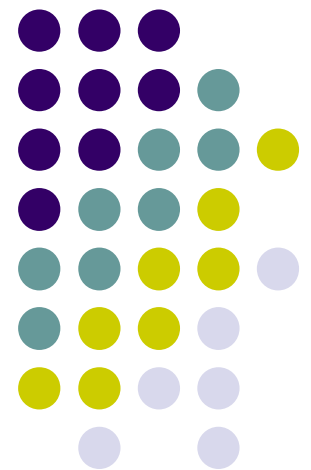
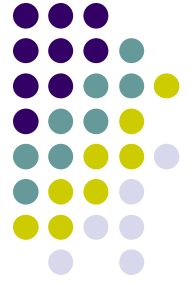


Teaching the Recession

Prof. Henry Chappell
University of South Carolina





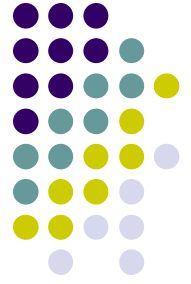
Teaching Contributions

- Organization and Content
 - Paper
 - Recession chronology
 - Glossary
 - Online lecture
 - More?

Introduction

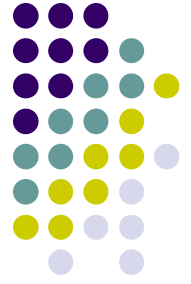


- Motivation!
 - Relevance of macroeconomic theory
 - Difficulty in teaching macroeconomic theory
 - Lagging coverage in textbooks



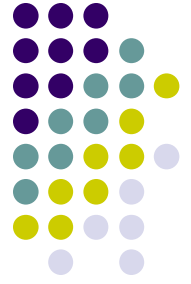
What Causes Recessions?

- Shocks to:
 - Productivity
 - Money supply and demand
 - Government spending
 - Taxes
 - Expectations
 - Wealth
 - Animal spirits



What About These?

- Are these important?
 - Housing market bubble
 - Mortgage defaults
 - Banking panics
 - Asymmetric information
 - Moral hazard



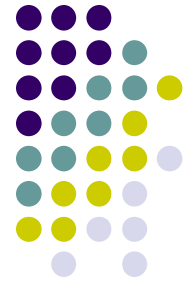
And What are These?

- Hedge funds
- The shadow banking system
- Subprime mortgages
- Securitization
- Collateralized debt obligations
- Credit default swaps
- Structured investment vehicles



Paper Content

- Recession Facts
 - What's Up? What's Down?
- Review of Theory
 - Classical
 - Keynesian
- Recession Causes I
 - Textbook Shocks?
- Housing: Bubble and Panic
 - Mortgage Market Institutions
 - Chronology of Events
- Institutional Failure
 - Principal-Agent Problems
 - Moral Hazard
 - Asymmetric Information
 - Bank Runs
- Recession Causes II
 - Animal Spirits
 - Financial Market Supply Shock
- Policy Responses
 - Ordinary Fiscal and Monetary Policies
 - Monetary Policy under Zero Interest Rates
 - Extraordinary Policy Responses (Bailouts)
 - Evaluation of Policy Responses

