

Basel Rules, endogenous Money Growth, Financial Accumulation and Debt Crisis

Overview:

- Moneylending dynamics
- The economy as a collection of money stocks and flows (no debt)
- Discretionary and non-d. flows
- Crisis mechanism
- System w/ banks, no CB
- ..with a CB
- ... with NBFIs also
- The race
- Conclusions

Money lending dynamics:

$$\frac{dA}{dt} = (\beta i - \lambda) A$$

↑ debt increase rate [$\$/y$]

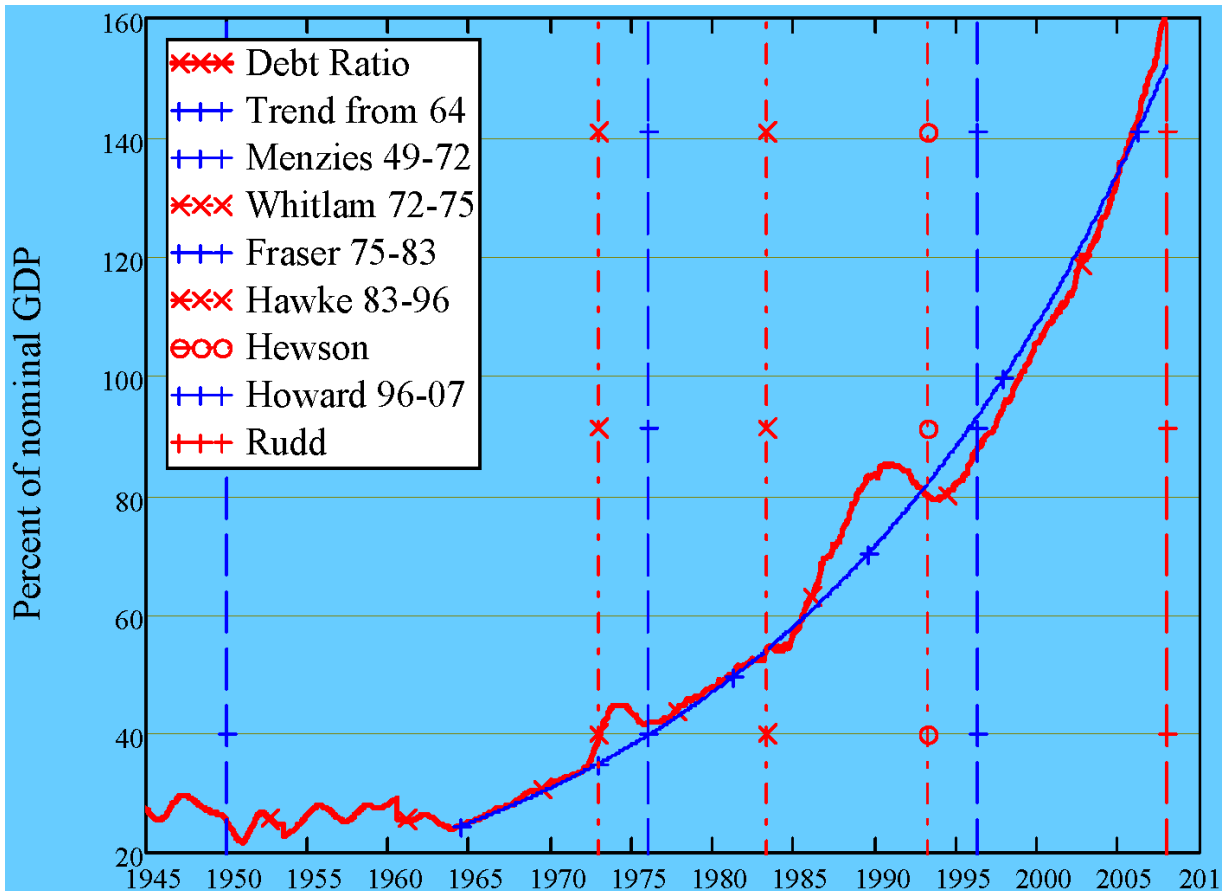
↑ profit share [$]$ ↑ interest rate [$1/y$]

↑ loss rate [$1/y$]

↑ debt [$\$$]

⇒ exponential growth!

