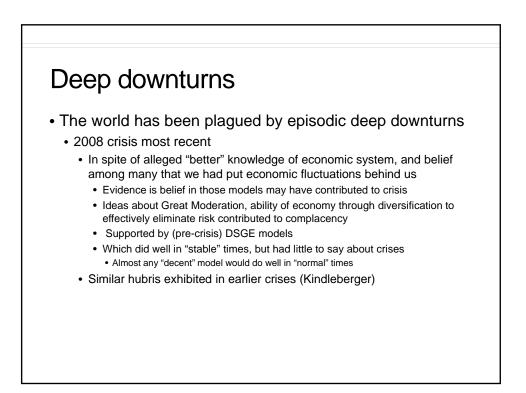
TOWARDS A GENERAL THEORY OF DEEP DOWNTURNS

Joseph E. Stiglitz Presidential Address IEA World Congress Dead Sea, Jordan June, 2014





- Crisis was man-made—created by the economic system
- Studying crises provides us insight into the behavior of economic system in less extreme times

Outline of talk

- Basic questions posed by deep downturns
- Three alternative approaches
- Focus on the capitalist economy as a *credit economy* and its implications

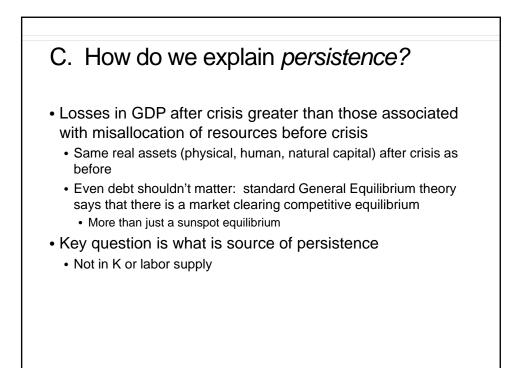
I. Three fundamental questions

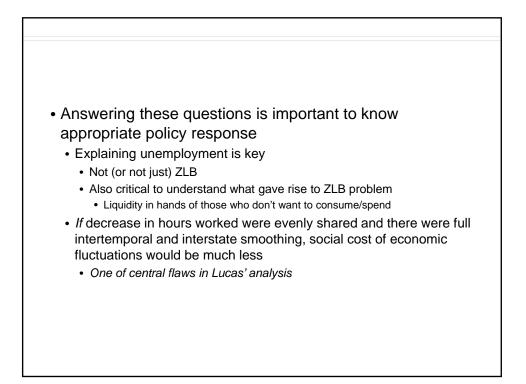
A. What is the source of perturbation?

Exogenous or endogenous? How do economic structures, policies, affect magnitude and frequency of perturbations

B. How can we explain magnitude of volatility?

- Change in physical state variables small
- No destruction as in war or natural disaster
- Yet huge changes in behavior
- Shocks seem to have been amplified, rather than "buffered," as suggested by traditional economic models
 - · Price adjustments and inventories

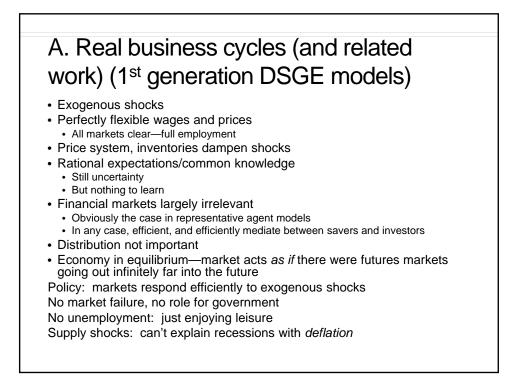




II. Three strands of theory

- A. Real business cycles (and related work)
- B. New Keynesian Theories with Rigid Wages/Prices
- C. Alternative strands of New Keynesian—Fisher-Greenwald-Stiglitz

