The Global Recession

Jesús Fernández-Villaverde
March 18, 2021

1University of Pennsylvania
A changing world: Globalization

On or around 1972, the world changed:

1. Visit of Nixon to China.
2. Old Bretton Woods system collapsed.
3. Oil shocks.

Bigger picture: globalization started to re-arrange the world.
GDP based on PPP, share of world (Percent of World)

- China, People's Republic of all indicators
- United States all indicators
- India all indicators
- Western Europe all indicators

©IMF, 2019, Source: World Economic Outlook (October 2019)
The impact

- Combined with new IT and lower transportation costs, dramatically changed the size of world labor force.

- Effects:
  1. International trade.
  2. Capital flows.
  3. To a smaller degree, emigration.
Figure 2.4: World Trade, Growth Rates
Figure 2.5: Current Accounts, billions of dollars
The Emergence of China, Labor Supply Shock, Current Account Deficit, and Capital Flows

3.1 The Rise of China

China benefited most due to globalization and emerged as one of the most important creditor nations and trading partners of the US. In 1980, China accounted for less than 1% of world GDP. By 2007 this figure had grown to almost 6%, making China the third largest economy and on track to overtake Japan as the second largest economy as early as 2011. This meteoric rise has been made possible by recent innovations in the communications and transportation areas that have helped open up the services of China’s enormous pool of underemployed labor to the western world.

![Figure 2: The ratios of China and US gross national savings (left scale) and nominal GDP (right scale). Source: Based on data from China National Bureau of Statistics and the BEA. National savings equals gross domestic investment plus the current-account balance.](image)

During the 1980-2007 period China’s share of World GDP rose while China benefited the most due to globalization, other emerging nations like, for example, Brazil and India benefited as well. We computed Savings using the formula, Aggregate Savings = Gross Domestic Investment + Current Account Balance.
• China saved even more than it invested.

• This seems odd: basic intuition.

• However:

  1. Absence of a social insurance network.

  2. Inadequate financial markets and poor financial contract enforcement.

• This leads to over-savings.
Additional force

- Chinese government kept Yuan from appreciating in the currency markets.
- Large accumulation of foreign reserves.
- Why?
  2. Instrument of national security.
  3. City-biased policy. CPC has read Marcuse.
Figure 7: Foreign exchange rate (Yuan/US$) as of January 1 each year. Source: FRB St. Louis.

To summarize, the sudden increase in labor supply from workers in developing countries because of globalization should have resulted in significant sections of the population in developed countries experiencing a decline in their living standards as more and more manufacturing and service jobs are outsourced. However, the flow of cheap liquidity from abroad...
Capital flows in international markets I

- Pressure on interest rates.

- Flawed regulations in Basel II.

- Financial institutions, particularly in the U.S., started to invent new instruments to satisfy world demand for highly-rated yet high-yield securities.

- Mortgage-Backed Securities (MBS).

- Tranches.
Jagannathan, Kapoor & Schaumburg (2009) Why are we in a recession?

"Global Savings Glut", as pointed out by Bernanke (2005) and Dooley et al (2005). Almost the entire increase in current account balances from BRIC, NIAC, and ME countries (the latter benefitting from a dramatic rise in oil prices after 1997) has been matched by an increase in the current account deficit of a single country: the US. We argue that this pattern (along with a period of easy US monetary policy) precipitated the stock market and subsequent housing bubbles in the US. The current crisis is therefore best understood in an open economy context as summarized in the flowchart below depicting the basic anatomy of the crisis as laid out in this paper.

Figure 1: The flowchart shows the developing world (exemplified by China) running (artificially) large current account surpluses which are invested in US treasuries and mortgage pools. The cheap financing of government debt (allowing low taxes) and mortgage debt (leading to rising house prices and cheap home equity loans) make US households feel wealthy spurring increased consumption including imports. Due to the high personal savings rate in the developing world, the income generated by exports to the US is to a large extent plowed back into US mortgage markets leading to a multiplier effect which is only magnified by the high average leverage of household mortgage debt.

Globalization has made the US an open economy, and closed economy general equilibrium models commonly used in macro economic analysis are arguably unsuitable for understanding the current recession. For example, Bernanke and Gertler (2000) examine the implications of asset price volatility for management of monetary policy using a closed economy general equilibrium model and conclude that "central banks should focus on underlying inflationary pressures. “ Alan Greenspan was supportive of the Bernanke and Gertler policy prescription that the Fed should ignore bubbles and stick to its traditional policy of controlling inflation. In the Bernanke and Gertler (2000) model, asset prices driven by bubbles are almost perfectly correlated with inflation, and so targeting inflation is enough; there is no need to explicitly target asset price bubbles. Such a conclusion need not in general hold in an open economy. As Jaimovich and Rebelo (2008) demonstrate, the response of real activities to news about the future in open and closed economies can be quite different.
Figure 9: Change in Chinese holdings of US assets by asset class in US $M.