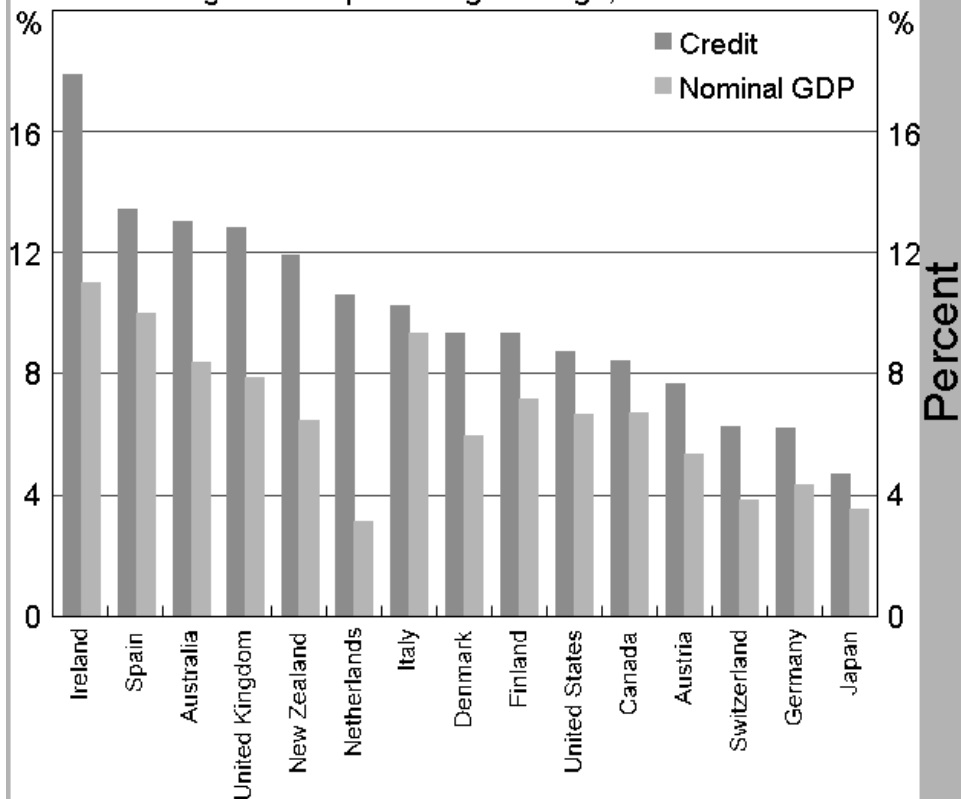
$$A(t) = A_0 e^{(\beta i - \lambda)t}$$



(Steve Keen, University of Western Sydney)

Credit and Nominal GDP

Average annual percentage change, 1977 to 2007*



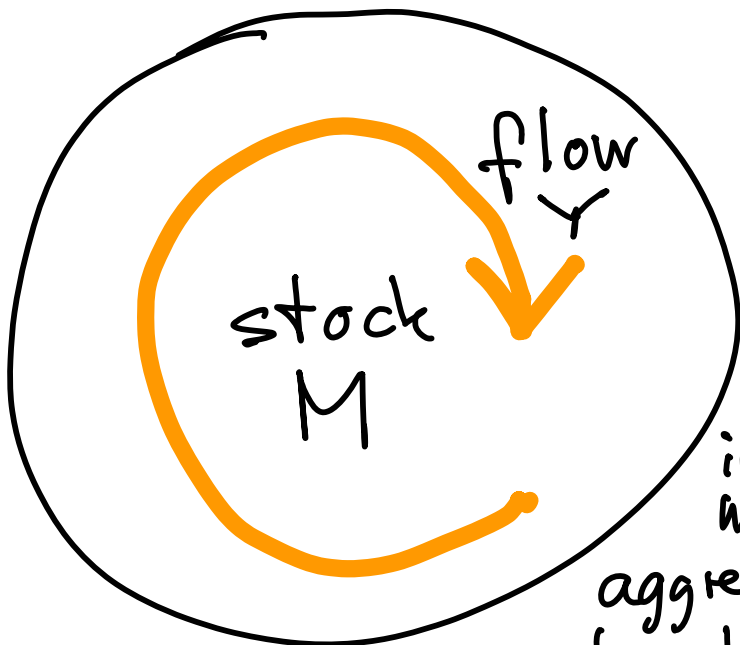
* Data are from June 1984 for New Zealand, and to December 2006 for Ireland.

