The Macroeconomic Effects Of 9/11

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Abstract

There has been an extensive discussion on the effects of the September 11 terrorist attacks. The economic literature on this issue appears to be unsatisfactory. In particular it shows three main shortcomings: it provides very different estimations of the costs, does not consider properly the macroeconomic implications, and it is fragmentary. The scope of this paper is to address some of these shortcomings. For this purpose, we will discuss the economic costs of the attacks and will provide a theoretical framework to illustrate and explain its macroeconomic effects.

1. Introduction

September 11 represents the most costly one-day event in the economic history of the United States. Despite the numerous newspaper and journal articles on this event, its macroeconomic effects are still not clear. The scope of this paper is to evaluate the economic costs of the attacks and provide a macroeconomic framework to illustrate and clarify these effects. The paper is organized as follows. Section two deals with the effects on the supply side while section three discusses the implications on the demand side including short run macroeconomic policies. Section four goes back to the supply side and discusses what we define as the “missing shift.” Finally section five provides concluding remarks.

2. 9/11 and the supply side

One of the main goals of the terrorists who planned and executed the 9/11 attacks was to damage the American economy. We all have seen the pictures of people dying, airplanes falling, the world trade center collapsing, and part of the pentagon being destroyed. The image portrayed by the media is that the attacks were an enormous loss for the American economy. Does this mean that the terrorists have achieved their goal, or as Osama bin Laden stated that the September 11 attacks “struck deep at the heart of the America’s economy”?

Let’s start by considering the three main effects on the supply side. The first one is the actual loss of productive capacity, which means primarily human and physical capital losses. The second one is the reduced willingness by firms to supply goods and services and the third one is the increased costs in insurance, security, and transportation, which should push prices up. In macroeconomic terms, the combination of these three effects represents a supply shock. To illustrate this effect we use the standard aggregate demand - aggregate supply model. Since we are dealing with the short run¹ we consider the upward sloping aggregate supply and assume a pretty flat aggregate demand implying a low sensitivity of demand to prices². As a result of the supply shocks coming from the 9/11 attacks, the aggregate supply curve shifts to the left, which implies a reduction in the level of production and an increase in the price level (see figure 1).

The result of this supply shock is that the economy moves from point A to point B. The impact on output and price will depend on the slope of both the aggregate demand and aggregate supply curves as well as the actual shift of the supply curve.

The data on the actual loss of productive capacity suggest that the loss in output was extremely low, definitely less alarming than the media have presented. Starting with the physical capital, the destruction of the trade

¹ It seems too early to assess the long-term macroeconomic impact; the only thing one can say at this stage is that it appears to be a jobless recovery.

² The data seems to support this assumption.

center buildings including the smaller ones around the twin towers approximately costs five billion dollars. The lost assets of the building tenants plus the cleanup cost and the loss of the four planes add about ten billion more. The cost of the damages on the pentagon is not easy to estimate but it seems to be approximately one billion dollars. Thus, the total physical cost due to the attacks is approximately sixteen billions dollars without considering the reconstruction cost.

Turning now to the human cost, approximately three thousand people were killed from the attacks, including the passengers and crew of the four planes. To calculate the economic cost of human life is not an easy task. Economists found that people working in high-risk jobs usually attached an average value of about \$3-5 million on their lives. In the case of the 9/11 we have to consider a higher figure because of the high skilled labor involved, such as brokers, financial analysts, lawyers, accountants, computer technicians, and so on. Following the calculations of Miller et al. (2003) we attached a value of 8 million per person, which means that the total loss of life was 24 billion.

Putting together the loss of capital, infrastructure, and the human loss the total cost is approximately 40 billion. The literature on 9/11 produces very different figures for its economic costs, ranging from 33 up to 120 billions, this can be explained by fact that some economists only include supply losses while others take into account demand losses too. However, if one considers that the value of US economy's total assets –physical and human- is about 100 trillion dollars, even the highest estimate remains quite limited.

Thus, even though 9/11 was the most costly one-day event in the economic history of the United States, nevertheless 40-50 billion represent approximately only 0.05 per cent of the total productive assets in the United States. Comparing the total cost of 9/11 with that of Hurricane Andrew in South Florida in 1992, which was estimated to be 25 billion perhaps 30 billion in today's terms, the difference is not striking. Krugman (2001), states the following: "Although Sept. 11 was a human tragedy on a scale far greater than any of America's recent natural disasters, in monetary terms the immediate loss was not much more than one might have expected from a severe hurricane or earthquake."

