Financial Dominance

Paolo Baffi Lecture 2015
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Overview

1. Ex-post redistribution of losses & recap
   - To sector with higher “amplification threat”
     - Financial sector’s amplification in 4 Steps
     - Amplifying amplification through “Financial Dominance”

2. Ex-ante risk sharing rules & contingent commitment

3. Government debt
   - Banks as hostage vs. as insurers
     - Doubling up strategy & diabolic loop
   - Role of other investors: “Secondary market dilemma”

4. Financial, fiscal and monetary dominance

5. European Monetary Union & ESBies
1. Re-distribution of losses after crisis erupted

Losses

- Permanent
  - Financial sector
  - HH sector
  - Nominal Savers
    - "financial repression"
  - Tax payer

- Temporary (Liquidity)
  - Liquidity spiral
  - Disinflationary spiral
  - Amplified by Keynesian demand (MPCs)
  - Amplified by

Amplified by

- Liquidity spiral
- Disinflationary spiral

Amplification in Financial Sector

- Technologies $b$
  - Inside Money
  - Money
  - Reserves
  - Inside equity
  - Risky Claim
  - Risky Claim
  - Risky Claim

- Technologies $a$
  - Inside Money (deposits)
  - Net worth
  - HH Net worth

The I Theory of Money
- with Yuliy Sannikov
Shock impairs assets: 1\textsuperscript{st} of 4 steps

Technologies $b$

- Technologies $a$

Inside Money (deposits)

Inside equity

Pass through

Outside Money

Net worth

Losses

Money

$B_1$

$A_1$

HH Net worth
Shrink balance sheet: 2\textsuperscript{nd} of 4 steps

- Technologies $b$

- Technologies $a$

Inside Money (deposits) → Pass through → Inside Money (deposits)

Deleveraging → Losses

Switch
Liquidity spiral: asset price drop: 3\textsuperscript{rd} of 4

- Technologies \textit{b}
  - Technologies \textit{a}

\[ \text{Switch} \]
Disinflationary spiral: 4th of 4 steps

- Technologies b

- Technologies a

Intermediaries are hit and shrink their balance sheets inducing
- Asset side liquidity spiral financial stability
- Liability side disinflation spiral price stability

Response of intermediaries to adverse shock leads to endogenous risk due to amplification
“Paradox of Prudence”

- ... in I Theory.

- Each bank is “micro prudent” (deleverages)
  - creates endogenous macro-risk “macro-inprudent”
    - Price process (drift & volatility) are taken as given
    - Pecuniary externality

- Analogy:
  Keynes’ paradox of thrift (levels instead of risk)
  each consumer saves ➔ aggregate income/saving declines
Ex-post Redistribution via Monetary Policy

- (Contingent) redistribution ... towards the banks “stealth recapitalization”

- Adverse shock $\rightarrow$ value of risky claims drops
- Monetary policy response: cut short-term interest rate
  - Value of long-term bonds (relative to money) ↑
  - “stealth recapitalization”
- Liquidity & Deflationary Spirals are mitigated

- Special Role of default-free long-term “safe asset” for MoPo
  - Interest rate policy leads to income/wealth effects
    (not only substitution effects)

- Refrain from government default
Redistribute via many Routes

- **Ex-post redistribution via**
  - Monetary policy: change asset prices/exchange rates “stealth recapitalization” (income not substitution effects)
  - Inflate away debt
  - Outright default on debt
  - Toughen foreclosure laws
  - Soften private bankruptcy

Involves government debt
Redistribute via many Routes

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- **Financial Dominance**
  - Financial sector refuses to recapitalize itself, will try to maximize adverse amplification
  - “being weak is your strength”
    - defense mechanism against financial repression
  - Involves government debt
Redistribute via many Routes

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    “stealth recapitalization” (income not substitution effects)
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Involves government debt

Source: Shin
Redistribute via many Routes

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Involves government debt
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   - Banks as hostage vs. as insurers
     - Doubling up strategy & diabolic loop
   - Role of other investors: “Secondary market dilemma”