Sources: ABS; Thomson Financial; World Bank

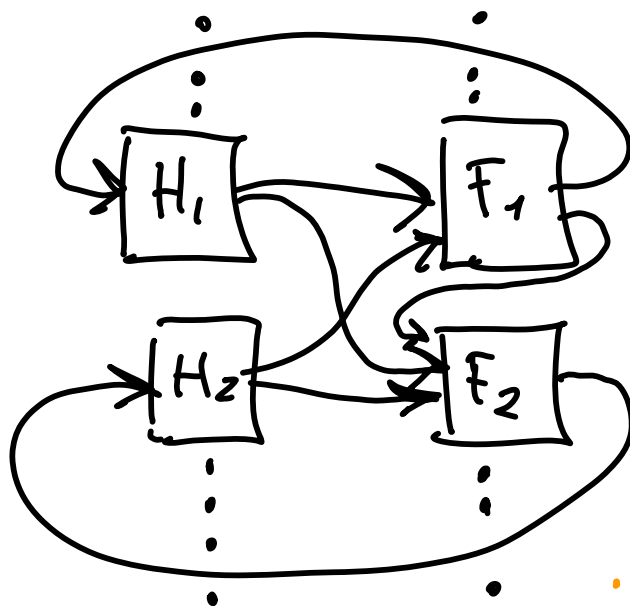
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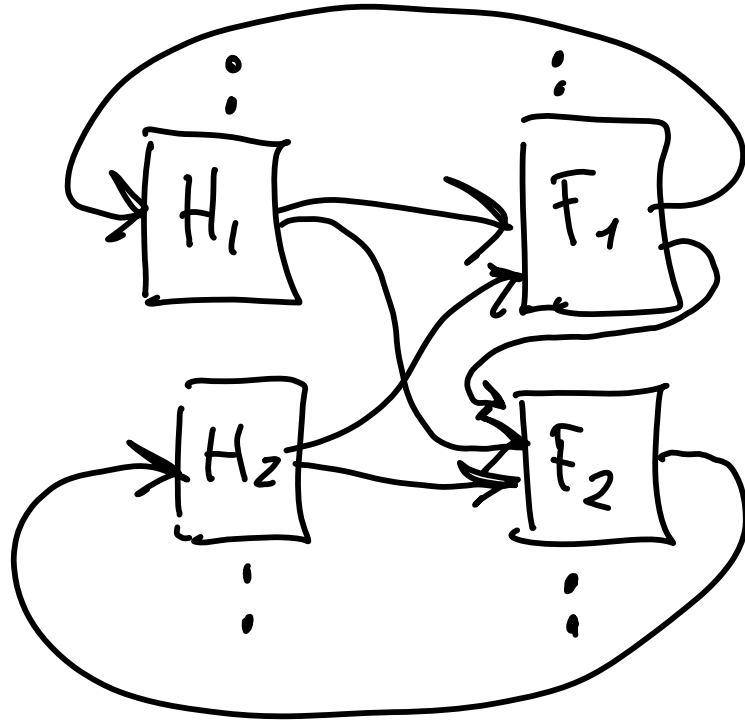
The economy as a collection of money stocks and flows (no debt)



the economy is a bundle of interconnected money flows; Y aggregated - Y is mediated by the stock M



