Financial Crises

Why They Occur, What to Do about Them, and Implications for the Investment Market

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- current financial crisis only latest in long sequence
- history of financial crises goes back hundreds of years
- probably crises will continue in future
  - each crisis somewhat different from predecessors
  - even if we fix mortgage loan market in U.S. (where current crisis started), something new will happen
  - even if anticipated, not all crisis may be preventable
- however, can devise mechanisms to *limit* crises

Today's topics

- Why do credit and investment markets have repeated crises and other markets do not?
- Why do credit and investment markets require substantial *ex post* intervention (and others do not)?
- What can be done *ex ante* to prevent/limit crises?

Speak from perspective of theory of *mechanism design*

- theory shows how to reconcile conflicts between goals of private individuals/institutions and goals of society
- done through changing *incentives* of individuals and institutions
  - e.g. through taxes, subsidies, and regulations

To understand what caused current crisis (and others like it) should first eliminate factors that were *not* primary causes

- irrationality
  - on part of bankers
  - on part of investors
  - on part of borrowers
- panic
- greed
- unethical behavior
- overconsumption in U.S./ oversaving in China
- opaque derivatives
- bankers' bonuses
- banks too big to fail

Why are credit and investment markets different?

(1) credit and investment *lifeblood* of economy

- if crisis in market for potatoes, won’t bring down market for automobiles
- if credit market doesn’t work, enterprises in *all* markets will have trouble meeting payrolls and paying for inputs
- if investment market doesn’t work, economy will stagnate - - no innovation

Why are credit and investment markets different?

(2) small shock to credit or investment markets often *magnified*

- if some potato growers fail, won't cause other growers to fail
- if some banks fail, may well cause other banks to go under
- if some hedge funds get into trouble, others may get into trouble too

Why are credit and investment markets different?

(3) credit and investment markets not *self-correcting*

- if some potato growers fail, others will step into breach no outside intervention needed
- if some banks fail, credit market can get "stuck" - - no banks willing to lend
- similarly, with investment market

Elaboration on points 2 and 3

- Suppose lack of rain wipes out potato crop near Edinburgh
- What will happen?
  - immediate effect is fall in overall potato output
  - but demand hasn’t changed - - fewer potatoes to go around
  - so price of potatoes *bid up*
  - induces other potato suppliers near Cornwall to grow and sell *more*

- So potato market “self-correcting”
  - crop failure hurts consumers in short run - - higher prices
  - but high prices induce suppliers to expand output
  - so effect of drought *mitigated* in long run
- Government intervention not needed
- Government interference in potato market likely to make things worse
- Suppose puts cap on potato price
  - discourages expansion of output that can make up for crop failure
  - this creates potato shortage or black market in potatoes

Credit and investment markets just the opposite

- Suppose a few banks get into trouble
  - made risky subprime mortgage loans
  - borrowers can’t repay loans
  - banks highly leveraged – don’t have enough capital to maintain other operations
- these banks have *other* borrowers
  - have to call loans in on these borrowers
  - so borrowers have to scale back activities that depended on these loans
  - thus will have harder time repaying loans from other *banks*

Credit and investment markets just the opposite

- so these other banks now get into trouble
  - have to call in loans from *their* borrowers
  - refuse to make new loans
- what started as *local* problem (subprime mortgage lending) spreads to *entire* credit market (systemic risk)
- initial problem *not* self-correcting (as in potato market)
  - gets *aggravated*
  - end up with *credit crunch*
  - not due to *panic*, but to *rational* responses by bankers and borrowers

- in economics terminology, bank exerts *externality* on other banks by being highly leveraged and making risky loans
  - externality: effect your actions have on others that you don’t take into account
  - when bank highly leveraged and makes risky loans, puts other banks in jeopardy
  - but doesn’t factor this effect in when leverages itself and makes loans (not harmed by it)
  - not *irrational* or *unethical* or overly *greedy*

- similar problem with investment/money-management market
- in recent years, investment increasingly *professionalized*
  - investment in stock market not made by *individuals*
  - but, by money managers (e.g., hedge funds)
- this has reduced investment *irrationality*
- but also created some *problems*