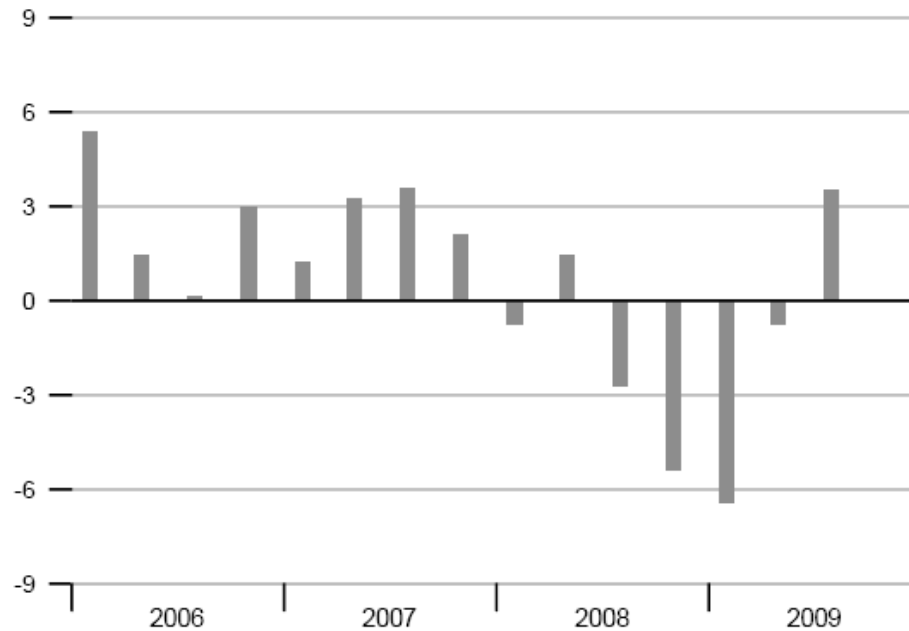


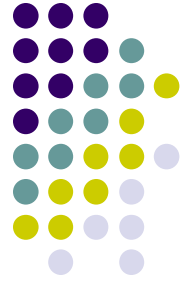
Recession Facts

- See the paper for more!

Real GDP Growth

Compounded annual rates of change

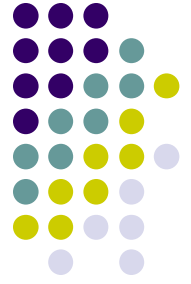




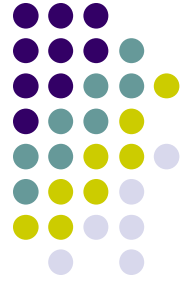
Overview of Theory

- Basics of the Textbook Theory
 - The model has three sectors
 - Supply side
 - Goods market
 - Money market
 - Consider two theoretical perspectives
 - Keynesian
 - Classical
 - We employ the IS-LM AD-AS framework

Classical vs. Keynesian Theories

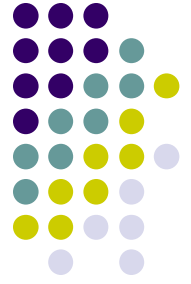


- In the Classical view, business cycle fluctuations arise on the supply side
 - Productivity shocks are the source of most cyclical movements
- In the Keynesian view cycles can result from:
 - Changes in monetary and fiscal policies
 - Instability of private sector spending



Shocks Causing Cycles

- A list of possible shocks:
 - Technology shocks and related expectations
 - Oil prices
 - Institutional change
 - Government spending
 - Taxation
 - Money growth and interest rates
 - Money demand shocks
 - Animal spirits



Shocks Causing Cycles

- A list of possible shocks:
 - Technology shocks and related expectations
 - Oil prices
 - Institutional change
 - Government spending
 - Taxation
 - Money growth and interest rates
 - Money demand shocks
 - Animal spirits

Table 1

- Please see Table 1

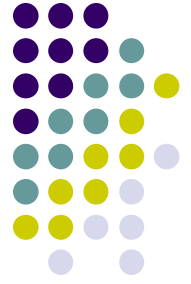
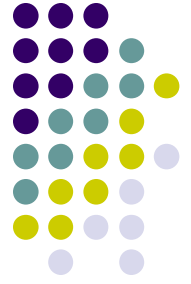


Table 1. Shocks that Can Cause Fluctuations

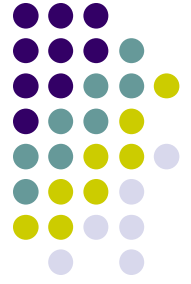
<i>Source of Shock</i>	<i>Impacts</i>	<i>Current Recession</i>
Productivity	A productivity (technology) shock directly affects output by shifting the production function and the FE curve.	Although technology in the usual interpretation has not regressed, real disruption in the financial services sector might be modeled as a productivity shock.
Price of oil	Oil does not directly enter the model, but a higher oil price, reflecting increased oil scarcity, reduces the output that can be produced from given labor and capital inputs. This can be modeled as a negative productivity shock.	There was an oil price run-up prior to the recession; however, the price quickly fell to a much lower level.
Wealth	In the Keynesian model, an increase in wealth, or expected future income, can increase aggregate demand and output. In the classical model wealth is a result of permanent productivity shifts and capital accumulation over time (it is a consequence of shocks, but not a shock in and of itself).	Increased housing wealth may have sustained high spending prior to the recession; decreased wealth in housing and the stock market probably contributed to the downturn.
Animal Spirits	In the Keynesian model, waves of optimism or pessimism about future income or profits can affect current consumption and investment and, as a result, aggregate demand.	One might explain the housing bubble and bust and related spending effects as consequences of changes in animal spirits.
Government Spending	In the classical model, higher government spending can have wealth effects, affecting labor supply and output. In the Keynesian theory, government spending affects output by adding to aggregate demand.	There were no major spending shifts prior to the recession. There have been spending changes in response to the recession.