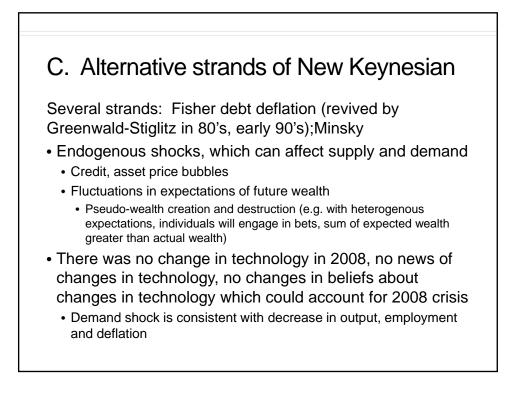
Each may have worked to help explain different historical episodes (oil price shocks, great moderation and early 90s)



B. New Keynesian theories with rigid wages/prices (DSGE Generation II)

• Shocks exogenous (and still mostly supply side shocks)

- · No news that could explain sudden decrease in demand
- Rigid wages and prices
 - · So markets do not clear
 - Focus on nominal rigidities
 - · Largely explained by menu costs
- Price system, inventories dampen shocks
- Rational expectations
- Early versions: financial markets work efficiently; later versions: financial frictions
- Key: Minimal deviations from standard model
 - Limited modeling of nature of financial frictions, credit markets



"Real" rigidities matter

- Markets may not clear
 - · Because of real rigidities, associated with imperfect information
 - Efficiency wage theory
 - · Credit rationing theories
 - Because of slow processes of adjustment (leading to real rigidities)
 - in a decentralized economy—wages adjust to shortages in labor market, prices in product market, real wages reflect balance of two (Solow-Stiglitz)
 - With risk aversion, firms and households adjust slowly
 - It is not cost of adjustment that matters, but risk

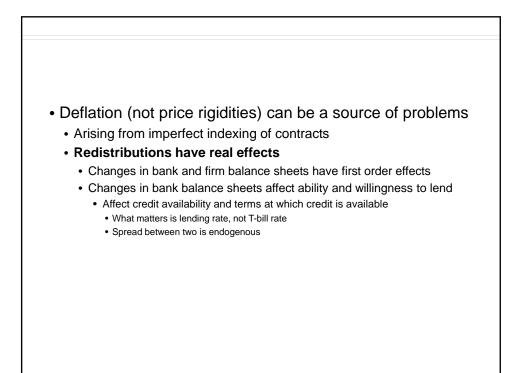
Other sources of rigidities

- · Labor may not move easily across sectors
- Can be "trapped" in sector with low wages
- · Takes capital to move into other sectors
 - But many of those who would like to move have lost their capital
 - · And financial market imperfections prevent access to funds

Other explanations of nominal rigidities

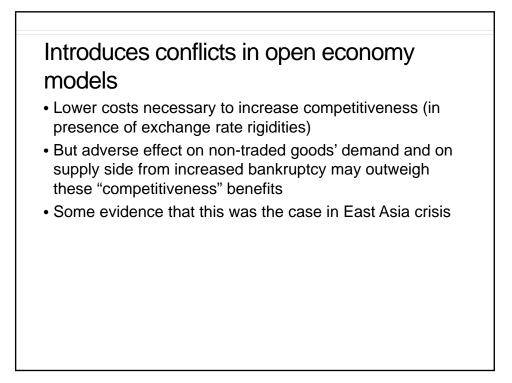
Menu cost theories unpersuasive

- Shifts in demand for nonstorable commodities must lead either to changes in prices or quantities
- · Costs of adjustments of quantities almost surely far more significant
- · Contracts may affect infra-marginal adjustments
 - but there is normally ample scope for marginal adjustments
 - And in "standard theories" (e.g. ignoring efficiency wage effects) those marginal adjustments should suffice to restore full employment
- It is the risks of adjustments that matter
 - · Uncertainty about reactions of rivals
 - With storeable commodities risks associated with adding to or subtracting from inventories limited



