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FINANCIAL MARKET ECONOMY VS SELF-FINANCING ECONOMY AND THE ROLE OF RISK AVERSION

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Does market financing of the economy increase long-term growth ?

From the « Financial Repression » of the 60s 70s to the beginning of the financial liberalization of the 80s, the great transformation in advanced economies.

Developing and emerging countries are encouraged to follow the financial liberalization initiated by the major international institutions (e.g. World Bank...).



What are the consequences of the policy of liberalizing financial markets on the long-term growth rate ?



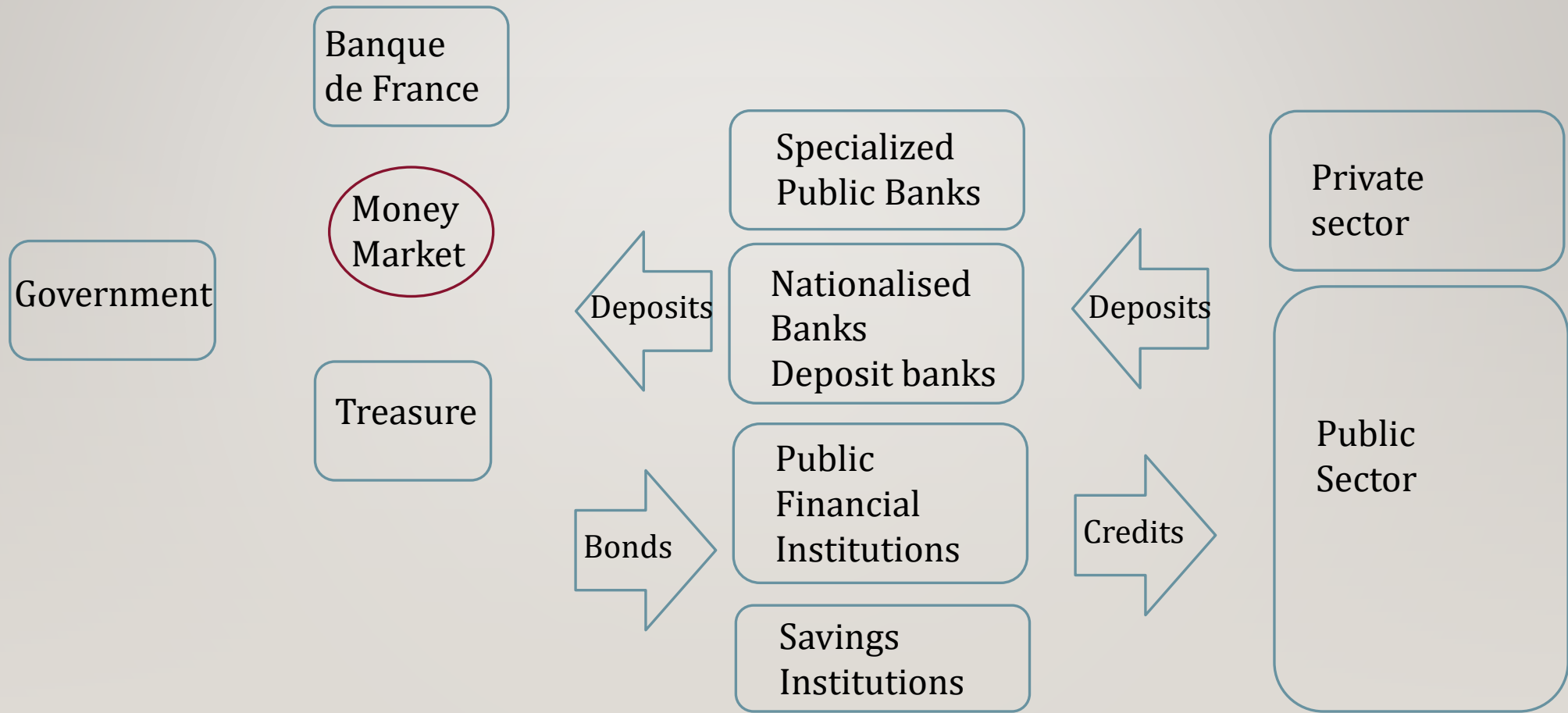
➡ In search of the empirical relationship between financial markets and economic growth...