Taxes	In the classical model, with Ricardian equivalence, an increase lump-sum taxes has no impacts. In the Keynesian model, higher taxes reduce desired spending.	There were no major tax policy shifts prior to the recession. There have been some tax cuts in response to the recession.
Money Supply	In the classical model, an increase in the money supply does not affect output, but does affect the price level. In the Keynesian model an increase in the money supply lowers the interest rate and increases aggregate demand and output.	Contractionary monetary policy was not a cause of the recession. Some have argued that excessively easy monetary policy might have played a role in the boom phase of the housing bubble. In response to the recession, monetary policy is expansionary.
Money Demand	In the classical model, an exogenous increase in money demand only affects the price level. In the Keynesian model, an increase in money demand increases the interest rate and reduces aggregate demand and output.	There were no changes in basic money holding preferences or transactions technologies that caused the recession. However, see the next entry.
Increased Riskiness of Non-money Assets	Increased risk associated with non-money assets will increase the demand for money, increasing the rate of interest and reducing AD and output.	Non-money assets did become riskier as the panic developed, and, this may have increased money demand.



Housing Markets

- Institutions and History
 - “Old-fashioned mortgages”
 - Securitization
 - Slicing and dicing: CDOs
 - Boom and Bust
 - Leverage and the Shadow Banking System



Panic!

- What Happened and When? See Table 2.
 - Home prices peak in 2006
 - Premonitions: UBS, Bear-Stearns, BNP Paribas, Countrywide, Northern Rock
 - Bear bailout
 - Fannie and Freddie in trouble
 - **Lehman bankruptcy!**
 - AIG, WaMu, Wachovia follow quickly
 - Treasury buys equity in 9 big banks
 - Dow drops below 8000 after peaking at 14000.

Table 2. Recession Chronology

8/1/2006	Housing prices peak (according to the Case-Schiller National Index) and begin to fall.
5/3/2007	UBS (UBS), a Swiss bank, announced it was shutting down its Dillon Read Capital Management hedge fund. The fund lost \$123 million related to U.S. subprime mortgage market investments.
6/22/2007	Bear Stearns announced that it had pledged a loan of up to \$3.2 billion to “bail out” one of its own hedge funds was negotiating loans with banks for another fund. The funds had invested in collateralized debt obligations (CDOs) backed by subprime mortgages. By July, the two funds had lost almost all of their value. Bear losses would produce a crisis in March 2008 (see later entries) and a subsequent takeover by J.P. Morgan Chase.
6/2008	Price of oil rises to \$134 per barrel, double what it had been a year earlier.
8/9/2007	BNP Paribas, a French banking company, announced that it could not fairly value the underlying assets in three funds as a result of exposure to U.S. subprime mortgages. It suspended withdrawals from the three funds.
8/16/2007	Countrywide Financial “expressed concerns” over liquidity because of uncertainty in the secondary market for securitized mortgage obligations. Depositors fled and share prices fell. Later (1/11/2008) Countrywide was purchased by Bank of America.
9/14/2007	Northern Rock PLC, a British bank, sought and received liquidity support facility from the Bank of England, following “problems” in the credit markets and a run on deposits. In February 2008 the bank was, at least temporarily, nationalized.
9/18/07	The Fed begins rate cuts with a move in target Federal Funds rate from 5.25 to 4.75.

