1 Title slide

First let me congratulate you on making it to the final chapter of our semester long journey into macroeconomics. We have spent all semester developing a model of the macroeconomy- a model which allows us to make causal statements about the determination and fluctuation of three key outcomes: output, employment, and prices.

Now we will apply this model to understand three significant events from economic history. This is without a doubt my favorite chapter from this semester. Even though this was only one semester of intro macroeconomics, the model we have developed has extraordinary explanatory power.

2 Context for this unit

The capitalist economic system remains plagued by its inability to generate, let alone sustain full employment, as well as its inherent instability. These two problems result from the behavior of the physical investment spending and the behavior of the financial sector. The solution is that there exists a very important role for the federal government to constrain the instability and provide social safety nets for those who have been excluded from participating in the provisioning process.

3 This unit

The three events that we will apply our model to understand are the great depression, the golden age, and the financial crisis. I am confident that if you follow the structure presented in Unit 17 you will be pleasantly surprised how well you understand the current circumstance that we find ourselves in.

Looking back into history we see that periods of expansion are followed by periods of contraction. Key to understanding this phenomenon is an idea put forward by Hy Minsky- stability is destabilizing. When things are going well, policymakers tend to forget that the next contraction is looming just beyond the horizon.

Listen to Alan Greenspan discuss how he was mistaken with his staunch support of the market and in the flaw that he later discovered in his model of the economy.

4 Three economic epochs

Looking back into the dustbins of history, we see three empirically distinct economic epochs. Pay attention to the averages of the series in each of those epochs. Note that we are using productivity growth here as a broad measure of economic performance.

At the end of the 1st and 3rd epoch there were crises. A common feature to understanding the dynamics which created these crises and understanding the instability and unemployment that plagues our economic system is the existence of positive feedbacks. Recall that a positive feedback is a situation where an initial disturbance or shock is amplified over time.

5 International comparisons

While we have mostly restricted our analysis to the U.S., we live in a highly globalized and interconnected economic society. While our society is interrelated, each country experienced these different epochs differently.

6. Pea pickers

This image was taken by the photojournalist Dorothea Lange while she was employed by the farm security administration- a new deal agency. I believe that this is one of the most powerful images from the Great Depression and serves as a compelling reminder that, even though we spend a good deal of time in the abstract world of the economic model, we are talking about outcomes that affect people. We are talking about people and economic policies that have a direct impact on our fellow community members.

7 The great depression

The Great Depression was the largest contraction a market economy had ever experienced. Starting in 1929 with the crash of the stock market, it persisted for over a decade until the U.S. entered WW2. Looking at the data we see that unemployment peaked at 25% while output contracted by about 33% and prices fell precipitously. In 1933 the new deal is put into place and the role of the public sector is forever changed.

8. Causes

You are probably wondering what caused this massive contraction that we now call the Great Depression. Good question.

In our attempt to understand the causes, it is helpful to think about the economy as a system with feedbacks. Positive feedback loops are destabilizing as an initial change is amplified through time. The dynamics which drove the economic contraction involved three simultaneous positive feedback loops.

Pessimism about the future causes our broad measure of household wealth, particularly expected future earnings from employment to shrink. As household wealth falls below the target, households increase their precautionary savings which reduces Aggregate demand. How might this impact investment? How would the crash in the stock market affect aggregate expenditures?

Loan default and falling asset prices led many banks to become insolvent. Shutting their doors, gone forever along with their customers deposits.

Falling asset prices (i.e. deflation) presents serious problems for a market economy. **[figure 14.8]**

Think about these three causes of the Great Depression in terms of the model we have developed. How does pessimism about the future and failure of the banking system impact output, employment, and prices? How do these two dynamics interact with falling prices? Do falling prices impact expenditure?

9. The problem of deflation

Deflation affects the level of aggregate expenditure through several channels. Deflation reduces aggregate demand which further exacerbates the negative bargaining gap and pushes prices lower. This is the positive feedback loop discussed on the previous slide.

