

Mundell on His Head: Asymmetric shocks are good for you, thanks to Economic and Monetary Union in Europe

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Introduction

- Divergence, nominal and real, has a bad rep in the EU.
 - paragraph 7 of the Treaty on European Union, there is the statement: “RESOLVED to achieve the strengthening and the convergence of their economies
 - Maastricht nominal & financial convergence criteria
 - Cohesion and Structural funds aim to promote convergence

Introduction

- Two cheers for divergence
 - Nominal divergence (prices, inflation rates):
 - necessary to varying degrees in the presence of nominal and real asymmetric shocks, asymmetric transmission of common shocks and for real convergence between countries at different levels of economic development (Balassa Samuelson)
 - Real divergence (real per capita GDP):
 - whether good or bad depends on mechanisms for risk-sharing and redistribution among nations
 - First-moment divergence: distributional & political problem
 - Second-moment divergence: can be a blessing.

Introduction

- Paper has nothing to say about conventional stabilisation policy (output gap) or conventional OCA theory (old-Keynesian/confuses real and nominal/no capital mobility)
- Is about how to handle shocks to the natural level of output
- Real model
- Consumption, not output provides the metric for stabilisation policy.

Model

- N countries; closed system
- **Households**
 - 2-period OLG model. Work when young; pay taxes/receive transfers when young & old
 $c_{i,t}^1, c_{i,t+1}^2, \tau_{i,t}^1, \tau_{i,t+1}^2, w_{i,t}$
 - Save when young and allocate saving to N national capital stocks under financial integration:

$$\sigma_{i,t}^j; \sum_{j=1}^N \sigma_{i,t}^j = 1$$

Financial Autarky: $\sigma_{i,t}^i = 1; \sigma_{i,t}^j = 0, i \neq j$

Model

- **Firms & production**

One global output. Capital has to be allocated to countries one period before it is used (& before realisation of uncertainty). Capital depreciates fully after one period. Labour immobile; CRS Cobb-Douglas Production functions; competitive labour & capital rental markets.

Model

- **Government**

- Only taxes and transfers

- Two taxes on the old:

- Lump-sum intra-country intergenerational redistribution

- International redistributive ‘corrective’ capital income taxation:

$$\tau_{i,t+1}^2 = \tilde{\tau}_{i,t+1}^2 + \mathcal{G}_{i,t+1}^2 s_{i,t} R_{i,t+1} = \tilde{\tau}_{i,t+1}^2 + \mathcal{G}_{i,t+1}^2 s_{i,t} \sum_{j=1}^N \sigma_{i,t}^j R_{t+1}^j$$
$$\mathcal{G}_{i,t+1}^2 = \frac{R_{i,t+1} - R_{t+1}^M}{R_{i,t+1}}$$

$$\sum_{i=1}^N s_{i,t} L_{i,t} R_{i,t+1} \mathcal{G}_{i,t+1}^2 = 0$$

Model

Two kinds of lump-sum taxes on the young

$$\tau_{i,t}^1 = \hat{\tau}_{i,t}^1 + \tilde{\tau}_{i,t}^1$$

$$\sum_{i=1}^N \hat{\tau}_{i,t}^1 L_{i,t} = 0$$

Inter-country redistribution
between the young

$$\tilde{\tau}_{i,t}^1 L_{i,t} + \tilde{\tau}_{i,t}^2 L_{i,t-1} = 0$$

Within-country intergenerational
redistribution

Results:

- **Proposition 1**

Under financial integration, every household in every member of the Union holds the Union-wide market portfolio of risky assets:

$$R_{i,t+1} = R_{t+1}^M$$

$$\sigma_{i,t}^M = \frac{K_{i,t+1}}{K_{t+1}}$$

Results:

- **Proposition 2.**

Optimization of our nice SWF requires the equalization of after-tax endowments. This can be achieved solely through labour-income-contingent lump-sum taxes and transfers among the young, that is by using the tax rule $\hat{\tau}_{i,t}^1 = w_{i,t} - \bar{w}_t$ with $\hat{\tau}_t^1 = 0$. At time t , wage-contingent taxes and transfers among the young born in period t are pure redistribution. Wage-contingent taxes and transfers among future young generations have both redistributive and risk-sharing features.