3. 9/11 and the demand side

What really distinguishes the 9/11 attacks from hurricanes and earthquakes is its impact on demand. In the standard aggregate supply - aggregate demand model the demand is influenced by two factors: changes in each of the demand components and in macroeconomic policies.

Starting with the demand components, 9/11 had three major consequences. First, a reduction in the actual consumption for travel, hotels, entertainment, and luxury items. Second, a decline in consumer confidence and third, a decline in business confidence that should result in a reduction of investment. This will produce a shift of the demand to the right and the equilibrium will move from point B to point C. The final effect will be a lower level of output and employment relatively to point B but the total effect on price maybe lower even relatively to point A (see

figure 2). Employment data show that between the beginning of the recession and the end of 2001, the US economy lost 0.9 million jobs. According to the National Bureau of Economic Research, the US economy entered into recession in March 2001 and by the time of the attacks industrial production had fallen for eleven consecutive months and US stock prices were already declining, especially in the high-tech sector. The unemployment rate which was 4.2 per cent at the beginning of 2001 increased to 5.7 per cent by the end of the same year.

Turning now to the macroeconomic policies one must admit that the response of policy makers was very prompt and effective. The major tools used by policy makers were the following two: interest rate and government spending. First, a reduction in the interest rate which was followed by an increase in the money supply. Just six days after the attacks, the Federal Reserve cut interest rates by half a percentage point. In addition, some economists argue that the large sustained reductions in interest rates that the Federal Reserve began early in 2001 started to boost investment over this period. One should remember, indeed, that the three month money market interest rate that had been 6.74 percent in the summer of 2000 had been cut to 1.75 by the late fall 2001. Since this policy of low interest rates was perceived as prolonged there were no expectations of future inflation. The second tool was an increase in government spending such as rebuilding the financial district of New York City and in military and defense spending. The growth rate of government expenditures on national defense which was - 0.5% in 2000 went up to 3.9% in 2001 and 8.9% in 2002 in real terms. Some economists also believe that the Bush tax cut of early 2001 was able to push disposable income up at exactly the right time. Morgan Stanley estimates that it provided an extra 120 billion dollars of surplus to real GDP in the first half of 2002.

The effect of these expansionary policies was to increase private and public consumption³ and to shift the aggregate demand from point C to point D (see figure 3). As one can see from figure 3 the economy moves to a higher level of production and possibly employment but also higher prices. These theoretical implications are not supported by the data. The consumer price index shows a lower growth in both 2001 and 2002 relatively to 2000: 2.8 and 1.6 per cent against 3.4 per cent respectively. The average figure for the last quarter for 2001 was 1.7 per cent. In addition, by examining the data from the U.S. Bureau of Economic Analysis one can see that after three consecutive quarters of negative growth, GDP started growing at 1.7 per cent in real terms to the point that the Federal Reserve Bank of New York claimed that the recession was over.

4. The missing shift

The final figures for output and prices seem to suggest a further shift, usually not mentioned in the literature, a sort of “missing shift”, mainly due to the increase of productivity driven by the technical progress introduced in the 80’s and 90’s which was able to increase production and at the same time keep inflation down. The productivity index in the non-farm business sector shows a sustained growth throughout the recession: from 116.1 in 2000 it went up to 124.7 in 2002. This implies that in our model the supply curve shifts once again but this time in

³ This is supported by the data as well. Within personal consumption particularly fast was the recovery of durable goods, such as automobiles, furniture, and appliances. However, private investment continued to show negative growth rates over this period.

the opposite direction relatively to the first movement, i.e., shifts to the right and reaches a new equilibrium at point E (see figure 4). The result will be an increase in output and income and reduction in inflation relatively to point D.

5. Conclusion

In this paper we have examined the effects of 9/11 on the demand and supply side of the US economy by using the standard aggregate demand - aggregate supply model. The media and the vast part of the literature emphasize a substantial loss in productive capacity and a negative impact on the demand components compensated by a prompt and effective response by monetary and fiscal policy makers. In this paper, it is argued that the initial supply shock was very limited and that the effect of these expansionary policies was to stimulate demand and supply. Nevertheless, it was the sustained productivity growth throughout the recession - the effect of which was a second shift in the aggregate supply – which explains why by the end of November 2001 the economy was out of the recession without facing serious inflationary problems.

6. References

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