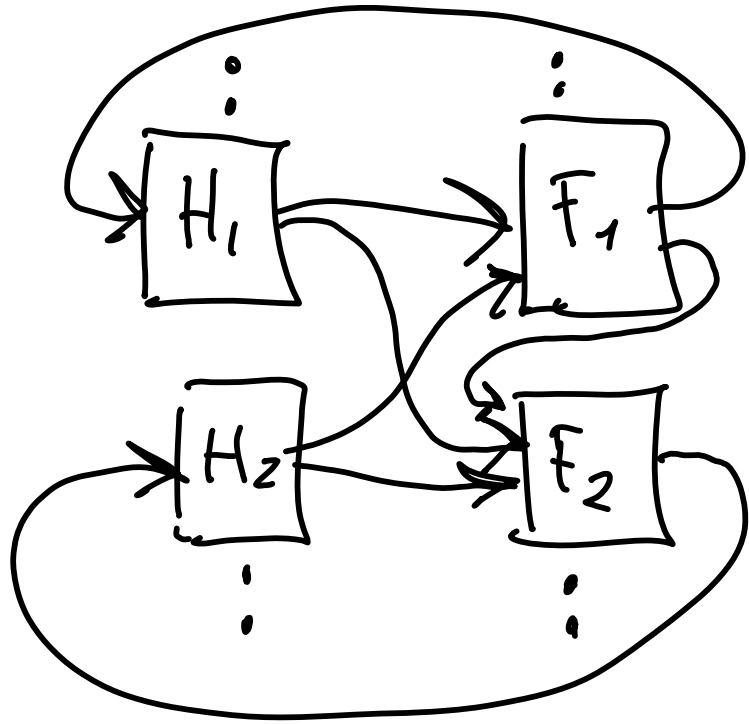
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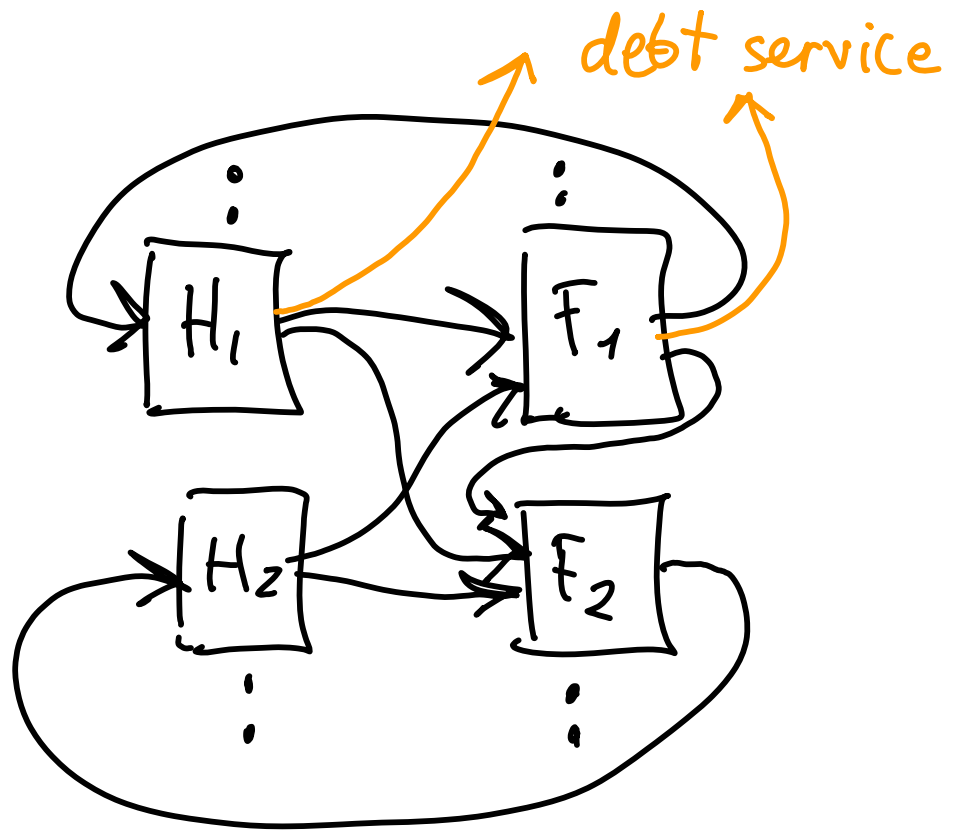
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Discretionary and non-d. flows



outflows are partly discretionary
⇒ flexibility
but
inflows are non-discretionary