Aggregate demand in the great depression

When we use our model to understand the causal relationships that exist between variables of importance, we rely on the assumption of *ceteris paribus* and the concept of a shock. THe reduction in

Consumption and Investment that we see in third quarter of 1929 is modeled as a shock to Aggregate demand. But before we go any further, recall the modelling process:

Video

1. We construct a simplified description of the conditions under which people take actions.
2. Then we describe in simple terms what determines the actions that people take.
3. We determine how each of their actions affects each other.
4. We determine the outcome of these actions. This is often an equilibrium (something is constant).
5. Finally, we try to get more insight by studying what happens to certain variables when conditions change.

Go through the first four steps and derive the equilibrium in the labor market and multiplier model and assume that A.D is such that employment is equal to the labor market equilibrium so that prices are stable. Now use the concept of a shock to gain insight by studying what happens when conditions change. In the third quarter of 1929 there was a massive contraction in Investment and Consumption. These negative shocks to AD result in lower output and employment and a reduction in the bargaining gap and downward pressure on prices. The positive feedback loops amplify this shock through time and causes a further reduction in aggregate demand.

11. Initial policy issues

Much like good policy can help to stabilize the economy bad policy can exacerbate the instability that plagues our capitalist economic system.

The dominant economic doctrine of the time called for a small federal government who would run a balanced budget. As the economy starts to contract, tax revenues decline. If the government wants to maintain a balanced budget, they must reduce expenditures. AS the government reduces its expenditures, it is engaging in austere fiscal policy which further deteriorates the situation. This would be modeled as a reduction in aggregate demand, a downward shift of the A.D function and lower output and employment.

At the onset of the Great Depression, the U.S. was on the gold standard. To prevent gold from flowing out of the U.S., the interest rate was kept high. Not only were the policy makers engaging in contractionary fiscal policy, but also in contractionary monetary policy.

12. The role of the gold standard.

Promising to convert currency into gold, operating on the gold standard, greatly reduces your policy space.

Contrast the initial response to the Great Depression with that of the fiscal and monetary policy response of the covid-19 pandemic or the great recession. The fed was much quicker to slash interest rates to 0 and to engage in massive balance sheet operations; moreover, congress responded swiftly in both cases with fiscal stimulus. The most recent in response to the covid pandemic involved as unprecedented 2 trillion-dollar stimulus.

13 Policy changes

With the election of FDR in 1932, the policy response was about to go in a very different direction. The federal government was about to become a major player in the economy. FDR implemented a banking holiday, abandoned the gold standard, and a mere 37 days after taking office, FDR put America back to work with direct job creation.

The program which would later come to be known as the Civilian Conservation Corp put young men between the ages of 18-25 to work, provided them with 3 squares a day, and offered educational opportunities in the evenings. The enrollees received $30 a month, $25 of which was automatically sent to their families. During its roughly 9 years in existence, the CCC planted 3 billion trees and constructed shelters, trails, and roads all over the U.S. The CCC is largely responsible for shaping the Americas national and state parks.

14. New deal posters

Not only did the new deal create a legacy rich in public works, but it also employed a great number of artists who created public art, both of which served to transform the nation.

15. New deal art

The artists created a slew of posters, plays, photos like that of the Migrant Mother, murals in schools and post offices all over the U.S. Have you been inside your local post office, like the one in downtown Saratoga, and noticed a fabulous mural on the wall, it may be a part of the legacy from the new deal.

16. Theodore Roosevelt

Here is a fine example of a shelter constructed by the CCC in what Theodore Roosevelt National Park is now. This shelter affords such fine views of the badlands that it has been credited with the piece of land receiving protection as a national park.

17. Watkins Glen state park

One of the finest examples of CCC stonework that I have ever seen can be found in the finger lakes region of NY in the very impressive Watkins Glen State Park.

18. Timberline

The new deal involved massive public works projects. In fact, the reach of the New Deal is much larger than most people are aware, and the legacy of the new deal programs continues to benefit society today. In NYC, new deal projects include the central park zoo, the Lincoln tunnel, la Guardia airport. However, the crown jewel of the New Deal public works is Timberline Lodge on Mt. Hood in Oregon.

19. The Golden Age

WW2 effectively ended the Great Depression and took the U.S. economy to full employment. One implication of the massive increase in deficit spending by the federal government is that it leads to the accumulation of financial assets in the other sectors. Combined with the cleansing of balance sheets that occurred with the great depression, the U.S. enters the Golden Age, a period of stable growth and declining inequality.

