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An Anomaly in Unemployment Rates:

A Comparative Analysis of Federal Governments' Responses to the COVID-19 Pandemic

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Honors Thesis

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Abstract

During the COVID-19 pandemic, the United Kingdom experienced extremely low unemployment rates compared to similarly developed nations. As a result of the ensuing national recessions, the United States' and Canada's Phillip's Curves shifted, while the United Kingdom's remained steady. Each of these three nations pursued relatively similar monetary and fiscal policies; however, the United Kingdom's government-supported wage policy had different requirements and specifications than that of the United States' and Canada's. The United Kingdom's government-supported wage policy prioritized saving jobs while the United States' and Canada's policies prioritized saving firms, leading to the disparity in national unemployment rates observed during the COVID-19 pandemic. There exists a balance between saving employment and saving production during a national recession that each government must walk carefully to provide the maximum welfare to their citizens.

I. Introduction

       In the Spring of 2020, a novel virus called SARS- CoV-2 (commonly known as COVID-19 or coronavirus) took the world by storm, leading to global infections, national policies, local quarantines, and loss of loved ones close to home. A global pandemic was nothing new, but most governments had not experienced a pandemic in recent history. Economically, the time of the coronavirus was just another recession; however, every nation faced new social dynamics that made the impacts of the coronavirus much more than just another recession. Apart from adjusting to quarantines and wearing masks, the COVID-19 recession also brought along death; the World Health Organization estimates that over 3.3 million individuals died as a result of the coronavirus (World Health Organization, 2021).

       While the social impacts of the coronavirus pandemic were great, the economic impacts may have been even greater. Unemployment rates reached record highs in nations across the world; the United States saw unemployment reach 14.7% and in Canada, unemployment reached 13.4% (Federal Reserve Bank of St. Louis, 2022). In the United Kingdom, households purchased less and consumption fell by 20% in the second quarter of 2020. Additionally, inflation rose, short-run GDP fell, and supply chains everywhere crumbled in the wake of the coronavirus pandemic around the globe.

       In response to both the social and economic impacts, national governments took action to bring welfare to their citizens, stability to their economies, and a sense of normalcy in the midst of chaos. While there were many similar responses across the world, each nation enacted different policies to meet the unique challenges they faced. For example, in the United States, the Federal Reserve lowered the federal funds rate by 1.5 percentage points, and through the American Rescue Plan, almost $1 trillion in programs and tax credits were provided for the

welfare of Americans (U.S. Department of the Treasury, 2021). However, when different actions

are taken, different results often abound; national responses to the coronavirus were no

exception. In the second quarter of 2020, the United Kingdom's short-run GDP fell to -19.2%

whereas Canada's only fell to -11.2%: just one example of these differences (Federal Reserve

Bank of St. Louis, 2022). While each nation faced different circumstances during the coronavirus

pandemic, we can compare and evaluate how well each government responded to maintain the

stability of its economy and the welfare of its people. One particularly interesting situation is

how well the United Kingdom kept its unemployment rate down when other nations saw record-

high unemployment rates during the COVID-19 pandemic.

Unemployment by Month
● Canada ● United Kingdom ● United States
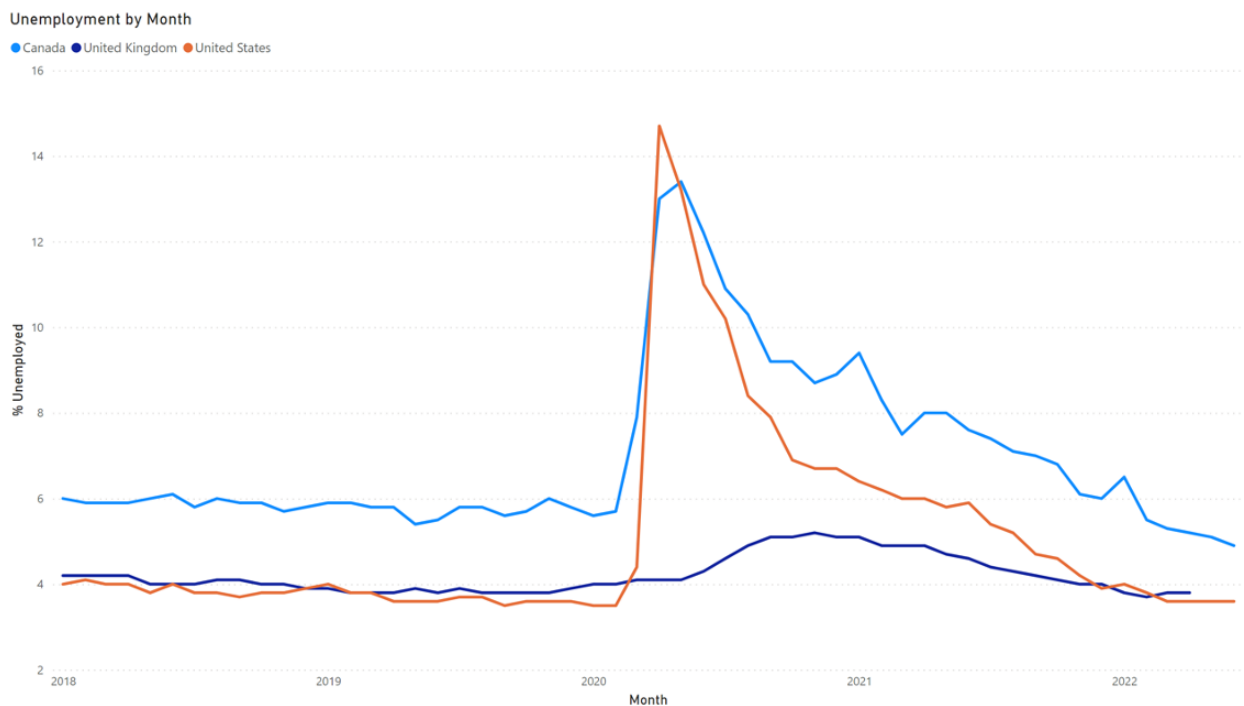
For the remainder of this thesis, I will be evaluating the policies that the United Kingdom took to

keep its workers employed as compared to the less successful United States and Canada.

