World Macroeconomic Overview

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Outline

Part 1: A Primer on Economic Growth

Part 2: Commodity Prices

Part 3: Housing Markets

Part 4: Inflation

Part 5: U.S. Overview

Part 6: European Overview
Part 1: A Primer on Economic Growth
Measuring Economic Growth

\[ Y = f(A, K, N, \text{raw materials}) \]

\[ Y = \text{GDP} \]

\[ f(.) = \text{Some production function} \]

**Inputs into production**

\[ K = \text{capital stock (machines, buildings, production equipment, etc.)} \]
\[ N = \text{labor force (number and quality of workers)} \]

\[ A = \text{Defined as “Total Factor Productivity”} \]
Defining Total Factor Productivity

- Total Factor Productivity (TFP) is basically a catch all for anything that affects output other than K, N and raw materials

- Examples
  - Innovation (including innovation in management practices)
  - Competition
  - Specialization
  - Regulation
  - Infrastructure
  - Work week of labor and capital
  - Quality of labor and capital
  - Changes in “discrimination” or “culture”
Growth Accounting

Output growth in a country comes from:

- Growth in TFP (see entrepreneurial ability, education, roads, technology, etc.)
- Growth in Capital (machines, equipment, plants)
- Growth in Hours (workforce, population, labor participation, etc).

One can decompose output growth into the part determined by A, K, and N.

Growth in output per worker (Y/N) is determined by A and (K/N).
What Causes Sustained Growth?

• Sustained increases in the growth of A are the only thing that can cause a sustained growth in output per person.

• Empirically, when a country exhibits faster Y/N growth .....  

33% typically comes from growth in K/N  
67% typically comes from growth in A  

(where N = employment (not hours) - limited data).
Growth Across Countries

• Most developed economies grow at the same rate that the “technological frontier” grows.

Some helpful definitions:

**Convergence** – countries inside of the technological frontier move towards the technological frontier.

**Divergence** – countries inside of the technological frontier grow at a rate less than the technological frontier.
Distribution of World GDP in 2014 (IMF, $)
## Distribution of World GDP in 2014 (IMF, $)

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<thead>
<tr>
<th>Top 10</th>
<th>Other Notable</th>
<th>Bottom 10</th>
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<tbody>
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<td>Congo</td>
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<tr>
<td>USA</td>
<td>India</td>
<td>Cent. Afric. Repub</td>
</tr>
</tbody>
</table>

- Qatar: 143,427
- Luxembourg: 92,049
- Singapore: 82,726
- Brunei: 73,233
- Kuwait: 71,020
- Norway: 66,937
- UAE: 64,479
- Switzerland: 58,087
- Hong Kong: 54,722
- USA: 54,597
Some Data: Distribution of World GDP in 2000

From Barro, 2003 – includes 147 countries. Horizontal axis is a log scale.
All data are in 1995 U.S. dollars.
Some Data: Distribution of World GDP in 1960

From Barro, 2003 – includes 113 countries. Horizontal axis is a log scale.
All data are in 1995 U.S. dollars.
Growth Rate of GDP Per Capita: 1960 - 2000

From Barro, 2003 – includes 111 countries.
Convergence of Income Across U.S. States: 1940 - 1980

Historical Trends in Convergence
Unadjusted 1940-1960

Per Capita Income 1940

Growth in Per Capita Income 1940-1960

Fitted values

gr_ipc_40_60

DE
CA
MA
NJ
NV
CT
RI
MD
MA
NJ
CA
NV
CT
RI
MD
Figure 1. Latin America and the Caribbean: Real GDP Growth

Sources: IMF, *World Economic Outlook*; and authors' calculations.
\(^1\) Weighted average of Latin American and the Caribbean countries.