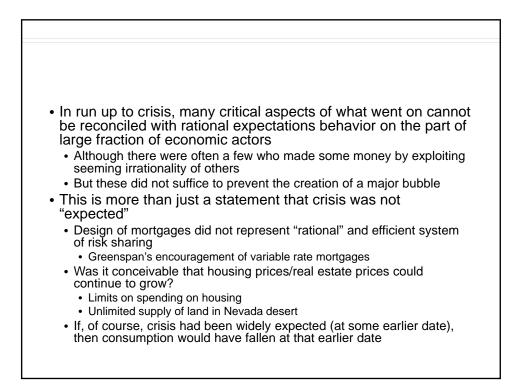
Short run adjustments may be disequilibrating

- Lowering (real) wages lowers aggregate demand, exacerbating problems of unemployment
- Lowering nominal wages and prices increases leverage of households and firms, lowering aggregate demand
 - Even applies to *disinflation*—lower rates of wage and price inflation than were anticipated
 - · Can increase bankruptcy probabilities
 - Leading to destruction of information and organizational capital
 - Increasing uncertainty, with both supply and demand side effects
 - Leading to weaker banks, decreasing lending and increasing interest rates charged by banks
 - Disparities in perceptions between borrowers and lenders can lead to negative pseudo-wealth, with further adverse effects on aggregate demand



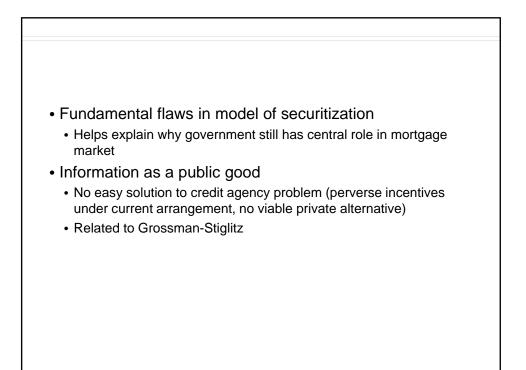
Rational expectations model provides poor guide to understanding macrobehavior

- World is always changing, so that it is not even clear what is entailed by rational expectations
- There hasn't been a downturn as deep as this one for 80 years
 - World 80 years ago was markedly different
 - Different politics
 - Different economic and financial structure
- Helps explain large diversity of interpretations of events and policies
 But in rational expectations models, everyone has same beliefs
 - Divergences in beliefs are of first order importance for understanding markets and macroeconomic behavior
 - · Even now, there are disagreements about magnitudes of multipliers
 - Gradual recognition that inferences based on models estimated in "normal" times are of little relevance in deep downturn
- In RE models, there is no learning, no problem of assessing whether we are experiencing an extreme outcome in an old regime, or whether we have moved into a new regime
 - Such learning is central to behavior of economic agents



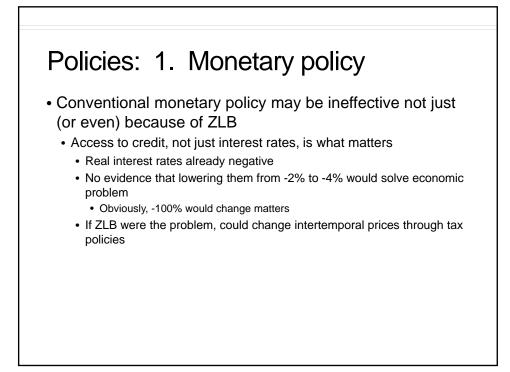
Financial sector is critical

- Not just T-bill rate or money supply
- · Lending rate and credit availability
 - "Liquidity"-access to funds-can dry up
 - Term has no meaning in "standard" models
- Credit to SME's linked to banking system
 - SME lending linked to regional banks (local information)
 - Made a difference to aggregate lending where you pumped money into the system
 - Fed didn't really grasp this
- Need theory of banking (Greenwald-Stiglitz, 2003)
 - · Balance sheets matter
 - · Prudential and macro-prudential regulations matter
 - · Risk perceptions matter
- Financial networks (interlinkages) matter
 - And financial sector cannot be adequately described by a representative agent model
 - · Related to problems of macro-economic externalities discussed below