Results

- **Proposition 3: Down with financial autarky**

Compare the Union under financial integration with the Union under financial autarky but with contingent internationally redistributive capital income taxes that allows savers in each country to earn the Union-wide market return on their savings. There are no internationally redistributive lump-sum taxes among the young nor intergenerational redistribution within individual countries. In general, the autarky equilibrium does not reproduce the efficient global allocation of capital of the financially integrated equilibrium and is therefore Pareto-inefficient.

Results:

- **Proposition 4**

With the unrestricted use of international and intergenerational lump-sum redistribution (and the corrective capital income tax) it is possible to reproduce any pattern of global capital formation achievable under financial integration. The associated consumption programmes will not in general be the same as under financial integration, but they will be Pareto efficient.

Results: Proposition 4 ctnd.

To achieve a Pareto-efficient equilibrium under financial autarky in general requires the use of 'corrective' capital income taxes/subsidies, the use of lump-sum international redistributive taxes and the use of lump-sum domestic intergenerational redistributive taxes.

The capital income taxes achieve state-contingent capital income risk-sharing between countries.

The domestic intergenerational redistribution and the international redistribution achieve the right amount of domestic capital formation – those that equate the risk-adjusted returns to capital across the N members of the Union despite the absence of international capital mobility.

Results:

- **Proposition 5: financial autarky can be made efficient or fair, but not both**

Financial autarky means that the price of investment efficiency may be that intergenerational or international distributional objectives have to be sacrificed.

Results:

- **Proposition 6: asymmetric shocks are welfare increasing when there is effective risk-sharing across countries.**

Holding constant the expected natural growth factors and the variances of the natural growth factors of the Union member states, lower (or more negative) correlations between national natural growth factors are welfare increasing when savers in each country hold the market portfolio.

Results:

- **Proposition 7.**

If Union-wide labour income risk sharing is possible, for instance through the international redistribution of labour income, the welfare enhancing effects of reductions in correlations between national total factor productivity growth factors that can be achieved by holding the Union-wide portfolio of financial assets are further boosted through reduction in the non-diversifiable labour income risk that remains after the Union-wide pooling of labour income risk.