12/12/2007	<p>The Term Auction Facility (TAF) was created by the Federal Reserve.</p> <p>Under TAF the Fed auctions collateralized loans with terms of 28 and 84 days to depository institutions. The program was motivated by a desire to reduce the spread between interest rates on overnight and longer term lending rates.</p> <p>The FOMC also authorized arrangements (swap lines) with the European Central Bank (ECB) and the Swiss National Bank (SNB) so that these banks could expand lending of dollars in Europe as needed.</p>
1/11/2008	<p>Bank of America announced it had agreed to buy Countrywide for \$4 billion in an all-stock transaction.</p>
3/10/2008	<p>Moody's Investors Service downgraded debt issued by a Bear Stearns fund. Rumors began to circulate in the market that there were "liquidity problems."</p> <p>Wessel (2009, Kindle Location 2827) says: "The problems were the ones that would recur throughout the Great Panic: credit and collateral. Commercial banks use deposits, insured by the government, so they aren't wholly reliant on short-term borrowing. Investment banks like Bear Stearns hadn't any deposits, so they were reliant on borrowing in the markets, often overnight."</p>
3/11/2008	<p>The Term Securities Lending Facility (TSLF) was announced. Under this program, the Fed would accept up to \$200 billion worth of mortgage-backed securities and exchange them for U.S. Treasury bills for up to twenty-eight days.</p>
3/14/2008	<p>J.P. Morgan Chase, in conjunction with the Federal Reserve Bank of New York, agreed to provide an emergency loan, up to 28 days, to Bear Stearns.</p>
3/16/2008	<p>Bear Stearns signed a merger agreement with JP Morgan Chase in a stock swap worth \$2 a share (less than 10 percent of Bear Stearns' market value just two days before).</p>
3/24/2008	<p>A new agreement was reached that raised JPMorgan Chase's offer to \$10 a share, up from the initial \$2 offer. On May 29, Bear Stearns shareholders approved the sale to JPMorgan Chase at the \$10-per-share price.</p>

7/1/2008	On July 1, 2008, Bank of America Corporation completed its purchase of Countrywide Financial Corporation.
7/2008	Losses on mortgage portfolios mounted for the GSEs, Fannie Mae and Freddie Mac. The Fed granting Fannie and Freddie access to Federal Reserve low-interest loans. Despite these efforts, by August 2008, share prices for both Fannie Mae and Freddie Mac had fallen 90% from year-earlier levels.
7/24/2008	The Housing and Economic Recovery Act of 2008 was passed by the Congress and subsequently signed into law by President Bush (on July 30). The act created the FHFA (The Federal Housing Finance Agency) with expanded regulatory authority over Fannie Mae and Freddie Mac.
9/7/2008	On September 7, 2008, the FHFA placed Fannie Mae and Freddie Mac into conservatorship. A conservatorship is akin to “temporary” nationalization. Many had always perceived that Fannie and Freddie obligations were government-guaranteed; this legislation made this explicit.
9/11/2008	AIG (American International Group) CEO, Robert Willumstad, notifies New York Fed President Timothy Geithner that the company was having difficulty obtaining short-term loans.
9/15/2008	Lehman Brothers declares bankruptcy. In 2008, Lehman faced losses from large positions in subprime and other lower-rated mortgage tranches. In contrast to the Bear Stearns event, government did not step in with a rescue when possible private takeovers fell through. Wessel (2009) attributes this, in part, to seeming intransigence from Treasury Secretary Henry Paulson.

