

The Role of Macro Imbalances in the US Recession of 2007–2009

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1. Introduction

The discussion of the US great recession of 2007–2009 has probably drawn the greatest attention among macroeconomists in recent years. A recession is normally defined as negative output growth for at least two consecutive quarters by the National Bureau of Economic Research (NBER). The US recession began in December 2007, and ended in June 2009, making the 18-month slump the longest since the Great Depression, according to the NBER (Wall Street Journal, 9/20/10). This downturn is thought to be the worst in modern history in light of the global scope of the crisis (Bernanke, 2010). US policymakers undertook the biggest government intervention in an otherwise market economy to mitigate the impact of the collapse. American people experienced the highest unemployment rate in more than a quarter century. Alan Greenspan, heading the US Federal Reserve from 1987 to 2006, defined the financial maelstrom as a “once-in-a-century credit tsunami” for the US. There is no disagreement that the US recession of 2007–2009 was the worst since the Great Depression (Krugman, 2009). The simplest explanation for the recession is that the bursting of the housing bubble triggered the financial crisis, ultimately making the recession inevitable. This reasoning is robust but incomplete. A macroeconomic approach to the understanding of what went wrong is deficient in the existing literature. This work attempts to fill that gap.

Most studies, including Taylor (2008, 2009), Gjerstad and Smith (2009), Holt (2009), and Jones (2010), accuse low interest rates, coined as cheap money policy, as the source of this debacle. But Bernanke (2010), the Chairman of the Federal Reserve, finds a weak link between cheap money and this crisis. He instead points to the government policies of boosting home ownership, substandard loans, and lack of

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vigilance on risks as being the main culprits behind the housing bubble. While both lines of argument have merits, I attempt to answer why money was cheap. This study finds that during the cheap money era, which began in the late 1980s, trade deficits, fiscal deficits, and falling private saving contributed to macroeconomic imbalances, which made the US recession worse than it otherwise would have been. Macro imbalances, in turn, necessitated the persistence of cheap money, which greatly contributed to the financial crisis.

2. The US Financial Crisis of 2007–2008

The financial crisis began in August 2007, and the recession began in December 2007. Hence, Bernanke (2010) argues that the financial crisis was sufficiently intense to spark a deep global recession. Gjerstad and Smith (2009) assert that the housing bubble collapse engulfed the financial system and then the wider economy. To find the main causes of the financial crisis, we immediately point to sub-prime mortgages, aggressive lending, mortgage securitization, and credit default swaps. These reasons, however, only form the surface of the problem. If we dig deeper, we find that cheap money in Greenspan's era, as shown by the Federal funds rate (Fed rate) in Figure 1, caused many of these problems. Despite the fluctuations, the Fed rate has been showing a downward trend since 1982, when Paul Volcker, the sitting Chairman of the Federal Reserve, raised interest rates to curb hyperinflation. The Fed rate has remained low, in the 1–5% range, since 2001. Low interest rates made mortgages inexpensive, created an artificial demand for houses, sent housing prices high, encouraged aggressive lending, made mortgage backed securitization very attractive and, thereby, created a bubble in the housing market. The bubble burst in August 2007 and began to deflate the asset side of companies like Fannie Mae, Freddie Mac, JP Morgan, AIG, and so on. While tight money was the main cause of the Great Depression, easy money was at the centerpiece of the financial crisis of 2007–2008. A lack of financial intelligence has aggravated the crisis to a critical extent. Now we need to see how macro imbalances influenced the persistence of cheap money and affected output decline.

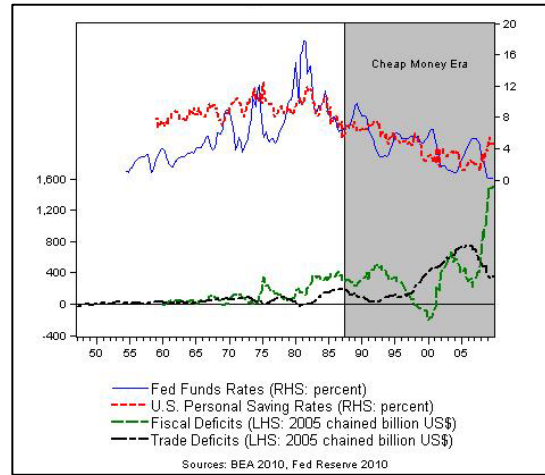
3. Macro Imbalances and the Great Recession

The open economy output equation, as presented below, can be used to explain macro imbalances:

$$Y = C(Y - T) + I(Y, i) + G + X(Y^*, E) - M(Y, E), \quad (1)$$

where Y is national output, C is consumption, T denotes taxes, I is investments, i is the interest rate, G is government spending, X is exports, Y^* is income of the foreign economy, E is the exchange rate, and M is imports. By suppressing the arguments in the parentheses and subtracting T from both sides of Equation (1), we get the open economy IS equation:

Figure 1. US Federal Funds Rates, Saving Rates, Trade Deficits, and Fiscal Deficits



$$X - M = S + (T - G) - I, \quad (2)$$

which says that net exports become equal to private plus government saving minus investment. This relationship also implies that if there is no gap between investment and private saving, fiscal balance will be equal to trade balance in open-economy equilibrium. After some rearrangement, the terms can be expressed in deficits:

$$(G - T) + (I - S) = (M - X). \quad (3)$$

Without any inference of causality, Equation (3) implies that fiscal deficits must be associated with trade deficits if investment is greater than or equal to private saving. If investment exceeds private saving, and imports exceed exports, the government must run deficits. Alternatively, a country with trade and fiscal deficits, which we call twin deficits, must have invested more than its private saving. All these cases are obvious for the US economy. I hypothesize that these macro imbalances played a significant role, both indirectly and directly, in creating the US great recession of 2007–2009.

