Wynne Godley Memorial Conference
Levy Institute

- **FINANCIAL INTEGRATION AND STABILIZATION IN A MONETARY UNION WITHOUT AND WITH BANK RATIONING**

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- **University Paris 13, CEPN-CNRS**

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- A SFC model of two countries in a monetary union
- Adjustments inside a monetary union and stabilization effects
- Conclusion

Introduction

- Context: asymmetric evolutions since 1999, intra-european imbalances and crisis of the euro area in 2010

- Adjustments mechanisms inside a monetaary union
- Relative wage and prices flexibility
- Labour mobility
- Federal budget
- Financial integration

Introduction 2

- Financial integration and adjustments: « international risk sharing »
- Intra-zone credit and capital income
- Promotion of deeper financial integration and international portfolio diversification without fiscal federalism (European Commission and ECB)
- Critics of theoretical basis and econometric methodology

Introduction 3

- A SFC model of a monetary union with two countries in the lines of Godley and Lavoie (2005-06; 2007) and Lavoie (2003)
- Description of real and financial integration in a consistent manner with assets and liabilities of all the agents
- Estimate of stabilization effects due to foreign capital income and intra-zone finance

2. A SFC model of two countries in monetary union

- Firms, households, government, commercial banks and Central bank
- Four kinds of assets: monetary assets, bonds issued by each state, Treasury bills issued by each state held by banks, equities
- Firms finance their real and financial investment by non distributed profit, banking credit and new issued equities
- Two countries with asymmetric sizes (N facing the rest of the union S); calibration using Eurostat and IMF data

- **Households**: consumption behaviour with wealth effect and portfolio choice following Godley (1999) approach with an arbitrage between cash, bank deposits, bonds and equities
- **Firms**: real and financial accumulation following a PK framework; equities issuing
- **Banks**: without or with credit rationing; key interest rate of the central bank exogenous; refinancing provided by CB to commercial banks
- **Government**: public expenditures exogenous; income taxes paid by households, commercial and central banks; Treasury bills generally purchased by banks without restrcition
- **Foreign trade** and current account

BALANCE SHEET

	Households N	Firms N	State N	Banks N	ECB	Households S	Firms S	State S	Banks S	Total
Capital		$+K^N$					$+K^S$			$+K^N+K^S$
Deposits	$+BD^N$			$-BD^N$		$+BD^S$			$-BD^S$	0
Currency	$+H_h^N$			$+H^N$	$-H$	$+H_h^S$			$+H^S$	0
Credits		$-L^N$		$+L_N^N$					$+L_S^N$	0
				$+L_N^S$			$-L^S$		$+L_S^S$	
Refinancing				$-RF^N$	$+RF^N+RF^S$				$-RF^S$	0
Bonds	$+p_b^N . B_N^N$		$-p_b^N . B^N$			$+p_b^N . B_S^N$				0
	$+p_b^S . B_N^S$					$+p_b^S . B_S^S$		$-p_b^S . B^S$		
Bills			$-BT^N$	$+BT_N^N$					$+BT_S^N$	0
				$+BT_N^S$				$-BT^S$	$+BT_S^S$	
Equities	$+p_e^N . E_{hN}^N$	$+p_e^N . E_{eN}^N$				$+p_e^N . E_{hS}^N$	$+p_e^N . E_{eS}^N$			0
		$-p_e^N . E^N$								
	$+p_e^S . E_{hN}^S$	$+p_e^S . E_{eN}^S$				$+p_e^S . E_{hS}^S$	$+p_e^S . E_{eS}^S$			
							$-p_e^S . E^S$			
Wealth	$-VH^N$	$-V^N$	$-D^N$	$-VB^N$		$-VH^S$	$-V^S$	$-D^S$	$-VB^S$	$-K^N-K^S$
Total	0	0	0	0	0	0	0	0	0	0

Three versions of financial integration

- Version 1: a model of financial autarky without foreign financial assets and intra-zone credit
- Version 2: a complete model with more or less developed financial integration
- Version 3: a model with intra-zone credit, but without foreign assets and intra-zone capital income transfers
- By comparison, possibility of estimating stabilization coefficients

