Covid-19 on Canadian Economy

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Covid-19 strikes anywhere in the world this year and leads to huge influence in various aspects in for different countries. It has already become a worldwide disease which is related to everyone. One of the most important fields being affected should be the economy field. For this report, we want to discuss the economy effects on several aspects in Canada.

1. GDP Effect

As a result of Covid-19, many stores, restaurants, supermarkets and various businesses shut down to reduce infection. Consequently, the consumption largely decreases. Since Y = C+I+G+NX, we see GDP will decrease. However, with such disease, government will spend money on medical care and provide subsidy and welfare to public, therefore the government spending will increase. This also affects the final result of GDP. Besides, the export will face reduction due to the shut-down of businesses, so does people' enthusiasm on investment. Therefore, if we combine all of the variables together, we are expected to see a reduction on GDP.

2. AE, PE Line

We know Planned expenditure PE = C+ I + G, the equilibrium is at point where AE = PE. Since actual expenditure AE = GDP = Y, we have Y = AE = PE. Since consumption and investment

decrease, which overweight the increase in government spending, the PE line is expected to shift down, which leads to a new equilibrium with lower GDP and IS curve shift to the left (as Figure 1.1).

Under the Classical model, the prices are flexible, labor market will be in equilibrium in the short run. As the IS curve shift left, since prices are flexible, LM will adjust instantaneously so that three lines intersect together. Therefore, price will decline such that the real money supply curve will shift to right in the money market (like Figure 1.2). This leads to a lower interest rate in money market hence cause a rightward shift of LM curve (Figure 1.1). And as interest rate become lower, the investment will intend to increase, but this effect cannot offset the general decreasing tendency of investment. Under Classical Model, for both short run and long run, there will be no change for real output, decrease in interest rate, and increase in real money balance.

Under the Keynesian framework, prices are sticky in short run, so the equilibrium will deviate from full employment level (FE line). As IS curve shift left, the equilibrium moves from point A to point B (Figure 1.1), which is the intersection of IS and LM curves. In this case, both Y and r decrease, LM curve will not adjust in the short run for sticky prices, so the real output falls, rea interest rate falls. But for the long run, the result will be the same as the situation under Classical Model.

However, in both cases, the FE line remain constant, which means nothing happened to labor market. But in fact, the falling GDP will have influence on both labor demand and supply.

3. Labor market

In terms of the effects on labor market, we discuss from two sides: firms and labor.

From firms' sides, since most of the businesses shut down temporarily, firms do not need too many workers and intend to fire workers to reduce the cost. Therefore, the labor demand curve shift to the left. From labor sides, in order to reduce infection and keep safe, people are required to stay at home, so there will be less people in society who are willing to find a job since safety is more important. Therefore, the labor supply will also decrease, so the labor supply curve shift to the left. As a result, the quantity of people who get employed will decrease from L_1 to L_2 (see Figure 2.1). And in IS-LM-FE Model, since the labor market also be affected by the decrease on GDP, the full employment labor quantity decreases, then the FE line must shift to the left.

Under the Classical model, the prices are flexible, as FE line shift left, LM curve will adjust instantaneously, so the price level would increase. Then the real money supply curve will shift to left in the money market (like Figure 2.3), which leads to a higher interest rate in money market hence cause a leftward shift of LM curve (Figure 2.2). Then the equilibrium point will move from point A to point B. This applied to both short run and long run. Therefore, real output falls, interest rate increase and real money balance decrease.

But for Keynesian framework where prices are sticky, LM curve remain unchanged, then the equilibrium will be at point A, with only FE line shift to $FE_{2,}$ so the equilibrium deviate from the FE line. For long run prices would increase and LM curve shift left, leads to the same result under Classical Model.

Therefore, we see the both IS curve and FE line shift, in long run, LM curve would shift so that three curves intersect in one point. However, in the case IS curve shift, LM curve shift rightward to adjust; and in case FE line shift, LM curve shift leftward to adjust. So if they both shift, LM curve may still remain unchanged even in long run. But if one curve shifts more than the other one, LM curve still need to shift to adjust, just depending on which one shift more.