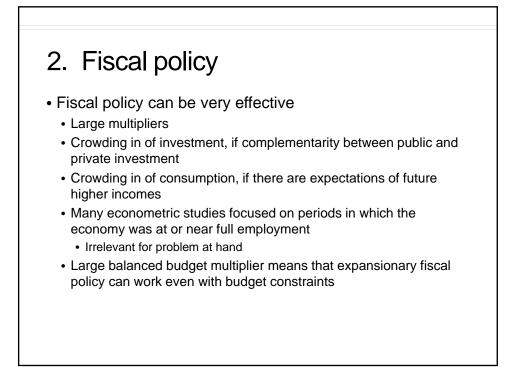
Contrasting implications

- Problem may not be price rigidities, but price flexibilities
- Large macroeconomic externalities
 - · Especially related to financial sector
 - · Which help explain both amplification and persistence
- Regulating financial sector crucial
 - And financial sector cannot be adequately summarized in a money demand equation



Explaining ineffectiveness of monetary policy

- Banks are unable or unwilling to lend
 Low T-bill rate has little effect
- · Banks may not pass on lower interest rates to customers
- Lowering interest rates to depositors/investors can be counterproductive
 - In short run: distributive effects
 - In medium term: inducing firms to use more capital intensive technology, leading to jobless recovery



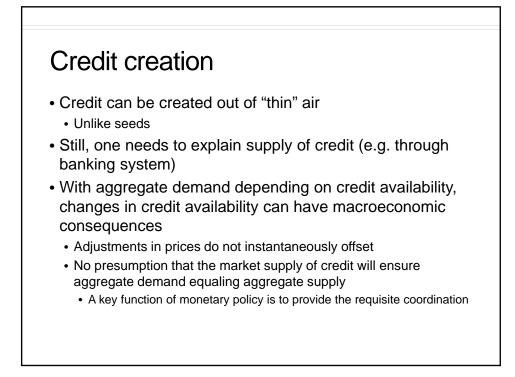
3. Debt Policy

- Debt restructuring may be an effective way of restoring aggregate demand
 - Deleveraging
 - May reduce negative pseudo-wealth
 - Redistribution, but more than just redistribution
 - · But contrary to standard model, redistributions do matter
- Inflation used to be an effective way of debt restructuring
 - No longer seems acceptable
- Government should have enacted a homeowners' chapter 11
 - · Resistance from banks proved crucial
 - Supported by Obama administration



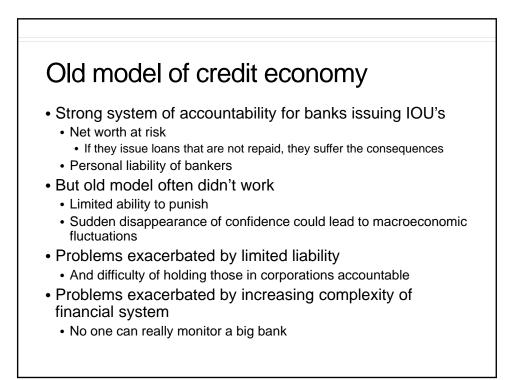
But this model provides a poor description of our economy

- What enables individuals to spend more than the resources they have available (either for consumption or investment) is access to credit
- Credit is different from ordinary commodities



A credit economy is based on trust

- Trust that the "money" that is borrowed will be repaid
- Trust that the money that is received will be honored by others.
- If a financial institution is trusted, it can create "money" ("credit") on its own, issuing IOU's that will be honored by others
 - Can thereby increase effective demand



Response

- Today, underlying "trust" in financial system is belief that government will come to the rescue
 - And that government is adequately regulating the financial system
 - But this exacerbates moral hazard problem
 - Worse for financial institutions that are too big, too interconnected, too correlated to fail
 - Distorted market
 - But belief is tempered by government's ability to rescue
 - · Giving advantage to banks from rich countries