From Sosa et al. (2013), IMF Working Paper
Real GDP Growth: Brazil (in 2005 U.S. $)

The graph shows the real GDP growth of Brazil from 2000 to 2014, measured in 2005 U.S. dollars. The growth is represented by a line graph with years on the x-axis and real GDP growth percentage on the y-axis. The data indicates significant fluctuations with peaks and troughs, particularly notable in the years 2007, 2010, and 2014. The shaded area from 2012 to 2014 is labeled "Slower Growth," suggesting a period of lower growth compared to previous years.
Real GDP Growth: Venezuela (in 2005 U.S. $)
Real GDP Growth: Chile (in 2005 U.S. $)

Year

Real GDP Growth

-3.0%
-2.0%
-1.0%
0.0%
1.0%
2.0%
3.0%
4.0%
5.0%
6.0%


Slower Growth?
Real GDP Growth: Peru (in 2005 U.S. $)

Year

Real GDP Growth


Slower Growth?
Real GDP Growth: Columbia (in 2005 U.S. $)
LAC: Growth Momentum, 2014–15

Difference in growth rates, 2015 versus 2014:
- Marked slowdown: $\leq -1\%$
- Moderate slowdown: $> -1\%$ and $\leq -0.2\%$
- Stable growth: $> -0.2\%$ and $< 0.2\%$
- Growth pick-up: $\geq 0.2\%$

Sources: IMF, World Economic Outlook database; and IMF staff calculations and projections.
Note: CADR = Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama; LA6 = Brazil, Chile, Colombia, Mexico, Peru, and Uruguay; LAC = Latin America and the Caribbean. For definitions of the other country groups and details on the aggregation method, see Table A2.1.
Source of GDP Growth

Latin America – Brazil, Chile, Colombia, Mexico, Peru, Uruguay, Bolivia, Ecuador, Paraguay, Venezuela
Emerging Asia – Indonesia, Malaysia, Philippines, Thailand, and China
Advanced Exporters – Australia, Canada, New Zealand, and Norway.

From Sosa et al. (2013), IMF Report
Barbados (BRB), Bolivia (BOL), Brazil (BRA), Chile (CHL), Columbia (Col), Costa Rica (CRI), Dominican Republic (DOM), Ecuador (ECU), El Salvador (SLV), Honduras (HND), Jamaica (JAM), Mexico (MEX), Nicaragua (NIC), Panama (PAN), Paraguay (PRY), Peru (PER), Trinidad and Tobago (TTO), Uruguay (URY), and Venezuela (VEN).
Drivers of Latin American Growth

- Very little comes from TFP growth – slightly more during the 2000s – but, small in comparison to the Asian economies.
- Hard to get sustainable growth without TFP growth
- Large increase in labor (decline in unemployment) driving the bulk of the growth. Good for standards of livings – but, hard to get sustainable growth from just increasing N.
Source of GDP Growth: Labor Component

Latin America 6 – Brazil, Chile, Columbia, Mexico, Peru, and Uruguay.
Other South American - Bolivia, Ecuador, Paraguay, and Venezuela
Central America – Costa Rica, Dominican Republic, El Salvador, Honduras, Nicaragua and Panama
Caribbean – Barbados, Jamaica, and Trinidad and Tobago.

From Sosa et al. (2013), IMF Report
Outstanding Questions: Part 1

• Why is Latin American growth slowing in recent years?

• Why was the growth during the boom years (2000-2012) occurring without strong TFP growth?
Part 2: Understanding Commodity Markets
What I Will Do

• Show trends in world commodity prices.

• Overview of commodity prices and macroeconomic activity.

• Discuss the importance of commodities for U.S. and Latin American economies.

• Discuss “Dutch Disease” and implications to commodity based economies.

• Forecast role of commodity price stabilization on U.S. and Latin American economies.
Importance of Commodity Sector to Latin American Economies

• Many popular press articles concerned about Latin American dependence on commodity prices

• The Economist (9/9/2010)

  “Commodities alone are not enough to sustain flourishing economies”

• During the 2000’s, 52 percent of regions exports are commodities (World Bank).

• Chile, Peru, and Venezuela still rely on raw materials for three-quarters of their exports.

