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Wirtschaftswunder: A Macroeconomic Study of Germany

By Connor M. Dollarhite

Introduction

The country of Germany is a fascinating story of economic perseverance and vitality. In the 20th century alone Germany experienced a rollercoaster of economic turmoil and growth. Through two world wars and the country being split down the middle, economic prosperity in Germany seemed bleak. Despite the odds, in 2021 Germany was the fourth largest economy in the world (Figure 1). How did it get here? Through the impact of influential economists and the perseverance of their ideals of a balanced fiscal budget, maintaining price stability, and always allowing for the flexibility of price and wages, Germany has been able to bounce back and not only survive but also thrive throughout wartime reconstruction¹, progressing to modern standards, and through the COVID-19 pandemic.

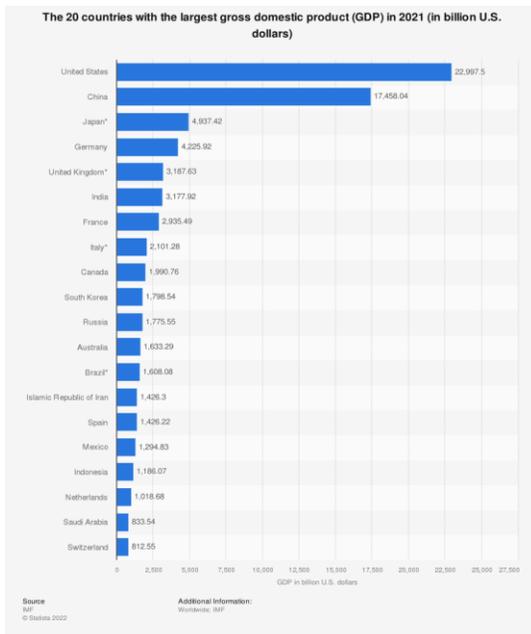


Figure 1. Countries with the Largest Gross Domestic Product (GDP)¹

¹Aaron O’Neill, “Countries with the largest gross domestic product (GDP) 2021,” Statista, February 16, 2023, <https://www.statista.com/statistics/268173/countries-with-the-largest-gross-domestic-product-gdp/>.

Economic History

Wirtschaftswunder

After World War I, Germany had suffered tremendous financial and economic impact. Under clause 231, the 'War Guilt Clause', of the Treaty of Versailles, Germany had to accept complete responsibility for the war. This responsibility came with the dismantling of the German national army and navy and a loss of 13% of total land and 12% of total population to the Allies. While these numbers are not staggering, the land that the Allies seized as a result of the admission of guilt was rich with iron and coal. As a result, Germany lost nearly 50% of their iron and coal production. The Allies also demanded severe financial reparations to be paid for their crimes during the war. These payments plunged the already economically suffering country into tumultuous debt. The Treaty of Versailles, combined with the entire world experiencing the Great Depression after World War I, led to Germany experiencing severe hyperinflation, devaluing the currency and making it useless. The political authorities at the time were looking for a scapegoat to blame the economic collapse on and this paved the way for Hitler's rise to power as he placed the blame on the shoulders of the Jewish population and the greed of Western civilization.²

Under Hitler's regime, the German economy was manipulated for his own selfish gain. Represented in Figure 2 below, Hitler manipulated the economy to impose price controls on all supplies that contributed to wartime goods. This allowed Hitler to buy war materials at an artificially low price. Doing this created a shortage of supplies for the rest of the country as the factories were locked into their wartime manufacturing to generate as much ammunition and

²"The Aftermath of the First World War," The Wiener Holocaust Library, accessed December 6, 2022, <https://www.theholocaustexplained.org/the-nazi-rise-to-power/the-effects-of-the-first-world-war-on-germany/the-treaty-of-versailles/>.

supplies as possible. Thus, the German population, not the German military, suffered the shortage that resulted from the imposed price ceilings.³