9/16/2008	<p>The Fed bails out AIG for 85 billion dollars.</p> <p>AIG's losses had stemmed from its sales of credit default swaps (“insuring” collateralized debt obligations that had by that time declined in value). The proximate crisis occurred when AIG’s credit rating was downgraded and the company was required to post additional collateral with its trading counter-parties. This led to a liquidity crisis.</p> <p>The Fed announced the creation of a secured credit facility of up to \$85 billion to enable enabling AIG to make payments or post collateral related to credit default obligation transactions. The government received warrants (options to buy) for a 79.9 percent equity stake in AIG. The credit facility was created under the auspices of Section 13(3) of the Federal Reserve Act.</p>
9/25/2008	<p>After a bank run in which Washington Mutual (WaMu) lost 9% of its deposits in ten days, the Federal Office of Thrift Supervision seized the bank and placed it into receivership of the Federal Deposit Insurance Corporation (FDIC). Its assets were sold to J.P. Morgan Chase. This was the largest bank failure in U.S. History.</p>
9/29/09	<p>Wachovia is the next to go. On 9/26 several businesses and institutional depositors withdrew money from their accounts in order to drop their balances below the \$100,000 insured by the FDIC (a silent run). Wachovia began talks with Citigroup and Wells Fargo. The FDIC decided to sell Wachovia's banking operations to Citigroup, and offered to absorb Citigroup’s losses above \$42 billion.</p>
10/3/2008	<p>Although Citigroup was providing the liquidity that allowed Wachovia to continue to operate, Wells Fargo and Wachovia announced on October 3, 2008 they had agreed to merge in an all-stock transaction requiring no FDIC involvement. On October 9, 2008, Citigroup abandoned their attempt to purchase Wachovia's assets, allowing the Wachovia-Wells Fargo merger to go through without any government guarantees.</p>
10/3/2008	<p>The Emergency Economic Stabilization Act of 2008 Enacted</p> <p>This legislation established TARP (Troubled Asset Relief Program), to be administered by the department of the Treasury. The program was initially announced as a plan to purchase troubled assets. However, later the funds were instead used to purchase equity in major banks (see 10/13/2008)</p>

10/13/2008	Paulson met with the heads of the nation's nine largest banks. Under pressure from the government, the banks agreed that the Treasury would buy stakes in nine major banks as a start. The goal was to inject \$250 billion into those banks and others to ease the credit crunch. This amounted to a revision of the TARP program, with the government buying shares in banks rather than directly buying troubled assets.
10/27/2008	The Commercial Paper Funding Facility was created as a special purpose vehicle (SPV) to permit the Fed to lend (indirectly) to a variety of companies. Permitted the SPV to purchase 3-month unsecured and asset-backed commercial paper.
11/20/2008	Oil price falls under \$50 a barrel for the first time in three and half years
11/25/2008	The Term Asset-Backed Securities Loan Facility (TALF) was created. The Treasury agreed to provide \$20 billion from TARP and the Fed contributed \$180 billion. This fund would be used to make loans collateralized by securities backed by student loans, auto loans, credit card loans, and loans guaranteed by the Small Business Administration.
11/10/23008	On November 10, 2008, the U.S. Treasury announced it would purchase \$40 billion in newly issued AIG senior preferred stock, under the authority of the Emergency Economic Stabilization Act's Troubled Asset Relief Program.
12/16/2008	The Fed cuts Federal funds rate to a range of 0-0.25 per cent.
12/19/2008	The White House agrees to 17.5-billion-dollar bail-out for US carmakers General Motors and Chrysler under TARP.
1/1/2009	Bank of America closes its deal to purchase Merrill Lynch. Shortly after, BofA received additional government funded loans.
1/20/2009	Barack Obama inaugurated.
1/28/2009	An FOMC policy directive reports that "The Committee anticipates that weak economic conditions are likely to warrant exceptionally low levels of the federal funds rate for some time."
2/17/2009	President Obama signs \$787 billion economic stimulus plan (the American Recovery and Reinvestment Act of 2009).

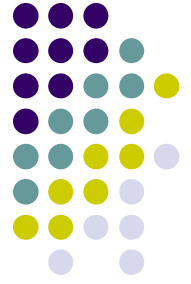
2/27/2009	Announcement: The U.S. economy shrank 6.2 percent (later revised) in fourth quarter of 2008.
3/2009	In March 2009, AIG announced that they were paying out \$165 million in executive bonuses.
3/23/2009	<p>The U.S. unveils a trillion-dollar “Public-Private” plan to take toxic assets out of banks. From the Treasury website:</p> <p>Using \$75 to \$100 billion in TARP capital and capital from private investors, the Public-Private Investment Program will generate \$500 billion in purchasing power to buy legacy assets – with the potential to expand to \$1 trillion over time.</p> <p>Source: http://www.treasury.gov/press/releases/tg65.htm</p>
5/7/2009	Results of bank “stress tests” undertaken by the Federal Reserve and other regulators were announced. Although tests showed capital deficiency for some large banks, the results were primarily viewed as being better than expected.



