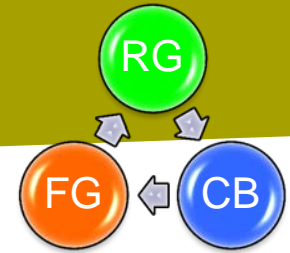
fiscal power at EC?

Policy implications



a Euro Treasury?





Many thanks

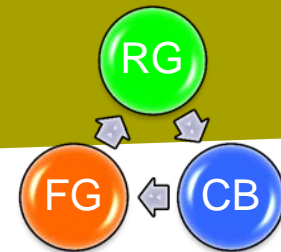
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Any comments or suggestions?

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web <https://sites.google.com/site/pclaeys/site/home>



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