See Levine (2002), (2005), Cecchetti and Kharroubi (2012), Peia and Roszbach (2015), Beck and Levine (2018)

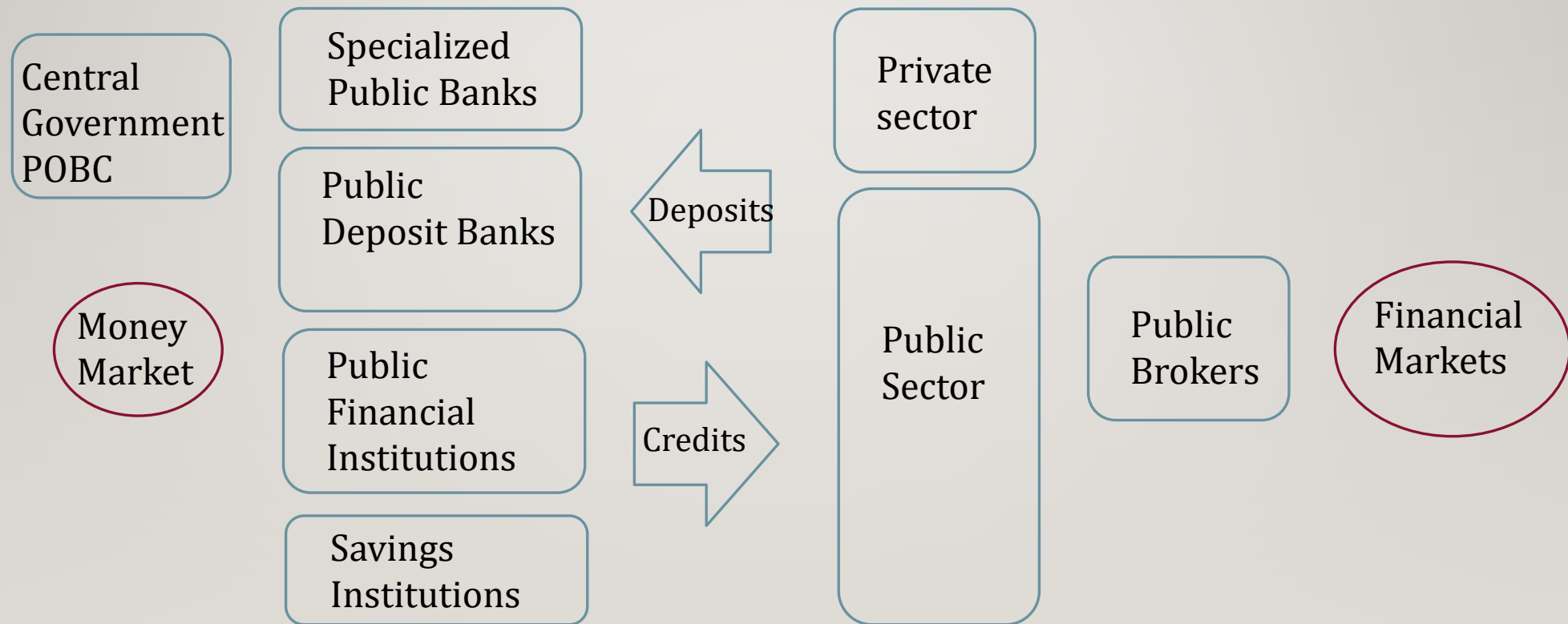
➡ Many counterexamples in recent economic history: France, Italy, Belgium, Japan, South Korea, Taiwan...