Five forms of SFC model

- Model 1: without global credit rationing
- Model 2: with global credit rationing by banks from both countries
- Model 3: with credit rationing specificly by domestic banks or by non resident banks
- Model 4: with Treasury bills rationing by domestic banks
- Model 5: with variable rate of interest on Treasury bills;

CONFIGURATIONS

Models \ Versions	Financial autarky	Normal financial integration	High financial integration	Intra-zone credit alone	High Intra-zone credit
Model 1 : Without global credit rationing	Model 1.1	Model 1.2 a	Model 1.2 b	Model 1.3	
Model 2 : With global credit rationing	Model 2.1	Model 2.2 a	Model 2.2 b	Model 2.3	
Model 3 : With credit rationing by domestic banks	Model 3.1			Model 3.3 a	Model 3.3 b
Model 3bis : With credit rationing by non resident banks	Model 3bis 1			Model 3bis 3a	Model 3bis 3b
Model 4 : Treasury bills rationing	Model 4.1			Model 4.3	
Model 5 : Variable interest rate	Model 5.1			Model 5.3	

3. Adjustments inside the monetary union and stabilisation effects

Configuration 1 : Without global credit rationing

Version 1 : Financial autarky

Version 2-a : Normal Financial integration (the case of euro area)

Version 2-b : High Financial integration

Version 3 : Intra-zone credit only (credits, bills)

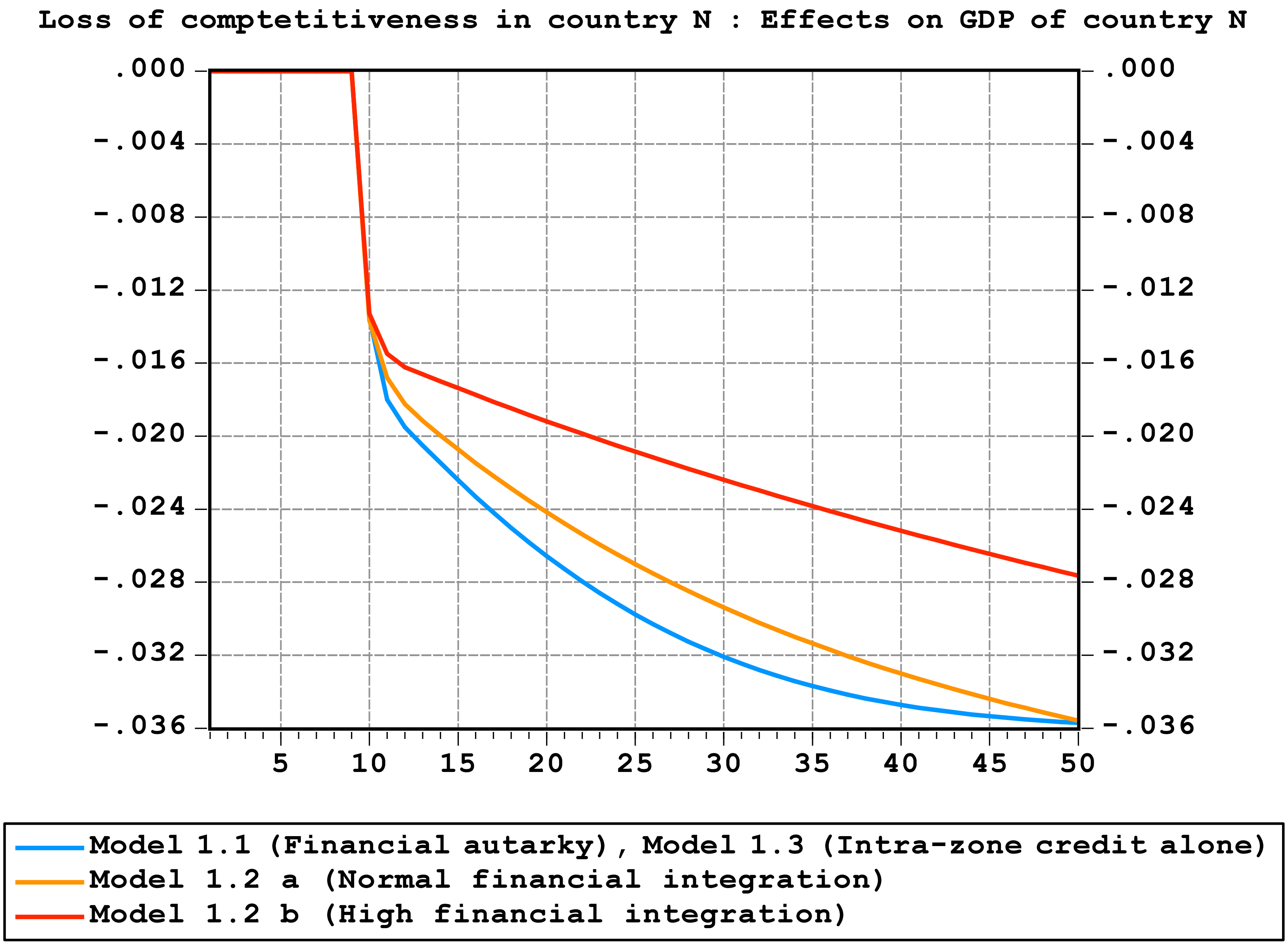
Simulation of shocks (supply or demand) and comparison of versions 2-a, 2-b and 3 with version 1