• Estimates suggest that one-third to one-half of regions growth during the 2000s can be attributed to higher demand for commodities.
Tax Revenues From Natural Resources

[Chart]

Can’t do without them
Tax revenue from natural resources as % of total tax revenue

- 1998
- 2008

Venezuela
Ecuador
Mexico
Bolivia
Latin America & Caribbean average
Chile
Peru
Argentina
Colombia
Source: World Bank

Taken from economist magazine
Trends in Composite Commodity Prices Over Time (IMF)

Chart 1. Indices of Primary Commodity Prices
(2005 = 100) 1/

- •••• In U.S. dollars
- - In SDRs
- - Real 2/

1/ Combines indices of non-fuel primary commodity prices and energy prices.
2/ Deflated by U.S. CPI.
Chart 2. Indices of Non-Fuel Primary Commodity Prices

(2005 = 100)

1/ Indices comprise 60 price series for 44 non-fuel primary commodities. Weights are based on the 2002-2004 average of world export earnings.
2/ Deflated by U.S. CPI.
What Drove the Commodity Price Boom?

• Chinese and Indian growth

• Massively large countries grew fast.
  o Increased demand for commodities and energy
  o As those countries converge to the technological frontier, economic growth will moderate. As it does, so will their commodity demand.
  o Additionally, they will start to mine their own commodities (seeing this already in resource rich China).
Commodity Price Forecasts (IMF)

Copper
(U.S. cents a pound)
Commodity Price Forecasts (IMF)

WTI Crude Oil
(U.S. dollars a barrel)
Commodity Price Forecasts (IMF)

Coffee
(U.S. cents a pound)
Share of Commodity Exports: Selected LAC – 2014 (IMF)
Is Commodity Growth Related to GDP Growth in Latin America?

IMF Report – NCPI is natural resource production index
Is Commodity Growth Related to GDP Growth in Latin America?

![Graph showing recent growth revisions versus net oil exports.](image-url)
Concerns About Commodity Price Reliance

• Volatility (commodity prices are volatile)

• “Dutch Disease” – referred to the North Sea’s gas boom in the mid-1970s on the economy of the Netherlands.
  
  o Commodity prices drive value of the currency making other parts of the economy less competitive. Increases reliance on commodity sector.

  o I expand the definition to refer to anything that draws resources towards one sector and away from another sector.

• Many non-agricultural commodities are not renewable. When they are gone, they are gone.

• Short run supply restrictions on commodity extractions yields large rents that are often expropriated by government (often leading to corruption).
Commodity Price Boom and Low TFP Growth

- As commodity prices grow, incentive of commodity rich countries to focus on extraction.
- The relative “monopoly” of the commodity exporters creates rents.
- There is not as much incentive to increase efficiency given the excess rents to the economy.
- Can result in large growth in output (and employment) without a corresponding increase in TFP.
- If the resource boom is temporary, can have lasting effects on a countries growth prospects!
- A similar story can be told for effects of housing boom in U.S., Spain, etc.
Summary: Part 1

• Weakening commodity demand is putting a strain on Latin American economies.

• Most important for high commodity producing countries that did not have high TFP growth during the 2000s.

• Latin American countries that export commodities dependent on world demand (which drives commodity price variation).
  - China/India/Emerging Market growth
  - U.S. growth (given proximity)

• Need to discuss Chinese and American growth to get a full picture of risks to Latin American economies.
Energy Boom in U.S.

- How has the U.S. responded to energy price boom?

- Potential spill over to Latin American Economies
U.S. Energy Production Over Time (IMF)

Figure 1.1.1
U.S. Crude Oil Production
(Millions of barrels per day)

Source: U.S. Energy Information Administration.
U.S. Energy Production Over Time (IMF)

Figure 1.1.2
U.S. Oil Production and Consumption
(Millions of barrels per day)

Source: U.S. Energy Information Administration.
Note: Refers to the production, consumption, and net import of petroleum. Petroleum consists of crude oil and petroleum products, which are unfinished oils, pentanes plus, and gasoline blending components.
U.S. Crude Imports Over Time (IMF)

Figure 1.2.2

United States: Crude Oil Imports, 2005 vs. 2013
(Million barrels per day)

Total = 10.1

2005

Total = 7.7

2013

Canada
Mexico
Other LAC
Persian Gulf
Nigeria

Other
Will A Strong U.S. Spur Latin American Growth?