The United States and Canada are good nations to compare the United Kingdom's policy

to as they are all considered "Group 3" nations (Naranjo & Sun, 2020). Group 3 nations are those

that are developed nations and have not been exposed to the SARS virus before. It is important for the nations we compare to have similar backgrounds as if we compare the United States (a nation not previously exposed to SARS) with Japan (a nation previously exposed to SARS), then Japan's citizens who have a natural immunity already built against the coronavirus may bias the analysis of the comparisons made. One could naturally conclude that Japan would have lower unemployment rates than the United States, as fewer individuals would contract the virus and continue working as a result of the natural immunity and not due to the policies enacted by the Japanese government. Similarly, it would not be appropriate to compare an undeveloped, impoverished nation with an affluent one, as they will not have the same resources, infrastructure, or finances to enact comparable policies with a developed nation. When comparing Canada, the United Kingdom, and the United States, we can see their infection rates and age distributions are very similar, as should be for Group 3 nations; therefore, neither an aging population nor a more infected nation can be to blame for the differences in unemployment rates.

COVID Positivity Rate

● Canada ● United Kingdom ● United States
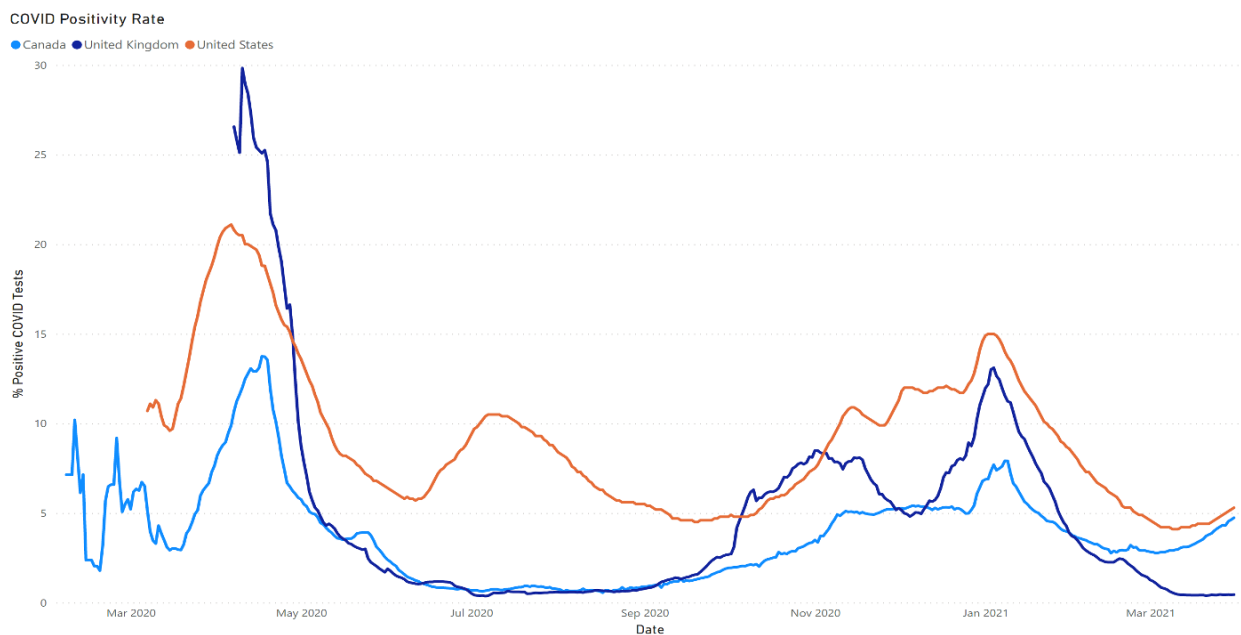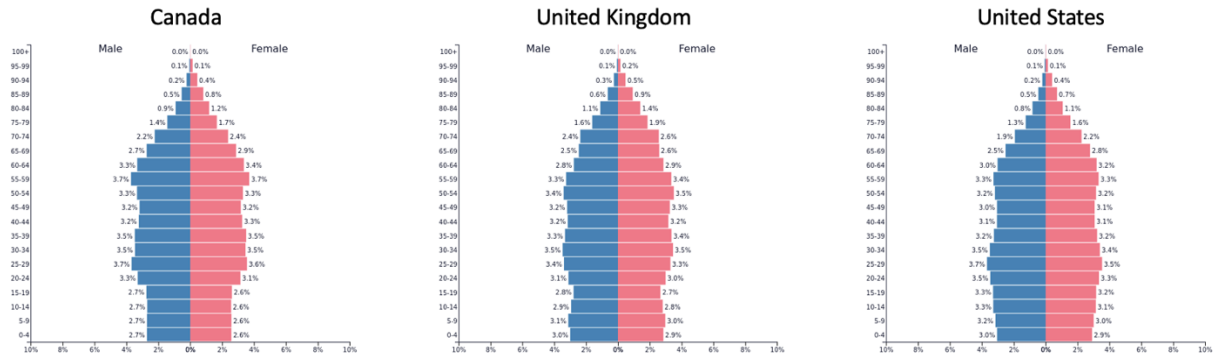
II. Inflation