20 Causes of golden age

During the Great Depression there was a revolution in economic thinking. John Maynard Keynes turned the economic profession upside down with his General Theory. Keynes created a framework which called for the government to step in and support Aggregate Demand.

Coming out of world war 2, U.S. labor was organized and perhaps in the strongest position it has ever experience. Labor did not flex its muscle to capture the entirety of increases in productivity which resulted from the governments support for research and development. Rather, labor shared the gains with capital. The post-war accord and the extremely healthy balance sheets of the private domestic sector contributed greatly to the Golden age of capitalism.

21 Workers and employees

The golden age can be accurately characterized as a virtuous circle.

High profits influence the behavior of physical investment spending. Remember, a change in expectations shifts the investment function.

Investment which leads to technological progress makes labor more productive. In terms of our model, increased productivity of labor leads to an upward shift of the price setting curve and an increase in the equilibrium level of employment. *Ceteris paribus,* higher equilibrium employment reduces price pressures and keeps inflation low even while economic activity surges.

The strength of unions allowed labor to partially capture a share of the increased productivity. However, labor did not exercise the full extent of its strength and instead exercised fair-share bargaining. This constrained behavior is, in terms of our model, like the voice effect that we were introduced to in Unit 9 which keeps the wage setting curve from shifting up and thus keeps the equilibrium employment higher than it otherwise would be.

22. Using the labor market model

Here you should work through the dynamics of the labor market described in the previous slide.

23. Collapse of post-war accord.

The golden age did not last forever. Starting in the 1970s there was a series of oil price shocks. It is insightful to think about how the price shocks affect the claim to the product of labor. Recall that when we relaxed the assumption of labor being the only input to production, we ended up with three groups laying claim to the product of labor. When price of the imported good rises, *ceteris paribus,* we end up with inconsistent claims on that output. Since labor had a strong bargaining position, they forced capital's share the contract. With diminished profitability, investment falls and we end up in a period of rising inflation and prices- stagflation.

24. stagflation

the stagflation of the 70's led to the death of the Keynesian model that dominated from the time of the great depression. The Keynesian solution to unemployment, priming the pump through boosting

aggregate demand would only exacerbate the inflation problem. This was not a demand-side crisis and could not be resolved though actively managing demand.

25. Supply-side crisis.

The golden age came to an end because of a supply side crisis.

26. Supply side reforms

Let the assault on labor begin. In response to the supply side crisis, policies began to actively diminish the power of labor. The public has been convinced that accepting unemployment is not only necessary, but worthy of tolerating in the name of stable prices.

The restrictive policy and assault on labor shift both the wage-setting curve and aggregate demand function down, reducing the bargaining gap.

27. The great moderation

Coming out of the golden age we enter the great moderation, a period of relative stability with low unemployment and inflation.

Stable prices were achieved through the slaughter of organized labor. You can see the result in the data, productivity continues to increase throughout the 80's and 90's, but real wages went stagnant.

In terms of our model, the increased productivity shifts the price setting curve up, but since the real wage remains stagnant, the markup is increasing. The increase in the markup suppresses real wages while productivity continues to grow.

Unlike the golden age where we saw high employment, high investment, and rising wages. Stagnant real wages contributed to the trend of rising inequality that starts to appear in the data at this time. Interestingly, the lack of wage growth did not prevent households from increasing their consumption; instead of fueling consumption through rising wages, households relied on debt. Throughout the great moderation we see housing prices continually rise and the perceived, but not always realized, increased wealth fueled a spending hysteria. Houses became the atm furnishing the cash to offset stagnant wages.

28. Problems with great moderation

Recall the video from earlier in the lecture of Alan Greenspan, he has admitted that he was wrong, markets are incapable of regulating themselves.

The lack of regulation combined with low interest rates created the conditions ripe for a housing bubble, a bubble that would eventually rock the global economy, bringing it to its knees.

29. Housing boom

Instability is partly due to the behavior of the financial sector and partly due to the behavior of physical investment spending, which includes household purchasing of real estate. The financial accelerator is a great example of a positive feedback loop. As asset values rise, it becomes easier to secure a collateralized loan, further pushing up asset values.