Business Cycle Comovement with the U.S. Economy, 2002–14²
(Correlation coefficient for monthly industrial output series)

IMF Report – Model Projection
Part 3: Understanding Housing Markets
What I Will Do

• Show recent data on property price movements in Latin America relative to the rest of the world.

• Establish three “facts” about the nature of housing prices.

• Provide a simple model to understand housing price dynamics.

• Forecast housing prices out for the U.S., China and Latin American (broadly).

• Discuss potential housing price collapse on Chinese economy.
## Real House Price Growth 2010-2013 (Post Global Recession)

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<th>Country</th>
<th>House Price Growth (Percent)</th>
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<td>Brazil</td>
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<tr>
<td>Britain</td>
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<td>Canada</td>
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<td>South Africa</td>
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<td>Spain</td>
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</table>
Real Brazilian Housing Price Index (2001M1 = 100)

Source: BIS Monetary and Economic Department
Real Brazilian Housing Price Index (2001M1 = 100)

Source: BIS Monetary and Economic Department
Three Facts About Housing Prices in Developed Countries

1. Long run house price appreciation averages 0 – 2 percent real per year.

2. Housing prices cycle (big booms are followed by big busts)

3. Supply and demand pin down house prices.

   • Caveat – “gentrification” can lead to sustained house prices over time.

   • What is gentrification? Is it more likely to occur in developing economies?
# Average Annual Real Price Growth By US State

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Average 0.011 0.036 0.005
### Average Annual Real Price Growth By US State

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**Average** | **0.011** | **0.036** | **0.005** |
## Average Annual Real Price Growth By US State

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Average 0.011 0.036 0.005
Inflation Adjusted Housing Price Growth in the U.S.
Typical “Local” Cycle: California
Typical “Local” Cycle: Nevada

![Typical “Local” Cycle: Nevada](image-url)
### Average Annual Real Price Growth Across Countries

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<td><strong>0.056</strong></td>
<td><strong>0.022</strong></td>
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Real House Price Growth in Spain
(Annual Appreciation)
Real House Price Growth in Ireland
(Annual Appreciation)
Real House Price Growth in Japan
(Annual Appreciation)
Real House Price Index in South Korea
Equilibrium in Housing Markets

Fixed Supply

\[ P_H \]

\[ Q_H \]
Equilibrium in Housing Markets

Fixed Supply

\[ P_H' \]

\[ P_H \]

Demand

\[ Q_H \]
Equilibrium in Housing Markets

Fixed Supply

Supply Eventually Adjusts

Demand

$P_H'$

$P_H''$

$P_H$

$Q_H$
How Does Supply Adjust?

• Build on Vacant Land

• Convert Rental or Commercial Property

• Build Up

• Build Out (Suburbs)

• Build Way Out (Create New Cities)

• Some of these adjustments can take consider amounts of time.

Caveat: Gentrification/Agglomeration can lead to sustained increases in house prices.
Why Do House Prices Cycle?

• Supply and demand forces.

• When demand increases (increasing prices), supply eventually adjusts (build more houses).

• The increase in housing supply moderates price growth.

• Housing supply – in the long run – is very elastic (convert old properties, build on vacant land, create new cities, etc.).
U.S Quarterly Housing Starts (in 1,000s)

Source: U.S. Department of Commerce: Census Bureau
Housing Prices in China

- China house prices have growth has been massive during the 2000s (e.g., ~500% in Beijing, ~350% in Shanghai, and 200% in mid-sized cities)

- Is housing price boom in China “a bubble”?

- Some academics/officials say no bubble. Income growth was also high. Income growth and housing growth have been tracking each other (although housing growth is slightly higher).

- As seen above, it is hard for economic theory to predict a tight relationship between housing price growth and income growth (because supply can adjust).