According to the Phillip's Curve, we would expect a nation's unemployment rate and inflation rate to have a negative relationship. Because the United States and Canada both had an increase in unemployment rates, we would therefore expect each nation's inflation rates to decline. In reality, inflation in the United States and Canada did decline in the second quarter of 2022; however, the United Kingdom's inflation rate did as well, and the differences in inflation rates are not as severe as we would expect given the differences in unemployment rates.
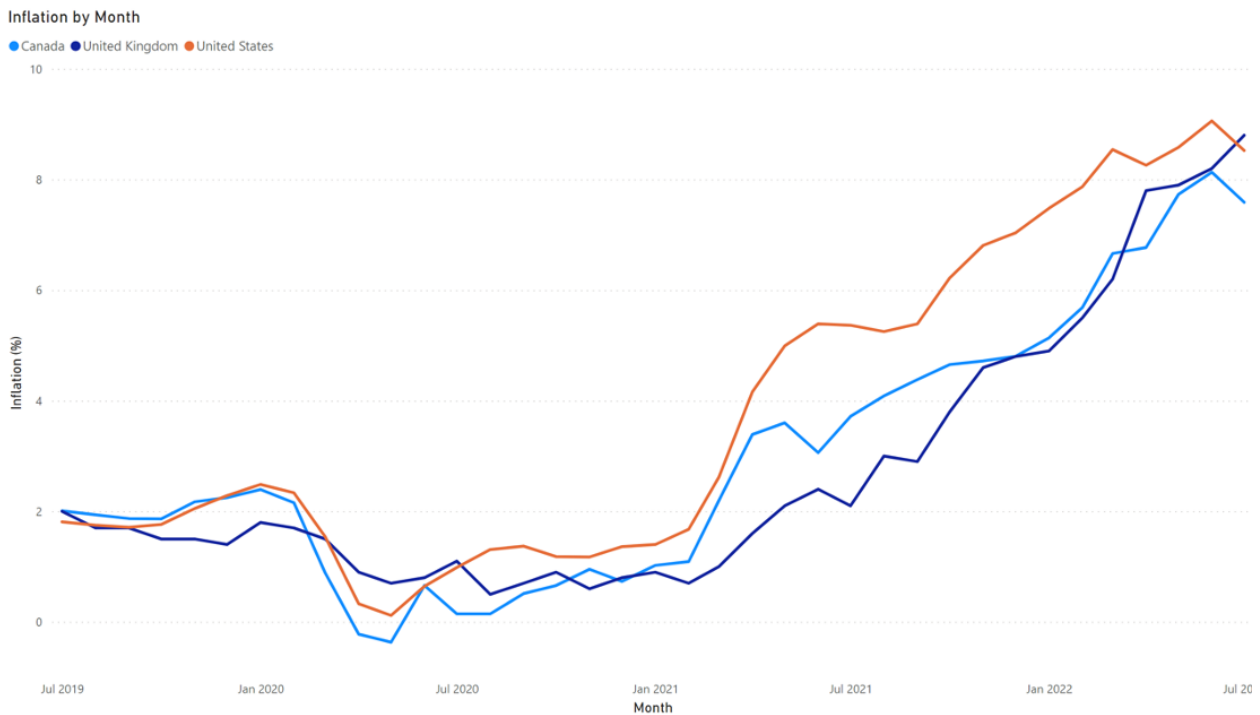
When looking at each nation's Phillip's Curve, something interesting begins to emerge:

Canada's Phillip's Curve

Year ● 2014 ● 2015 ● 2016 ● 2017 ● 2018 ● 2019 ● 2020 ● 2021 ● 2022
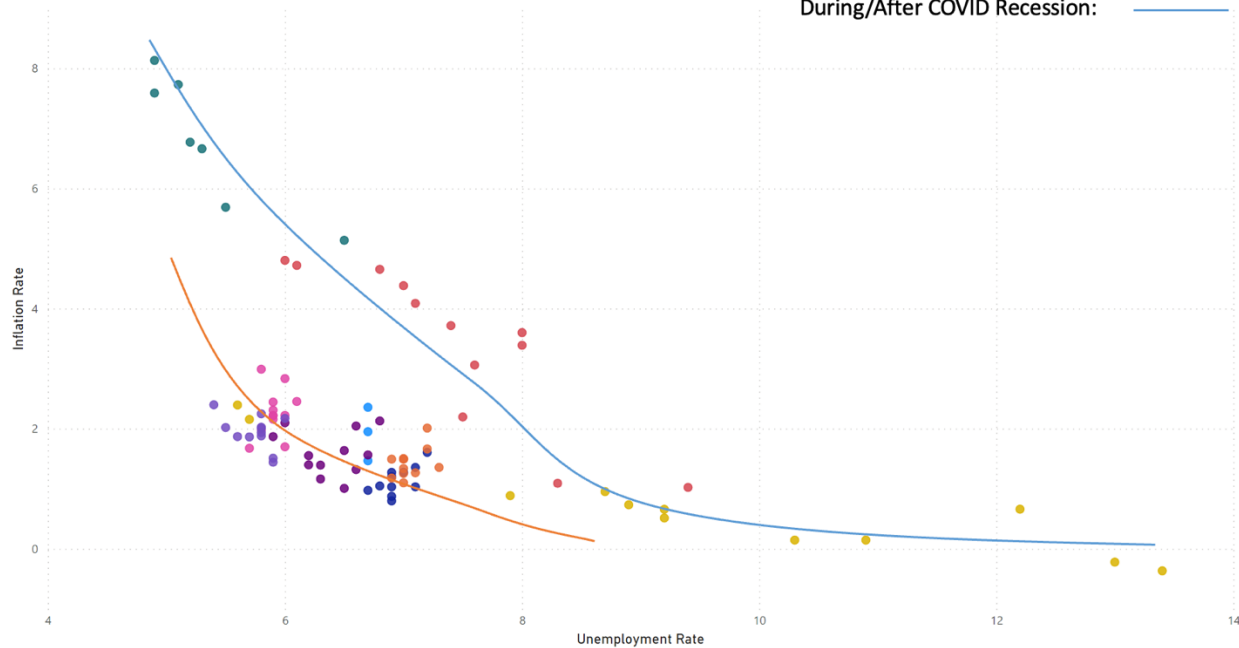
Before COVID Recession:
During/After COVID Recession:

United Kingdom's Phillip's Curve

Year ● 2014 ● 2015 ● 2016 ● 2017 ● 2018 ● 2019 ● 2020 ● 2021 ● 2022

Before COVID Recession:
During/After COVID Recession:
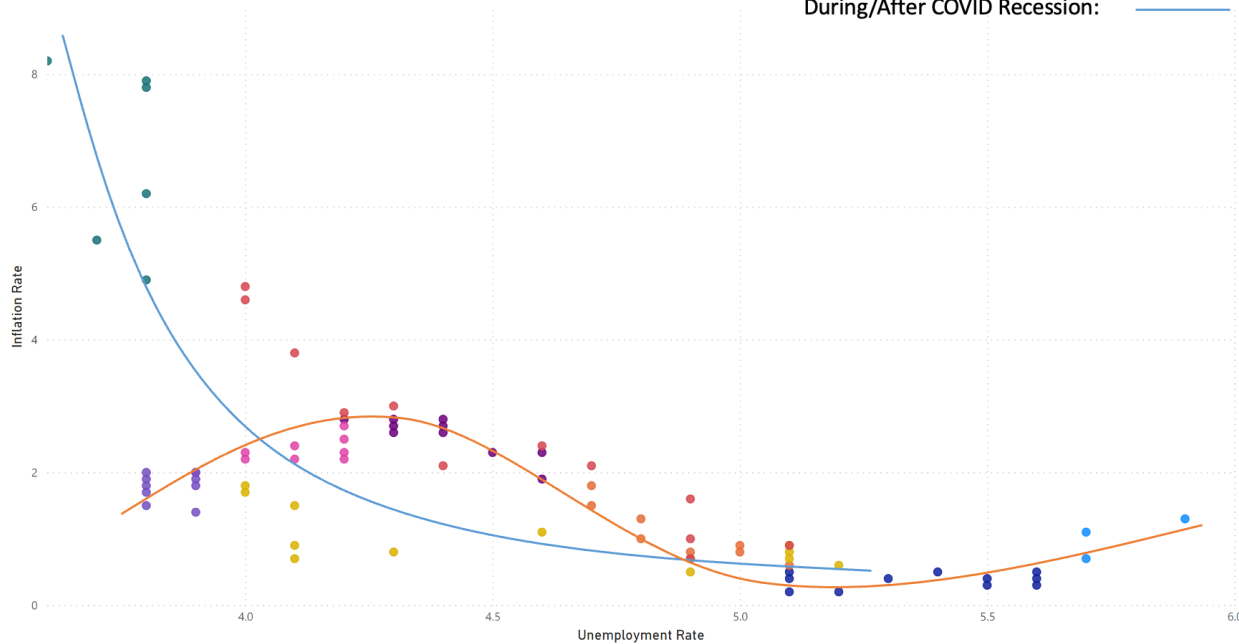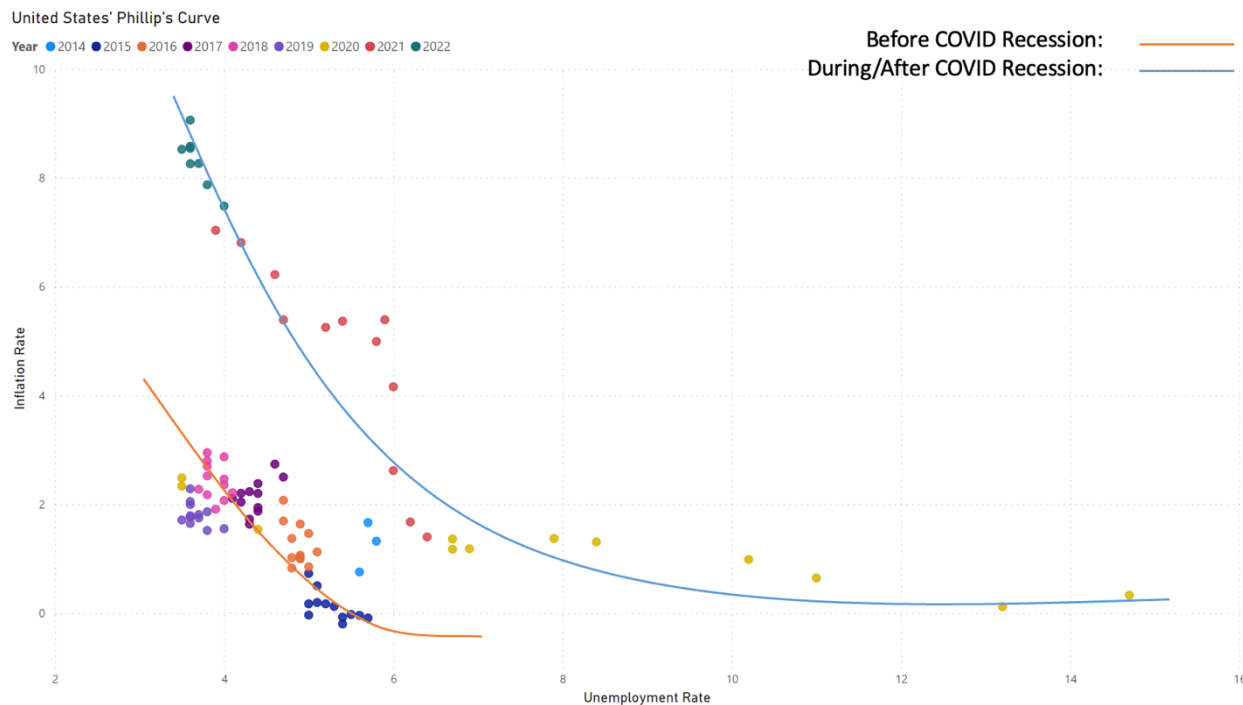
The United States' and Canada's Phillip's Curve shifted right at the start of the coronavirus pandemic and has remained on this new curve since. A rightward shift in a Phillip's Curve is typically indicative of a worsening state of an economy and this would make sense given the rapid entry into a recession that both the United States and Canada experienced. The United Kingdom's Phillip's Curve shifted from a sin-wave shape to the more typical Phillip's Curve shape at the start of its recession during the COVID-19 pandemic. While the shape of the curve changed for the United Kingdom, the pairings of unemployment and inflation rates did not change very drastically, especially when compared to the United States' and Canada's Phillip's Curves. It seems that whatever caused the United Kingdom's unemployment rate to stay low may also be what caused its Phillip's Curve to remain relatively steady during the coronavirus pandemic.

III. Production

While employment is good for the health of an economy, so is production which is measured through a nation's GDP. As I began to discuss previously and, as we would expect, during the time of the COVID-19 pandemic, production declined for most every nation. The United Kingdom's short-run GDP (the percent deviation from their trend) fell to -19.22% in the second quarter of 2020.