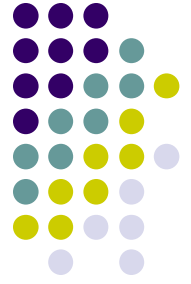
Institutional Failure

- Why the breakdown?
 - Principle-agent problems
 - Moral hazard problems
 - Asymmetric information
 - Bank runs (and non-bank runs)
 - Political support for housing
 - Bad monetary policy
 - Greed?

Shocks Causing Cycles II



- Animal spirits
- A financial markets supply shock



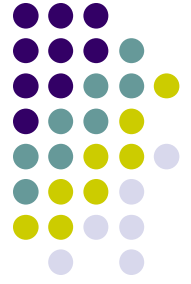
A Supply Shock?

- How can financial market events be interpreted as a supply shock?
 - Efficient financial markets support higher output and productivity.
 - A “trust break-down” reduces aggregate output.
 - Asymmetric information: financial market “lemons.”



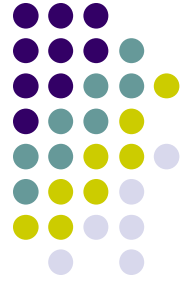
Evans on Supply Shocks

- Charles Evans says:
 - “A financial market shock may have some characteristics of a DSGE TFP shock: The cost of producing an intermediate input—credit intermediation—has become more expensive.”
 - “Can markets easily work around the disruptions to the credit intermediation process that channels funds from savers to borrowers? Or have we experienced a permanent destruction in something we might want to think about as the financial sector capital stock?”



The Correct Theory?

- Which theory best accounts for the recession?
 - An excellent unanswered question



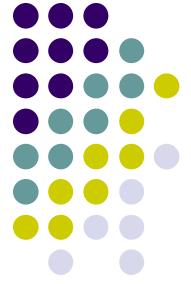
Policy Responses

- Types of Responses
 - Ordinary fiscal and monetary policies
 - Monetary policy in a zero-interest rate environment
 - Financial sector bailouts
 - Regulatory reform



Fiscal Policy Actions

- American Recovery and Reinvestment Act of 2009
 - Stimulus: Spending increases and tax cuts valued at \$787 billion.
- Cash for Clunkers
 - Inefficient and inequitable?



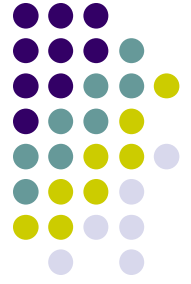
Deficits and Debt

- Debt facts
 - Deficits are high.
 - The U.S. debt-to-GDP ratio is high, but probably not yet crisis-inducing.
 - There is no free lunch.

Conventional Monetary Policy



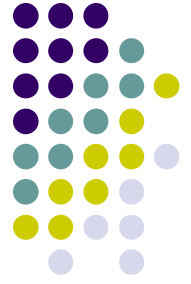
- Recession Policy Prescription:
 - Increase the money supply while lowering the Federal funds rate.
 - The funds rate is near-zero.



Is the Fed Guilty?

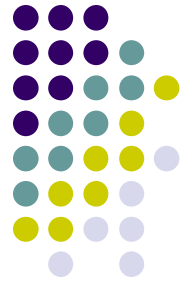
- Did monetary ease cause the bubble?
 - Low interest rates preceded the housing bubble.
 - Rules vs. discretion: The Taylor rule

Zero-Interest Rate Policies

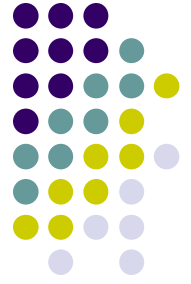


- When interest rates cannot go lower:
 - Convince the public that rates will stay low for a long time.
 - Influence the yield curve by purchasing longer term securities.
 - Expand the size of the central bank balance sheet.

Reducing Counterparty Risk

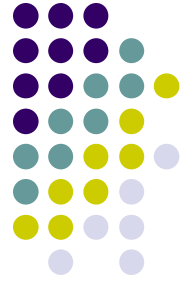


- Special Fed programs to “unclog” financial markets
 - One institution will lend more freely to another if it knows that the borrower has high quality collateral or can borrow from the Fed in order to repay.