- Empirically, no relationship between house price growth and income growth.
House Price Growth in China (Fang et al, 2015)
Real House Price Index vs Real Per Capita Income Index: US (2005=100)

Real House Price Growth 1975-2014: 46%
Real Per Capita Income Growth 1975-2014: 63%
Real House Price Index vs Real Per Capita Inc. Index: Germany (2005=100)

Real House Price Growth 1975-2014: -1% per year
Real Per Capita Income Growth 1975-2014: 52% per year
Real House Price Index vs Real Per Capita Inc. Index: Spain (2005= 100)

Real House Price Growth 1975-2014: -25% per year
Real Per Capita Income Growth 1975-2014: 27% per year
Real House Price Index vs
Real Per Capita Inc. Index: Italy (2005=100)

Real House Price Growth 1975-2014: -1%
Real Per Capita Income Growth 1975-2014: 37%
Real House Price Index vs Real Per Capita Inc. Index: Ireland (2005= 100)

Real House Price Growth 1975-2014: 119%
Real Per Capita Income Growth 1975-2014: 71%
Real House Price Index vs Real Per Capita Inc. Index: Japan (2005=100)

Real House Price Growth 1975-2014: -20%
Real Per Capita Income Growth 1975-2014: 60%
Real House Price Index vs Real Per Capita Inc. Index: Croatia (2005=100)

Real House Price Growth 1975-2014: 8%
Real Per Capita Income Growth 1975-2014: 257%
Real House Price Index vs Real Per Capita Inc. Index: S. Korea (2005=100)

Real House Price Growth: 13%
Real Per Capita Income Growth: 153%
What is Driving Property Price Boom in China?

• How much of the increase in Chinese housing demand during last decade is due to lack of alternate investment options?

• Antidotal evidence that housing is a preferred investment vehicle in China given low returns on bank accounts and restricted access to equity markets.

• Some evidence that foreign Chinese investors have propped up housing prices in London, Vancouver, and Toronto.

• Little formal analysis on this topic.
**Data on Multiple Ownership of Residential Property**

- Data from China’s Urban Household Survey
- Analyzed data for Liaoning, Shanghai, Guangdong, and Sichuan
- Fraction of households (by income category) who own 1 or 2 houses.

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<td>Shanghai</td>
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<td>Guangdong</td>
<td>76.55</td>
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<td>Sichuan</td>
<td>79.42</td>
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Data on Multiple Ownership of Residential Property

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<table>
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<th>Shanghai 2 house</th>
<th>Guangdong 1 house</th>
<th>Guangdong 2 house</th>
<th>Sichuan 1 house</th>
<th>Sichuan 2 house</th>
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Housing Supply Growth in Chinese Cities

Deng et al. (2015), NYU working paper
Unsold Housing Inventories in Chinese Cities

Figure 9: Unsold Inventory Held by Developers As a Share of Sales Volume, A Closer Look at 12 Major Markets

Deng et al. (2015), NYU working paper
Vacancy Rate in Chinese Cities

Figure 11: Housing Vacancy Rate Based on Urban Household Survey between 2002 and 2009

Deng et al. (2015), NYU working paper
House Prices and The Macroeconomy

- Three channels of house prices on economic activity
  - Building channel (high housing demand creates jobs in construction sector).
  - Wealth channel (high house prices can drive spending because people feel wealthier or because they tap into home equity).
  - Bank channel (falling house prices could cause defaults which causes banks to lose money – effects aggregate lending).

- Lower leverage in Latin America limits the latter channel (bank losses could be less from a property price decline).
House Price Forecast: U.S.

- Housing prices have – for the most part - stabilizing in nominal terms.

- We should expect annual real housing price growth of somewhere in the range of 0% to 3% nominal in the medium run.

- Housing market will not be “rebounding” toward 2006 levels anytime soon.
  - Have a glut of existing supply
  - No reason to expect a large housing demand shock
House Price Forecast: Latin America

- Fair amount of heterogeneity across

- Olympics should prop up prices in medium run in Brazil (demand is high, increased construction costs, etc.)

