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Comments on Alexis Derviz: “Collateral Composition, Diversification Risk, and Systemically Important Merchant Banks”

Wolf Gick

Center for European Studies, Harvard University
and
Free University of Bozen/Bolzano, School of Economics

What the paper by is about

- Studies the accumulation of systemic risk in an investment banking sector that assists the corporate sector in diversifying.
- **In line with the view that debt crises are essentially crises of collateral markets.**
- However, active asset trading is usually too costly to be done by firms, thus they need the service of merchant banks/investment banks.
- **Banks themselves become a highly concentrated industry that would like to diversify. Yet, as their investment opportunities are limited, they eventually end up investing in a set of companies not dissimilar to those that require their service for diversification.**
- Banks furthermore face limits to exploit their market power. The collateral that they provide becomes less valuable when deposit rates are low. This negatively affects their own equity holdings, in turn rendering the merchant bank sector fragile.

Who diversifies the diversifiers?

- One could argue that merchant banks can always offer claims on itself as diversified collateral to the firms.
- In practice, this is limited by the need of the bank to make the collateral worth something.
- Thus, it is the structure of financial services that creates a problem: diversified collateral (deposits or bonds) may be much more affected by systemic impairment than firm liabilities as the latter may be less connected.
- Is there a simple remedy?
 - 1 State guarantees on merchant bank's liabilities do not always help, and if, the costs of such guarantees may skyrocket.
 - 2 Mandating merchant banks to only hold equity as liabilities is not realistic.

Contract Theory as the Microeconomic Foundation

- While many models on debt crises and regulation argue that a connected moral hazard problem can be mitigated by both securitization and e.g. certification, Derviz follows a different explanation:
- **Central problem lies in the fact that in a world of asymmetric information it is rational to default, and debt contracts exist because it is rational to default.**
- Townsend (1979) and costly state verification: it is impossible for a shareholder to determine the value of a dividend that a merchant bank owes to him.
- Creditor-shareholder theories: Townsend (1979), Black-Scholes (1973) and Merton (1974) assume that under default, all company assets are transferred without exception to the creditor: the creditor becomes a shareholder.

Calls for a theory of both default costs and collateral markets.

Including collateral in debt contracts

- In practice, there is destruction of value in case of default (e.g. legal and administrative costs)
- Next step beyond Black-Scholes and Merton: Kiyotaki-Moore (1997) on collateral being different from a firm's productive assets.
- In practice: What is on a firm's and on a merchant bank's balance sheet?
- **What are the inherent limits to diversification in a collateral market?**

Ingredients to the model

- 2 periods: in the first labor being hired and borrowing/investment decision being made. In the second, output is sold, revenue is distributed and investment returns paid out.
- Cobb-Douglas production function of the economy, with a TFP component that can be unknown itself, with only its distribution being known to the players.
- Collateral $(1 - t(k))k$ is defined in terms of marketable units of k .
- Capital transformation function (2) of $t(k) = \delta + \tau(k)$.
- Borrowing comes in two parts: b^m is the amount borrowed to pay labor, b^k the amount to co-finance physical capital purchase, both adding up to total loan size $b = b^k + b^m$.
- Equation (3) offers $k = q - \nu + b^k$ defines the financing of physical capital. Whenever $\nu > 0$ own output defined collateral is augmented by the one of shareholders. Shareholders are the source of outside collateral exceeding $(1 - t(k))k$.
- Dividends are paid to shareholders following the constraint $B^k = k - q + \nu$, ν becoming the diversified collateral.

Solving

- Firm survives if its EBIT exceeds its debt service, or

$$Af(k, m) + 1 - t(k))k + (1 - i^o)\nu \geq (1 + r)b^k + b^m)$$

- leading to a threshold of A^d that can be determined for which survival is certain. Furthermore, the firm's manager decides on hiring labor and capital.
- Core is about equilibria with diversified collateral choices.
- Paper then calculates (Section 3) the baseline equilibrium with government guarantees for the merchant bank, based on Derviz (2012). Limits to governmental guarantees because of big tail risks to the public sector.

Concluding: CoCos have (at least) two convincing properties

- The micro part: It will be close to impossible to reduce leverage from collateral diversification to zero, because of managerial incentives. **Firms are institutions that work this way, and managers are subject to their incentives.**
- The policy part: As a result, an optimal firm decision will generate a poorly sustainable leverage at the macro level. **Bailouts, in a crisis, however, are limited, and if done, they come with exorbitant costs..** (See yesterday's NY Sunday Times interview with Tim Geithner.)
- The suggestion: Make a legal adjustment from plain deposits to CoCo deposits linked to aggregate economic indicators.
- **Advantage: bridges the Townsend (1979) micro view in line with policy options.**
- More ideas/extensions (next page)

Extensions/Ideas for the “next paper”?

- A good paper has three qualities:
 - ① Great topic
 - ② Well matching methodology / supporting theory
 - ③ Convincing execution.
- What's left?
- Some links perhaps to make the reader understand why it is different from other explanations? (e.g. Illiquidity and all its friends, Inside and Outside Liquidity)..
- Or a new paper: why does it differ from the old setup in Townsend (1979)?