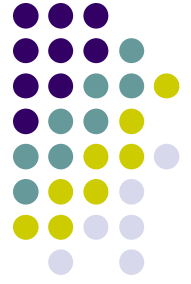
Bailouts

- Emergency loans and asset purchases
 - Article 13.3 of the Federal Reserve Act: “unusual and exigent” circumstances
 - The Emergency Economic Stabilization Act of 2008 (the “Bailout” bill).



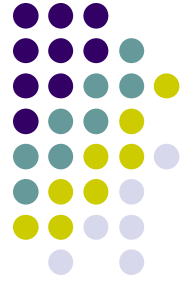
The Rationale for Bailouts

- Why bailouts were appropriate:
 - Lender of last resort can forestall a bank run.
 - Avoid contagion of failure.
 - Without bailouts, the government would be obliged to cover huge losses anyway.
 - Costs of the bailout may turn out not to be terribly high.



What About GM?

- Bailouts for Auto Companies?
 - The failure of an auto company has less potential for systemic contagion as the collapse of financial institutions.



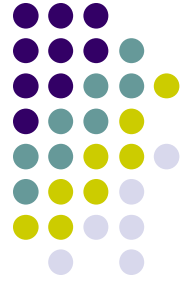
Monindustrial Policy

- What is monindustrial policy?
 - John Taylor uses the term to refer to monetary policy actions that favor specific industries
 - Lacking neutrality monetary policy may be more politicized



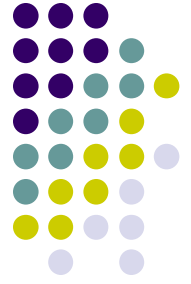
Moral Hazard Revisited

- Heads I win; Tails you lose
 - What happens when bailouts are anticipated by large financial sector firms?



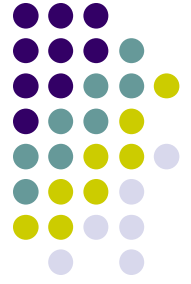
Future Inflation?

- Avoid collapse now, but what about the Fed in the future?
 - Sell off accumulated assets.
 - Reduce the money supply.
 - Let interest rates rise.
 - Avoid political pressure to monetize debt.



Regulatory Reform

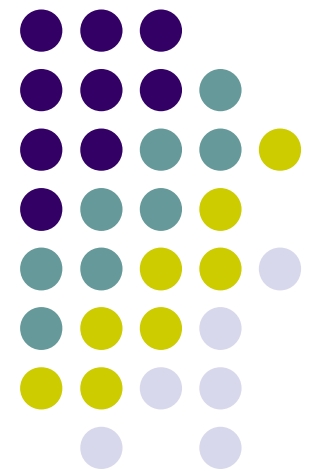
- Possible reforms
 - Designate responsibility for systemic risk
 - Greater transparency of financial products.
 - Limit leverage; increase capital requirements.
 - Enforce and strengthen mortgage requirements.



An Excellent Recession!

- At least for teaching!
 - Business Cycles
 - Keynesian and Classical Theories
 - Financial Panic
 - Expectations
 - Principal-Agent Problems
 - Asymmetric Information and Moral Hazard
 - Appropriate Monetary and Fiscal Policies
 - Bailouts

The End



Recession Glossary

American Recovery and Reinvestment Act of 2009	This is Obama Stimulus Bill. The bill offered \$787 billion in tax cuts and funding for spending in response to the recession.
CDO	<p>Collateralized Debt Obligation</p> <p>Collateralized debt obligations (CDOs) are asset-backed securities whose value and payments to owners are derived from underlying assets like mortgages. CDO payment streams are divided into “tranches” with differing claim priorities on income flows. Senior tranches have higher priority claims. Junior tranches have lower priority claims, but pay higher returns in the absence of losses in the underlying assets.</p>
CDS	<p>Credit Default Swap</p> <p>A credit default swap (CDS) is a contract in which the buyer of the CDS pays the seller and, in exchange, receives a payoff if a credit instrument (like a CDO) goes into default.</p>
CPFF	<p>Commercial Paper Funding Facility</p> <p>The Federal Reserve Board created the Commercial Paper Funding Facility (CPFF), to help provide liquidity to commercial paper markets. Commercial paper includes unsecured notes issued by banks or corporations.</p> <p>According to the Fed, “The commercial paper market has been under considerable strain in recent weeks as money market mutual funds and other investors, themselves often facing liquidity pressures, have become increasingly reluctant to purchase commercial paper, especially at longer-dated maturities. By eliminating much of the risk that eligible issuers will not be able to repay investors by rolling over their maturing commercial paper obligations, this facility should encourage investors to once again engage in term lending in the commercial paper market.”</p> <p>Source: http://www.federalreserve.gov/newsevents/press/monetary/20081007c.htm</p>