- Need to separately analyze both demand factors (credit constraints, commodity price demand) and supply factors (building regulations, construction costs).

- Will land prices permanently increase because of gentrification (lower crime, better schools, lower pollution, etc.)?

- Are prices over-inflated?
House Price Forecast: China

- I believe housing prices to be over-inflated.
- Prices are starting to fall in the last year (slightly)
- Demand is propped up – housing being treated as an investment vehicle.
- Financial liberalization may cause a housing price collapse.
- Will the stock market collapse spill over to the housing market?
  - Stocks have plummeted during the last two months (25 percent decline)
- Will the housing price collapse effect the overall economy?
Risks to the Chinese Economy

- Stocks still up on the year – but, stock wealth makes up only 6% of household wealth. Stock issuance only funds 5% of firm investment (the rest is financed by bank lending).

- As a result, stock market decline may not have big effect on domestic spending.

- Growth in output has been slowing – prior to the stock market declines.

- Banks are lending – encouraged by the government. This will prop up firm investment/consumer spending. Will it spur inflation?

- Is a financial crises in China looming?
Part 4: The Anemic U.S. Labor Market
Unemployment Rate: 1970M1 – 2015M4

Source: US. Bureau of Labor Statistics
Shaded areas indicate US recessions - 2015 research.stlouisfed.org
How is Unemployment Measured?

- **Standardized Definition of the Unemployment Rate:**
  - Unemployed \(=\) jobless but looking for a job
  - Labor Force \(=\) \#Employed + \#Unemployed
  - Unemployment Rate \(=\) \(#\text{Unemployed}\) / (Labor Force)

This is the definition used in most countries, including the U.S.

U.S. data:  http://stats.bls.gov/eag.table.html
U.S. measurement details:  http://stats.bls.gov/cps_htgm.htm

Issues: Discouraged Workers, Underemployed, Measurement Issues
Components of Unemployment

• **Flow of people into the unemployment pool**
  - Flow into unemployment from employment (job loss)
  - Flow into unemployment from out of labor force (stop being discouraged)

• **Flow of people out of the unemployment pool**
  - Flow out of unemployment into employment (job finding)
  - Flow out of unemployment out of labor force (discouraged workers)
Employment to Population Rate: Men
Employment to Population Rate: Women

Source: US. Bureau of Labor Statistics
Shaded areas indicate US recessions - 2015 research.stlouisfed.org
Non-Employment Rate:
Prime Age Non-College and College Men

Solid Line: Data:
Dashed Line: 5th Order Polynomial
Non-Employment Rate:
Prime Age Non-College and College Women

Solid Line: Data:
Dashed Line: 5th Order Polynomial
Types of Unemployment

- **Frictional Unemployment**: Result of Matching Behavior between Firms and Workers.

- **Structural Unemployment**: Result of Mismatch of Skills and Employer Needs

- **Cyclical Unemployment**: Result of output being below full-employment. Individuals have the desire to work and the skills to work, yet cannot find a job.

- **Is Zero Unemployment a Reasonable Policy Goal?**
  - No. Frictional and Structural Unemployment may be desirable (unavoidable).
Why is the Distinction Important?

• How much of the current low employment is **structural** vs. **cyclical**?

• This is a current debate among policy makers (and a question I am trying to answer in my own research)

• **Why could there be structural non-employment?**
  
  o Some industries boomed inefficiently during the early 2000s (construction) and need to retrench. The jobs being created now are not in those industries (where unemployment is high).

  o Some industries were in secular decline during the 2000s (manufacturing). The jobs being created now are not in those industries.

  o Workers in manufacturing and construction need to be reallocated to other sectors.
My Current Research

- Big decline in manufacturing employment during the early 2000s. This depresses wages and employment of non-college individuals.

- Housing boom during the early 2000s lifted the employment and wages of lower skilled individuals (by propping up construction and housing related services).

- Housing boom “masked” the structural decline in manufacturing. The manufacturing decline is “permanent” while the housing boom was temporary.

- This is the focus of a series of new papers I have with (with Kerwin Charles and Matt Notowidigdo).