Without global credit rationing

With a realistic calibration (version 2-a), stabilization by external capital income is limited and does not exceed 9**%**.

In the case of high financial integration (version 2-b), stabilization may reach 25**%,** but with unrealistic hypothesis

Intra-zone credit (version 3) has no specific stabilizing effect; no difference between domestic credit and intra-zone credit due to the refinancing by the Central Bank


Loss of comptetitiveness in country N : Effects on GDP of country N
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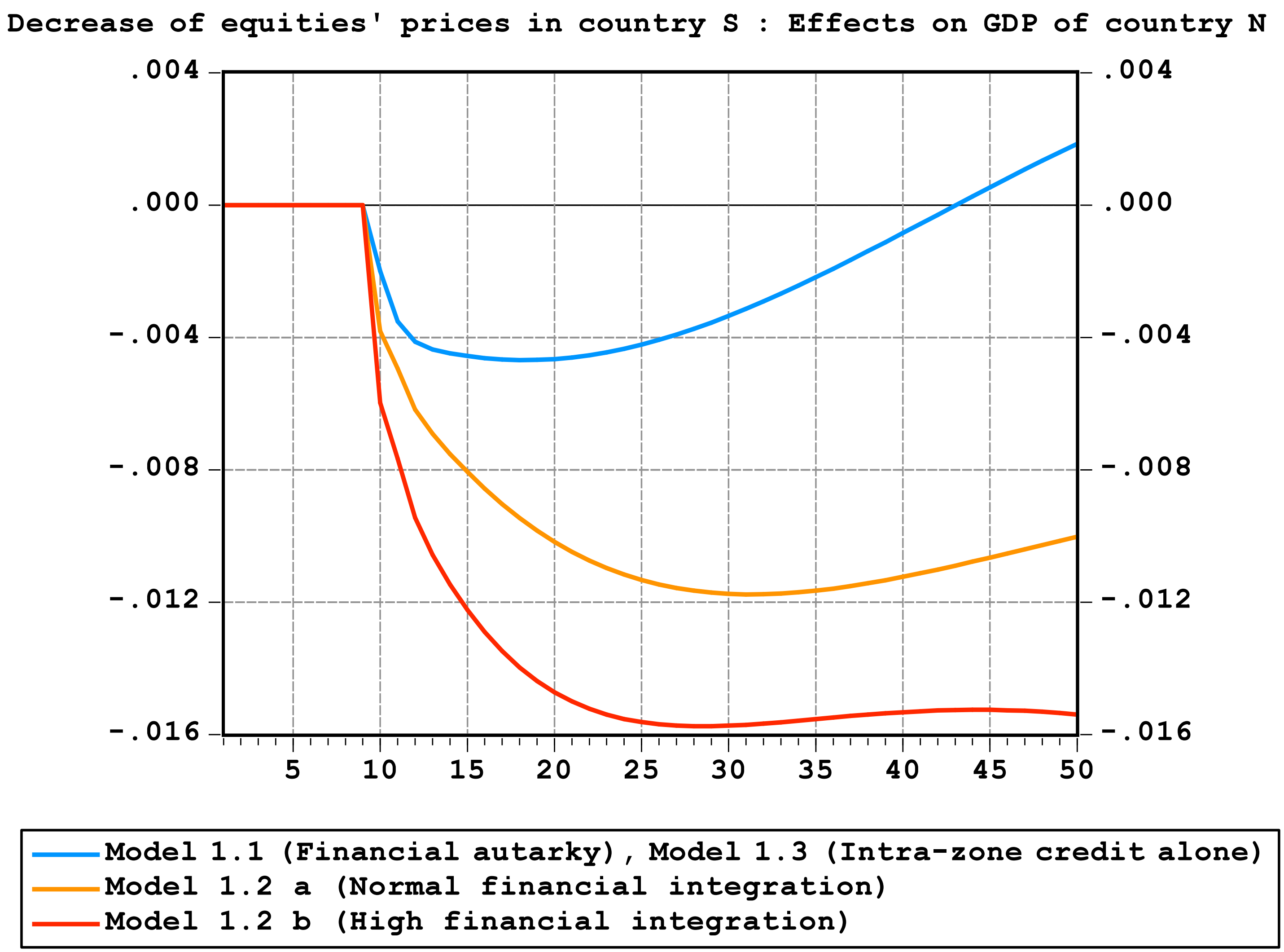
Model 1.1 (Financial autarky), Model 1.3 (Intra-zone credit alone)
Model 1.2 a (Normal financial integration)
Model 1.2 b (High financial integration)