Emergency Economic Stabilization Act of 2008	The Emergency Economic Stabilization Act of 2008 was the legislation that created TARP, the tool for much of the “bailout” of large financial sector firms. The act authorized Secretary of the Treasury to spend up to \$700 billion to purchase “distressed assets” and make capital injections into banks.
Fannie Mae and Freddie Mac	The Federal National Mortgage Association (FNMA), commonly known as Fannie Mae, is a stockholder-owned corporation chartered by Congress in 1968. The corporation's purpose is to purchase and securitize mortgages in order to ensure that funds are consistently available to the institutions that lend money to home buyers. The Federal Home Loan Mortgage Corporation (FHLMC), known as Freddie Mac was created in 1970 to expand the secondary market for mortgages in the US and to provide competition for Fannie. Fannie Mae and Freddie Mac are commonly referred to as government sponsored enterprises (GSEs).
Federal Reserve Act Article 13.3	<p>This article of the Federal Reserve Act states that:</p> <p>“In unusual and exigent circumstances, the Board of Governors of the Federal Reserve System, by the affirmative vote of not less than five members, may authorize any Federal reserve bank ... to discount for [make loans to] any individual, partnership, or corporation, notes, drafts, and bills of exchange when such notes, drafts, and bills of exchange are indorsed or otherwise secured to the satisfaction of the Federal Reserve bank.”</p> <p>In emergencies, the Fed has the ability to make loans to almost anyone!</p>
FDIC	The Federal Deposit Insurance Corporation is the agency responsible for insuring deposits at banks.
FHFA	The The Federal Housing Finance Agency was created as a regulatory agency by passage of the Housing and Economic Recovery Act of 2008. In particular, the agency assumed oversight of Fannie Mae and Freddie Mac.

Foreign Exchange Swap	Foreign exchange swaps permitted the Fed to exchange dollars for foreign currencies supplied by foreign central banks. The intent was to permit the foreign central banks lend dollars to foreign banks.
Hedge Fund	A private investment fund that trades and invests in a variety of assets that might include securities, commodities, currency, and derivatives on behalf of its clients.
SIV	Structured investment vehicles (SIVs) are funds, often created by banks but operated “off-balance sheet. The strategy of these funds was to borrow money by issuing short-term debt and then lend by buying longer-term securities (often asset-backed securities).
Shadow Banking System	This term refers to the broad collection of non-bank financial intermediaries who have had increasing importance in world-wide lending activities. These institutions do not accept deposits like banks do, but have often been funded by issuance of short-term debt.
TAF	The Fed’s Term Auction Facility (TAF), the Fed provides collateralized loans to depository institutions over somewhat longer terms (28 to 84 days) than its usual discount window loans.
TALF	Term Asset-Backed Securities Loan Facility The Fed launched the Term Asset Backed Securities Loan Facility (TALF) to directly provide credit supporting the issuance of asset-backed securities collateralized by student loans, auto loans, credit card loans, and loans guaranteed by the Small Business Administration (SBA).
TARP	The Troubled Asset Relief Program (TARP) is a program of the United States government to purchase assets and equity from financial institutions to strengthen its financial sector. It is the largest component of the government’s measures in 2008 to address the subprime mortgage crisis. TARP was created by The Emergency Economic Stabilization Act of 2008. Under the program the Treasury purchased preferred stock and warrants in the nine largest American banks in October 2008

TSLF	The Term Securities Lending Facility (TSLF) was created by the Federal Reserve to temporarily exchange treasury bills owned by the Fed for mortgage-backed securities for up to 28 days. The facility was intended to improve liquidity by providing firms with high-quality collateral.
------	--