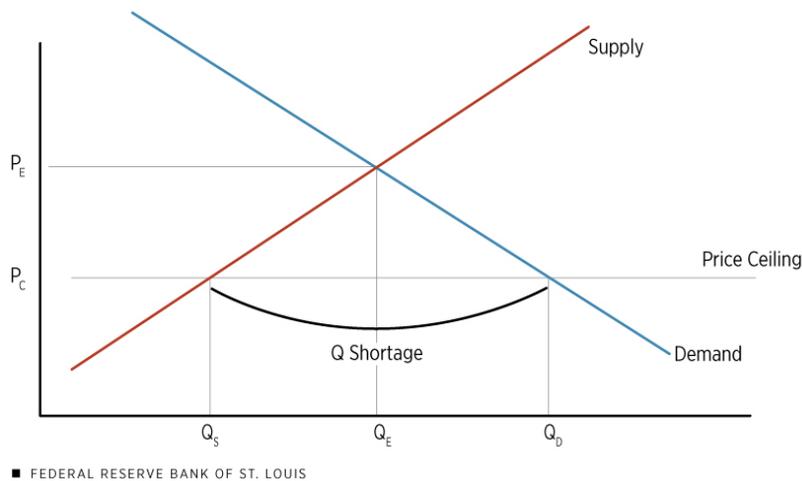


Figure 2.⁴

At the end of World War II Germany experienced a severe lack of infrastructure due to the bombing and destruction they received during the war. The country lacked the physical capital to generate goods at a steady rate. On top of the lack of physical capital, the country lacked labor capital as the population of men and boys was severely low after they had been sent off to war and killed. Real GDP was down by 33% and housing stock was reduced by 20% due to the infrastructure damages.⁵ With relatively no supplies, the German economy resorted to food rationing 1,500 calories per person per day. The current German currency, the Reichsmark, became worthless due to the severe inflation the country had experienced.⁶ Imposed price controls were still in place making demand high and supply low and there were scarce supplies

³Gregory Gethard, "The German Economic Miracle," Investopedia, accessed December 7, 2022, <https://www.investopedia.com/articles/economics/09/german-economic-miracle.asp>.

⁴For more information, see David F. Perkins, "The Science of Supply and Demand," Economic Research, Federal Reserve Bank of St. Louis, March 2021, <https://research.stlouisfed.org/publications/page1-econ/2021/03/01/the-science-of-supply-and-demand>.

⁵Gethard, "The German Economic Miracle."

⁶Gethard, "The German Economic Miracle."

to go around. This led to the emergence of a black market of goods and services. Without any value in the established currency bartering became the primary form of trade, with corporate firms even creating new positions called the "Compensator" to function as a professional bartering liaison between firms to make fair trades.⁷ Eventually, the country was split into two halves down the middle of Berlin, the capital, by the Berlin Wall with East Germany under Soviet communist rule and West Germany under Allied capitalist rule.

With such persistent economic turmoil within Germany how did it become the fourth largest economy in the world in just a century after the first World War? Germans call this bounce back the *Wirtschaftswunder* (pronounced virt-shafts-vunder) which translates to the "German Economic Miracle." This can be attributed to many factors but begins with Walter Eucken. During Hitler's regime, Eucken taught at the University of Freiburg which openly taught in opposition to Hitler's political actions.⁸ Eucken promoted what he called a "social free market," and his economic philosophies gained much traction during the war when the German citizens were suffering major economic struggles. He and his followers saw that even the wartime production that generated short term stimulus into the German economy was not enough to sustain the country's economy after a few years and advocated for change. This change was the implementation of free market capitalism mixed with government intervention in the form of cartel and monopoly intervention as well as maintaining a welfare safety net for the German population.⁹ Eucken also promoted a strong central bank that could monitor the economic climate of the country that was independent of the German government. The entirety of Eucken's economic thought was based on minimal central planning. He held the idea that the central

⁷David R. Henderson, "German Economic Miracle," in *The Concise Encyclopedia of Economics*, ed. David R. Henderson (Carmel, IN: Liberty Fund, 2007), <https://www.econlib.org/library/Enc/GermanEconomicMiracle.html>.