Perverse effect of financial integration: diffusion effects are higher than stabilizing effects



Configuration 2 : with global credit rationing on firms of country N

As previously,

Intra-zone credit has no stabilizing effect when banks of both countries ration firms of country N; role of Central banking refinancing

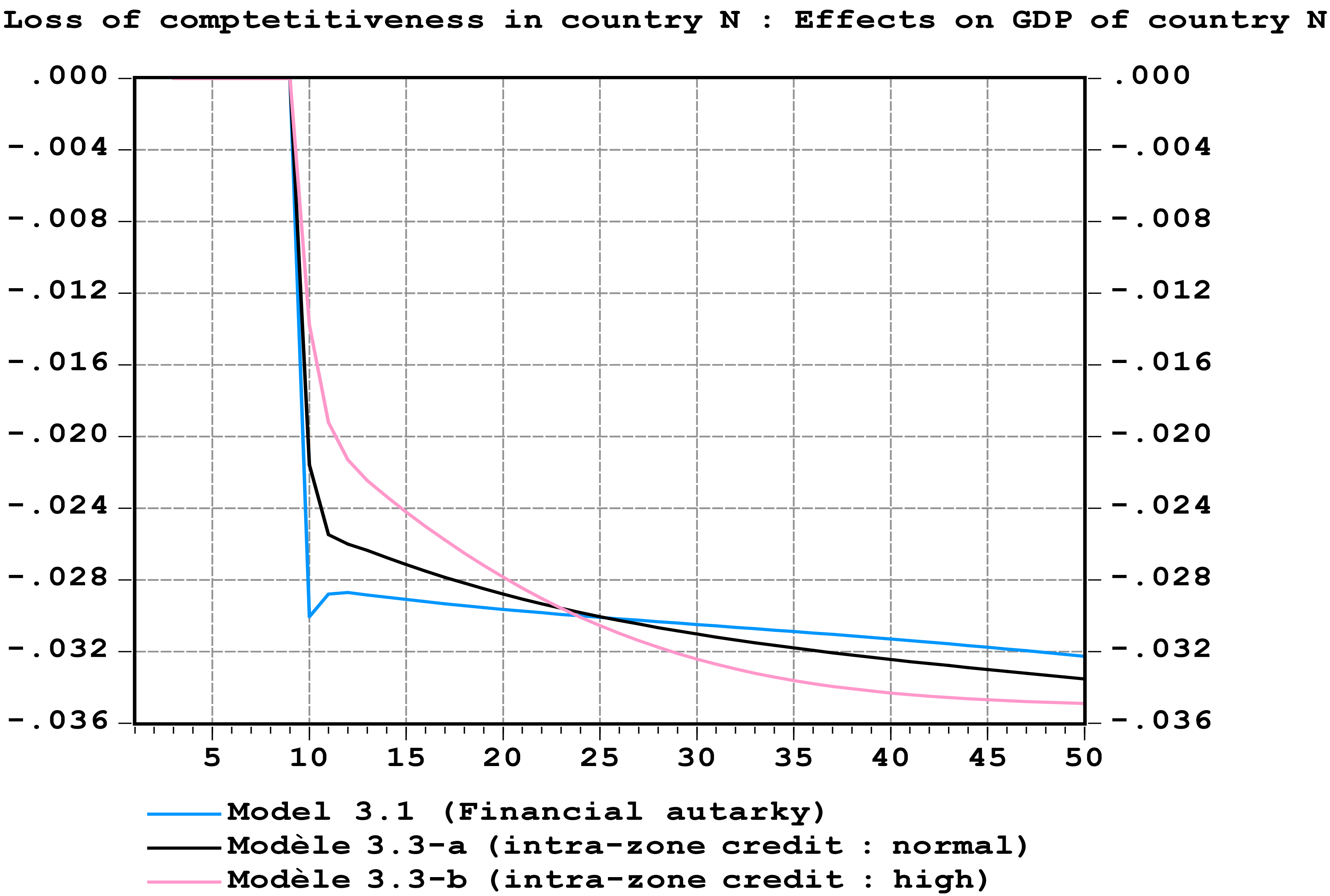
Stabilization by foreign capital income remains limited and is only higher in case of deeper, but unrealistic, financial integration

