

Cross-Country Long-Run Spillover Effects and Coordination of Fiscal Policy: an Exploration

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Next

- **Motivation**
- Approach
- Spillover results in normal times
- Spillover results in crisis times
- Coordination results
- Conclusion



Policy landscape

- Fiscal policy coordination is more present in the policy debate than years before
- Increased coordination has to some extent already entered policy, e.g. the European Semester (2010)
- Cross-country fiscal policy spillovers is one rationale for coordination...
- ... but existing economic studies tend to find small spillovers, at least in normal times



Scientific landscape

- Most existing studies focused on normal times...
- ... and combine fiscal and monetary policy (at the ZLB or not)
- Methodological challenges for empirical analysis are large
- Simulations with CGE models avoids most of these challenges
- Existing cross-country CGE analyses never consider...
 - skill differences
 - pensions¹
 - progressive taxation
- ... all of which influence economies within and across borders
- Note for instance:

	Austria	United Kingdom
Tertiary education rate (%)	13	31

1: Boersch-Supan et al. (2006) consider regions, not countries



Question and contribution

- The DSGE literature illustrates the importance of monetary policy constraints
 - Asymmetric ZLB impacts may in theory lead to cross-country differences in savings responses, and thus spillovers
 - Simulations with DSGE find that fiscal policy spillovers are bigger when the ZLB operates
- Research question: is there a rationale for fiscal policy coordination...
 - ... beyond complements to constrained monetary policy (ZLB)?
 - ... even under a minimal integration view without short-run frictions (products and capital market integration: yes; migration¹ and tax optimisation²: no)?
 - In other words, are the freedom to trade and to invest anywhere sufficient to allow *alone* for sizeable spillovers?
- Contribution: answer the research question in normal and crisis times, including skill differences, pensions and progressive taxation in a long-run, cross-country CGE analysis covering 14 European Union countries
 - In line with evidence, production exhibits capital-skill complementarity
 - Together with cross-country differences in skill composition and capital market integration: spillovers may differ (even for the same country sizes)

1: recall Brexit campagne

2: recall EC ruling on Apple



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Single-country model basis

- Existing single-country OLG model used on a regular basis for policy evaluation, such as:
 - Fiscal devaluation in 4 EU countries (for DG TAXUD)
 - 2015 Austrian tax reforms (for Austrian Ministry of Finance)
- Detailed modelling of labour markets and institutions, including:
 - Single composite good with constant exchange rates
 - Three skill groups
 - Capital-skill complementarity in production
 - Endogenous labor market decisions along intensive and extensive margins
 - Public policy instruments: progressive taxation, earnings-related pensions, social security
- In times of crisis, we assume that public debt is a safe asset issued in nominal terms
 - terms do not grow either with inflation nor productivity growth
 - return: 4% lower than interest rate on private debt



Extension to multi-country model

- Spillover effects due to capital markets integration
 - Assumption: only capital is a mobile factor (Buiter, 1981)
 - A stylized rest-of-the-world country captures non-EU trade flows
- Suitable for analysis of reforms and low frequency shocks (crisis, aging)
- To answer the research question, the approach isolates (on purpose) structural components from other components:
 - No business cycle fluctuations (no price rigidities)
 - No short-run, fiscal multiplier effects
 - No comparative advantages of trade (single good)
 - No firms relocation or tax planning activities
 - No migration effects
 - No monetary policy, nor interaction with fiscal policy
 - No terms-of-trade effects
 - No population aging effects (for now)
- Our analysis provides a *complementary view* on spillovers and policy coordination



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Spillovers from a fiscal policy reform

Assume Germany cuts labor income taxes 20 % and keeps its budget balanced with higher consumption taxes; other countries make no reform, except changing consumption taxes to keep their budget balanced; then ...

	DE		ES		Spillover %	
	Year 1	LR	Year 1	LR	Year 1	LR
Macroeconomics						
GDP (%)	0.126	0.431	0.003	0.008	2.4	1.9
Investment (%)	0.869	0.494	0.007	0.016		
Consumption (%)	-0.271	0.720	0.024	-0.015		
Trade Balance (%)	0.134	-0.088	-0.011	0.011		
Interest Rate (%)	0.000	-0.035	0.000	-0.035		
Labor Market						
Participation (pp)	0.002	0.039	0.001	0.001		
Hours Worked (%)	0.034	0.073	0.001	0.001		
Unemployment (pp)	-0.141	-0.189	-0.001	-0.002		
Gross Wage Rate (%)	-0.398	-0.227	-0.003	0.011		
Net Wage Rate (%)	3.297	3.472	-0.003	0.010		
Taxes						
Consumption Tax (pp)	0.027	0.024	-0.000	0.000		
Worker Income Tax (pp)	-0.024	-0.024	-	-		



Discussion

Why is there a spillover (ES benefits from DE reform too) at all ?