4. Correlation and Causality Tests

Economists find in retrospect that cheap money policy began once Volcker completed his term and Greenspan took office in 1987. Bernanke, who succeeded Greenspan in 2006, is also viewed as accommodative as Greenspan. I select the cheap money era from 1987Q3 to 2009Q4 as the sample of my study. The Fed rates and private savings rates are collected from the Federal Reserve (2010) and Bureau of Economic Analysis (2010). All other data on GDP, trade deficits, and fiscal

deficits, expressed in 2005 constant prices, are collected from the Bureau of Economic Analysis (2010). Figure 1 shows a steady fall in the private saving rates during the cheap money era and a rapid increase in fiscal deficits since 2000.

Now I work with five series—Fed rates, savings rates, fiscal deficits, trade deficits, and GDP growth. The correlation matrix in Table 1 shows that fiscal deficits are negatively correlated with interest rates and output growth. High trade deficits are associated with low interest and saving rates. Cheap money is linked with low saving rates. Other correlation coefficients are not significant and can be ignored. The Granger causality tests presented in Table 2 show the direction of causality. As Tests 1 and 2 in Table 2 show, high fiscal and trade deficits lowered the Fed rate. This implies that macro imbalances indirectly contributed to cheap money policy and hence the housing bubble before the financial crisis. Apart from twin deficits, excessive capital inflows to the US market, which Bernanke (2005) called the saving glut, contributed to the persistence of low interest rates. Test 3 shows that low Fed rates caused falling savings rates, which arguably augmented lower down payments for home buying, lower equity, higher leverage, higher risk, and a bigger bubble in the housing market. Tests 4 and 5 confirm that twin deficits contributed to output decline. Although, the underlying channel is an aspect of further study, this implies that the US is likely to encounter more recessions in the future if twin deficits are not corrected. As Tests 6 and 7 show, both fiscal and trade deficits reinforced each other, augmenting twin deficits. Moreover, trade deficits appeared to have lowered saving rates, as shown in Test 8. Cheap money policy appeared to have raised fiscal deficits, as shown in Test 9. While fiscal deficits were augmenting, it was in the interest of the US to maintain low Fed rates, whose rise would essentially elevate the cost of external borrowing by pushing global lending rates higher than before.

Table 1. Correlation Matrix with US Macro Variables: 1987–2009

	Fed rate	Savings rate	Fiscal deficits	Trade deficits
	0.4226			
Savings rate	4.37 [0.00]			
	-0.6265	0.0298		
Fiscal deficits	-7.54 [0.00]	0.28 [0.78]		
	-0.4949	-0.8708	0.1331	
Trade deficits	-5.34 [0.00]	-16.62 [0.00]	1.26 [0.21]	
	0.1676	0.1223	-0.3594	-0.1297
GDP growth	1.59 [0.11]	1.16 [0.25]	-3.61 [0.00]	-1.23 [0.22]

Note: Correlation coefficients (bold when significant at the 1% level) are followed by t-statistics and p-values (in brackets). Source: Bureau of Economic Analysis 2010 and Federal Reserve 2010.

Table 2. Granger Causality Tests with US Macro Variables: 1987–2009

Test	Null hypothesis	Lag 1		Lag 2		Lag 3		Lag 4	
		F	P	F	P	F	P	F	P
1	Fiscal deficits does not Granger cause Fed rate	0.9245	0.34	0.3007	0.74	2.9286	0.04	2.1332	0.08
2	Trade deficits does not Granger cause Fed rate	0.0992	0.75	0.9465	0.39	2.4770	0.07	2.7414	0.03
3	Fed rate does not Granger cause saving rate	0.6411	0.43	2.9946	0.06	2.0766	0.11	1.5420	0.20
4	Fiscal deficits does not Granger cause GDP growth	1.1274	0.29	1.4149	0.25	1.7935	0.15	2.1064	0.09
5	Trade deficits does not Granger cause GDP growth	0.9688	0.33	4.2117	0.02	3.3092	0.02	2.4356	0.05
6	Trade deficits does not Granger cause Fiscal deficits	1.847	0.18	4.110	0.02	4.471	0.01	3.949	0.01
7	Fiscal deficits does not Granger cause trade deficits	8.670	0.00	1.971	0.15	0.365	0.78	0.283	0.89
8	Trade deficits does not Granger cause savings rate	14.121	0.00	3.740	0.03	3.271	0.03	3.013	0.02
9	Fed rate does not Granger cause Fiscal deficits	0.376	0.54	12.477	0.00	6.115	0.00	3.780	0.01

Note: F-statistics are bold when they are significant at the 10% level. Source: Bureau of Economic Analysis 2010 and Federal Reserve 2010.

5. Conclusion

The great recession of 2007–2009 has been the worst in the US since the Great Depression. As the common story goes, low interest rates or cheap money policy contributed to the housing bubble that created the financial crisis, which, in turn, caused the recession. This explanation is robust but incomplete. This study finds that both trade and fiscal deficits contributed to low interest rates and output decline in the US over the cheap money era from 1987 to 2009. Low interest rates, again, caused low private saving, which greatly contributed to the housing bubble. Thus,

low saving and twin deficits contributed, both directly and indirectly, to the financial crisis, and hence to the recession. While the financial crisis made the recession inevitable, macro imbalances made the recession worse than it otherwise would have been. Restoring macroeconomic balances and enhancing financial vigilance are required to avoid further recessions of the US economy in the future.

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