Configuration 3 : Asymmetric bank rationing

Asymmetric bank rationing modifies the results on the role of intra-zone credit

With credit rationing by domestic banks (model 3), stabilization by intra-zone credit exists, but remains moderate (around 9% in case of realistic level of intra-zone credit).

With credit rationing by non resident banks (model 3bis), diffusion effects of credit rationing in the rest of the union are high


Loss of comptetitiveness in country N : Effects on GDP of country N
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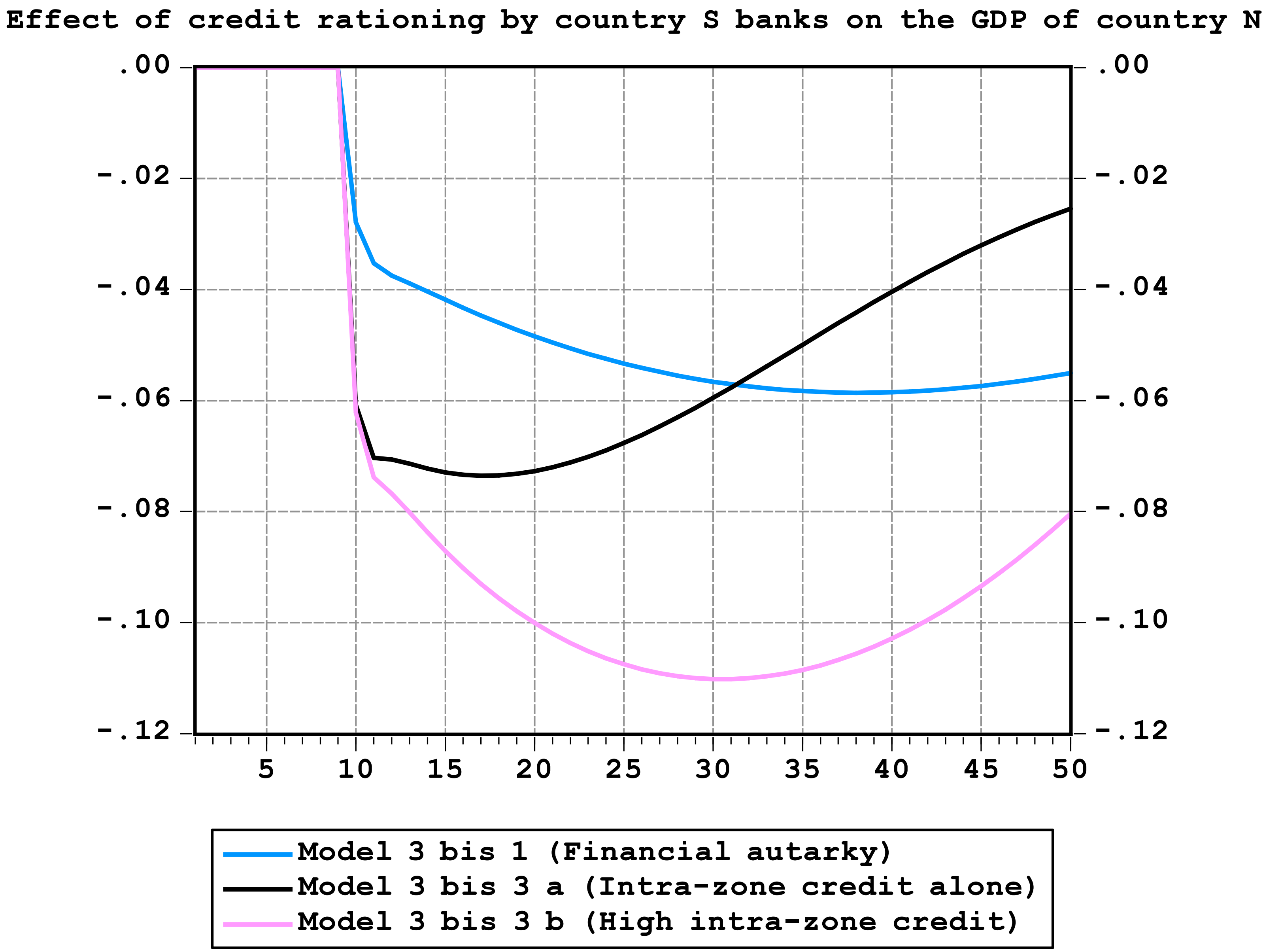
Model 3.1 (Financial autarky)
Modèle 3.3-a (intra-zone credit : normal)
Modèle 3.3-b (intra-zone credit : high)