The French Treasure « circuit » 1946-1967 : an « off-market » model



The Self-financing chinese system: is the central Government the Lender of Last Resort ?



Theoretically, the self-financing economy is considered to be less efficient compared to the financial market economy.

In a significant contribution, Levine (1991) compares the two financing methods in a simple endogenous growth model.

Levine (1991) shows that the additional liquidity generated by trade on the financial market explains the best growth performance of the financial market economy.



This note proposes to revisit the positive relationship between the liquidity level of the financial market and the long-term growth rate.

Our lecture of the Levine's model (1991) using simulations leads to a nuanced conclusion : the market is not always the most effective method of financing long-term wealth creation, as the example of China shows.

A first insight : The conditions under which the market economy dominates the self-financing economy are related to the interactions between the sphere of production and individual preferences characterized by risk aversion.



The basic setup

The economy is a simple version of the overlapping-generation model where the accumulation of human capital has a positive effect on the economy (e.g. Aghion and Howitt (2009)).

The time is defined by a sequence of periods, t , $t + 1$, $t + 2$...

The representative agent live two or three periods (Diamond and Dybvig (1983)).

The first-period income fully saved is placed between the two primary assets: a liquid “storage” technology and a firm’s production technology. The “storage” technology is risk-free with a constant unit rate of return ($n > 0$). The second asset, production technology, has a higher return than the liquid technology ($R > n$) and is illiquid because physical capital production lasts two periods.



The firm's income is only paid out during the third period.

➡ Investing in the firm before knowing the lifespan poses a risk if the saver lives through two periods. Premature liquidation of the firm's capital in formation (x) yields a lower return than production and storage technology ($R > n > x \geq 0$)

The economy is composed of investors living two periods and entrepreneurs living three periods. The young agent becomes an investor with probability, $(1 - \pi)$ or entrepreneur with probability, π .

At the beginning of the first period, the young agent maximizes the expected utility of future consumption by calculating the proportion invested in the productive capital of the firm, q^{crra} :

$$\max_{q^{crra}} \mathbb{E} \left\{ -\frac{(1-\pi) \times (c_2)^{-\gamma}}{\gamma} - \frac{\pi \times (c_3)^{-\gamma}}{\gamma} \right\}, \text{ with the constant risk aversion, } \gamma > 0$$

In the second period, the investor gets his consumption, c_{t+1} , from the remuneration of storage technology and the premature liquidation firm's value:

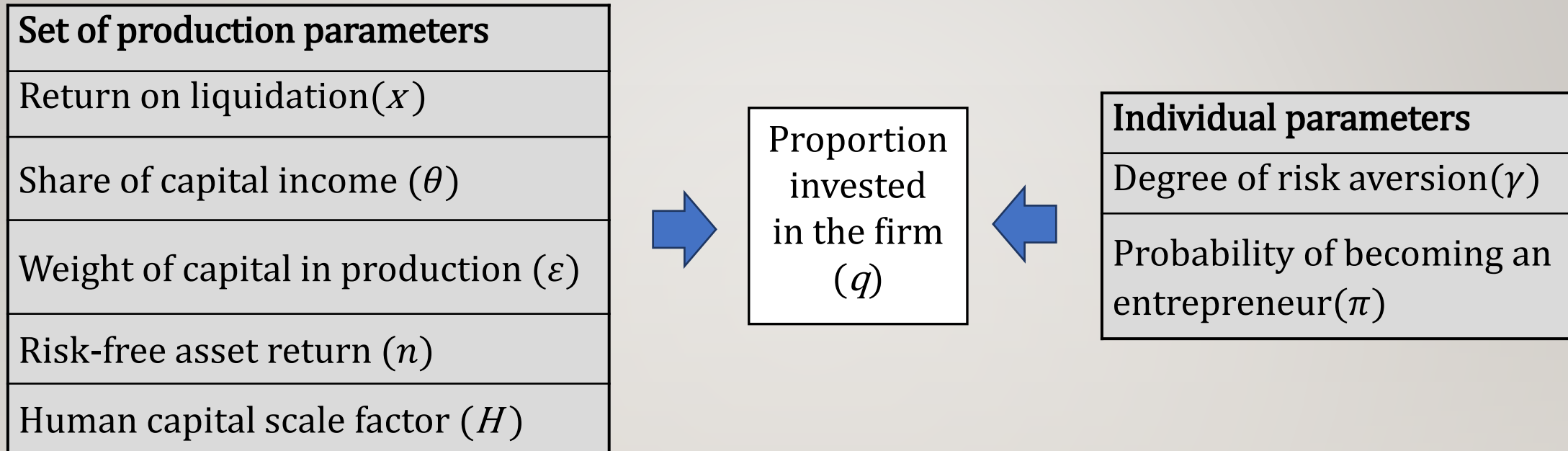
$$c_{t+1} = (1 - q) \times w_t \times n + x \times q \times w_t.$$