⁸Gethard, "The German Economic Miracle."

⁹Gethard, "The German Economic Miracle."

government should be as hands-off as possible to let the invisible hand of the free market to run its course. He stated that holding a policy of full employment only leads to the central government getting involved and implementing price controls that would overstep their bounds.¹⁰ He argued that it was the opposite of his opinion, Keynesian demand policies, which brought Germany into financial ruin. To combat this, prices and wages need to return to a flexible state to remove any central planning or price controls. Keynesian economics promotes the theory that economies are not self-stabilizing even with fully flexible prices and will not return to perfect equilibrium if there is no intervention from the central government. Eucken, however, saw the instability of market economies as a result of a destabilizing monetary system and insufficient price flexibility as central planning would interfere.¹¹ In this way, Eucken is remarkably similar to the economic philosophy of Milton Friedman. Having passed away in 1950, Eucken did not live to see his concepts come to complete fruition after the war had ended, but one of his students, Ludwig Erhard, took up the mantle.

Ludwig Erhard is coined as “the father of the Wirtschaftswunder” and, just like his teacher Walter Eucken, was diametrically opposed to Keynesian economics and the causes of the Great Depression.¹² While Keynes determined that management of demand via central planning must be active and the Great Depression was a result of a lack of intervention, Erhard saw the causes as insufficient wage and price flexibility. Erhard argued the German government post World War II needed to focus on price stability and structural reforms as opposed to focusing on aggregate demand.¹³ In this way, you can remove any barriers to a free-market economy and

¹⁰Gethard, “The German Economic Miracle.”

¹¹P. Bofinger, “German macroeconomics: The long shadow of Walter Eucken,” *Centre for Economic Policy Research*, June 7, 2016, <https://cepr.org/voxeu/columns/german-macroeconomics-long-shadow-walter-eucken>.

¹²Bofinger, “German macroeconomics.”

¹³Gethard, “The German Economic Miracle.”

allow the flexible wages and prices to function as incentive for workers to positively impact the economy through labor, consumption, and investment. After World War II, Erhard collaborated with the Allies to replace the now worthless Reichsmark with a new Allied issued currency called the Deutsche Mark (DM). With the introduction of this new currency, the country of Germany saw a 98% contraction in the money supply.¹⁴ This is due to the vast amounts of Reichsmark that was in circulation due to its extreme devaluing and the new DM is worth significantly more and thus there is less of it in circulation. On top of the introduction of the DM, Erhard introduced large tax cuts to encourage spending and investment.¹⁵ In Figure 3 below you can see the effect of the tax cut on wages and employment moving from point A to point B. After a tax cut, wages and employment both increased, and this is exactly what Erhard knew would happen. When the Allies were in control, they taxed, in the middle tax bracket, the Reichsmark 85% and Erhard lowered it to 18%.¹⁶

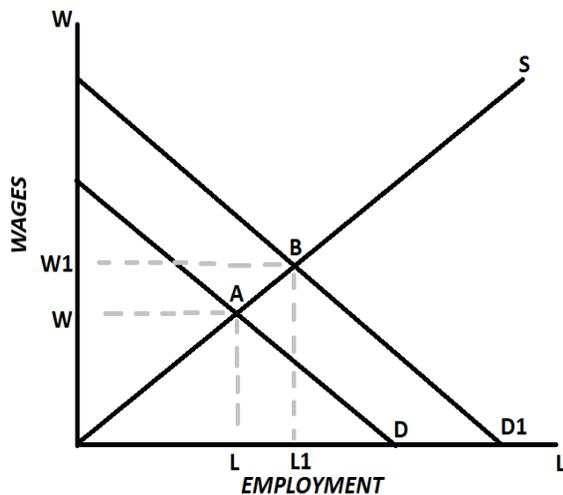


Figure 3. Wages versus Employment.¹⁷

¹⁴Gethard, "The German Economic Miracle."

