International Journal Of Engineering Research And Development
e- ISSN: 2278-067X, p-ISSN: 2278-800X, www.ijerd.com
Volume 16, Issue 9 (September 2020), PP. 34-36

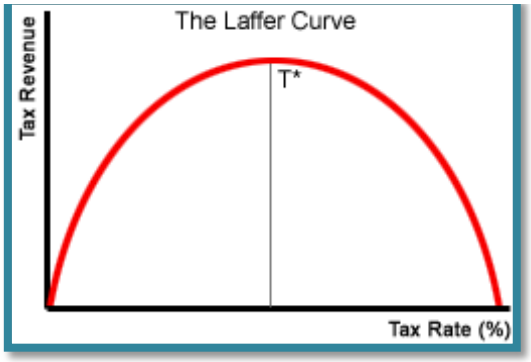
Testing for the existence of Laffer curve: Norway

Himanshu T

Date of Submission: 15-09-2020 Date of Acceptance: 30-09-2020

I. INTRODUCTION:

The Laffer curve is a theory in taxation explained by the supply-side economist Arthur Laffer, he used it to demonstrate the relationship between the tax rate and the correspondingly tax revenue collected by the government. He argued that economic activities, such as production decreased as taxes increased, and vice-versa.



The curve suggests that initially as the tax rate 'T' increases the tax revenue generated by the government also increases, this continues till a tax rate (T=T*) where the government revenue generated through taxes is maximum. Beyond this point any increases in the tax rate would lead to decreases in the tax revenue. The curve also shows that tax revenue is zero when (T=0) and (T=100%).

Laffer curve and Supply Side Economics:

Laffer curve came as an alternative to the Keynesian solution of initiating economic growth, unlike Keynesian who said that government should increase their spending in order to push up the aggregate demand in the economy, Laffer argued that it was taxes that increased the burden on the producer (supply side) which lead them to produce less, employee less people. This lead to lesser income being generated in the economy which meant lesser tax revenue in turn with slowing economic growth, therefore his solution to ensure economic growth was to lower the tax rates to an optimal level of T*.

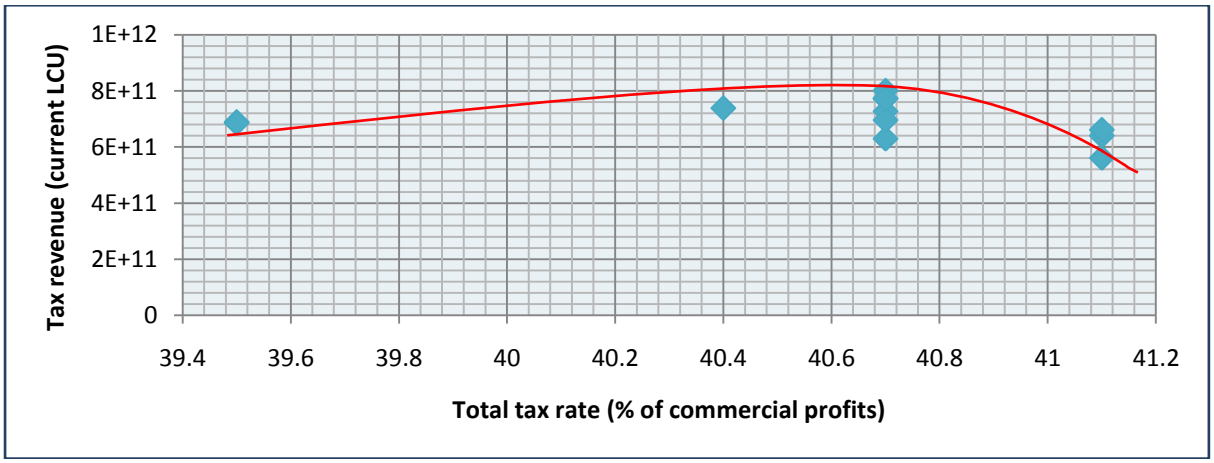
The intuition of charging lesser tax rates form producers and workers stemmed form the fact that in the presence of higher tax rates producers and workers, with most of their profit and income being taken by the government would be dis-incentivised to work. Both will decrease their production and work which in turn would lead to not only a fall in tax revenue but economic growth. Therefore through this Curve he portrayed the counterproductive nature of increasing taxes, that is instead of generating more revenue it decreased it (beyond T*).

(Note T was recognised as the threshold or the maximum tax rate beyond which the incentive to work/produce reduces with any marginal increase in the taxes)*

Testing for its Validity:

The implications for the existence of such a theory were serious. Especially for countries which have high tax rates, because it meant that by charging higher tax rates they were dis-incentivising production and work in their countries. In doing so they had actually reduced the tax base, which is the number of people that could be taxed.

Norway is a good example of such countries; they have some of the highest tax rates in the world. Owing to which over the recent years they have started to reduce the tax rates, the following data has been collected for a period of 12 years:



Years	Total tax rate (% of commercial profits)	Tax revenue (current LCU)
2005	41.1	5.6086E+11
2006	41.1	6.40157E+11
2007	41.1	6.6088E+11
2008	40.7	7.26961E+11
2009	40.7	6.29217E+11
2010	40.7	6.95672E+11
2011	40.7	7.7376E+11
2012	40.7	8.00297E+11
2013	40.7	7.71267E+11
2014	40.4	7.38395E+11
2015	39.5	6.88772E+11
2016	39.5	6.85555E+11

II. Analysis:

We see that through the years, from 2005 to 2016 the government has reduced taxes. As expected (we observe form the graph as well) that till 2012 a decrease in the tax rate does lead to an increase in the tax revenue, this can be attributed to the theory mentioned above; that is a decrease in taxes meant that producers in the economy had a lesser tax burden. Owing to lesser burden the producers increase the level of output, which leads to a greater amount of employment in the economy. This increases the tax revenue by increasing the tax base in two ways, firstly, owing to higher output the amount of tax paid by the producer is more (even though per unit tax is less), secondly, since now more people are employed a greater amount of revenue is earned form income taxes. This basically proves the argument put forth by the proposers of supply side economists, which is by lowering tax rate you, can actually achieve higher tax revenues while stimulating growth.