- On impact, labor supply and production increase in DE but consumption taxes reduce consumption ...
- more exports from DE increases imports in ES ...
- higher consumption in ES allow for a lower consumption tax rate ...
- ... stimulating labor supply in ES

Why is the spillover so small (2.4 %) ?

- Investments adjustment in DE absorb already a large part of the savings shock in DE (+0.87%)
- leading to a limited exports increase in DE (+0.13%) ...
- ... split over 13 other countries and the rest of the world



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Spillovers from a large, asymmetric and one-time shock

Assume a natural disaster or financial crisis in Germany, such that the German government increases its spending 25 % to provide relief¹ during 5 years but keeps its budget balanced with higher labor income taxes; then ...

	DE	ES	PL
Macroeconomics		Year 7	
GDP (%)	-0.447	-0.198	-0.090
Capital Stock (%)	-0.523	-0.315	-0.195
Trade Balance (%)	0.667	-0.106	-0.058
Interest Rate (%)	0.426	0.426	0.426
Labor Market		Year 7	
Gross Wage Rate (%)	-0.071	-0.159	-0.101
Net Wage Rate (%)	-0.859	-0.338	-0.156
Eff. Employment (%)	-0.247	-0.123	-0.055
Macroeconomics		Yearly Avg (Years 1-25)	
GDP (%)	-0.591	-0.144	-0.059
GDP Spillover (% , vs DE)		24.4	10.0

1: yearly 2.5 % GDP increase, to compare to total 10.8% GDP post-2008 financial sector support in Germany (IMF estimate)



Discussion (1/2)

The spillover effects at time of crises: rationale for policy coordination

- GDP in shock-free countries reduced up to 24 % of GDP reduction in country hit by shock
- No other reason (channel) than investors being free to invest in any country

Why is there a spillover (ES also suffers) at all ?

- The increase in public spending in DE draws resources from the integrated capital market
- There are less resources for private investment in all countries
- Further, the decrease in the capital stock decreases wages
- ... and incentives to provide labor, in all countries



Discussion (2/2)

Why is the spillover bigger (24 %) ?

- The relief effort in DE is large and immediate
- The increase in household savings in DE is (by far) not sufficient to cover the government spending increase in DE

Why is the spillover bigger in some countries (ES: 24%, PL: 10%) ?

- Workforce in ES is less qualified (no secondary education: 48% in ES, 23 % in DE, 12 % in PL)
- With capital-skill complementarity: reduction in investment and capital stock in ES hurts more
- For instance, setting capital share of income as in DE, spillover is lower in ES (18 %)



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Example of three international coordination rules

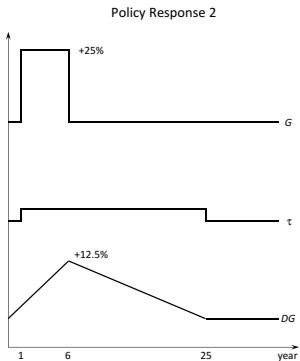
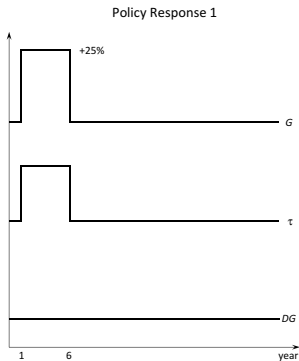
In effective terms:

- A No increase of public debt allowed
- B Increase of public debt possible under some circumstances
- C Increase of public debt always allowed



Example of policy options in times of crisis

Assume the same natural disaster in Germany and the same relief programme, but two financing options...

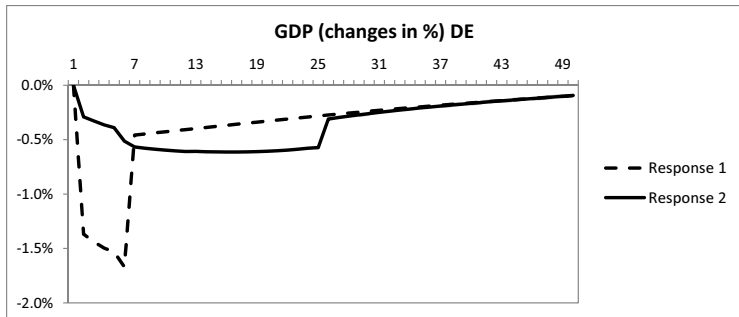


Coordination rules: A: OK
 B: OK
 C: OK

A: not allowed
B: depends
C: OK



Comparing policy options outcomes: results (1/2)