4. Money market

By Covid-19, the real GDP, decrease, which means a fall in demand of money. According to liquidity preference of money, there are three aspects why people demand money. The first one is transaction motive, which means the desire to hold money for the day-to-day buying of goods and service. Because of the large area shut down of businesses, people's day-to-day consumption falls, therefore the demand for money would decrease. ($(\frac{M}{P})^d = L(r, Y)$, Y decrease, so money demand decrease). The second preference is the precautionary motive, it is a reason for holding money for unexpected or unforeseen events. And as a result of corona virus disease, people are expected to save more money in order to prepare for the accident caused by the disease, the demand for money then would increase. The third one is the speculative motive, which is a reason for holding money with a view to make future gains from buying financial assets, which is something like investment. Therefore, with such disease, people's demand for money can either decrease or increase, which is undetermined.

5. Inflation

For inflation, we have formula: $\pi = E[\pi] - \beta(u - u^n) + \nu$

As people all stay at home, unemployment has been caused, which is denoted by term $\beta(u - u^n)$. High unemployment rate makes the inflation rate go down, which is from demand-side, lower aggregate demand reduce inflation.

As businesses close, many industries closed, which make the production declined, therefore there will be a supply shock, denoted by term ν. The cost of production increase, the aggregate supply decrease. The raise of ν increases the inflation rate, which is a cost-push inflation. (see Figure 3)

From the graph we see the whether it will cause inflation is undetermined, but the real GDP will decrease.

6. Conclusion

In summary, Covid-19 brings a huge influence on canadian economy in many aspects, in general, it leads to a large decrease in real GDP for domestics. It also leads to a series effects on real interest rate, real money balance, price level and many other areas. It will have a long-term effect which may exist for following few years.

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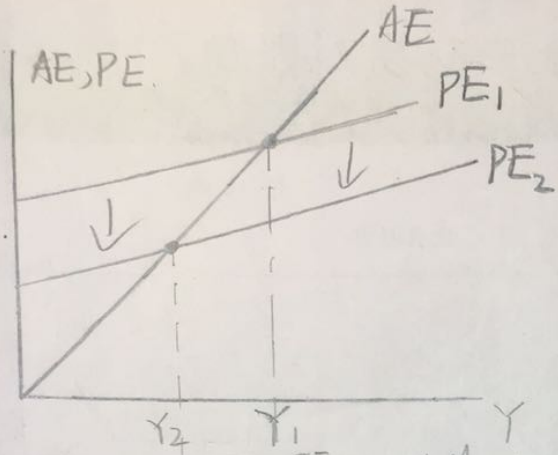