¹⁵Gethard, "The German Economic Miracle."

¹⁶Henderson, "German Economic Miracle."

¹⁷For more information, see Perkis, "The Science of Supply and Demand."

Erhard, contrary to all German and United States advisors, removed the price controls when the new currency was released. This was to allow the free market to dictate its own flexible prices and return to equilibrium supply and demand rather than keeping the harsh ceilings that stifled production of goods to the public.¹⁸ After all this change, Erhard saw the fruits of his labor. Almost immediately shops were booming, bartering ceased, the black market dissolved, and now that the German currency had value, people began looking for work. Yale University economist at the time, Henry Wallich, stated, “The spirit of the country changed overnight. The gray, hungry, dead-looking figures wandering about the streets in their everlasting search for food came to life.”¹⁹ The German people now had a sense of belonging and work now that their labor had value and the free market allowed for flexible wages and prices. They no longer used ration cards to purchase food, but rather the DM became the ration card that the German worker found purpose in working for.²⁰ By the end of 1948, Germany was back to pre-World War II levels and ten years later, the economy had grown by 400% from 1948.

Figure 4 below depicts how the Wirtschaftswunder is not due to the wartime productivity, but rather recovery was due to a turnaround from its economic policy in 1945. The GDP per capita growth in Germany remained below their historical linear trend throughout the years between World War I and World War II and only came close to the trendline during the war productivity boom of the early 1940s. The steep decline in GDP per capita growth at the end of the war is an indicator that the war gain productivity is not sustainable during peacetime. Thus,

¹⁸Gethard, “The German Economic Miracle.”

¹⁹Henderson, “German Economic Miracle.”

²⁰Henderson, “German Economic Miracle.”

we can conclude that the period of recovery was in the 1950s and resulted from the turnaround of economic policy in 1945.²¹