4. Financial, fiscal and monetary dominance

5. European Monetary Union & ESBies
Ex-ante: Rule – Contingent Commitment

- **Ideal Rule** (e.g. monetary rule):
  - Distribute to “bottleneck” (balance sheet impaired sector)
  - Improves *risk sharing/insurance*
    - reduces amplification
  /endogenous risk
Ex-ante: Rule – Contingent Commitment

- **Ideal Rule** (e.g. monetary rule):
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  - Improves risk sharing/insurance
    - reduces amplification 
    /endogenous risk

- **Problems:**
  1. Insurance alters behavior
     - **Moral hazard**
  2. Time-inconsistent rule
     How to commit to it?
Contingent Commitment Challenge

- **Ex-ante**
  - Gov. promises to limit ex-post redistributions (only risk sharing)

- **Interim**
  - Strategic positioning
  - **Financial dominance**
    - Pay out dividend
    - Invest in gov. bonds (crowds out real lending)
    - Deflationary spiral

- **Ex-post**
  - Redistribution of losses, MoPo, bail-outs
  - Benefits sector that can cause most severe amplifications

### Time-inconsistency
- Ex-ante: promise limited redistribution to keep interest rate low
- Ex-post: redistribute too much
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- Dual role of contingent debt
  - Liquidity: Smooth temporary shocks over time
    - Tax smoothing
    - Keynesian stimulus
  - Solvency: Risk sharing permanent shocks over states of nature
    - Through MoPo
    - Through default

- Time-consistency + risk sharing problem
  - Ex-ante:
    - promise to repay in states above a certain cut off
    - (partially) default in “crisis states”
  - Ex-post:
    - Excessive default

- Contingent commitment vs. “straightjacket commitment”
Government Debt: Toy Model

- $t = 1$ Refinance outstanding debt (from $t = 0$)
  - Determines face value of new debt
  - Default costs

- $t = 2$ uncertainty realizes -- state space
  1. $x = \text{GDP: Economic activity} - \text{income of citizens}$
  2. $x = \text{Primary surplus: absent austerity measures/extra taxes}$

- Repay debt
- Extra austerity measures/taxes to cover shortfall
- Default decision
Government Debt

- Limited commitment: verification cost
- Risk-neutral investors

\[ \text{Payoff of debt claim in } t = 2 \]

\[ 1 \]

\[ 1/\bar{x} \]

\[ \bar{x} \]

Tax revenue (normal regime)

Face value

Face value

0

0
Government Debt

- Limited commitment: verification cost
- Risk-neutral investors

\[ \text{Payoff of debt claim in } t = 2 \]

\[ \text{Face value} \]

\[ \text{Face value} \]

\[ 0 \]

\[ 0 \]

\[ \text{Tax revenue (normal regime)} \]

\[ \frac{1}{x} \]

\[ \frac{1}{x} \]
Government Debt

- Limited commitment: verification cost
- Risk-neutral investors

\[
\text{Payoff of debt claim in } t = 2 = \frac{1}{x} \quad \text{(normal regime)}
\]

- Contingent debt
  - Partial default in bad states
Government Debt

- Limited commitment: verification cost
- Risk-neutral investors

Payoff of debt claim in $t = 2$

\[ \text{Face value} \]

\[ \text{Verification cost} \]

\[ \text{Tax revenue (normal regime)} \]

\[ \text{default probability} \]

Refinancing Potential $t = 1$
Government Debt

- Limited commitment: verification cost
- Risk-neutral investors

Payoff of debt claim in $t = 2$

Refinancing Potential $t = 1$

Tax revenue (normal regime)

Face value

Verify the verification cost
Government Debt

- Limited commitment: verification cost
- Risk-neutral investors

\[ \text{Face value} \]

\[ \text{Payoff of debt claim in } t = 2 \]

\[ \text{Tax revenue (normal regime)} \]

\[ \text{Verification cost} \]

\[ \text{default probability} \]

\[ \text{Face value} \]

\[ \text{Face value} \]

\[ \text{Refinancing Potential } t = 1 \]

\[ \text{solvent} \]

\[ \text{insolvent} \]
Government Debt

- Limited commitment: verification cost
- Risk-neutral investors

**Graph:**
- Payoff of debt claim in $t = 2$
- Face value
- Verification cost
- Tax revenue (normal regime)
- Refinancing Potential $t = 1$
- Solvent
- Illiquidity
- Insolvent
Government Debt

