

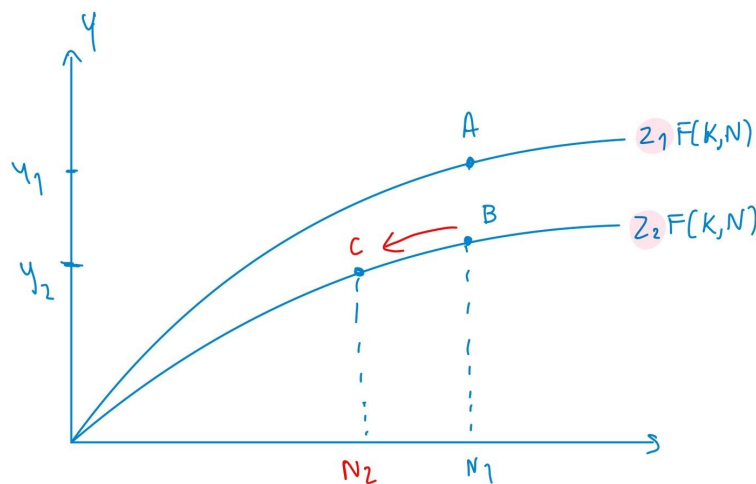
### Automotive industry crisis in 2008-2010

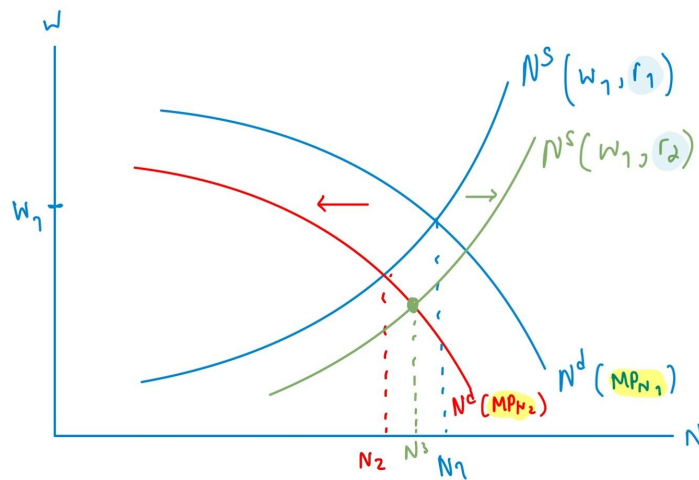
The crisis in the automobile industry between 2008 and 2010 was part of the financial crisis between 2007 and 2008. European and Asian automobile manufacturing companies were highly affected. However, most of the impacts occurred in the American automobile industry.

The automotive industry faced a significant increase in the price of automobile fuel associated with the 2003-2008 energy crisis. Consumers were discouraged to buy vehicles using low fuel economy. The American "big three" automobile manufacturers, General Motors, Ford and Chrysler faced a drastic drop in their sales. The financial crisis between 2007 and 2008 further caused the price of raw materials to inflate. By 2009, the situation worsened; both GM and Chrysler encountered forthcoming bankruptcy. The U.S. and Canadian governments assisted by giving financial bailout with a total of 85 billion U.S. dollars to prevent massive unemployment and larger damage to manufacturing as a whole, allowing companies to restructure. The industry almost fully recovered by 2012.

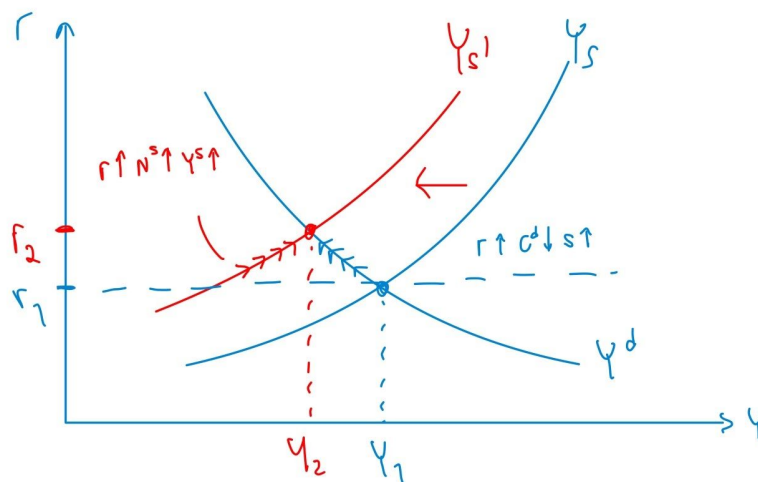
Excluding the bailout, I would like to analyze the effect of the increase in the price of raw materials on the three markets, which could be interpreted as a temporary decrease in total factor productivity or  $z$ .

The decrease in  $z$  ( $z_1$  to  $z_2$ ) was caused by a fall in output given input leading to the fall in marginal productivity of labor. So TFP shifts downward causing a fall in  $Y$  ( $A$  to  $B$ ) given  $N$ . Labour demand decreases because they can produce less with the same real wage ( $w_1$ ). Now that  $MP_n$  is less than real wage, to maintain firm's optimal choice, it has to reduce the number of labour to increase  $MP_n$ , following the law of diminishing return. So the level of employment falls from point  $B$  to  $C$ .

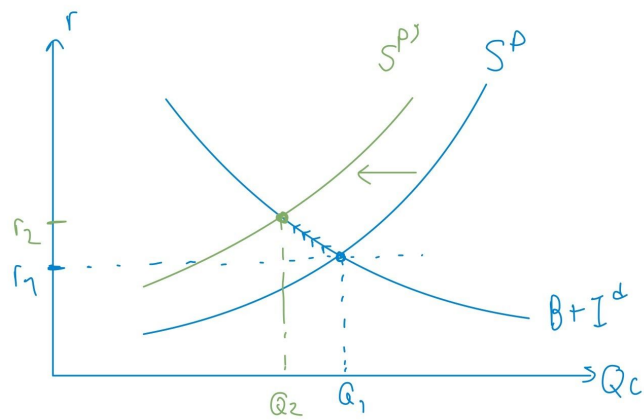




The effect of the interest on the labour market is a fall in labour supply. Since the higher interest rate, which could be interpreted as a higher price of leisure, encourages the consumer to have less leisure, less current consumption, more saving and to supply more labour, assuming stronger substitution effect.  $N_s$  shifts to the left, reducing employment and causing a rise in real wage.



In the goods market, output supply also shifts to the left because the fall in labour demand and employment occurred in the previous market. This leads to a rise in interest rate. A rise in labour supply is shown through a movement along the  $Y_s$  curve and a fall in current consumption is shown through a movement along the  $Y_d$  curve as the real interest rate rises. So we end up having lower output, lower employment and higher real wage.



The effect on the credit market is a fall in private savings because a rise in interest causes income, but due to consumption smoothing, current consumption drops less than  $Y$ . This eventually results in a reduction of private savings so  $S^p$  shifts left so there is a fall in quantity of credit and increase in the real interest rate.