SR GDP by Quarter
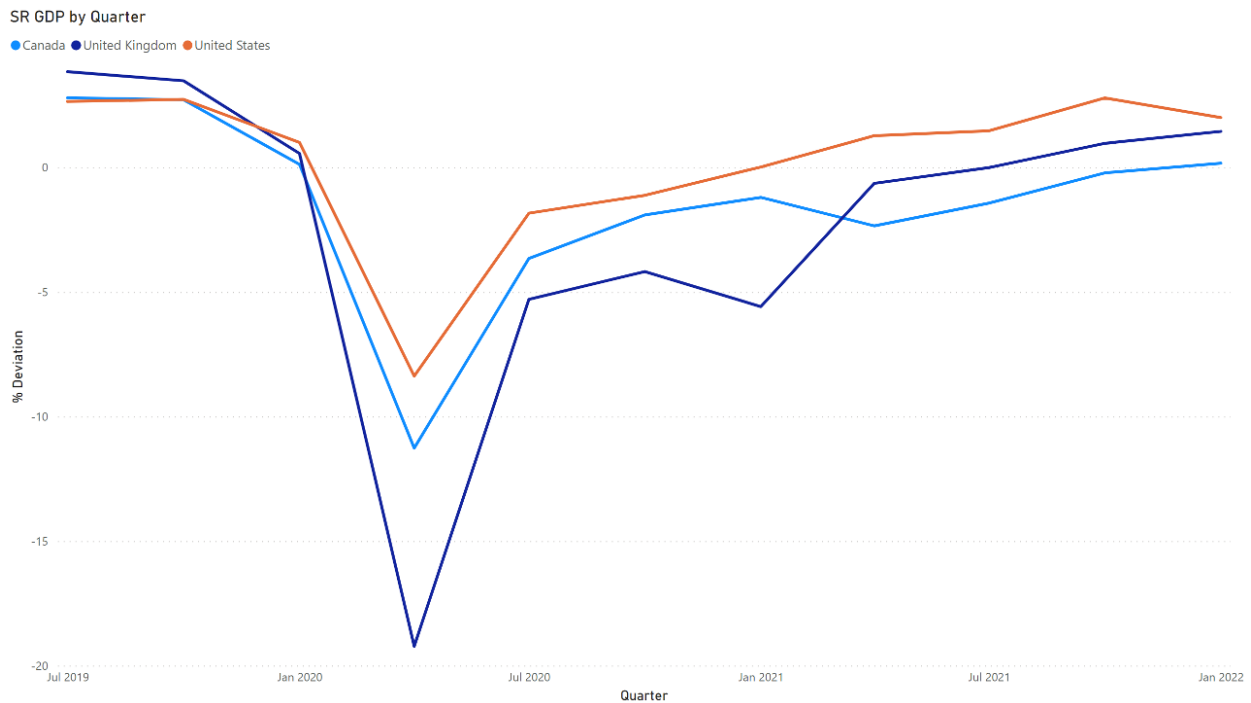
Interestingly, while the United Kingdom's Phillip's Curve and unemployment rate was least impacted during their COVID-19 recession, their GDP was most impacted when compared with the United States and Canada. The United States experienced the smallest impact to production while also experiencing the largest impact to employment. The opposite is true for the United Kingdom who experienced the largest impact to production and the smallest impact to employment. It appears that there may be a tradeoff between a nation saving its production and saving its unemployment rate.

IV. Monetary Policy

In response to the recessions, each nation faced during the coronavirus pandemic, national governments enacted both fiscal and monetary policies to strengthen their economies. First, let us consider the monetary policy each nation took and its influence on the unemployment rate. One of the biggest tools a federal government has when influencing the state and health of an economy is its central bank's policy rate. The central bank policy rate (or CBPR) is the interest rate at which a nation's central bank charges other financial institutions to borrow funds, which has an indirect impact on the interest rate under which private firms and individuals operate. In the United States, the Federal Reserve sets the CBPR, the Bank of Canada in Canada, and the Monetary Policy Committee in the United Kingdom.

Central Bank Policy Rate by Month
● Canada ● United Kingdom ● United States
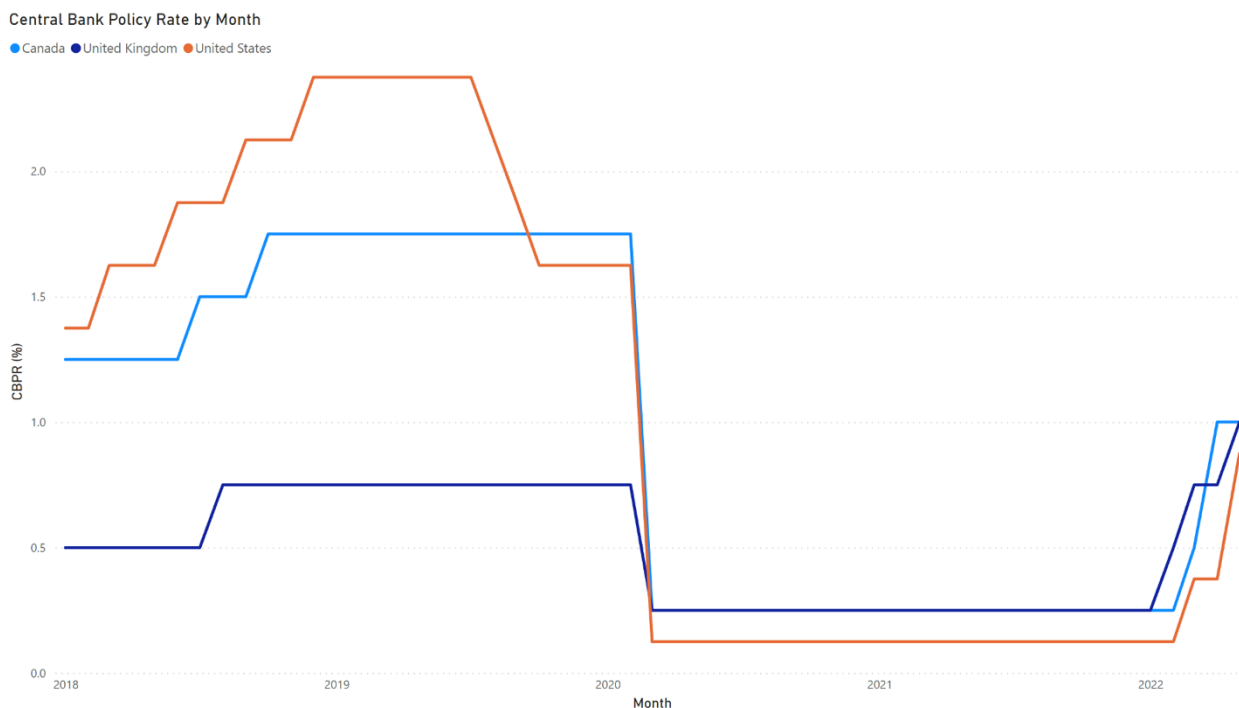
We can see that all three nations lowered their CBPR in March of 2020. Both the United States' Federal Reserve and Canada's Central bank dropped their CBPRs by 1.5 percentage points whereas the Monetary Policy Committee only dropped the United Kingdom's CBPR by half a

percentage point. In part, the United Kingdom's Monetary Policy Committee could not lower

their CBPR by as much as the United States and Canada as their CBPR was already relatively

low and there was not as much room to move. However, there was still some room for the United

Kingdom's CBPR to drop further as evidenced by the United States dropping their CBPR lower

than even the United Kingdom's.