Discretionary and non-d. flows

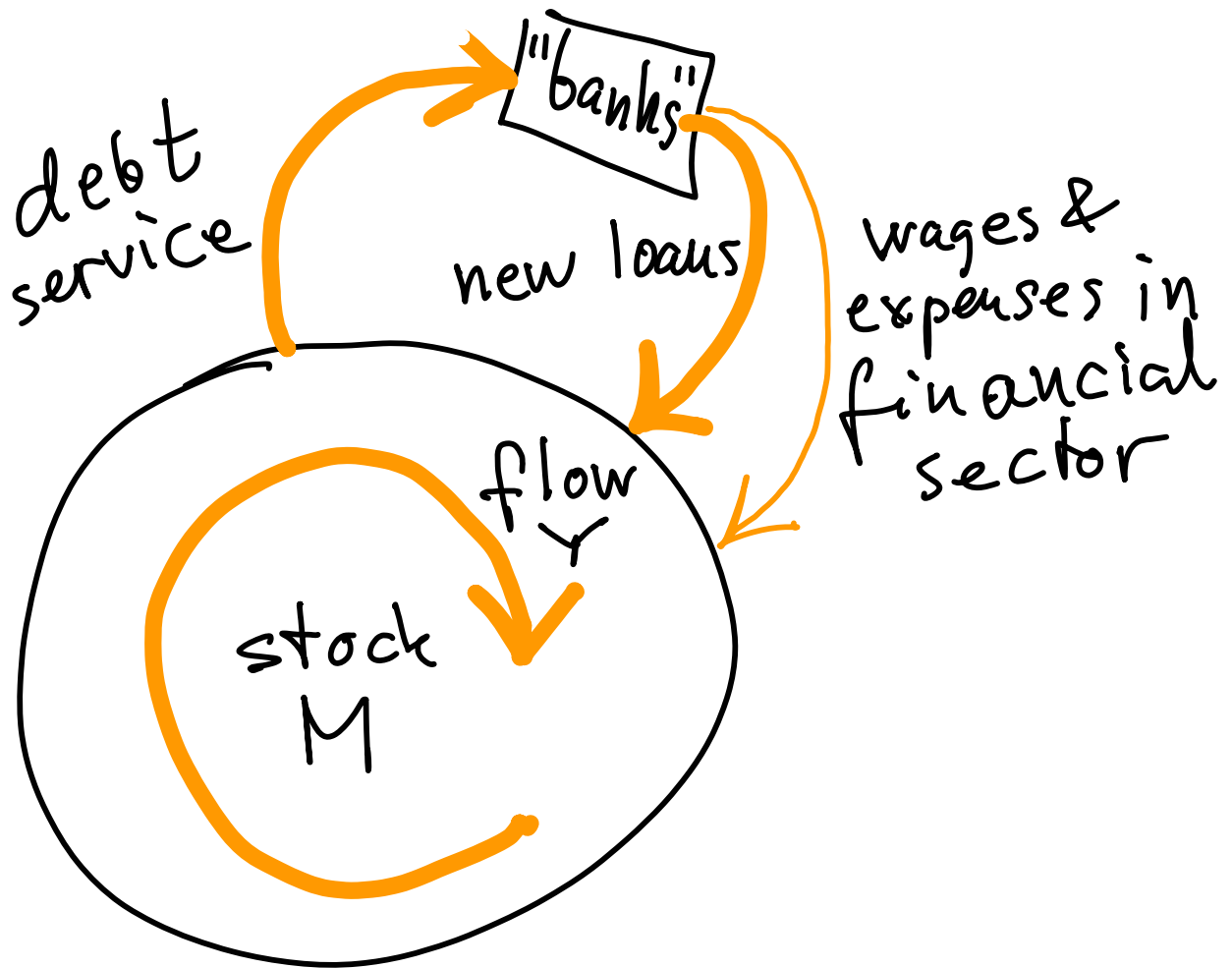


debt service is an outflow,
but still non-discretionary!