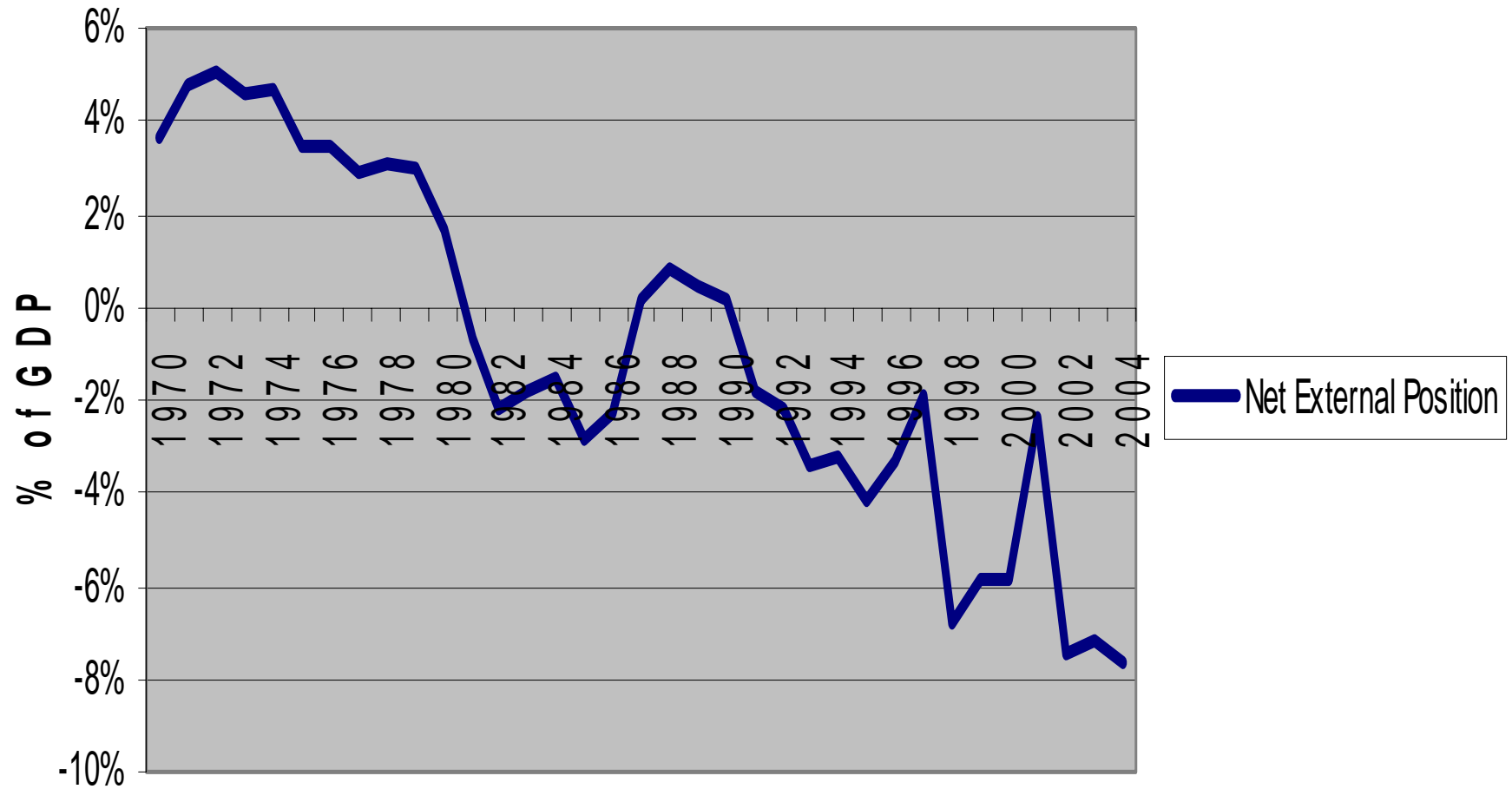
Conclusions

- Stabilisation policy should be about smoothing individual consumption across time and across states of nature. It is not about stabilising output and employment, except insofar as these are a by-product of consumption smoothing. Its welfare economics foundations are the same as those governing longer-term consumption smoothing (over the life cycle and across generations) and international redistribution and risk sharing.
- Financial market integration is a key mechanism for Union-wide capital income risk sharing
- The Single European Act of 1986 and the Single Market Programme by encouraging financial market integration, have been an important tool for EU-wide macroeconomic stabilisation