While the differences in monetary policies appear to match the pattern seen with the

differences in unemployment rates, I do not believe that the United Kingdom's more

conservative monetary policy is the main reason that the United Kingdom's unemployment rates

remained so low. We would expect a lower CBPR rate, to lead to a higher level of economic

activity as explained by the IS-MP model, which measures the relationship between the nominal

interest rate and short run output, and this appears to hold true as the United States' and Canada's

short-run GDP remained higher than the United Kingdom's.
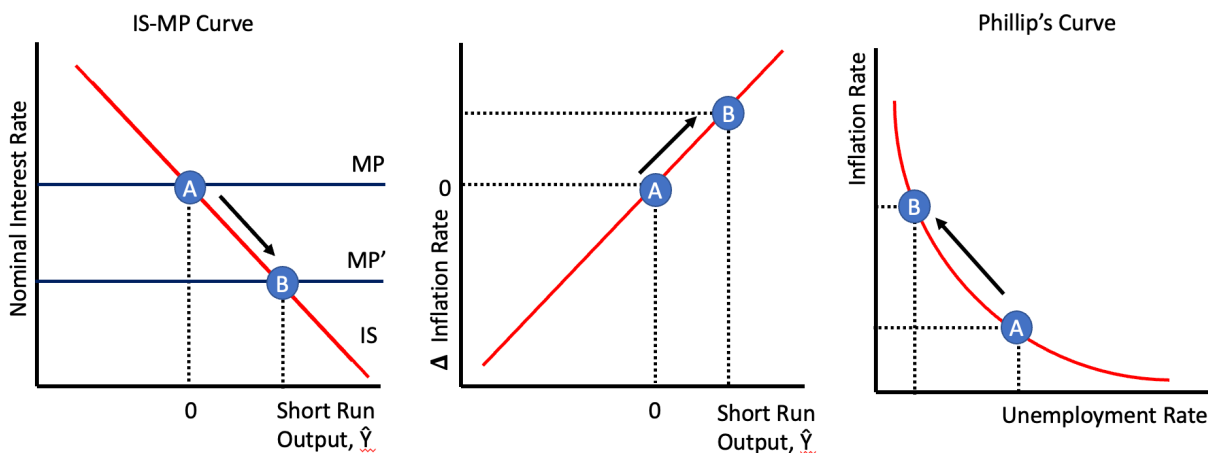
However, when we combine the IS-MP model and Phillip's Curve, we would expect a lower

CBPR to lead to greater rates of inflation and lower rates of unemployment, but this doesn't

match the results we saw with the United Kingdom which leads me to believe that the United

Kingdom's monetary policy actions is the reason for its low unemployment rates during the

coronavirus pandemic.

V. Fiscal Policy

Next, let us consider each nation's fiscal policies in response to their COVID-19 recession. A major form of fiscal policy is government spending which is reflected in a nation's public debt. When visualizing each nation's short-run public debt, we can see that the United Kingdom's fiscal policy was also very conservative as compared to the United States' and Canada's fiscal policies.
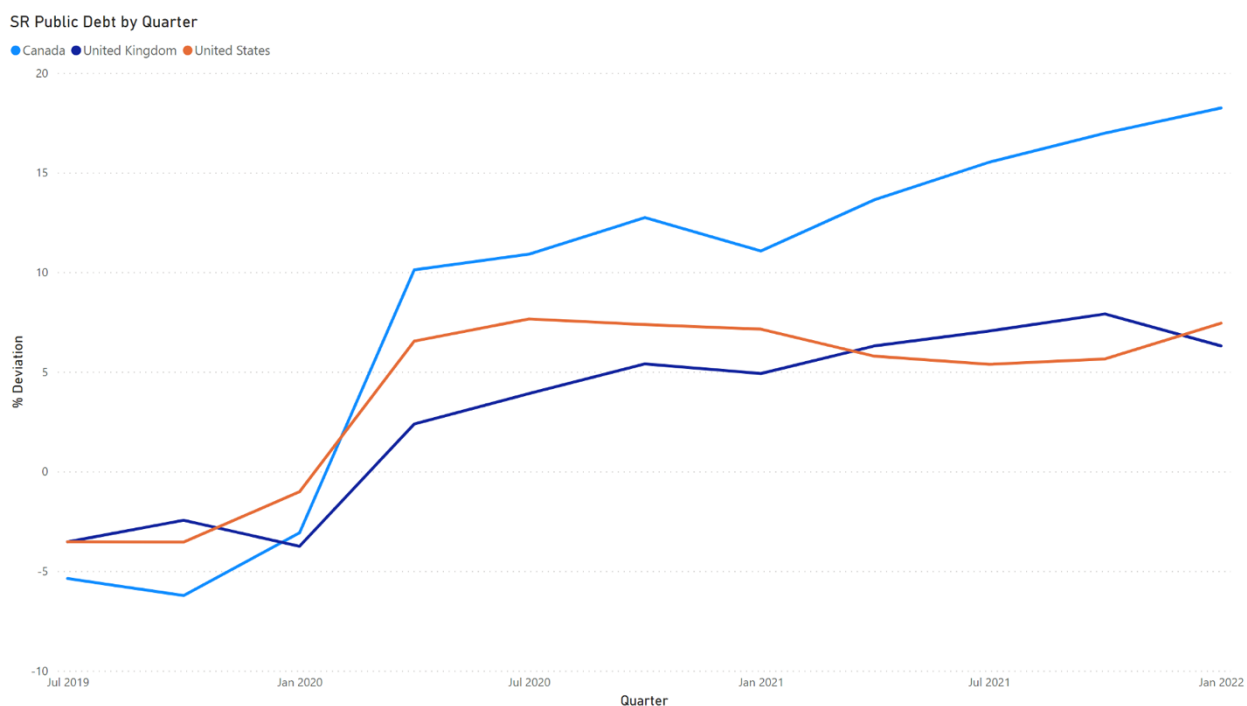
This is a very interesting situation, as we would expect the nation that has the most conservative monetary and fiscal policies to perform the worst when it comes to macroeconomic indicators such as the unemployment rate; however, the United Kingdom had the lowest unemployment rate during the coronavirus pandemic. An analysis of where the funds in each nation's fiscal policies were allocated may help us to determine why the nation with the least short-run public debt (estimating government spending) best kept its people employed and receiving wages.