Effect of credit rationing by country S banks on the GDP of country N
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Model 3 bis 1 (Financial autarky)
Model 3 bis 3 a (Intra-zone credit alone)
Model 3 bis 3 b (High intra-zone credit)

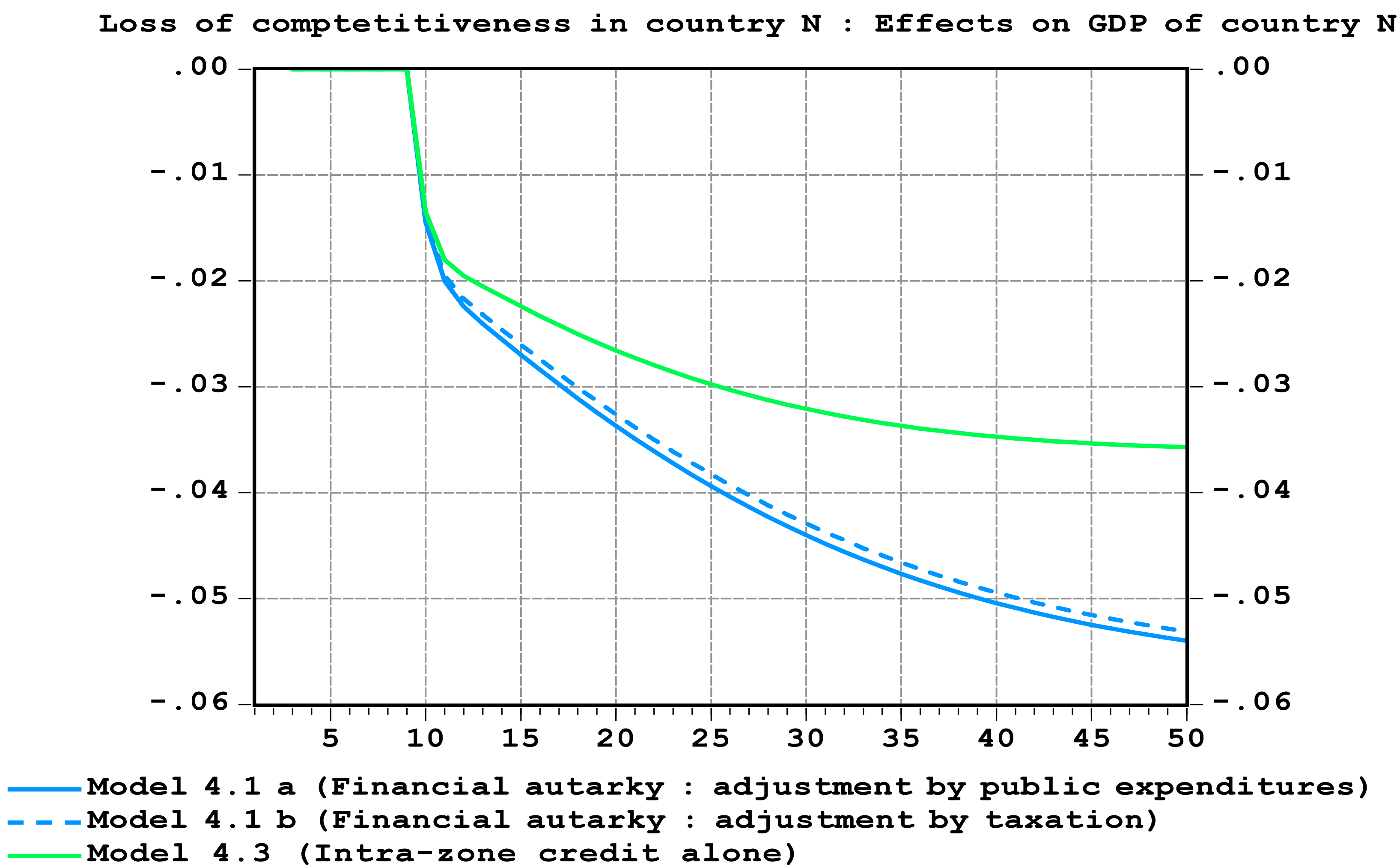
Configuration 4 : Treasury bills rationing with constant interest rate