Sudden changes in credit availability

- Can result from sudden changes in trust
- Sudden changes in banks' perceptions of risk
- Sudden changes in banks' balance sheets (actual and perceived)
 - As a result of changes in market prices
 - · As a result of changes in pseudo-wealth
 - As a result of defaults (actual or anticipated)

Fundamental asymmetry

- Asymmetry: Loss of wealth or purchasing power (access to credit) may force those who want to spend more than their income to decrease spending in tandem
 - Those who gain in wealth (access to credit) do not have to increase spending in a corresponding way
- Problem familiar in international context
 - · Worry about global imbalances
 - Adverse effect on global aggregate demand from surpluses

Inequality gives rise to corresponding imbalances

- Those at the bottom who see their incomes decline are forced to reduce spending
 - Unless one temporarily creates a housing bubble
- Those at the top continue to save
- Lowering interest rates will not likely resolve problem
 - Target savers (for purchasing home, financing college education, retirement) will increase saving
 - · Retirees depending on T-bills will reduce consumption
 - · How interest-sensitive is consumption of the very wealthy?
 - Even taking into account effects of lower interest rates on capital assets
 - Especially if interest rate reductions are expected to be temporary
 - Especially if policy regime introduces new macroeconomic uncertainties

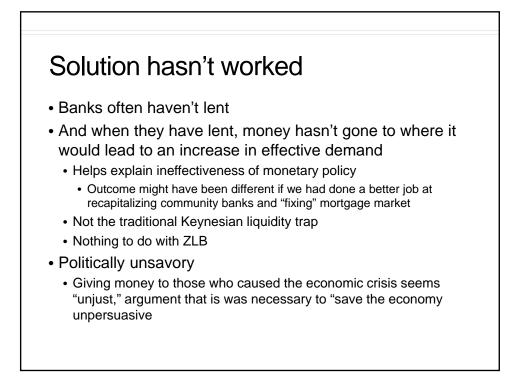
Easy solution for some governments

They can create money and credit

- Power to tax and print money—to make good on their promises
- They have delegated powers, allowing others to profit
- · Contributing greatly to ongoing inequality

Standard approach

- · Enhance the ability of banks to provide credit
 - · Through regulatory and monetary policies
 - Through open and hidden subsidies
- · Hope that they do so
 - And that the money goes to increase effective demand
 - Rather than purchasing preexisting assets (land)
- And that they don't take advantage of the unwary



Alternative solutions

- Government uses its own credit capacity
- To engage in high return public investments
- To address other major social needs
 - E.g. related to growing inequality
 - Climate change

Alternative approach

- Induce banks to focus on lending activities
 - · Should have been one of major foci of regulatory reform
- Direct lending by the government
 - Student lending
 - Mortgage lending
 - Other categories of investment (climate)
 - Criticism: government is not good at lending
 - Response: neither is the private sector; government has done better job at least in these areas

Money rain

- Would induce more spending
- Would not be inflationary, so long as amounts were appropriately calibrated
- But in many countries (e.g. US) the problem is not an insufficiency of consumption, but of investment, and broad based money rain would restore full employment by encouraging consumption

IV. The crisis in economics

Standard models

- Criticism is not just that the models did not anticipate the crisis (even shortly before it occurred), they did not contemplate the possibility of a crisis
 - Said it couldn't/wouldn't happen
 - · Had no insights into what generated it
- Have provided inadequate guidance on how to respond
 - Even after bubble broke, it was argued that diversification of risk meant that the macro-economic consequences would be limited
 - · Large parts of the world well below potential
 - In some countries, downturn worse than the Great Depression
 - Risk of significant hysteresis effects from protracted unemployment, especially of youth

There are alternative models

- Both Real Business Cycles and the New Keynesian DSGE models that provide better insights into the functioning of the macro-economy
 - More consistent with micro-behavior
 - More consistent with what has happened in this and other deep downturns
- And provide alternative insights into what kinds of macroeconomic policies would restore the economy to prosperity and maintain macro-stability
- This talk has attempted to sketch some elements of these alternative approaches