In the third period, the entrepreneur consumes the income from storage technology and r_{t+2} the firm's profit:

$$c_{t+2} = (1 - q) \times w_t \times n + r_{t+2}.$$



The determinants of firm's investment



Self-financing economy growth rate and risk aversion

The long-term growth rate of the economy between periods t and $t + 2$, g_y corresponds to the ratio between the level of output of each period:

$$g_y = \frac{y_{t+2}}{y_t} = H \times (1 - \theta) \times \pi^\theta \times q.$$

. Determinants of growth rate(g_y)

	If increase	Effect on the rate of growth
Parameters of the productive set	of return on liquidation (x)	+
	the share of profit (θ)	+/-
	of the share of capital in the development (ε)	+
	of risk-free asset return (n)	- -
	of the scale factor of human capital (H)	+
Individual settings	of degree of risk aversion (γ)	- -
	of probability of become an entrepreneur (π)	+ +

What is the consequence of introducing a financial market into the model ?

➡ Investors and entrepreneurs can now trade corporate shares on the financial market after learning at the start of the second period their type.

The total income of investors living two periods is changed; it is equal to the sum of the income from storage technology and the sale of the company's shares. In most cases, the income from the sale is generally higher than that derived from the liquidation of capital in the absence of a market.

➡ The entrepreneurs withdraw their resources invested in storage technology to finance the purchase of the securities sold by investors in search of liquidity. The entrepreneur's income is equal to the sum of the firms' profits



Optimal consumptions are determined from the maximization of utility, this time considering the price of companies' shares. The investor calculates the proportion of equilibrium invested in the capital:

$$q^{scrra*} = q^{slog*} = q^{s*} = \frac{\varepsilon \times \pi}{1 - \pi + \varepsilon \times \pi},$$

with the relative price, $P = \frac{(1 - q^s) \times n}{(1 - \pi) \times \theta \varphi \times H \times \pi^{-\delta} \times q^s}$

Among the many possible cases, we focus on the high-performance economy in terms of growth.

Using numerical simulations, the economy can be characterized by a combination of the parameters.

The degree of risk aversion is relatively low;