Think about this in terms of the balance sheet. The rising home values increases actual wealth relative to targeted wealth, households respond by spending more. But wages have been stagnant for decades, no worries the financial sector will find creative, perhaps even genius ways to allow you to transform your house into an atm. Everyone enjoys the gravy train while the bubble inflates. The euphoria of an inflating bubble makes us blind to history, housing prices will never fall… or will they?

30. Subprime

During the euphoria of the housing bubble, housing prices continued to show strong gains and people's perception of risk started to become skewed. Adding to the fire, finance came up with all kinds of ways to take an asset- the mortgage- and transform it from a stream of revenue spanning 30 years to instant cash. The securitization of mortgages further fueled the housing bubble. As fast of commercial banks could issue mortgages, investment banks bought them up to slice and dice and sell claims to the stream of revenue that a mortgage is expected to generate. the extremely complex financial instruments were portrayed as extremely safe and gobbled up around the world.

The financial sector wanted more mortgages to securitize, the problem was that there are only so many qualified borrowers. But since home values were expected to rise indefinitely, who cares if the borrower does not pay the loan back, seize the property and sell it for a profit. Not only did banks come up with all kinds of exotic loans like the ninja loan- no income, no job or assets, but they also engaged in predatory behavior.

31. Financial deregulation

Stability is destabilizing! The stability of a prolonged period like the great moderation sows the seeds of its own destruction. The more adventurous financing of investment pays off to the leaders, so others follow.

The development of new financial assets allowed banks to become highly leveraged. A derivative is a financial instrument in the form of a contract that can be traded, whose value is based on the performance of underlying assets such as shares, bonds or real estate. A collateralized debt obligation (CDO) is a structured financial instrument (a derivative) consisting of a bond or note backed by a pool of fixed-income assets (MBS). The collapse in the value of the instruments of this type that were backed by subprime mortgage loans was a major factor in the financial crisis of 2007–2008. A mortgage-backed security (MBS) is a financial asset that uses mortgages as collateral. Investors receive payments derived from the interest and principal of the underlying mortgages.

It was during the great moderation that we also see a huge increase in the globalization of capital flows as these financial assets that were tied to U.S. housing market found themselves on balance sheets all over the world. Balance sheets all over the world become increasingly interconnected.

The demand for these new assets was so great that lenders and credit rating agencies were enticed to engage in fraudulent behavior further reinforcing the financial accelerator. There was a massive increase in subprime mortgages, which were sliced, diced, bundled and sold. The long period of stability in financial markets made the crisis more likely.

32 The financial crisis

Like the golden age before it, the great moderation would come to an end, its demise came with the financial crisis of 2007. Use the financial accelerator and the balance sheet presentation of household wealth to understand the dynamics presented in the data here.

A reduction in collateral value, reduces access to credit and reduces consumption spending. As spending falls, so too does expected profitability and thus investment contracts. Workers begin to be laid off which further drags down aggregate demand.

33 The financial crisis 2

Throughout the 90's and 2000's home values were rising, wealth was increasing as was consumption, but not wages. The mixture of stagnant wages and rising home values led to debt fueled consumption spending.

The initial decline in housing prices set off a positive feedback process. With the onset of the crisis, home values begin to crash. Ponder these two questions: How does this affect expected future earnings? How do households respond?

34 The role of banks in the crisis

The financial crisis was a banking crisis. Banks became highly leveraged throughout the great moderation. When the bottom fell out of the U.S. housing market, it took down all the assets that were tied to it. Declining asset values creates a solvency issue- is net worth positive or negative. Insolvency makes it very difficult to access credit and from insolvency, a liquidity crisis ensues. Without access to credit, the only way to get cash is though liquidation of assets. Fire sales tend to set off a deflationary spiral which only worsens the insolvency that set this process off.

the federal reserve and congress had to step in and bail out financial institutions or face the wrath of another great depression. Bailing out the banks which involved mergers of various financial institutions sets the stage for excessive risk taking in the future. The financial institutions know that they can reap the rewards of excessive risk taking without any of the costs…because the government will bail them out! Profits are privatized while losses are socialized.

35 Lessons learned from last century

Here we can see a summary of what the conventional wisdom was, the lesson learned, and key thinkers from whom we learned.

36 Lesson learned?

You can see in the data contrasting the great depression to the great recession that economists have learned from the past.

The great recession was much less severe, and part of the reason was the quickness and magnitude of the policy response.