



EUROPEAN CENTRAL BANK

EUROSYSTEM

Monetary Easing, Leveraged Payouts and Lack of Investment

By Viral V. Acharya and
Guillaume Plantin

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Caterina Mendicino
European Central Bank

Since the global financial crisis

- corporate leverage has significantly increased
- elevated corporate payouts to shareholders – large net share buybacks
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Key observations

Since the global financial crisis

- corporate leverage has significantly increased
- elevated corporate payouts to shareholders – large net share buybacks
- weak fixed business investment below historical trends

⇒ **Acharya and Plantin (2020):**

explains these changes in the financial structure of US corporations (low investment and high leveraged payouts) as the result of **extraordinarily accommodative behavior of the Federal Reserve** over the past decade!

This Paper in a Nutshell (1)

Entrepreneur lives 2 period and is risk neutral over consumption and discounts C_1 at $R > 1$...

$$\max_I C_0 + \frac{C_1}{R}$$

... $t = 1$ receives an endowment of C good $W > 1$ against which she can borrow....

$$B \leq W$$

...to frontload consumption and/or invest I at $t = 0$

$$C_0 + I \leq \frac{B}{r}$$

$\frac{1}{r}$ implicit discount rate at which risk neutral counter-party lends $\frac{B}{r}$ units of consumption good at $t=0$ against the promise to receive back B at $t = 1$

She invests I into a technology that with probability e delivers $f(I)$ units of C_1

$$C_1 = ef(I) + W - B$$

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This Paper in a Nutshell: (2) allow for leveraged borrowing

$$\max_{I,x} C_0 + \frac{C_1}{R}$$

$(1 - x)$ = leverage against future output of the investment technology....

$$B \leq W + (1 - x)ef(I)$$

...to frontload consumption at $t = 0$ and/or invest I

$$C_0 + I \leq \frac{B}{r}$$

$$C_1 = ef(I) + W - B$$

This Paper in a Nutshell

If $r \geq R$

- she doesn't want to frontload consumption ($C_0 = 0$)
- only borrows against the endowment to invest

If $r < R$

- she would like to front load consumption $C_0 > 0$
- also by means of "leveraged payouts": $(1 - x) > 0$

This Paper in a Nutshell: (3) $r < R$

If $r < R \Rightarrow$ all constraints bind

$$\max_{l,x} \frac{W + (1-x)ef(l)}{r} - l + e \frac{xf(l)}{R}$$

C_1 = fraction of future output against which she doesn't borrow (x)

Let's also assume that she can choose directly the probability of success of the investment project e with private cost!

$$\max_{l,x,e} \frac{W + (1-x)ef(l)}{r} - l + \left[xe - \frac{e^2}{2\pi} \right] \frac{f(l)}{R}$$

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This Paper in a Nutshell: (3) $r < R$

- $x < 1 \Rightarrow$ leveraged borrowing $(1 - x) > 0$

$$x = \frac{R}{2R - r}$$

- $\downarrow r \Rightarrow \downarrow$ skin in the game & \uparrow leveraged borrowing $(1 - x)$

$$e = \pi x = \frac{\pi R}{2R - r}$$

- $\downarrow r \Rightarrow \downarrow$ reduces incentives (prob success of Investment)

\Rightarrow Leveraged payouts and the output of investment technology might go in opposite directions!

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Acharya and Plantin (2020): Embed this mechanism into a 2 period OLG model

- consumption technology (workers) and investment technology (entrepreneurs) both using labor
- monetary policy controls real cost of capital r
- prices are fixed at any t
- negative productivity shock

Trade-off leveraged payouts vs effort induced by $\downarrow r$ following \downarrow productivity

⇒ **privately but not socially optimal!**

- benefits of leveraged payouts only private
- BUT reduced investment output (due to lower effort) is a social loss

⇒ (In the absence of leverage regulation) **optimal monetary policy might even "lean against the wind"** (i.e. to not be accommodative in a downturn) to fully contain leveraged payouts and maintain productive efficiency.