Treasury bills rationing by domestic banks,

In financial autarky the government must adjust its fiscal policy by cutting public expenditures or increasing taxes

With external financing from the rest of the union, the budgetary policy is no more constrained

Facing a negative shock, intra-zone financing of Treasury bills stabilizes around 15-20 % of the shock, compared with the financial autarky case


Loss of comptetitiveness in country N : Effects on GDP of country N
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Model 4.1 a (Financial autarky : adjustment by public expenditures)
Model 4.1 b (Financial autarky : adjustment by taxation)
Model 4.3 (Intra-zone credit alone)

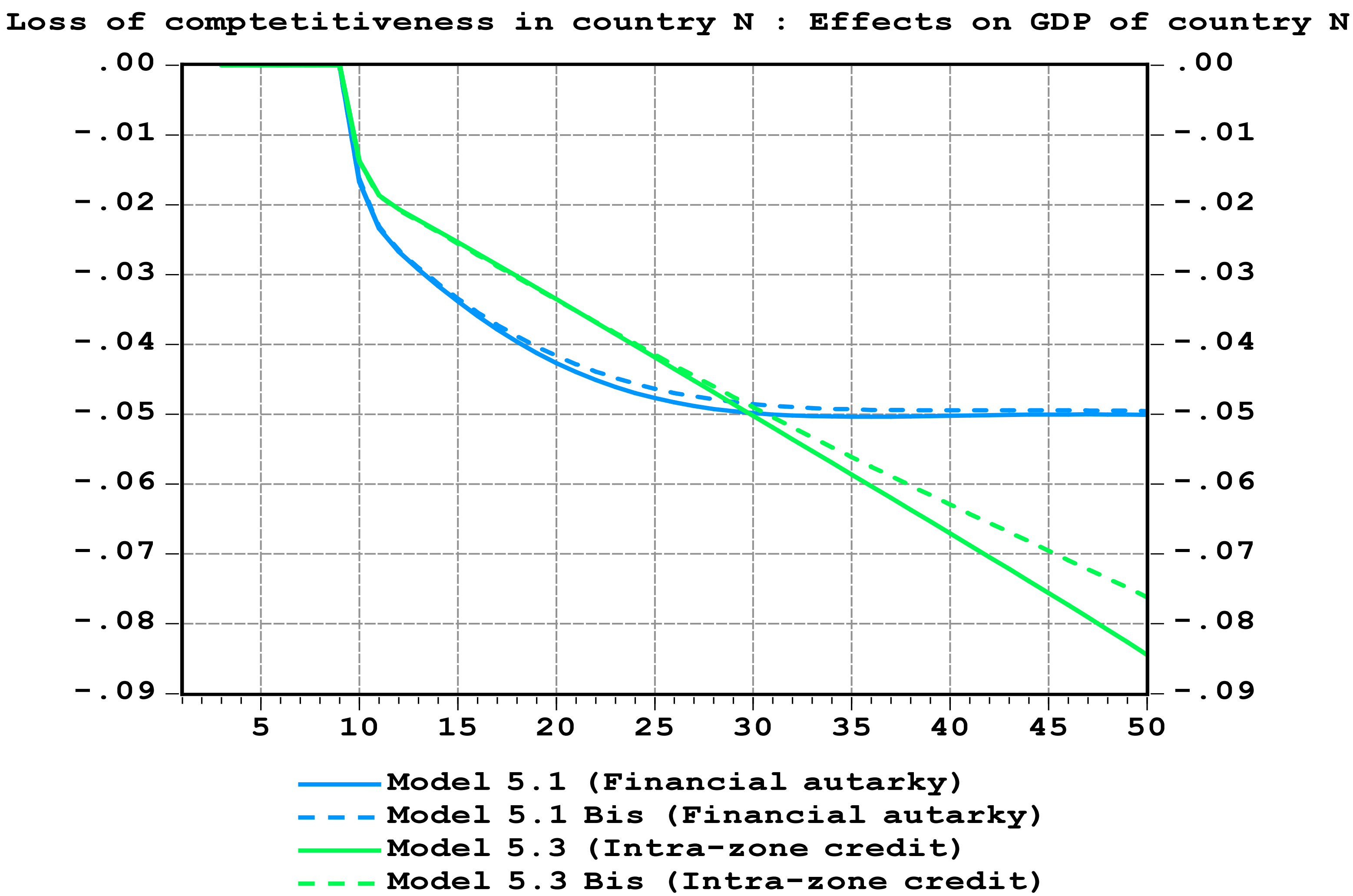
CONFIGURATION 5 : Treasury bills rationing with variable interest rates

Beyond the adjustment of fiscal policy, interest rate on government securities increases, in order to meet the demand of securities; impact on other rates of interest

Facing a negative shock, intra-zone finance stabilizes 20% of the shock at short term, compared with the financial autarky.

But a reversal appears at medium term. Intra-zone finance authorizes a larger public deficit and a continuous increase of public debt, which induce higher interest rates and generate a cumulative process. The slowdown is amplified

In financial autarky, the more restrictive fiscal policy at short term makes the government less dependant of financial markets.



Loss of comptetitiveness in country N : Effects on GDP of country N
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Model 5.1 (Financial autarky)
Model 5.1 Bis (Financial autarky)