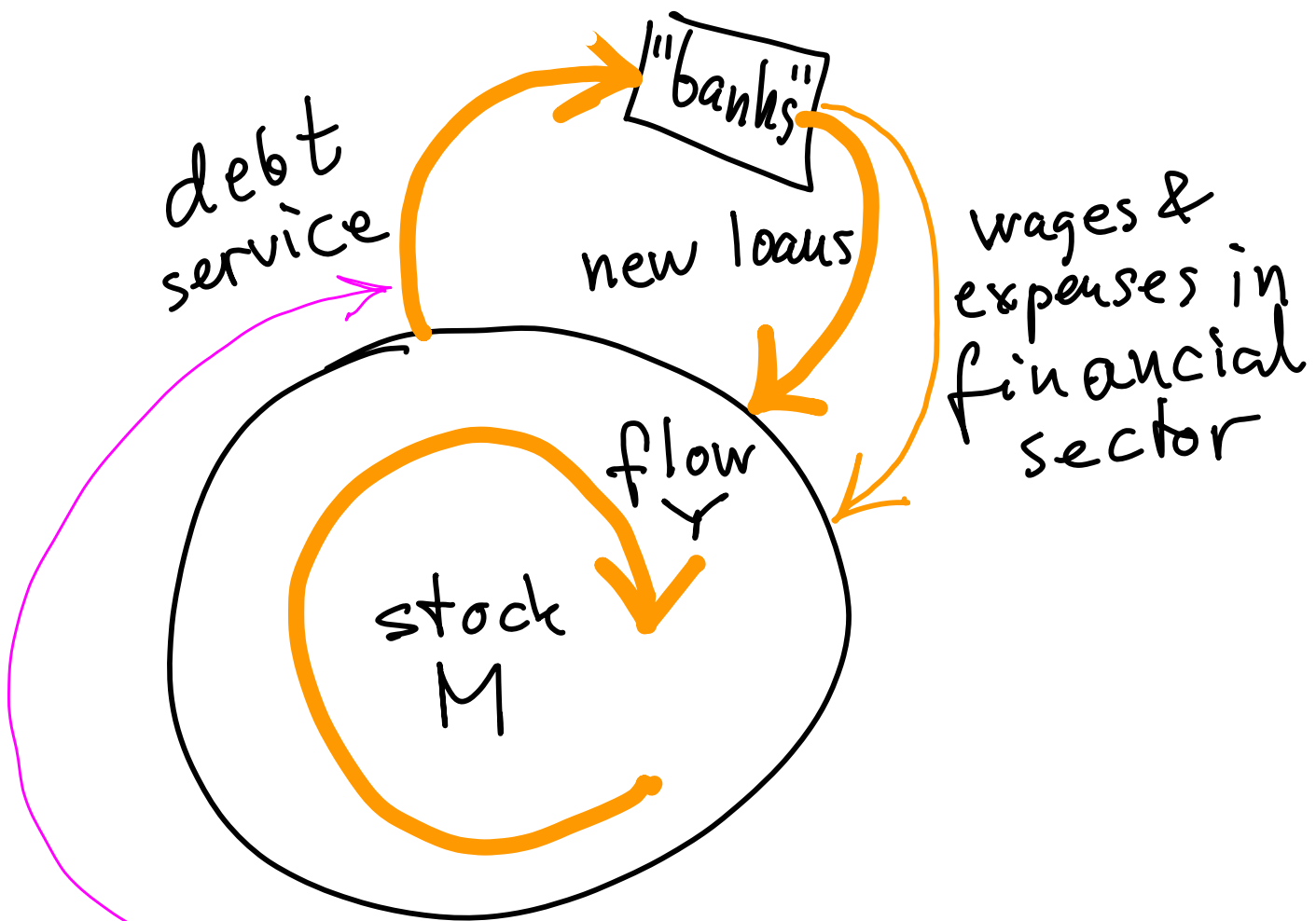
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Crisis mechanism



Crisis mechanism



This is an aggregate non-discretionary flow.