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- **the secular downward trend in equilibrium real interest rates...**
 - Productivity shock hits one generation of young workers
 - Reduction in r over the same time horizon
- **OR monetary policy temporary deviations from that rate?**

Monetary Policy responds to cyclical fluctuations and is state contingent: sources of cyclical fluctuations matter for its response!

Temporary Slowdown in Productivity

Textbook Macro Model

- Optimizing Households and Firms
- Nominal Price Stickiness
- Taylor rule: Monetary policy Rate “leans against” changes in output (≥ 0) and, especially, inflation (>1)

↓ Productivity \Rightarrow ↑ real marginal cost for firms \Rightarrow ↑ prices \Rightarrow ↑ Inflation

- Changes in productivity affect firms marginal costs and thereby feed into their optimal pricing decisions!

\Rightarrow ↑ Interest Rate

- Monetary policy increases nominal interest rate (sufficiently) to counteract the increase in inflation!

\Rightarrow By mimicking the increase in the natural interest rate can both **stabilize inflation and close the output gap** (make output drop as much as its potential level).

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If at the core of the analysis is...

(1) **the endogenous component of monetary policy** (e.g. changes in short-term policy rate)

⇒ study its role in shaping the responses of the economy to different types of recessionary shocks!

If at the core of the analysis is...

(1) **the endogenous component of monetary policy** (e.g. changes in short-term policy rate)

- **supply shocks:** output and inflation move in opposite direction
 - considering firms pricing decisions is crucial for the monetary policy response to these shocks (e.g. productivity shocks)!
- **demand shocks:** output and inflation move in the same direction
 - assumption of extreme nominal price rigidities maybe less problematic for qualitative illustration of the channel.

⇒ Considering firms pricing decisions important for (quantitative) assessment of the channel highlighted in the paper!

(2) secular downtrend in real short-term rates

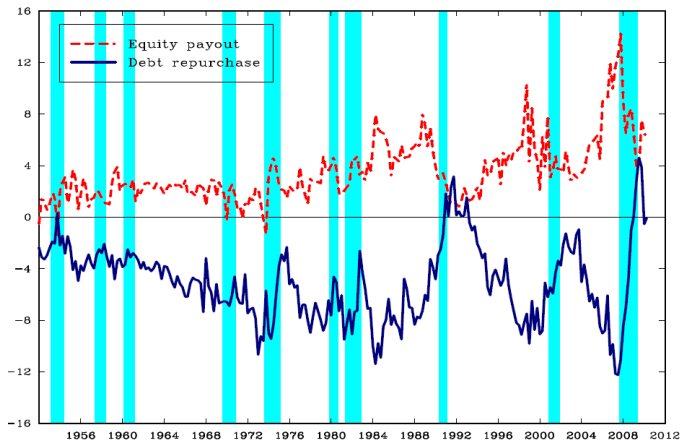
⇒ **structural changes** call for **structural policies**: fiscal policy, regulation...

Again on the trend and the cycle: Closer look to the Data!

Firm Financing over the Business Cycle

Jermann and Quadrini (AER, 2012)

Non Financial Business Sector – Flow of Funds Accounts of the FRBoard.

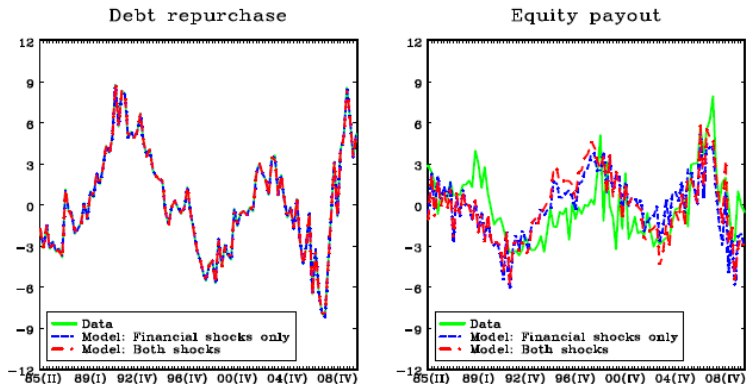


Firm Financing over the Business Cycle

Cyclical properties of US firms' financing (e.g. Covan and Den Haan, AER, 2011; Jermann and Quadrini, AER, 2012)