During the coronavirus pandemic, the International Monetary Fund tracked and summarized the key fiscal policies each nation's government took in response to the COVID-19 pandemic and following recessions A summary of the fiscal policy amounts for each nation can be found in the tables below:

USD Billion:

Nation	Additional Spending & Forgone Revenue in the Health Sector	Additional Spending & Forgone Revenue Outside the Health Sector	Accelerated Spending and Deferred Revenue Outside the Health Sector	Equity Injections, Asset Purchases, Loans, Debt assumptions	Guarantees	Total Size
Canada	$45.6	$216	$68	$4	$61	$326.6
United Kingdom	$131	$391	$16	$1.3	$452	$975.3
United States	$687	$4,641	$18	$56	$454	$5,838

USD per Capita:

Nation	Additional Spending & Forgone Revenue in the Health Sector	Additional Spending & Forgone Revenue Outside the Health Sector	Accelerated Spending and Deferred Revenue Outside the Health Sector	Equity Injections, Asset Purchases, Loans, Debt assumptions	Guarantees	Total Size
Canada	$1,200	$5,700	$1,800	$100	$1,600	$8,600
United Kingdom	$1,900	$5,800	$200	$20	$6,700	$14,500
United States	$2,100	$14,100	$50	$200	$1,400	$17,700

The International Monetary Fund found that the total measure of fiscal policy responses to the coronavirus was $326.6 billion USD in Canada, $975.3 billion USD in the United Kingdom, and

$5,838 billion USD in the United States (International Monetary Fund, 2022). When we take population size into account, these totals are translated as $8,600 USD per capita, $14,500 USD per capita, and $17,700 USD per capita for Canada, the United Kingdom, and the United States respectively. It now becomes evident, that the United Kingdom's fiscal policy response to the coronavirus was not the worst of the three nations, but its total expenditure per capita is not as impressive as the United States and does not reflect its low unemployment rates. The International Monetary Fund tracked fiscal policy across five categories- such as Additional Spending & Forgone Revenue in the Health Sector and Accelerated Spending and Deferred Revenue Outside the Health Sector. The only category that the United Kingdom had the highest expenditures per capita in was Guarantees where $6,700 USD per capita was spent as compared to the United States' and Canada's $1,400 USD per capita and $1,600 USD per capita.

A guarantee is a formal promise or assurance that a loan or debt will be paid by a guarantor (the national government in this case) if the original loan or debt holder is unable to make payment. A government guaranteeing business loans helps those businesses to get a loan in the first place by giving assurance to the firm issuing the loan which in turn encourages businesses to invest and stimulates the economy. Throughout the coronavirus pandemic, The British Business Bank provided guarantees of 80% for lenders on each loan and covered the first 12 months of interest for small and medium businesses via the Coronavirus Business Interruption Loan Scheme and Coronavirus Large Business Interruption Loan Scheme. The United States and Canada had similar government-backed guarantee programs; however, these programs did not cover interest incurred as the United Kingdom's did. While The United Kingdom's guarantee program was great due to its magnitude, I believe its most important part was interest coverage. With interest being covered, firms are not just incentivized to 'make it through the pandemic, but

instead were encouraged to leverage the time of the pandemic to grow and expand without incurring debt beyond the principal. However, interest rates for all three nations were very low at the time, so any interest incurred would have been small compared to pre-COVID times. The United Kingdom's guarantee program more than likely did contribute to their low unemployment rates; however, given the low already low CBPR and interest rates, their guarantee program was also more than likely not the main cause of the low unemployment the United Kingdom experienced.

VI. Government-Supported Wage Policies

While an analysis of the United Kingdom's fiscal policy for guarantees does not appear to be the cause of its low unemployment rates, another category of fiscal policies tracked by the International Monetary Fund has strong evidence of being the cause: Additional Spending & Forgone Revenue Outside the Health Sector. Again, the United Kingdom's expenditures in this category are not impressive, as only $5,800 USD per capita was spent in the United Kingdom whereas the United States spent $14,100 USD per capita; however, analysis into how funds were being spent in this category provides fascinating insights. The Additional Spending & Forgone Revenue Outside the Health Sector includes spending on government-supported wage policies.

A government-supported wage policy is a fiscal policy with the aim of providing an employee's full or partial wage that is in jeopardy of becoming unemployed due to the state of the economy in order to incentivize the employee's firm to continue to offer employment to that employee. In all 3 nations, it was never illegal to fire an employee during the COVID-19 pandemic, outside of anti-discriminatory laws, but these policies were put in place to encourage firms to not fire employees in face of economic hardship. In the United States, the Paycheck Protection Program covered wages and other costs, such as healthcare insurance, for businesses

with fewer than 500 employees for up to eight weeks (Institute for Government, 2021). There was no maximum amount, but these loans had to first be approved by the Government and would later be forgiven if the provided money was spent correctly. In total, $800 billion USD ($2,400 USD per capita) was spent on the Paycheck Protection Program, and an estimated 2 million jobs were saved (0.6% of the population) (Rittenberg, 2022). In Canada, the Canada Emergency Wage Subsidy paid 75% of employees' wages, up to a maximum of $616 USD per week ($2,700 USD per capita), starting in March 2020 and ending in October 202, for firms that demonstrated a 30% decrease in revenue (Institute for Government, 2021). In total, the Canada Emergency Wage Subsidy cost $73 USD billion ($1,920 USD per capita), and an estimated 500,000 jobs were saved (1.4% of the population) (Smart & Eisen, 2021).

Finally, the Coronavirus Job Retention Scheme in the United Kingdom paid furloughed workers 80% of their previous salary, up to a cap of $2,700 USD a month, starting in March 2020 with declining payments from June 2020 to September 2021 (Institute for Government, 2021). This meant that while business doors were closed, individuals could still receive wages. Furloughed workers did not count towards the United Kingdom's unemployment rate, as furloughed workers were still considered employees and still received wages; they were just not performing any labor. The United Kingdom's Coronavirus Job Retention Scheme cost $78 billion USD ($1,160 USD per capita), and an estimated 9.3 million jobs (13.8% of the population) were saved by this program (Craig, 2020). The Office for National Statistics found that 92% of furloughed workers by the Coronavirus Job Retention Scheme remained employees at the same firm after coming out of furlough (Davies et al., 2021).

The United Kingdom's supported wage policy proved to be much more effective than both the United States' and Canada's. This primarily appears to be due to two reasons. First,

firms could stop producing (leading to a lower GDP) and still pay their employees in the United Kingdom, while in the United States and Canada, firms still needed to operate. Second, the requirements of where funds could be spent were much stricter in the United Kingdom. Many businesses in the United States did not use all the funds provided by the Paycheck Protection Plan to support wages. The State Science and Technology Institute found that only 23% of funds from the Paycheck Protection Plan went to employees in medium-sized businesses and only 34% to those employees in small businesses; however, the Paycheck Protection Plan required businesses to use at least 60% of their funds to pay for employment costs (Rittenberg, 2022).