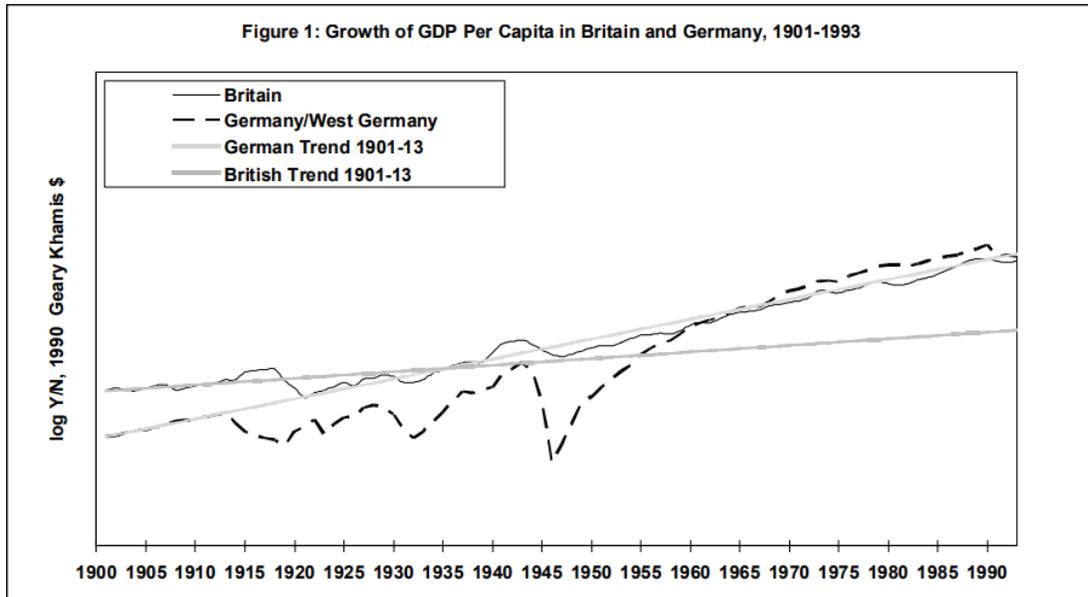


Figure 4. Growth of GDP per capital in Britain and Germany, 1901-1993.²²

The Marshall Plan also affected Germany during this time. The Marshall Plan was a United States issued program in which they gave aid funds to European countries after the war to rebuild their economies. Many economists have debated the success of the Marshall Plan and if the money given even had a substantial effect. Regarding Germany, the United States gave \$2 billion in aid to help stimulate the German economy, but there is great evidence that the Marshall Plan did not have very much of a part, if any, in the Wirtschaftswunder. Other countries that received substantial aid from the Marshall Plan showed lower growth than Germany, thus indicating another variable to be involved with their tremendous growth. For example, France received 18% of funds granted in the Marshall Plan (while Germany received 11%), implemented Keynesian economic principles that Erhard and Eucken both vehemently opposed,

²¹Barry Eichenbreen and Albrecht Ritschl, “Understanding West German Economic Growth in the 1950s” (working paper, Department of Economic History, London School of Economics, London, 2008).

²²Echengreen and Ritschl, “Understanding West German Economic Growth in the 1950s.”

and saw less economic growth than Germany that can still be seen today.²³ Represented in Figure 5 below is the historical disparity of real GDP between Germany and France. On top of this, directly after the war, the Allies were charging the German government \$2 billion a year for occupation costs in West Germany. In this way, the \$2 billion given to the German government was only returning some of the money they had taken that plunged Germany into deeper economic ruin.²⁴

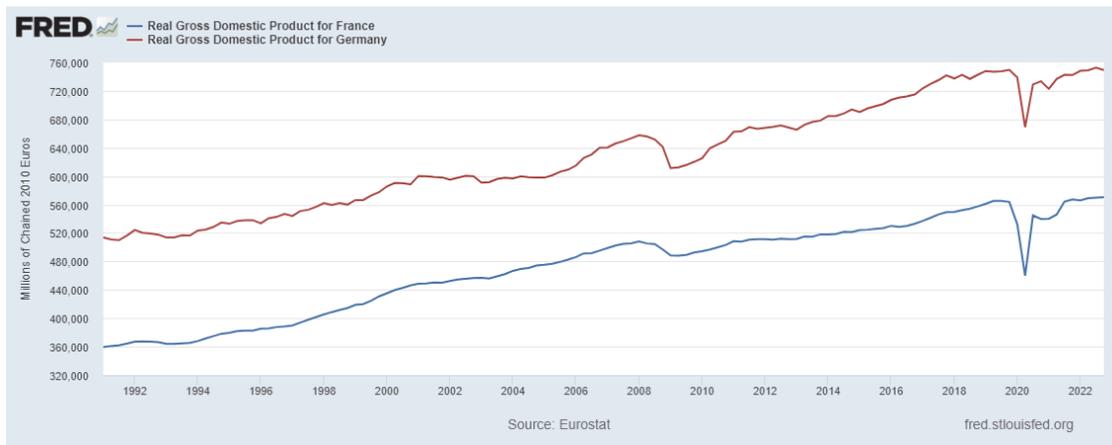


Figure 5. Real GDP France versus Germany.²⁵

After all of this, the Berlin Wall still loomed menacingly down the center of the country. West Germany was thriving with this new economic plan and currency developed by the partnership of the Allied forces and Ludwig Erhard, but East Germany, under Soviet rule, was still struggling. This disparity of economic prosperity between the two sides of the country is another example to strengthen the effectiveness of free market trade and Erhard and Eucken’s economic principles as Soviet influences in East Germany pushed out free market trade and flexible wages for a more socialist, monitored economic paradigm. However, in 1989 East

²³Catherine Shakhdam, *Post-War Recovery and Growth: How France Found Economic Velocity After WW2* (Baghdad, Iraq: Al-Bayan Center for Planning and Studies, 2018), <https://www.bayancenter.org/en/wp-content/uploads/2018/06/978675463.pdf>

²⁴Henderson, “German Economic Miracle.”