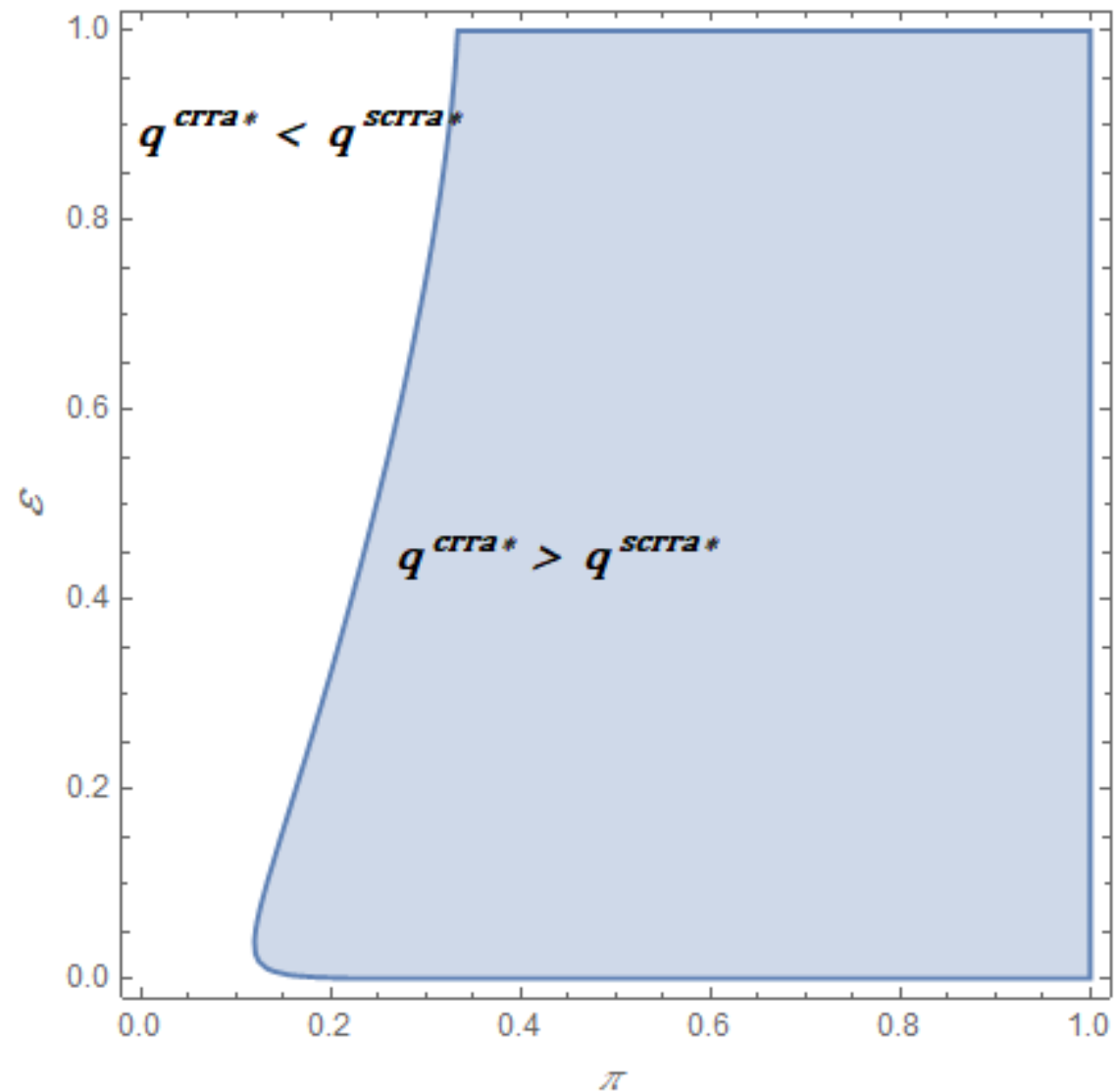
The high proportion of entrepreneurs in the population;

A significant weight of private capital in production associated with high profit and abundant savings.

