

Discussion of Vincenzo Quadrini's

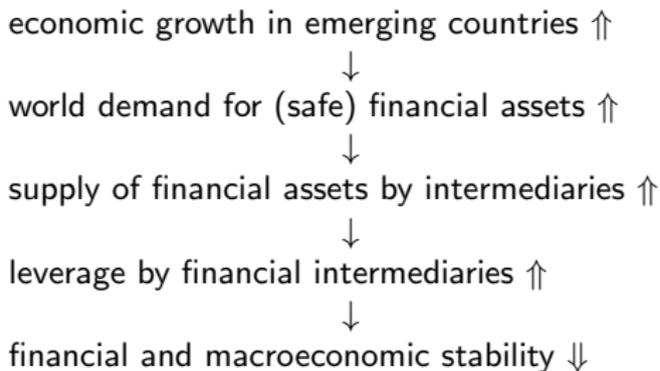
The Growth of Emerging Economies and Global Macroeconomic Stability

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Research question

- How does the recent growth of emerging countries affect the financial/macroeconomic stability in industrialized (and emerging) countries?
- Vincenzo elaborates on a plausible channel:



Dynamic general equilibrium model (quite complex)

- Two countries: $j \in \{IC, EC\}$
- Three sectors: workers, entrepreneurs, financial intermediaries

Workers

- provide labor
- consume
- trade safe asset that (i) gives a real return and (ii) is available in fixed supply (houses)
- borrow via banks (subject to borrowing constraint)

Entrepreneurs

- hire labor taking wage $w_{j,t}$ as given (before observing productivity)
- produce output good, $y_{j,t}^i = z_{j,t}^i h_{j,t}^i$
- face idiosyncratic productivity shocks $z_{j,t}^i$
 - average productivity \bar{z} in EC relative to IC increases over time
 - productivity risk is residual risk (cannot be insured through state-contingent contracts; measures financial market development)
 - volatility of productivity shocks higher in EC compared to IC
- insure against productivity risk by holding buffer stock of financial assets, $b_{j,t}^i$
- financial assets are issued by intermediaries

Financial intermediaries (banks)

- give loans to workers (l_t)
- sell bonds to entrepreneurs (b_t)
- liquidation value of banks: $\xi_t l_t$
 - $\xi_t = 1$ when assets are sold to other bank
 - $\xi_t = \underline{\xi}$ when assets are sold to non-bank
- banks renegotiate when $b_t \leq \xi_t l_t$; repay only $\tilde{b}_t = \xi_t l_t$
- multiple equilibria when leverage is above $\underline{\xi}$
 - if everybody suddenly believes that $\xi_t = \underline{\xi}$ for all banks, then all banks renegotiate, all assets need to be sold to non-banks, liquidation value is $\xi_t = \underline{\xi}$
- sunspot determines probability of a financial crisis

From growth to financial crisis: the mechanism in the model ...

- Productivity increases in EC
- Entrepreneurs in EC want to hire more labor and hold more bonds to insure against productivity risk
- Intermediaries in EC and IC increase supply bonds (and increase leverage)
- At some point leverage exceeds threshold ξ ; risk of financial crisis emerges (equilibrium multiplicity)
- Eventually sunspot triggers financial crisis
- Financial crisis reduces output via effect on entrepreneurial activity

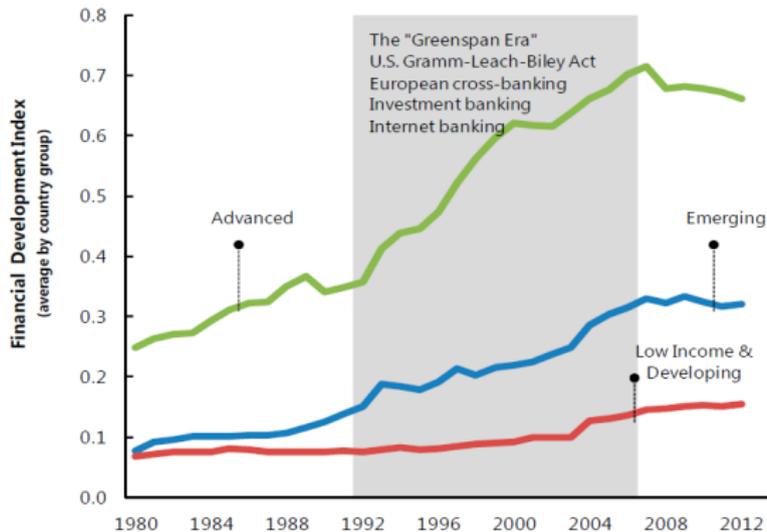
Comment 1

1) Paper abstracts from financial development

- Paper assumes that $std(z_{j,t}^i)$ is constant over time
In quantitative part, it looks like it even increases: $std(z_{j,t}) = \bar{z}_{j,t}\sigma_j$
- Is this a plausible assumption? Would like to see some discussion in the paper ...
- Interpretation: no financial development (recall: residual risk!)
- In the data, growth and financial development seem to move together
- This could have (at least quantitatively important) implications for global demand for bonds

Comment 1

Figure 4. Financial Development Through Time



Source: IMF staff estimates.

Comment 2

2) Optimal entrepreneurial activity

- Are the linear policies given in Lemma 2.1 really optimal for entrepreneurs?
- My take: not without appropriate restrictions on the state space and/or the parameter space
- Currently, no explicit restrictions on
 - the size and sign of $b_{j,t}^i$
 - the distribution of shocks, $\Gamma_{j,t}(z)$

Comment 2

Recall:

- Utility of entrepreneurs is logarithmic, $u(c_t) = \ln c_t$
- Optimal policies according to Lemma 2.1 are

$$h_{j,t}^i = \phi_{j,t} b_{j,t}^i, \quad (1)$$

$$c_{j,t}^i = (1 - \beta)[1 + (z_{j,t}^i - w_{j,t})\phi_{j,t}] b_{j,t}^i, \quad (2)$$

$$q_t b_{j,t+1}^i = [1 + (z_{j,t}^i - w_{j,t})\phi_{j,t}] b_{j,t}^i - c_{j,t}^i \quad (3)$$

- What if an individual entrepreneur starts with low $b_{j,t}^i$ (for example $b_{j,t}^i = 0$) and experiences a very negative $z_{j,t}^i$?
- Policies would prescribe zero or even negative consumption
- But positive consumption is possible if the entrepreneur borrows and chooses $b_{j,t+1}^i < 0$.

Comment 2

- Is there an implicit bonds-in-advance assumption?
Can entrepreneurs use new borrowing to finance current "production losses" $(z_{j,t}^i - w_{j,t})h_{j,t}^i$?
 - If yes, should be optimal to do so for low initial $b_{t,j}^i$ combined with very negative shock?
 - If not, what happens when the entrepreneur's bonds are insufficient to cover current losses?
- But even if initial bond holdings are high: after a series of negative shocks buffer stock would be depleted and same question arises ...
- To sum up: would like to see a more precise discussion of the assumptions underlying the entrepreneurial sector
- Especially since linear policies seem crucial for aggregation

Conclusion

- Very nice contribution to the macro-finance literature
- Innovative approach: entrepreneurs as savers
- Theoretical results very appealing
- Underlying assumptions may need more discussion