Model 5.3 (Intra-zone credit)
Model 5.3 Bis (Intra-zone credit)

4. Conclusion

- Foreign assets holding has a stabilising role, but stabilization coefficients of capital income remain limited with realistic level of financial integration
- Intra-zone credit has no stabilization effects in case of no credit rationing and in case of global credit rationing by banks; role of refinancing by CB
- With credit rationing by domestic banks, stabilization by intra-zone credit exists, but remains moderate
- In case of Treasury bills rationing by domestic banks, intra-zone financing of Treasury bills has a stabilising effect, with constant rate of interest.
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Conclusion 2

- But, when interest rates increase due to banks' reluctance to finance more issue of Treasury bills, intra-zone credit from the rest of the union has no more stabilising effect due to its increasing cost.
- Illustration of the last Greek, Irish and Portugese crisis; financing by the rest of the Union at fixed interest rate would have a stabilising effect
- Argument in favour of a direct finance by the ECB or an exchange of new issued European bonds against Treasury bills of deficit countries or a euro-zone clearing union.
- However these mechanisms would not resolve the question of under-competitiveness of deficit countries (the third pilar of Keynes' project of Clearing Union including exchange rate adjustments)
- In a monetary union, possible only through fiscal transfers (as counterpart of implicit transfers due to exchange rate misalignments) or through wage deflation or long term structural adjustments