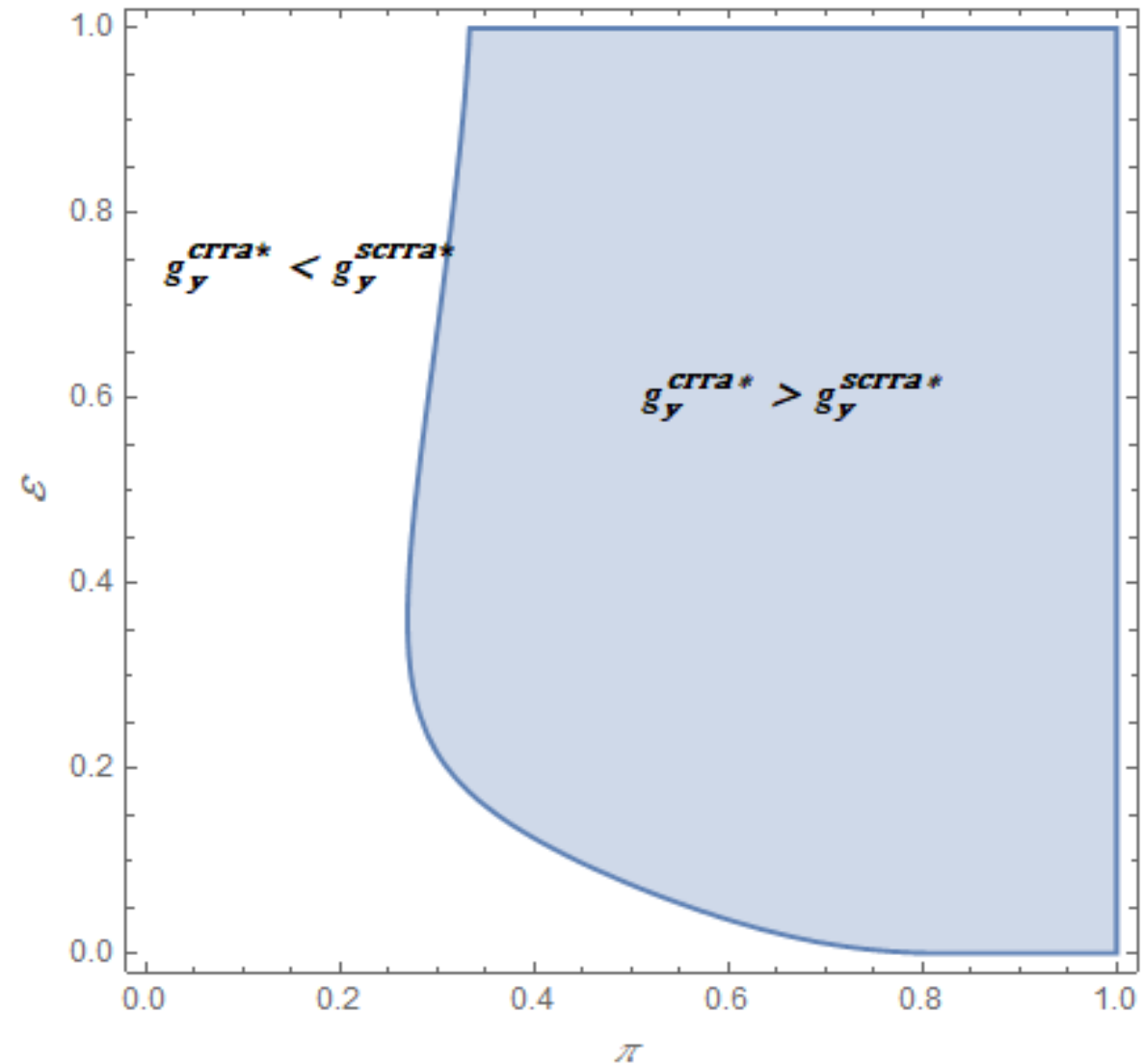


Equilibrium proportion

Financial market economy
vs self-financing economy



Economic growth rate Financial market economy vs self-financing economy



In our simulations, the equilibrium growth rate of the emerging self-financing economy is higher than that of the financial market economy, because the gains from trading on the stock exchange do not compensate for the high propensity to invest by investors who are insensitive to the risk of the self-financing economy.

Levine's conclusion (1991) is not generic, there are indeed many combinations of parameters such that the growth rate of the self-financing economy is higher than that of the financial market economy.



Thank you for your attention