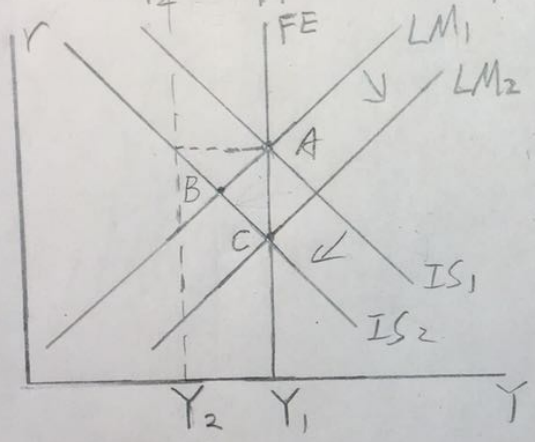

Figure 1.1

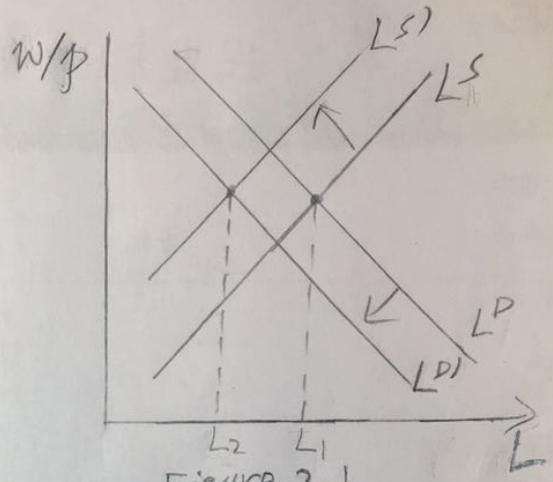

Figure 2.1

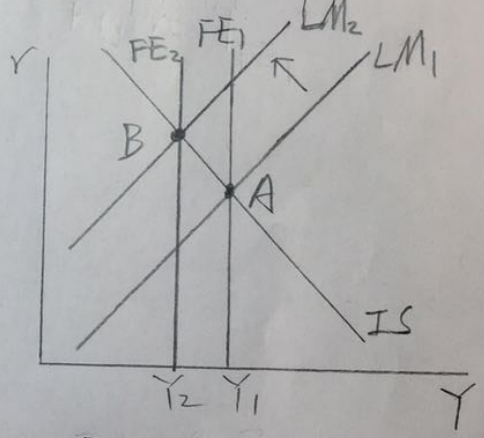

Figure 2.2

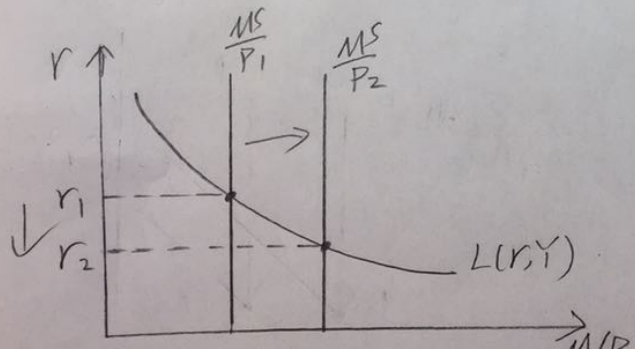

Figure 1.2

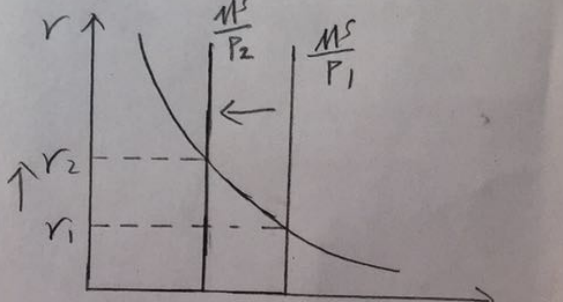

Figure 2.3

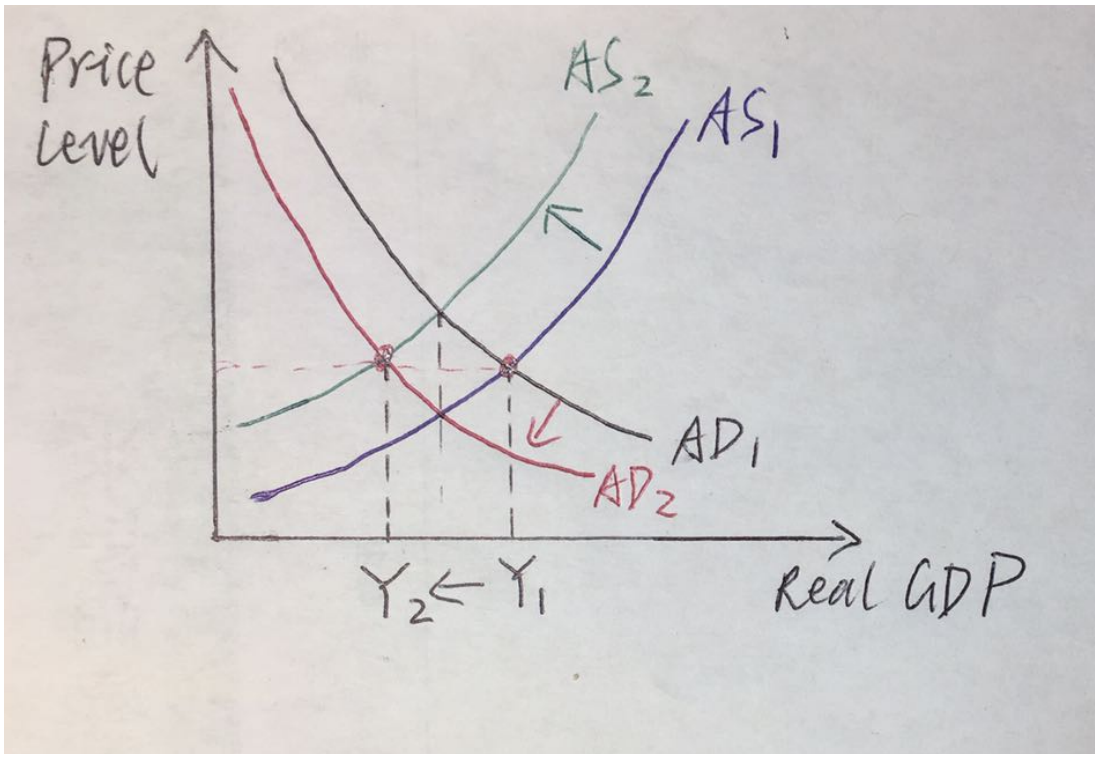

Figure 3