Was it worth the subsidies: Okun Gap vs Harberger's Triangles

Okun Gap

An Okun gap represents the situation when an economy's potential gross domestic product (GDP) differs from its actual gross domestic product. It can either be inflationary gap or recessionary gap depending on the state of economy, inflation, and unemployment rate. (Figure 1) If the economy is below its long-run full employment level, real GDP will be below potential level, and it will creates recessionary gap. (Figure 2) Inflationary gap is the situation when the employment is above the natural level of employment, therefore real GDP will be above potential.

Figure 1: Recessionary Gap

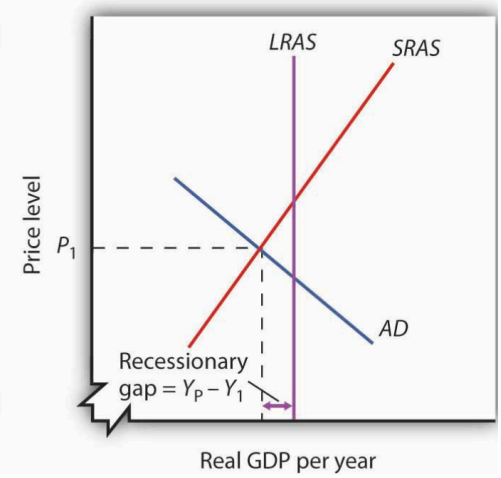
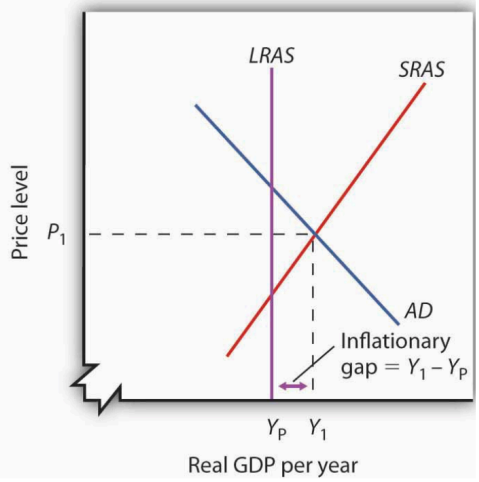


Figure 2: Inflationary Gap



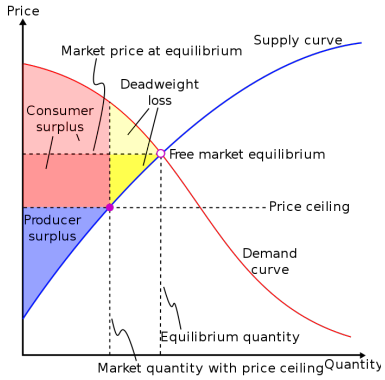
Source: Rittenberg Libby, Principles of Macroeconomics

If the economy faces a gap, policy makers have two policies to choose. First, nonintervention policy. They will do nothing but to wait for the economy to adjust to its potential output in the long-run. Second, stabilization policy. They will take actions on shifting the aggregated demand or short-run aggregate supply to its potential. But doing so will cause market distortion, resulting in a decrease in welfare and create a Harberger's triangle.

Harberger's Triangle

A Harberger triangle (a.k.a. deadweight loss triangle) is used to calculate the efficiency cost of taxes, subsidies, government regulations, and other market distortions. It enlighten the economist to be able to evaluate the welfare effects of market misrepresentations. Harberger's triangle can be right-pointing when fewer trades occur than the equilibrium. This can be the results of taxes, market power of sellers, or price ceiling. Figure 3 illustrates the right-pointing triangle when there is price ceiling. The triangle will be left-pointing when more trades occur than the equilibrium. It can be the results of subsidies or price floors. Figure 4 illustrates the left-pointing triangle from the subsidy.