It is a striking empirical fact that per capita consumption in the US grew at a steady rate of roughly $1,994 per year over the period 1980-1999, but jumped abruptly to approximately $2,849 per year from 2001 through 2007 (see Figure 11). How was this remarkable increase in consumption financed? The increase happened despite the March-November 2001 recession and subsequent jobless recovery which resulted in no significant increase in hourly earnings nor in non-farm employment rates. In fact, per capita consumption in excess of wages and salary accruals and proprietors' income increased by almost 230% from approximately $2,181 in 2000 to $7,255 by 2007. The stock market was also roughly flat between 2000 and 2007 with the S&P500 starting at 1,499 in 2000 Q1 and ending at 1,421 in 2007Q1.
Figure 10: Current account balance and change in household indebtedness. All numbers are in US$ per household.

Source: Treasury
Starting in the late 1990's the average national home value appreciation went from around 5% per year to a peak of 15% per year in 2006 before collapsing in late 2007 (see Figure 12). The S&P/Case-Shiller home price index went from 100.77 in 2000Q1 to 186.07.
Figure 15: Average US household residential leverage computed as total residential mortgage debt divided by residential home values (primary residence only). Source: FHFA, OFHEO
While housing prices in Western countries increased, everything seemed fine.

Of course, eventually housing prices started to fall.

Institutions most involved in the trading of MBS and related instruments collapsed.

We did not know how to properly handle huge capital inflows.

A first warning because...
Situation in China

- Communist Party of China (CPC) lacks legitimacy.
- Old memories from SWW and Civil War quickly fading out.
- Bottom line of party to the people: Après moi le déluge.
- Lieux de Mémoire (Pierre Nora):
  1. The Century of National Humiliation.
  2. Imperialist powers jumping over China.
  3. War lords.
- Extreme nationalism of urban middle class.
Bretton Woods was one of the pillars of the reconstruction of the world economic order after the WWII.

U.S. and U.K. were keenly aware that they could not repeat the mistakes of 1919-1939.

System of governance of capital flows.

System of financial regulation.
45 years later

- We still do not know how to regulate our international financial sector.
- What is really the role of the IMF?
- Are meetings such as G-20 effective?
- Issues have become even more salient.
But globalization is still leaving many countries behind

- Two main areas:
  1. Most of the Muslim world.
  2. Africa.

- Tensions for the future.

- Role of oil and other commodities.

- Demographic pressures.
Meanwhile, in the western economies

- Median incomes stagnated in many countries.

- Income inequality has grown.

- Educational systems losing their role as a means of social mobility.

- Many privatizations processes only meant the substitution of a public monopoly for a private one.

- Scandals of corporate governance.

- Demographic change.

- Health costs.

- Large immigration flows.
Figure 2.14: Hourly Earnings

France
Germany
Spain
UK
US
Income distribution

- Big changes in relative wages.

- More true in Anglo-Saxon countries than in continental Europe (but perhaps no!).

- Possible reasons:
  
  1. International trade.
  
  2. Skill-biased technological change.
  
  3. Erosion of rents (decline of unions?).
The mechanisms that Piketty claimed in his book would lead to higher inequality (relating to capital dominating labor) are speculative and not supported by most economists. Household finance surveys in 1962 and 1983 show that the top 1 percent share changed little over that period, edging up from 32 percent in 1962 to 34 percent in 1983. Those shares were higher than the 30 percent share found in the first modern SCF in 1989. Economist Edward Wolff used Federal Reserve data to create his own estimates of the top 1 percent wealth share. He found that the share was fairly flat from 1962 to 2010 but then rose after that.

A third method for estimating wealth shares relies on estate tax returns. Using these data, Wojciech Kopczuk and Saez estimated that the top 1 percent share of U.S. wealth was essentially flat from the 1930s all the way through to 2000.

In sum, the widely cited wealth data created by PSZ are off base. A 2014 study by Kopczuk concluded that “estimates of the distribution of wealth based on the Survey of Consumer Finance and the estate tax method show little or no rise in the share of total wealth held by the top 1 percent of the population in the last 30 years, while the capitalization approach finds a substantial rise.” Similarly, a 2016 Federal Reserve study found that “the top share estimates derived in this paper show much lower and less rapidly increasing top shares than the widely cited values from the Saez and Zucman (2016) and Piketty and Saez (2003) studies.” The 2019 estimates by the Federal Reserve and SZZ show lower figures for the top 1 percent share and a slower rise than the PSZ data. U.S. wealth inequality has risen, but given the huge changes in technology and globalization that have transformed our economy, some changes over the decades are not surprising.

What about the future? Warren Buffett claimed that wealth inequality “has widened and will continue to widen unless something is done about it.” That is not clear at all. Buffett is echoing Piketty, but the mechanisms that Piketty claimed in his book would lead to higher inequality (relating to capital dominating labor) are speculative and not supported by most economists.
Wealth inequality statistics do not include the ‘wealth’ that individuals hold in Social Security.