- Preview some background patterns first. Then I will talk about the identification of this mechanism.

- Summary: Both housing and manufacturing had a significant effect on labor markets during the last 15 years within the U.S.
Total Monthly U.S. Manufacturing Employment (in 1,000s):
1980M1-2014M5

~1 Million Jobs Lost
During 1980s and 1990s
~1 Million Jobs Lost
During 1980s and 1990s

~4 Million Jobs Lost
Between 2000-2007
(Housing Boom Years)
~1 Million Jobs Lost
During 1980s and 1990s

~4 Million Jobs Lost
Between 2000-2007
(Housing Boom Years)

~1 Million Jobs Lost
After 2007
U.S. Employment Trends for Non-College Men (age 21-55)

Manufacturing + Construction

Manufacturing

Construction
Part 5: Housing Boom and Educational Attainment
Propensity to Have At Least One Year of College (Age: 18-29)
Propensity to Have At Least One Year of College (Age: 18-29)

Figure 10: Trends in Educational Attainment in States with Housing Booms, 1985-2011
Any College Share Over Time (older cohorts), MSAs Split By Size of Housing Demand Shock
Did Housing Boom Delay College Attendance?

- Use same local labor market design to answer this question.

- The answer is YES!

- Places that had large housing booms had a large reduction in the propensity to attend at least one year of college.
  - Nearly all the action was on two year colleges (community colleges, technical schools, trade schools, etc.).
  - Found effects for both men and women.

- During the bust, this trend reversed (but, not completely).

- Estimates can explain about 50% of the time series change for both men and women.
Conclusions

1. **Structural shifts are having real effects on the economy during the 2000s.**
   - About 40% of increase in non-employment during 2000s can be attributed to the decline in manufacturing.
   - Most of this effect occurred along the “out of the labor force” margin and not the “unemployment” margin.
   - Manufacturing (inclusive of the part masked by housing boom) explain about 35% of increase during the recession.

2. **Labor market was weaker in the 2000-2007 period than we thought.**
   - Housing boom “masked” deterioration of U.S. labor market.
   - 2000-2007 period marked by secular decline in one sector and a temporary boom in another sector.
   - Implication: 2007 may not be a good benchmark to evaluate cyclical changes in economic variables of interest.
Conclusions

3. The net effect of housing booms/busts on labor markets was smaller over the entire decade.
   - The bust reduced employment but the boom raised employment.

   - Housing boom distorted human capital in addition to physical capital.

5. Broader implications – what happens when you have cyclical booms/busts in one sector and persistent declines in another sector.
   - Not saying housing is important, per se (it was just the boom/bust during this decade).
   - Real focus is on the manufacturing decline.
Part 6: Some Thoughts on Inequality
Inequality Mania

- Recent empirical work showing inequality is increasing:
  - Income inequality (Kevin Murphy, Larry Katz, Emmanuel Saez, Thomas Piketty, Ed Glaeser).
  - Consumption Inequality (Steve Davis, Me)
  - Employment Inequality (Kevin Murphy, Bob Topel, Me)
  - Wealth Inequality (Thomas Piketty, Emmanuel Saez)

- What are the causes of increased inequality?

- Is increased inequality detrimental to a society?
Thomas Piketty *Capital in the Twenty First Century*

- **Book:** “Capital in the Twenty First Century” - Worldwide best seller.

- Documents wealth inequality increases around the developed world.

- Claim: economic conditions are such that eventually most wealth will be concentrated in the hands of the rich.
  - Forces will continue to make inequality grow.
  - Reason: rate of return on capital > income growth (i.e., $r > g$)

- **Policy prescription:** Tax wealth

- **In my class, walk through all the assumptions needed for Piketty’s conclusions.** Some of the assumptions are unrealistic.
The top decile share in U.S. national income dropped from 45-50% in the 1910s-1920s to less than 35% in the 1950s (this is the fall documented by Kuznets); it then rose from less than 35% in the 1970s to 45-63% in the 2000s-2010s. Sources and series see piketty.pse.ens.fr/capital2c.
Cross-Country Income Inequality: Top 1%

