

# On Moral Hazard and Macroeconomics

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"A model of moral-hazard credit cycles" Journal of Political Economy 120(5):847-878 (2012).

"On Keynes and the theory of banking" (2010 blog)

<http://econciv.wordpress.com/2010/12/14/on-keynes-and-the-theory-of-banking/>

These notes:

[http://home.uchicago.edu/~rmyerson/research/mhazmacro\\_uc.pdf](http://home.uchicago.edu/~rmyerson/research/mhazmacro_uc.pdf)

# Introduction

Macroeconomists have learned much since 1929, and with this understanding they have made the world better today. But the financial crisis of 2008 and its aftermath have shown that economists still need to learn more.

I'd suggest we may look to game theory and information economics, particularly to the theory of moral-hazard agency problems, for much of the new understanding that is needed.

A loss of confidence in banks precipitated the economic crisis of 2008. So why did American economic policy in 2009 focus on a stimulus to increase aggregate demand instead of financial regulatory reform? Before game theory, it was hard for economists to bring regulatory rules and informational differences into their analytical framework. This conceptual bias led early macroeconomists to focus more on price-theoretic constructs like aggregate demand and interest rates.

## A *General Theory* without bank failures or credit rationing

Much of macroeconomic theory follows from or responds to Keynes's *General Theory of Employment, Interest and Money* (1936).

But the *General Theory* discusses of saving and investment at length without seriously considering financial intermediation or bank failures.

His *General Theory* even ignores his own observations on how monetary policy can affect aggregate investment without changing interest rates.

*"There is normally a fringe of unsatisfied borrowers to whom a bank would be quite ready to lend if it were to find itself in a position to lend more. The existence of this unsatisfied fringe allows the Banking System a means of influencing the rate of investment supplementary to the mere changes in the short-term rate of interest."* Keynes, *Treatise on Money*, 1930.

Why did he omit this vital observation from his "General Theory"?  
Such credit rationing may have seemed theoretically indefensible in 1936...

## Credit rationing from moral hazard

Credit rationing may have seemed theoretically indefensible in 1936, but 35 years later, Stiglitz and Weiss (1981) derived it from *moral hazard* and *adverse selection* in finance.

When an entrepreneur borrows from a bank to finance a new venture, the probability of its success may depend on entrepreneurial efforts that a bank cannot directly monitor.

To motivate such hidden efforts, the borrower must anticipate substantial profit from his venture's success (*moral hazard rents*).

This need to let borrowers keep enough profit from their success can impose an upper bound on the interest rate that banks can charge.

So interest rates might not rise even when qualified eager borrowers cannot find funds.

## The vital role of information economics

Problems of getting people to choose hidden actions appropriately are called **moral hazard**.

Problems of getting people to share hidden information honestly are called **adverse selection**.

Such problems of agents having different information are analyzed by modern **information economics**, which first developed in 1970s, building on advances in **game theory**.

Banks and other financial intermediaries earn profits by having better information about investments than their depositors, so a theory of banking depends on information economics.

*"Twenty years ago, there was no microeconomic theory of banking, for the simple reason that the general equilibrium model was unable to explain the role of banks. Since then, a new asymmetric-information paradigm has emerged that has been useful in explaining the role of banks and pointing out weaknesses of the banking sector."*

X. Freixas, J.-C. Rochet (1997)

## Focusing on moral hazard in financial intermediation

Moral hazard in financial intermediation has an essential fundamental role at the heart of any capitalist economy.

Problems of moral hazard in banking were evident at many stages of the recent financial crisis.

A successful economy requires industrial concentrations of capital that are vastly larger than any typical individual's wealth.

The mass of small investors must rely on specialists to do the work of identifying good investment opportunities.

Individuals who hold such financial power may be tempted to abuse it for their own personal profit.

Bankers and other financial intermediaries borrow much of what they invest, but their incentives to invest well depend on their having a stake in the profits of their investments (bank capital).

*When bank capital is too small, abuse of trust can be profitable.*

## Can moral hazard in banking cause recessions?

In "Moral-hazard credit cycles," I show how macroeconomic fluctuations can be driven by moral hazard in financial intermediation.

I assume investors can find good investments only through bankers, who may be tempted to divert funds to their cronies' bad investments.