- equity payouts are negatively correlated with debt repurchases
 - some substitutability between equity and debt financing
- while equity payouts (including share repurchases) tend to increase in booms, debt repurchases increase during or around recessions
 - recessions lead firms to restructure their financial positions by cutting the growth rate of debt and **reducing the payments to shareholders**

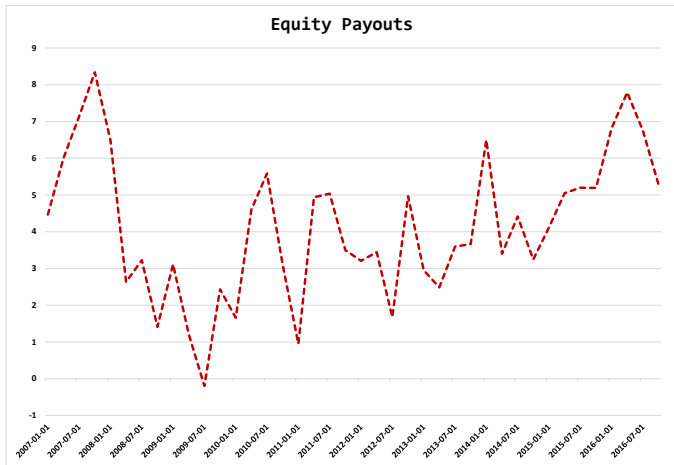
Firm Financing over the Business Cycle (1980-2010)



Financial shocks important for capturing the dynamics of both financial flows (debt and equity) and real business cycle quantities (e.g. Jermann and Quadrini, AER 2012)

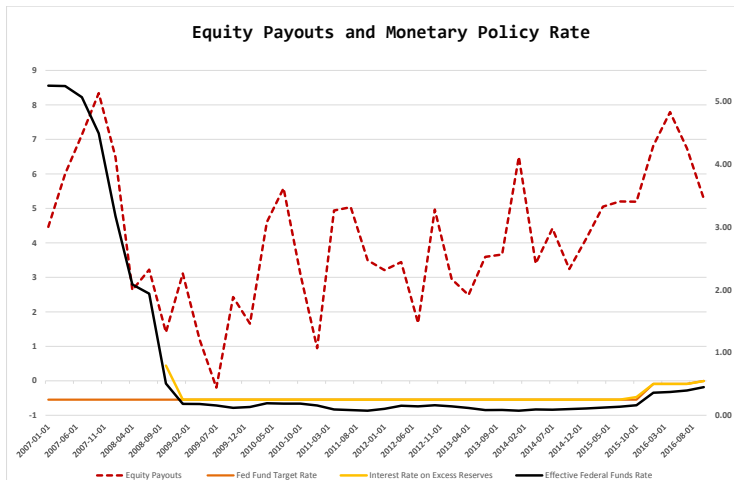
Firm Financing over the Business Cycle (2007-2020)

Since GFC: behaviour in line with historical regularity!



Firm Financing over the Business Cycle (2005-2020)

Not obvious/stable relation with Policy Interest Rates



Any Testable Implications?

- The literature highlighted an important role of financial frictions in determining this investment channel of monetary policy (e.g. (Gertler and Gilchrist, 1994; Cloyne et al., 2018; Ottonello and Winberry, 2020)
- Many compelling stories on the effectiveness of low/negative rates (e.g. Altavilla et al. 2020)

⇒ Can you provide evidence regarding the importance of the mechanism and the friction that you point out for the transmission of monetary policy/low rates?

VERY nice theory paper \Rightarrow trade-off investment vs levered equity payout with low real interest rates!

BUT....

- clarifying the scope of the analysis: secular downward trend in real interest rates might be a more promising venue!
- providing a proper quantitative assessment of the mechanism

...still needed to step up the importance and policy relevance of the message!