{Tax↓→ Production↑→ employment↑→Tax base↑ →Tax revenue↑}……Tax revenue chain

(Note: this is the concept of dynamic scoring)

However, we observe two discrepancies form the theory in the data: Firstly, we see that from 2008 till 2012 even though the tax rate is the same the tax revenue increases, post 2012 that is in 2013 we see that tax rate remaining the same, tax revenue actually fell. This prompted the government to lower the taxes in the subsequent years as they thought that the tax rates were too high, but that actually lead to an even greater fall in the tax revenue.

This has the following implications:

1) This means that the tax rate of 40.7% was actually the optimal tax rate, as post this the lowering of the tax rate reduced revenue.

2) Existence of different tax revenue for the same tax rate implies that there exist various exogenous factors (other than the tax rate) that determine the revenue generated for the government. These factors are not considered in the Laffer curve.

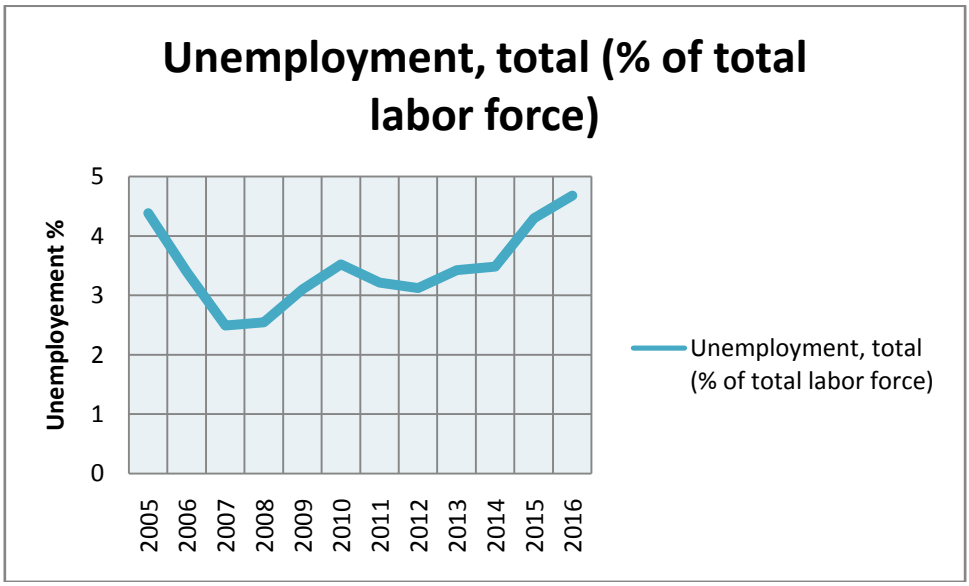
The second implication actually creates a fundamental problem for the existence of the Laffer curve as it means that in real world, where there exists lots of determinants of tax revenue, tax rate cannot be solely treated as an instrument to achieve an optimal level of it.

What happens in the data from Norway accurately projects the problem economists have with the Laffer curve, which is it is far too simplistic in its assumptions:

1) It assumes that there is only a single tax rate; relaxation of this assumption would actually explain the existence of different tax revenues at the same tax rate. Norway post 2008-09 along with lowered tax rates was giving high tax credit, as a result firms increased their production (which through the chain given above increased the revenue).

2) It does not considers time lag: relaxing this would again help explain the discrepancy in the data, as post the lowering of tax to 40.7%, producers increased the production(which through the chain would increases the revenue).However, this would happen over a period of time and not instantaneously (as we can observe form the data).

3) The theory further assumes that a decrease in the taxes would strictly follow the above chain, but the evidence collected from Norway refutes this. This is because exogenous factors decreased the tax base, as in the case of Norway in 2012-2013 period the firms in the economy owing to lower tax rates accumulated capital. They used this capital to increase production, but in labour-saving manner, this implied that the chain was broken. Thus in 2013 it lead to higher unemployment as shown by the data, this explains the decrease in the tax revenue (decreased tax base) while the tax rate remained unchanged.



III. Conclusion:

❖ As we see from the empirical evidence the curve is not 100% accurate in predicting a way which maximises tax generated revenue, since it does not consider various other exogenous variables (hence the discrepancies).

❖ However, the economic principle underlying the theory is very relevant. As from the data we can roughly infer that lowering of the tax rate does actually lead to an increase in the tax revenue, further beyond the optimal level(T*=40.7) reduction in tax rate decreases the revenue. This shows that the theory of Laffer curve with some modifications (considering exogenous variables) can actually be used to get maximum/optimal level of tax revenue by the countries in real world.

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Himanshu T. "Testing for the existence of Laffer curve: Norway." *International Journal of Engineering Research And Development*, vol. 16(9), 2020, pp 34-36.