Comparing policy options outcomes: results (2/2)

	DE	
	Response 1	Response 2
Macroeconomics	Year 7	
GDP (%)	-0.447	-0.579
Capital Stock (%)	-0.523	-0.461
Trade Balance (%)	0.667	0.412
Interest Rate (%)	0.426	0.301
Labor Market	Year 7	
Gross Wage Rate (%)	-0.071	0.245
Net Wage Rate (%)	-0.859	-1.892
Eff. Employment (%)	-0.247	-0.527
Macroeconomics	Yearly Avg (Years 1-25)	
GDP (%)	-0.591	-0.543
Gain (% , R2 vs R1)		8.3



Discussion (1/2)

Why is the second policy option (temporary public debt increase) better, in GDP terms ?

- The disruptive effect of taxation is overproportional and taxes increase more with the first policy option
- Policy option 1: smoothing across countries only
- Policy option 2: smoothing across time and countries



Discussion (2/2)

Interpretation: risk of vicious circles

- Countries close to a public debt ceiling can not implement the better policy option if hit by a new shock
- Bad luck or unsound economic policy in the past can explain a high public debt level
- Vicious circle: countries close to a public debt ceiling because of bad luck in the past in growingly weak economic position because of coordination rules (rather than own economic policy)
- Suggestion: look for coordination rules which separate choices from chance

Recall some context:

- Gains from particular examples of coordination exhibited here are limited (8%)
- More creative approaches to coordination may lead to greater gains



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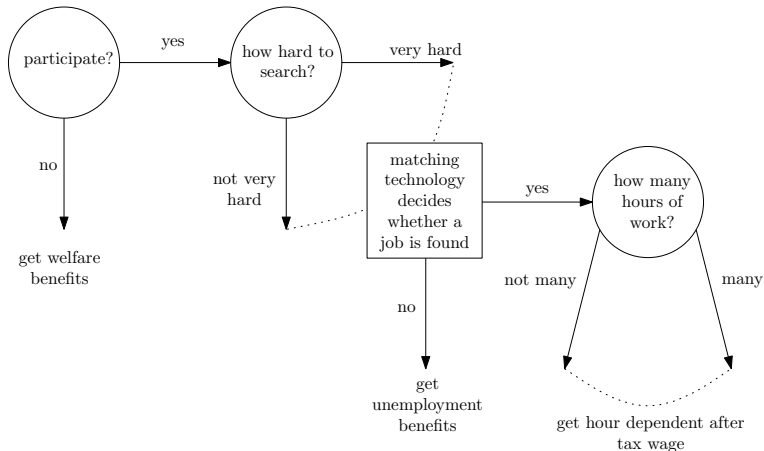
Concluding remarks

- Cross-country spillovers are larger in times of crisis (up to 24%)
- Provides a rationale for policy coordination...
- ...only because investors are free to invest where they want (capital market integration)
- Coordination rules should ideally separate choices from chance
- So far, gains from coordination have been found to be small...
- ... but all possible coordination mechanisms have not been investigated (or even defined)
- Additional sensitivity analyses may also change (slightly?) estimates up or down



Thank you for your comments !

Appendix: overview of household labor supply decisions



Appendix: details on spillovers in crisis times

	DE		ES		PL	
	R1	R2	R1	R2	R1	R2
Macroeconomics	Year 7					
GDP (%)	-0.447	-0.579	-0.198	-0.161	-0.090	-0.074
Capital Stock (%)	-0.523	-0.461	-0.315	-0.247	-0.195	-0.155
Trade Balance (%)	0.667	0.412	-0.106	-0.067	-0.058	-0.038
Interest Rate (%)	0.426	0.301	0.426	0.301	0.426	0.301
Labor Market	Year 7					
Gross Wage Rate (%)	-0.071	0.245	-0.159	-0.118	-0.101	-0.079
Net Wage Rate (%)	-0.859	-1.892	-0.338	-0.278	-0.156	-0.127
Eff. Employment (%)	-0.247	-0.527	-0.123	-0.101	-0.055	-0.045
Macroeconomics	Yearly Avg (Years 1-25)					
GDP (%)	-0.591	-0.543	-0.144	-0.120	-0.059	-0.050
GDP Spillover (% , vs DE)			24.4	22.1	10.0	9.2

R1: 5 years public spending increase, constant public debt

R2: 5 years public spending increase, temporary increase in public debt