Numerous factors may move wealth inequality either up or down in the future. For one thing, there is a “race between the stock market and the housing market.” Middle-income households gain relative to top groups when housing prices are rising quickly, but top groups do better when the stock market is rising quickly. In recent years, equity prices have risen faster, which has boosted the top 1 percent share, but markets may change direction down the road.

Another dynamic is the normal functioning of life-cycle finances. Most young people start their careers with little wealth but build a nest egg by their 60s. The SCF data for 2016 show that the mean family net worth for ages 35–44 was $289,000 while the mean for ages 55–64 was $1,167,000.

Yet another dynamic regards debt incurred for higher education. A growing share of families—currently 22 percent—owe education-related debt. That debt is now the largest part of household debt aside from mortgages, and it substantially reduces net wealth for affected families in the SCF data.

However, the education investment funded by debt helps people build human capital, which is an asset. But the SCF does not include human capital, so it understates the true wealth of young people who invest in education. The upshot is that the rise in education debt has skewed measured wealth inequality.

Human capital is not the only portion of wealth left out of inequality estimates. Some wealth estimates, including the SCF, exclude defined benefit pension plans, which are owned broadly by the middle class. If defined benefit plans were included in the SCF data, it would reduce the top 1 percent share by 5 percentage points.

Finally, wealth inequality statistics do not include the ‘wealth’ that individuals hold in Social Security. Social Security is not legally owned wealth, but to individuals, the future...
Figure V. Educational Attainment Decompositions, Males and Females 1900-1980 Birth Cohorts

Notes: 3-year moving averages based on CPS October, Census, CPS March and NCES data. HS graduates are those who obtained a regular public or private HS diploma (excluding GEDs) from the NCES. "Graduate HS" is the fraction of 8th grade enrollments for a given cohort who report a regular HS diploma. "Attend Given HS" is the fraction of recent HS graduates who report being enrolled the fall of the year following graduation. "Attend College" is college enrollments of recent HS graduates as a fraction of 18 year old cohort size. College graduates are those who report a BA or higher by age 25. "Graduate Given Attend" are those who obtained a four year degree as a fraction of the college enrollment total for that cohort. Two-year degrees are not included. "Graduate College" is the number of college graduates as a fraction of the 18 year old cohort size. Population estimates are from the Census P-20 reports. HS diplomas issued by sex are estimated from CPS October data after 1982.
PISA worldwide ranking
average score of math, science and reading

Source: OECD, 2015-2016

The Program for International Student Assessment (PISA) is a worldwide study by OECD in 70 nations of 15-year-old students’ scholastic performance on mathematics, science and reading.

Above 500
1. Singapore 551.7
2. Hong Kong 532.7
3. Japan 528.7
4. Macau 521.3
5. Estonia 524.3
6. Canada 523.7
7. Taiwan 523.7
8. Finland 522.7
9. South Korea 519.0
10. China 514.3
11. Ireland 509.3
11. Slovenia 509.3
13. Germany 508.0
13. Netherlands 508.0
15. Switzerland 506.3
16. New Zealand 505.7
17. Denmark 504.3
17. Norway 504.3
19. Poland 503.7
20. Belgium 502.7
21. Australia 502.3
21. Vietnam 502.3

Between 450-500
23. United Kingdom 499.7
24. Portugal 497.0
25. France 495.7
26. Sweden 495.7
27. Austria 492.3
28. Russia 492.0
29. Spain 491.7
30. Czech Republic 490.7
31. United States 487.7
32. Latvia 486.7
33. Italy 485.3
34. Luxembourg 483.3
35. Iceland 481.0
36. Croatia 475.3
37. Lithuania 475.0
38. Hungary 474.7
39. Israel 472.0
40. Argentina 468.7
41. Malta 463.7
42. Slovakia 463.0
43. Greece 458.7

Below 450
44. Chile 443.0
45. Bulgaria 439.7
46. Cyprus 437.1
46. Romania 437.7
48. UAE Emirates 432.7
49. Uruguay 430.0
50. Turkey 424.3
51. Trinidad & Tob. 423.0
52. Moldova 421.3
53. Montenegro 418.7
54. Costa Rica 415.7
55. Albania 415.0
55. Thailand 415.0
57. Mexico 411.7
58. Colombia 410.3
59. Qatar 407.3
60. Georgia 405.3
61. Jordan 399.0
62. Indonesia 395.3
63. Brazil 395.0
64. Peru 394.0
65. Lebanon 376.3
66. Tunisia 371.3
67. Macedonia, Rep. 369.0
68. Algeria 362.0
69. Kosovo 357.7
70. Dominican Rep. 339.3
Challenges for the future

• Manage arrival of new countries to world stage.

• Achieve international cooperation to handle collective action problems.

• In particular, financial and corporate governance.

• Convince middle classes that they have a “stake” on the right policies.

• A “pro-market agenda” is not a “pro-business agenda”

• Decline of Volkspartei.