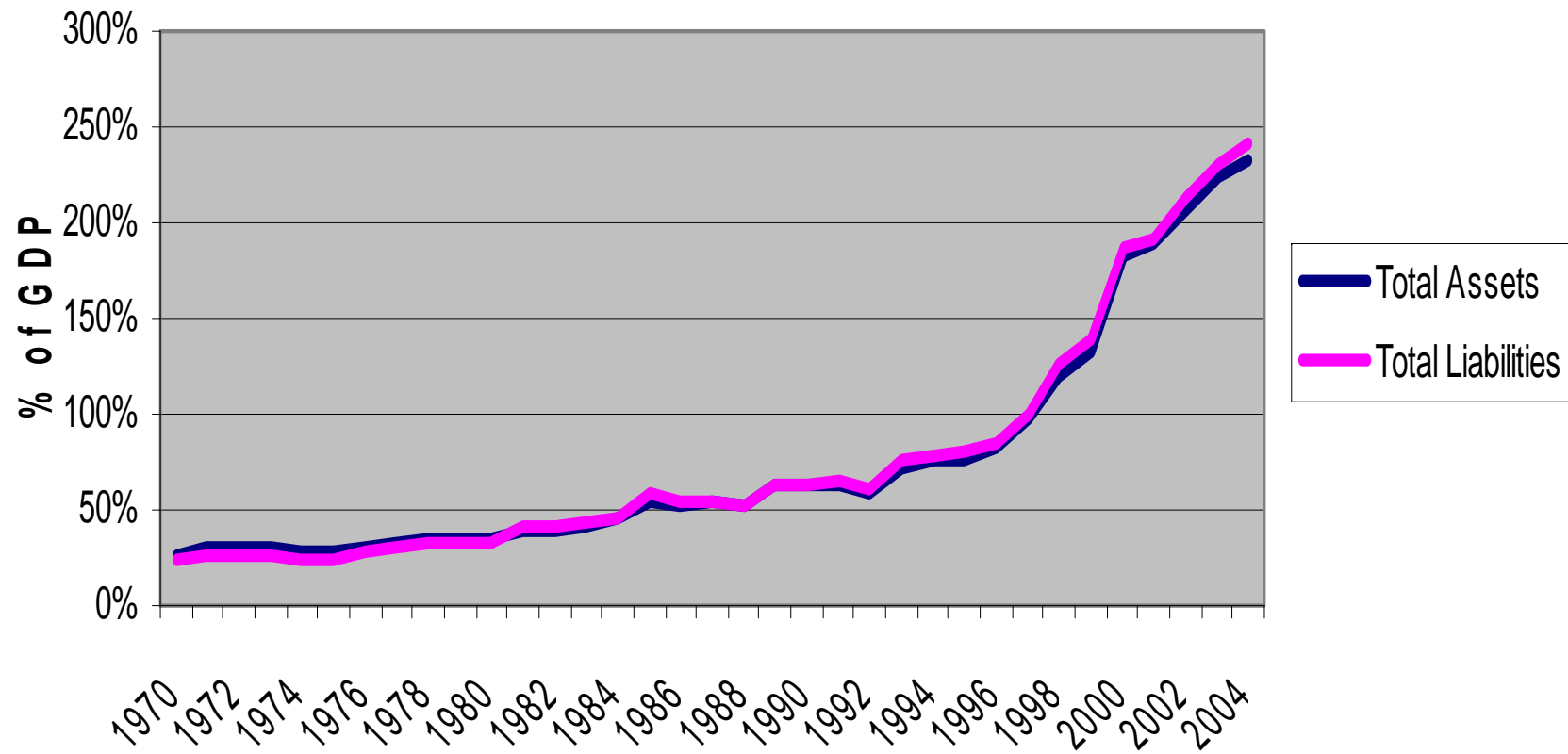
Conclusions

- EMU has made a significant contribution to the deepening of EMU-wide financial market integration.
- There has been a major reduction in portfolio selection home bias, with more to come.

Weighted Average Net Foreign Investment Position for EMU12



Weighted average Gross Foreign Investment Position for EMU12



Conclusions

- Because of EMU, asymmetric output shocks may now be welfare-enhancing rather than welfare-reducing.

Conclusions

- Labour income risk sharing can be achieved through intergovernmental or supranational redistributive policies.
- Labour income risk sharing can be achieved in part through the creation, by private or public agents, of synthetic securities whose payoffs mirror those of observable and verifiable labour income streams.
- Asymmetric information and associated problems of adverse selection and moral hazard make the issuance of financial instruments contingent on individual labour income unlikely and probably undesirable. There is no corresponding argument against issuing claims whose pay offs track industry-wide or nation-wide labour earnings. Such 'Shiller securities' can, even though they are in zero net supply because of 'free labour' (illegality of slavery, indentured labour etc), have an important role in hedging labour income risk.
- Labour mobility is another mechanism for pooling labour income risk. The second of the 'four freedoms' is therefore certainly not the least important.