- hedge funds and other investment firms often *highly leveraged*
- for each investment firm, rational to be leveraged
  - get higher returns
- however, leveraged investment firm imposes externality on other firms (just as leveraged banks impose externality on other banks)
- markets with significant externalities often don't work well on own
  - take clean air, for example

- Why isn’t there a market for clean air?
- in fact, there *is* such a market, but so limited we hardly see it
- suppose laundry next door to steel plant
  - smoke from steel plant interferes with laundry
  - laundry may offer to pay steel plant to reduce smoke (so market for smoke reduction exists)
  - but smoke doesn’t just affect laundry - - affects many other enterprises
  - by paying for reduction, laundry confers benefit on other enterprises (externality)
  - laundry doesn’t take this into account
  - so likely to *underpay* for reduction - - end up with too much smoke
- corrective mechanism: government imposes cap or fine on smoke emissions by steel plant

- for credit/investment markets, end up with too much leverage and too much risk
- chance of severe crisis too big
- Need *two* corrective mechanisms
  - *ex post* : *after* banks and investment firms get into trouble
  - *ex ante* : to prevent crisis in *first* place

Ex post mechanism:

If some banks or investment firms get into trouble,

- government can bail them out
  - infuse with capital so can continue to operate
  - or buy up their loans/investments
- but bailout important primarily for *other* banks or investment firms that would be hurt if bailed-out institutions failed

Bailout policy insufficient by itself

- unless occurs immediately, disruption to lending/investing
  - costly for economy
- so also need *ex ante* mechanism :

  regulation
  - constraints on what banks and investment firms can do

Reason why regulation needed

- bank or investment firms ignores externality imposed on other institutions by risky loans/investments and leverage - - undervalues cost of these loans/investments and leverage for other institutions

Principal forms of regulation

- limits on leverage/capital requirements
  - given lending/investment, need minimum capital level
  - limiting leverage limits bank's or investment firm's liquidity
  - Obama Administration has proposed such limits
- minimum standards for loans
  - borrowers must be sufficiently creditworthy
  - Federal Reserve has power to impose standards (but failed to do so)

- restrictions on derivatives/securities
  - derivatives allow risks to be shared with others
  - risk-sharing useful
  - however, encourages riskier lending/investment
  - so, because of externality, should restrict derivative trading
- don’t allow same risk to be hedged multiple times

  (as in credit default swaps)

- correct incentives of rating agencies
  - need rating agencies
  - too costly to have each investor evaluate securities/derivatives on own
  - agencies should not be paid directly by parties whose securities they rate
  - instead could be financed from a fund paid into by these parties
  - track record of agencies should be publicized

    (reputational mechanism)

- regulation of bankers' bonuses
  - many complaints about these bonuses
  - however, bonuses *per se* not problem
  - problem : rewarding bankers for success without punishing failure – encourages overly risky lending, which with leverage, imposes negative externality
  - solution : bankers should return bonuses (or suffer other punishment) if loans fail
  - Obama Administration recently proposed tax on bonuses

    will not solve problem/done out of fairness

    banks will simply raise bonuses/pass cost on to shareholders

    does not address question of *when* bonuses awarded

- regulating size of banks
  - problem with big banks *not* too big too fail
  - several small banks failing has same effect as one big bank failing
- problem with big banks : because of externality
  - bank takes too much risk
  - in particular, doesn’t *diversify* sufficiently
  - so too likely to fail
  - small banks also too likely to fail
  - but several small banks less likely all to fail than one big bank, because each does something different (though perhaps not *very* different)

- have argued that can understand financial crises without invoking
  - irrationality
  - panic
  - greed
  - lack of ethics
  - opaqueness of derivatives
  - bonuses
  - too big to fail
- crises brought on by externality created by
  - risk-taking
  - leverage
- corrective mechanisms
  - bailouts
  - regulation

- Well-designed regulation/bailout package
  - can prevent many crises from getting started - - rules against subprime loans would have prevented this one
  - can resolve them if do occur
  - historically, regulation worked from 1940~1980
- Can’t hope to prevent credit crises completely and still allow for creativity
  - can’t anticipate all possible innovations by banks and money managers
  - so can’t have rules that prevent only harmful innovations
- But can do a lot better than we’ve done this time