- Limited commitment: verification cost
- Risk-neutral investors

\[
\text{Face value} = 1 + r_B
\]

\[
\text{Tax revenue (normal regime)} = \frac{1}{x}
\]

\[
\text{Default probability} = x
\]

\[
\text{Refinancing Potential } t = 1
\]

\[
\text{illiquidity}
\]

\[
\text{solvent}
\]
“Straight Jacket” Commitment

![Graph showing the relationship between tax revenue and face value.](image-url)
“Straight Jacket” Commitment

Tax revenue (normal regime) vs. Face value

Refinancing Potential $t = 1$

always liquidity

No liquidity problem

solvent

insolv.
“Straight Jacket” Commitment

- ... but tax short-fall
- Needs to raise taxes/austerity: distortionary costs

\[
\text{Refinancing Potential } t = 1
\]

\[
\text{always liquidity}
\]

\[
\text{No liquidity problem}
\]
“Straight Jacket” Commitment

- Shortfall needs to be financed through
  - Austerity measures
  - Emergency tax hikes

\[ \tau(x - F) \]

- For very low realizations of \( x \) these costs might go to infinity
How can Financial Sector Help?

1. Offer itself as hostage for commitment device to repay financial dominance is helpful ...
   - Impose “default cost” $C$ on citizens
     - $x$, i.e. GDP, declines as banking sector goes into tailspin
   - History: Bank of England
   - But government has to
     - Pay in addition to bail out banking sector
     - Banking sector kills real sector, gov. debt crowds out real loans

2. Provide insurance against
   - Rollover risk
   - Solvency risk

   only achievable if banks have sufficient loss absorption capacity
   financial dominance rules this out
“Straight Jacket” Commitment

- Default if austerity costs + repayment exceed $C + x$
  - Default if $\tau(x - F) + F > C + x$
Diabolic Loop

- Trigger: fiscal or financial

Financial dominance increases commitment costs!
“Bank Hostage” Commitment

- Default if austerity costs + repayment exceed $C + x$
  - Default if $\tau(x - F) + F > C + x$

- Financial dominance increase commitment costs $C$
“Bank Hostage” Commitment

- Default if austerity costs + repayment exceed $C + x$
  - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs $C$

Lower default probability
“Bank Hostage” Commitment

- Default if austerity costs + repayment exceed $C + x$
  - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs $C$

- Lower default probability
- Lower verification cost
- Lower face value $F$
- Lower interest rate
“Bank Hostage” Commitment

- Default if austerity costs + repayment exceed $C + x$
  - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs $C$

Δ Lower default probability
Δ Lower verification cost
Δ Lower face value $F$
Δ Lower interest rate

Again
Δ Lower default probability
“Bank Hostage” Commitment

- Default if austerity costs + repayment exceed $C + x$
  - Default if $\tau(x - F) + F > C + x$

- Increase commitment costs $C$

- Default prob ↓, but if: higher cost $C$ & higher austerity $\tau$
- “doubling up strategy”

- Lower default probability
- Lower verification cost
- Lower face value $F$
- Lower interest rate

Again
- Lower default probability
Diabolic Loop 2 overturns argument!

- Less lending to real economy
  
  - GDP and tax revenue, $x$, declines

\[ \text{LTRO starts} \]
Diabolic Loop 2

- Default if austerity costs + repayment exceed $C + x$
  - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs $C$

![Diagram](image)
Diabolic Loop 2

- Default if austerity costs + repayment exceed $C + x$
  - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs $C$

$\tau(x - F)$

$C + x - F$

$1/\bar{x}$

$\bar{x}$

default

austerity

→ Lowers GDP, $x$

→ Default probability rises
Diabolic Loop 2

- Default if austerity costs + repayment exceed $C + x$
  - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs $C$

$\tau(x - F)$

$C + x - F$

$F$

$1/\bar{x}$

\[ \text{Default} \quad \text{austerity} \]