It grows with accumulation and makes the economy fragile!

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System w/ banks, no CB

quite simplified aggregate "Bank"

$$CAR = \alpha = \frac{A - L}{A}$$

← liabilities = credit money
= deposits ✓

← assets = loans

We then have

$$L = (1 - \alpha)A, \text{ to be used later on}$$

System w/ banks, no CB

quite simplified aggregate "Bank":

$$CAR = \alpha = \frac{A - L}{A}$$

← liabilities = credit money = deposits
← assets = loans

assume that the Bank tries to keep α as small as allowed.

$$\Rightarrow \dot{A}(t) = g A(t)$$

$$g = \frac{\beta i - \lambda}{\alpha}$$

$$\text{and } L(t) = (1 - \alpha)A(t)$$

- Loans create deposits!
- Debt and money grows pari passu.
- Steeper growth for small α .

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..with a CB

- but no reserve ratio requirement:

$$CAR = \alpha = \frac{A + R - L}{A}, \quad \begin{array}{l} R = \text{reserves} \\ = \text{base money} \\ = \text{HPM} \end{array}$$

$$\Rightarrow \dot{A}(t) = gA - \frac{\beta i_d - i_R}{\alpha} R(t)$$

where $g = \frac{\beta i_d - \lambda}{\alpha}$ as before

new →

profit share i. on deposits i. on reserves

We now have $L = (1 - \alpha)A + R$

• credit money growth may now be steeper than debt growth.

Good.

..with a CB

- but a reserve ratio requirement $R = \theta L$,
 $0 < \theta \leq 1$.

New result is:

$$\dot{A}(t) = gA - \frac{\theta(1-\alpha)}{\alpha(1-\theta)} (\beta i_L - i_R) A$$

$$\text{Now } \dot{L}(t) = \frac{1}{\theta} \dot{R}(t)$$

By keeping a low i_R , and
noting that $\dot{R}(t) = i_R R + \gamma$

govt. deficit spending

- we note that credit money growth may still be steeper than debt growth.
- γ , i_R and θ are control variables for the govt.

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• ... with NBFIs also

$$x = \frac{A-L}{A}, \text{ gearing} = \frac{L}{A-L} = \phi$$

$$x = \frac{1}{1+\phi}, \text{ inverse relationship approx.}$$

loans to others

loans from others, not money!

$$\text{Result: } \dot{A}(t) = \frac{\beta i - \lambda}{x} A(t)$$

but

- Money only shifted around, no L growth
- x may be smaller (say 3%, corresponding to gearing = 32). This implies NBFIs growing faster than the Bank.

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The race

1. Debt growth vs
2. Money growth vs
3. Real growth

- All are exponential. But 3. can't go on like that, obviously
- If 2. leaves 3. behind \Rightarrow inflation
- If 1. leaves 2. behind \Rightarrow debt crisis

Conclusions

We have, based on a few generic and simplified models, tried to chart the basic mechanics of debt and money growth. A clear understanding of this is necessary to enable meaningful discussion of policy proposals related to stabilising financial systems.

We draw the following conclusions:

- Under today's Basel regime, credit money grows endogenously, at an exponential rate. This crucial fact should be recognised.
- Debt build-up at a steeper rate than GDP should be avoided, and curbed through regulatory measures.
- Debt creation by non-bank financial institutions is dangerous in the long run since money is not created along with such loans.
- The required minimum capital/asset ratio for banks may be used to control debt growth and could be increased from today's low value. But it can only be changed gradually – it cannot be employed as a short-term regulating instrument.
- Fiscal policy in the form of persistent deficit spending is necessary in an economy where nominal GDP grows. The deficit flow may be varied around its growing exponential reference path and by this also function as a short-term regulating instrument.