Figure 9.2. Income inequality in Anglo-saxon countries, 1910-2010

The share of top percentile in total income rose since the 1970s in all Anglo-saxon countries, but with different magnitudes. Sources and series: see piketty.pse.ens.fr/capital2lc.
U.S. Wealth Inequality

Figure 10.5. Wealth inequality in the U.S., 1810-2010

The top 10% wealth holders own about 50% of total wealth in 1910 and 75% today.
Sources and series: see piketty.pse.ens.fr/capital21c.
Inequality Thoughts

• Are there benefits to income inequality?
  – In *human capital* models, unequal returns to skill are necessary to induce people to invest in human capital.
  
  – “The widening inequality in earnings and the buoyant demand for skilled workers also indirectly encourages greater growth in the economy by increasing the incentives for young people to invest in themselves.” Gary Becker, *The Economics of Life*
Inequality Thoughts

• Is income inequality detrimental to society?
  – The economic literature has focused on documenting trends in inequality and modeling the determinants of income inequality.
  – However, the consequences of inequality are relatively understudied due to some challenges in research design.
  – How do we think about:
    o The health of societies that are unequal?
    o Intergenerational mobility?
    o Income segregation (do poor and rich people choose to live next to each other)?
    o Political participation (who votes? who gives money to candidates)?
Part 7: The Sustainability of Europe
European GDP Growth Rate
European GDP Growth Rate

Economic growth in Europe

www.economicshelp.org | Source: OECD June 2013 growth forecast
Will Eurozone Last?

- How do currency unions deal with regional heterogeneity?
  - Devaluation of local currency (only possible if currency union dissolves).
  - Regional migration - very little population migration in Europe (language barriers).
  - Inter-Region transfers – this is the policy currently being pursued.
  - Inflation in the relatively strong countries (makes weak countries exports cheaper).
  - Wage/Budget cuts in the relatively weak countries (politically hard to implement).
Why is the U.S. a good “currency union”?  

- How do currency unions deal with regional heterogeneity?  
  - Devaluation of local currency (only possible if currency union dissolves).  
  - Regional migration  
  - Inter-Region transfers  
  - Inflation in the relatively strong countries (makes weak countries exports cheaper).  
  - Wage/Budget cuts in the relatively weak countries (politically hard to implement).
## U.S. Inter-Region Transfers: 1990-2009 Average

<table>
<thead>
<tr>
<th>State</th>
<th>Yearly Net Transfer (% GDP)</th>
<th>State</th>
<th>Yearly Net Transfer (% GDP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>10.3</td>
<td>Hawaii</td>
<td>-6.7</td>
</tr>
<tr>
<td>Minnesota</td>
<td>10.0</td>
<td>Virginia</td>
<td>-7.3</td>
</tr>
<tr>
<td>New Jersey</td>
<td>7.5</td>
<td>Alaska</td>
<td>-7.5</td>
</tr>
<tr>
<td>Illinois</td>
<td>5.6</td>
<td>Maryland/DC</td>
<td>-7.5</td>
</tr>
<tr>
<td>Connecticut</td>
<td>5.3</td>
<td>Maine</td>
<td>-7.6</td>
</tr>
<tr>
<td>New York</td>
<td>4.4</td>
<td>North Dakota</td>
<td>-7.7</td>
</tr>
<tr>
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<td>3.3</td>
<td>Montana</td>
<td>-9.2</td>
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<tr>
<td>Michigan</td>
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<td>West Virginia</td>
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<tr>
<td>Nebraska</td>
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<td>Mississippi</td>
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</tr>
<tr>
<td>Massachusetts</td>
<td>2.1</td>
<td>New Mexico</td>
<td>-13.1</td>
</tr>
</tbody>
</table>

From Economist: 8/1/2011
Some Concluding Topics (if time allows)

- Monetary Policy in the U.S. – Interest Rate Policy Going Forward?
- U.S. inflationary pressures?
- Greek exit?
Questions