While the United Kingdom may have spent much less on its supported wage policy, its stricter requirements forced businesses to use the funds to pay wages of furloughed employees, instead of investing the funds into the business to help keep afloat in poor economic conditions. In Canada and the United States, funds could be spent much more freely which led to businesses using the funds to help keep afloat (leading to higher GDP), rather than focusing on supporting the workers the funds were intended for. In the United Kingdom, those businesses that were inefficient during the Pandemic temporarily closed, but employees still received wages. Once the pandemic ended, those previous inefficient businesses had a second chance to prove their efficiency in a normal market setting. Whereas in the United States and Canada, those businesses that were inefficient during the Pandemic continued to operate, even if they were already going out of business before the Pandemic. Instead of funds being used to support workers until businesses could become efficient again, the United States and Canada fueled inefficient businesses to keep operating in a market they would not normally be able to survive in, which created the trade-off between unemployment and production as we saw previously. If the United States and Canada wanted to increase the effectiveness of their Supported Wage Policies in

retaining workers, then it would have been beneficial to place stricter limits on how and where the government-provided funds went. Instead of using the funds to operate inefficient businesses, the funds should have instead been used to support those workers who were in jeopardy of losing their jobs if the United States and Canada wanted to optimize their supported wage policies to keep unemployment rates down.

VII. Conclusion

The cause of the United Kingdom's low unemployment during the COVID-19 pandemic as opposed to the United States' and Canada's unemployment rates clearly appears to be its employee-centered government-supported wage policy. While, the United Kingdom, United States, and Canada's supported worker policies all had at least some goal of protecting employees, the United Kingdom's policy seems to have focused the most on retaining jobs and paying employees (when a business would not have been able to do themselves otherwise) while the United States' and Canada's less-strict policies focused on saving firms and did not result in firms keeping/paying employees at as high of a rate as firms did in the United Kingdom. While a clear trade-off between employment and production has appeared, this does not necessarily mean that the United Kingdom made the best policy decisions to maximize the welfare of its people; rather, it only indicates that the United Kingdom made the best policy decision regarding keeping the unemployment rate down. Stabilizing and increasing GDP surely provides welfare, just as employing individuals does; however, finding the right balance of policies to support both employment and production to maximize total welfare for a nation will prove difficult to discover and will be different for each nation's economic environment and condition.

As discussed previously, we would expect unemployment and production to be negatively correlated and for higher levels of employment to lead to higher levels of production,

and that is the case; however, when we plot Canada's, the United Kingdom's, and the United States' unemployment rates against their short-run GDP, we can see that the slope on each nation's trend line is vastly different.
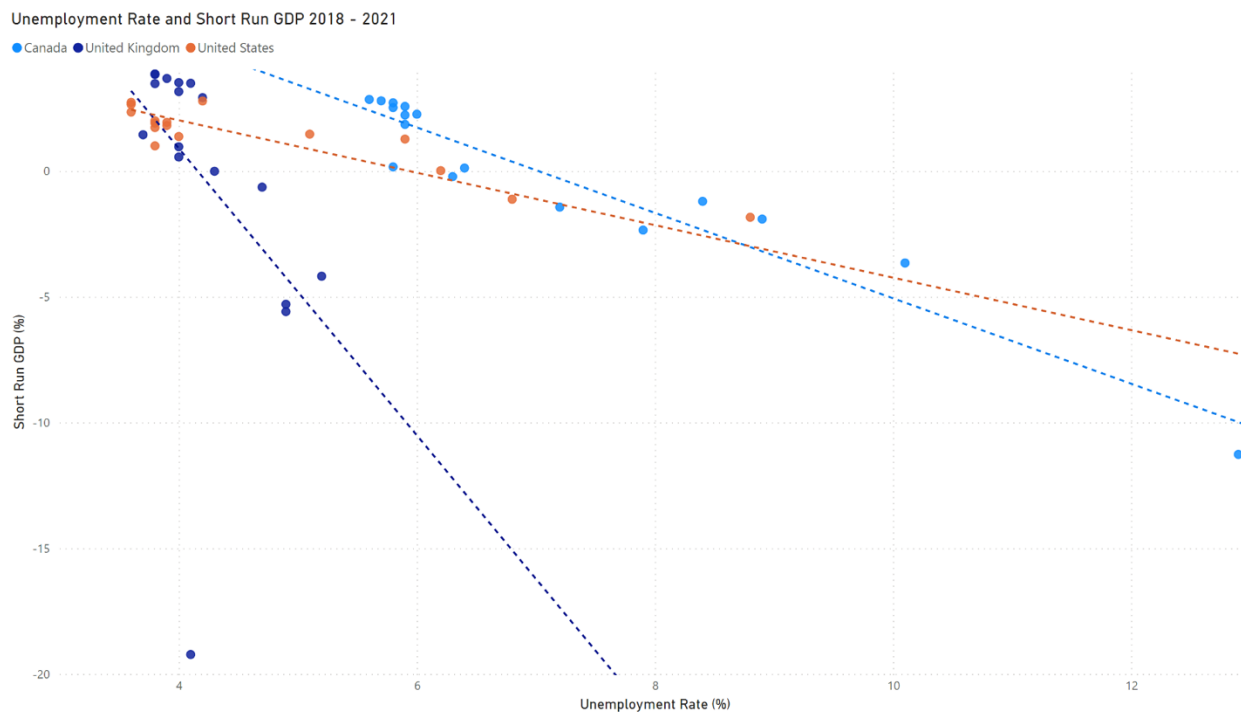
Because the United Kingdom's slope is much steeper than the United States' and Canada's, this means that its short-run GDP is impacted by its unemployment rate more than the United States' and Canada's short-run GDPs are impact by their unemployment rate. This implies that it would take a much larger increase in the United States' and Canada's unemployment rate to yield the same decline in production than in the United Kingdom. As a result, the fiscal policy that the United Kingdom enacted was wise as it focused on saving its production by savings its employment whereas it was wise for the United States and Canada to focus on saving their production by pursuing other means of welfare.

While we now have some insights into how different economic conditions may warrant a different fiscal response, the balance of pursuing production or employment saving measures has

not been discovered. Additional, broader research that is outside the scope of this thesis is needed to determine what that ideal balance is for each nation to provide the most welfare. Maybe a team or an individual in the future will pursue finding this solution, which would prove to be greatly beneficial to nations around the world in learning how to best respond in the midst of a sudden recession. However, at the end of the day, we can see that the United Kingdom's strict fiscal policy in supporting employee wages is what caused 9.3 million jobs to be saved and for the United Kingdom to experience one of the lowest unemployment rates around the world during the COVID-19 pandemic.

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