$\rightarrow$ Lowers GDP, $x$
$\rightarrow$ Default probability rises
$\rightarrow$ Verification costs rise
$\rightarrow$ Face value $F$ rises
$\rightarrow$ Interest rate rises
Diabolic Loop 2

- Default if austerity costs + repayment exceed $C + x$
  - Default if $\tau(x - F) + F > C + x$
- Increase commitment costs $C$

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$C + x - F$

$\frac{1}{x}$

$\bar{x}$

- Lowers GDP, $x$
- Default probability rises
- Verification costs rise
- Face value $F$ rises
- Interest rate rises

$2^{nd}$ “GDP Diabolic Loop” can undo all the benefits
  - Bank hostage is not even a doubling up strategy
“Bank Hostage” Commitment

- Extremely high commitment cost $C$ due financial dominance
  - “straight jacket commitment”

- Reduces illiquidity problems

- Lower default prob., lower interest rate, but if failure then much worse “doubling up strategy”

- &... but 2nd Diabolic Loop goes in opposite direction

- No safety valve
... but can other investors help?

- “Secondary markets dilemma”
  - Selling government debt to foreign investors
  - Selling government debt to voters

Before crisis gov.-debt always travels back to weak banks!

- Only way out: avoid financial dominance
  - MacroPru to ensure equity cushion of banks is large enough
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only achievable if banks have sufficient loss absorption capacity
  - financial dominance rules this out
  - Sensible MacroPru regulation needed
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Interaction with Fiscal & Monetary Dominance

- Overcommitment problem

1. Split government in different authorities
2. Macro Pru & banks/investors share risk vs. straight jacket commitment
   - Strict rules for financial sector
   - Other commitments (fiscal risk sharing)
3. Both safe asset & contingent debt is needed
   - “squaring a circle”? 
Institutional design: split authorities

Fiscal authority  split  Central Bank

0/1-Dominance vs. battle: “dynamic game of chicken”
Institutional design: split authorities

- Monetary dominance
  - Fiscal authority is forced to adjust budget deficits

- Fiscal dominance
  - Inability or unwillingness of fiscal authorities to control long-run expenditure/GDP ratio
  - Limits monetary authority to raise interest rates

0/1-Dominance vs. battle: “dynamic game of chicken”
Institutional Design: Financial Dominance

- **Monetary dominance**
  - Fiscal authority is forced to adjust budget deficits

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  - Inability or unwillingness of fiscal authorities to control long-run expenditure/GDP ratio
  - Limits monetary authority to raise interest rates

- **Financial dominance**
  - Inability or unwillingness of financial sector to absorb losses
    - Refusal to issue no equity – pay out dividends in early phase of crisis
Institutional Design: 2\textsuperscript{nd} Game of Chicken

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European Context

- Straightjacket commitment
  - No inflation valve
  - No exchange rate valve
  - Cross-border Flight to safety capital flows

- How can government debt be both?
  - Safe asset (without default)
    - To smooth out temporary liquidity shortage, allow for Keynesian stimulus
  - Insurance instrument
    - To risk share extreme crisis states (Greece, …)
European Context

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- ESBies
  - Pool
  - Split into two classes
    - Safe
    - Defaultable
Flight to safety

Today: asymmetric shifts across borders

- Value of German debt decreases
  - German CDS spread rises, but yield on bund drops (flight to quality)
- Value of Italian/Spanish/Greek... sovereign debt declines

*Flight to safety asset is endogenous (coordination problem)*
Flight to safety

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  - Value of German debt decreases
    - German CDS spread rises, but yield on bund drops (flight to quality)
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- With ESBies: Negative co-movement across tranches
  - Value of ESBies expands – due to flight to quality
  - Value of Junior bond shrinks – due to increased risk
  - Asset side is more stable

Flight to safety asset is endogenous
(coordination problem)
Conclusion

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   • Straight jacket commitment removes safety valve

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     ▪ Over-commitment due to financial dominance
     ▪ Doubling up strategy & diabolic loop
   • Role of other investors: “Secondary market dilemma”

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