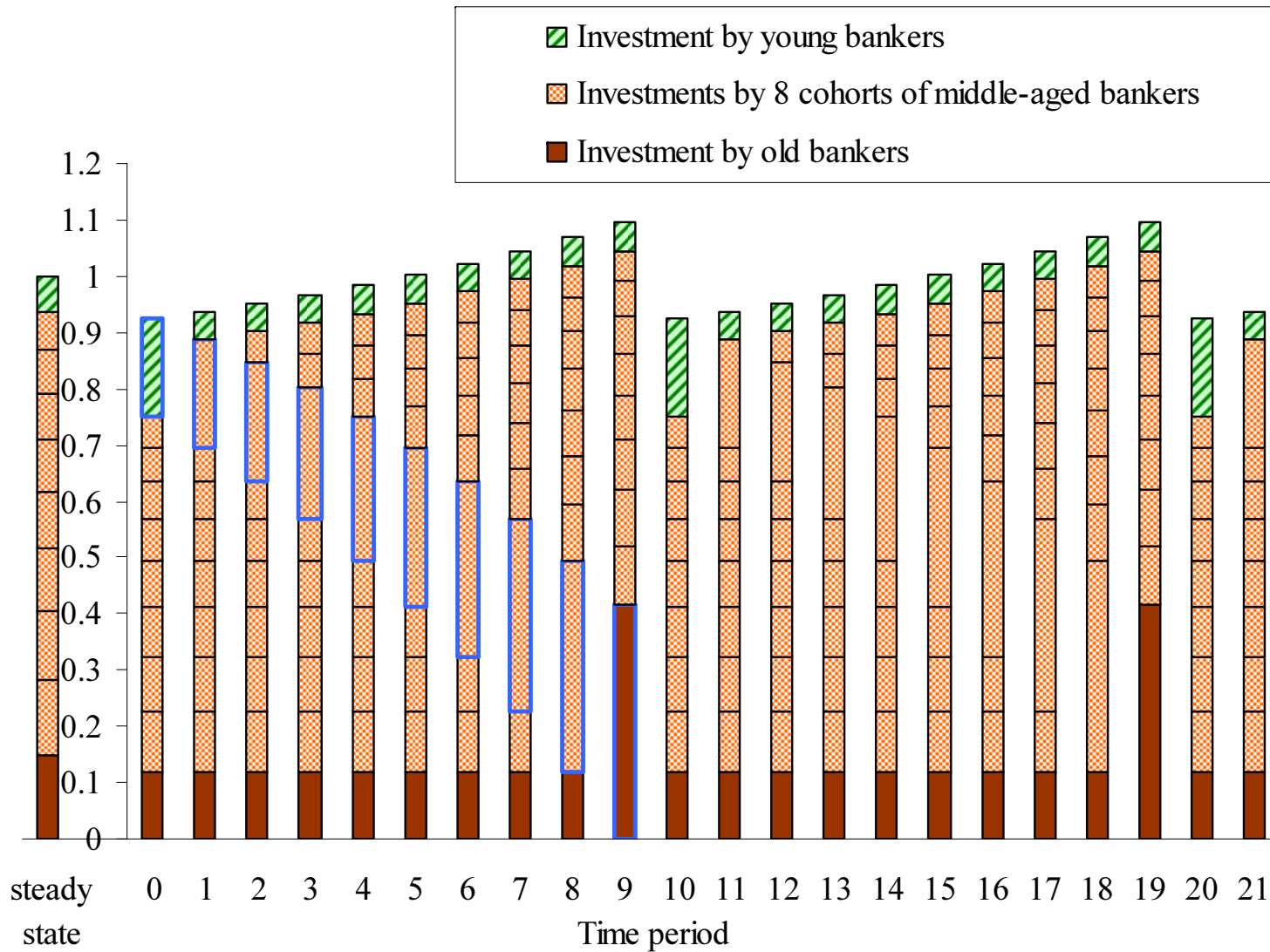
Such behavior is efficiently deterred by promising big late-career rewards for bankers who consistently deliver successful investments.

The promise of one big bonus at the end can motivate good behavior throughout an agent's career!

**This need to invest through intermediaries who have long-term career incentive plans can create complex macroeconomic dynamics.**

When there is a shortage of trusted financial intermediaries, aggregate investment is reduced, and employment may suffer; but then increased recruiting of young bankers can create a future surplus, as their responsibilities will grow until retirement under efficient incentive plans.

*The result can be a cycle of booms and recessions.*



Investment amounts handled by different cohorts of bankers with 10-period careers, starting at time 1 with bankers investing only 80% of steady-state amounts.

(Parameters:  $n=10$ ,  $\rho=0.1$ ,  $M=0.33$ ,  $A=0.36$ ,  $b=0.327$ )



## Conclusion: incorporating finance into macroeconomics

Paul Krugman's view of what economists have to do:

*"First, they have to face up to the inconvenient reality that financial markets fall far short of perfection, that they are subject to extraordinary delusions and madness of crowds.*

*Second, they have to admit that Keynesian economics remains the best framework we have for making sense of recessions and depressions.*

*Third, they'll have to do their best to incorporate the realities of finance into macroeconomics."*

Paul Krugman, NYTimes, 6 Sept 2009

I agree strongly with Krugman's third point, that **economists need to incorporate finance into macroeconomic theory.**

But we are unlikely to do this by using an old Keynesian theory that was developed when economists had no analytical models of banking or financial markets.

## Conclusion: applying information economics in macro

In Keynes' day, differences among traders' information were "market imperfections," but now economists regularly analyze problems of trust among people with different information.

In particular, when information is costly, members of a crowd may rationally choose to rely on the expertise of others, whose temptation to mislead must be countered by greater long-run rewards from maintaining a good reputation.

A collapse in the supply of such good reputations would indeed be a crisis.