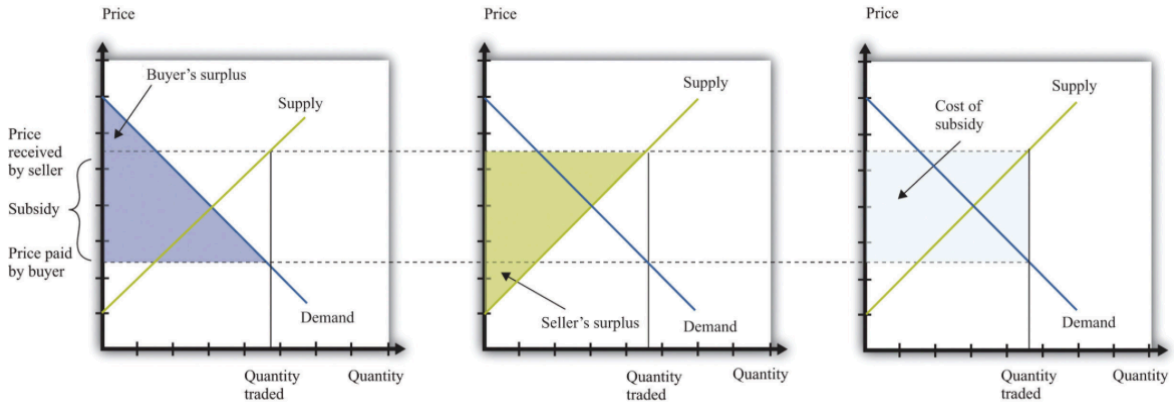
Figure 3: Right-pointing triangle



Sources*: wikipedia*

The deadweight loss lies to the right-hand side of the competitive equilibrium quantity because some trades occur where the cost exceeds the benefit. Figure 4 shows the buyer surplus and the seller surplus in the presence of a subsidy. Both are increased by the subsidy. However, subsidies mean that the government spends resources rather than taking them in. The figure shows that the cost of the subsidy is greater than the increased surplus received by the buyers and the sellers. The difference between the cost and the increases in surplus is the deadweight loss.

Figure 4: Deadweight loss due to subsidy



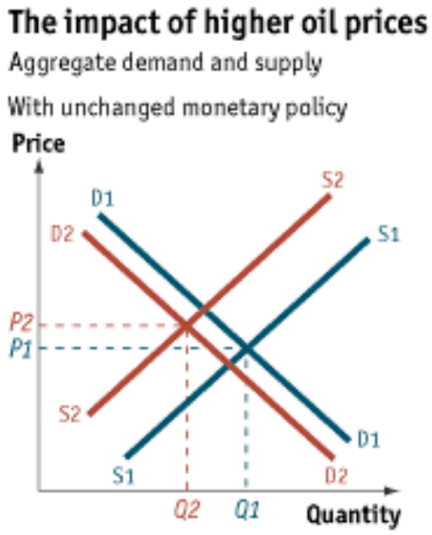
Source: Cooper Russell, Theory and Applications of Economics.

The impact of higher oil prices

To understand the effect of higher oil prices, we use a standard economic diagram of aggregate demand and supply. In the left-hand chart, the economy is in equilibrium at the point where the aggregate demand curve D1 and the aggregate supply curve S1 intersect, at price level P1 and output Q1. A higher oil price hurts an oil-importing economy in two ways. First, it increases firms' production costs and reduces profits, so they supply fewer goods and services at any given price. This shifts the aggregate supply curve to the left, to S2. Second, higher oil prices transfer income from oil-importing countries to oil producers (some of this may come back as higher exports). Since income

and spending are squeezed in the oil-importing countries, the aggregate demand curve also moves left, to D2. *(The Economist, 2004)*

Figure 5: Impact of higher oil prices



The economy therefore suffers both a negative supply shock and a negative demand shock. Output clearly falls (to Q2), but the impact on underlying inflation is ambiguous: in theory it could rise or fall, depending on the shapes of the demand and supply curves and the relative sizes of their leftward shifts. Some economists even argue that a rise in oil prices is "deflationary", justifying a cut in interest rates. But this is a misuse of the term. Higher oil prices will deflate demand, but they are unlikely to lead to lower prices. Prices are much more likely to rise, to somewhere like P2 in the chart. Higher oil prices always push up headline inflation. The key issue is whether dearer energy will also feed into prices and wages across the whole of the economy. *(The Economist, 2004)*

Sources: The Economist, (2004, June 10). The crude art of policymaking

The negative output gap make the policymakers to consider a stabilization policy such as oil price subsidy to close the Okun gap. But this policy come up with the economic cost of overconsumption. Lucas W. Davis make an analysis in the paper "The Economic Cost of Global Fuel Subsidies". Fuel subsidies have a large impact on government budgets, requiring taxes to be higher than they would otherwise, and inhibiting the ability of government to address other fiscal objectives. Expenditures on energy subsidies in many of these countries exceed public expenditures on health, education, and other key components of government spending.

Okun Gap VS Harberger's Triangle

Economists have different ideas on the relative importance of Okun gap and Harberger triangles. They ask question of how many Harberger triangles it takes to fill one Okun gap. A first answer came from James Tobin when he conjectured that 'it takes a heap of Harberger Triangles to fill an Okun Gap' (Tobin, 1977, p.468). Stephen Williamson believed that there is no difference at between an Okun gap and a Harberger triangle (Williamson, 2012). He estimates that it simply takes one Harberger triangle to fill an Okun gap. Paul Krugman seems convinced that it really does take a heap of Harberger triangles (Krungman, 2012). Unfortunately, there is no clear agreed-upon way of determining the number of Harberger triangles that fit in one Okun gap.

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