

# Comments on Jean-Edouard Colliard: “Rational Blinders”

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# Overview

- Paper tackles an important and timely topic.
- Reasonable and parsimonious modeling framework.
- Some interesting & provocative results
- Hard to interpret the relevance of these results because paper does not present full model solutions



# The Issue

- Banks have the ability under Basel rules to use internal models to determine the amount of capital they must hold.
- Banks almost certainly have better information than regulators on their “true” risks, and how the true risks relate to the risk reported by the models.
- Will banks exploit this information advantage to use models that understate risks in order to achieve greater leverage?



# The Model: Agents and Assets

- Borrowers who finance risky projects: they can default.
- Investors with access to a safe asset who can also invest in intermediaries.
- Limited liability intermediaries endowed with capital who can borrow from investors and lend to borrowers.
- Investor-Intermediary contracts non-contingent.
- Benevolent regulator.



# The Model: Models

- $F(t, \sigma)$  is a cumulative probability that fraction  $t$  of loans will default.  $\sigma$  indexes model optimism.
- Monotone likelihood ratio property.
- $\sigma$  drawn from a distribution.
- Bank knows true value of  $\sigma$  but the regulator just knows the distribution.



# The Model: Timing

- Regulator specifies function that makes capital requirement contingent on bank's announcement of  $\sigma$ .
- $\sigma$  drawn from its distribution. Bank reports  $\sigma'$  to the regulator.
- Loan and deposit interest rates, and borrowing and lending are determined in competitive equilibrium.
- Some borrowers default.



# Two Policy Tools

- Paper explores two policy tools: capital requirements and ex post monitoring of model based on performance.
- Second model is a mechanism design in which there are transfers from/to bank contingent on realized default experience compared to model predictions.



# Capital Requirement

- In equilibrium a fraction of intermediaries choose the most optimistic model and maximum leverage: others invest in safe asset.
- The greater the demand for loans, the more banks choose maximum leverage/optimistic model.
- Since regulator can't distinguish between models, it imposes identical capital requirement on all banks using models.





# Capital Requirement II

- One of the main results of the paper is that tightening capital requirements can lead to more bank failures in equilibrium.
- If loan demand very inelastic, tighter capital requirement  $\rightarrow$  greater margin on loans  $\rightarrow$  more banks choose to enter risky lending.
- Result depends on fraction of risky lenders being “small enough”: will this happen in equilibrium?



# Capital Requirement III

- Regulator is benevolent, so amount of defaults is constrained optimal: regulator never tightens too much. Is the point that real world regulators are flawed and may over-tighten?
- The relevant issue is the loss from information asymmetry, and how this varies with demand parameters.



# Capital Requirement IV

- What is the value of increased regulatory precision (i.e., narrower range of models) and how does this vary with level and elasticity of demand?
- It's unclear whether model can answer these questions as currently constituted but a modest change might permit it: let support of the regulator's distribution be centered  $\pm h$  around true risk parameter.



# Backtesting

- Transfers between bank and regulator conditional on model performance. Also capital requirements: regulator has more tools
- IC, IR, LL constraints.
- Most potentially interesting part of the paper, but the weakest: need to solve the program, but don't.
- Impose binding IR constraint: is this optimal? Why not leave rents with banks?



# Backtesting II

- Interesting but unexplored question: what is the value of backtesting vs. a system in which the regulator only can utilize capital requirements?
- What drives the value of backtesting? Accuracy of backtest (e.g., the level at which the model is “distinguishable from above)?



# Backtesting III

- Paper worries about the credibility of transfer schedules that require payments to bankrupt banks.
- Isn't the real problem the credibility of promises not to bail out the bankrupt?
- In the model, adding a  $T \geq 0$  constraint must reduce welfare. There is a benefit to bailouts here. How big is it? What drives it?
- Addressing these issues requires solving the entire program. Paper doesn't do that, meaning it falls short of its potential



# What's the Alternative?

- The paper focuses on the potential costs of allowing banks to choose models.
- Are standard models a better alternative?
- Doesn't eliminate gaming the models: better-informed banks load up on the risks the model underestimates.
- This leads to crowded trades, which can create systemic risks.