²⁵For more information, see “FRED Graph,” Federal Reserve of St. Louis, accessed April 23, 2023, <https://fred.stlouisfed.org/series/GDPC1>.

Germany allowed free travel to West Germany without legal repercussions, as there had been in the past, and this immediately collapsed the East German economy.²⁶ All of the laborers and those who were willing to work immediately flocked to the more prosperous West Germany where their labor would mean something. They could finally obtain goods and services of value for their hard work. It was through Erhard and Eucken's principles that economic prosperity and hope for families accompanied the name of "West Germany." Without the proper supply of labor, the wages increased (see Figure 6) to attract more workers, but there was not enough labor capital in the region to sustain their economy. The Berlin Wall fell on November 9th, 1989, and the two halves of Germany were reunited under one free market government and economy. Even over 30 years later, the geographical regions of West and East Germany see output disparity. East Germany still only has 75% of the GDP per capita compared to West Germany.²⁷

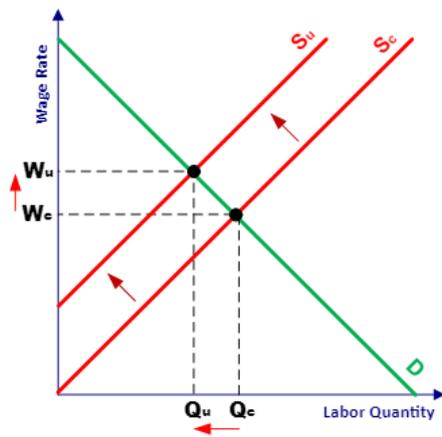


Figure 6. Wage rate versus labor quantity.²⁸

²⁶Gethard, "The German Economic Miracle."

²⁷Gethard, "The German Economic Miracle."

²⁸For more information, see Perkis, "The Science of Supply and Demand."

Historical Germany can offer us amazing insight as to what has worked in economic theory. Historical Germany is a prime example of how damaging inflation mixed with price controls and high tax rates can be. Historical Germany is also a notable example of the benefit of ending inflation, removing controls, and cutting high marginal tax rates. These historic examples continue to bleed into the economic prosperity and policy of Germany today.

COVID-19 Pandemic: Continued Resilience

Throughout the COVID-19 pandemic Germany proved to be an economically resilient country through the continued usage of Erhard and Eucken’s core principles of maintaining a balanced fiscal budget, keeping prices stable, and leaving room for the flexibility of price and wages. It was through the usage of these principles that Germany has achieved economic success and stability post-COVID-19. It was greatly beneficial that before the pandemic Germany was situated in an economically prosperous climate. In 2019 Germany was at a 7.1% surplus in their nominal GDP combined with record-low unemployment. This was largely in part due to the high private consumption of German citizens.²⁹ Germany also continues to embody the spirit of both Walter Eucken and Ludwig Erhard via keeping a government budget surplus via the implementation of the “debt-brake.” The “debt-brake” is a fiscal policy in place within the German constitution requiring the federal government to maintain as little debt as possible.

Eucken and Erhard championed the idea of minimal debt and profitable government investments.

With this tremendous start, Germany’s GDP was not as severely affected by the pandemic compared to its European counterparts. In Figure 7 below you can see that Germany’s GDP, relative to the United States dollar, was much smaller.³⁰ The GDP in Germany fell by just

²⁹“Economic Policy Reforms 2021: Going for Growth,” *Organisation for Economic Co-operation and Development*, April 2021, <https://www.oecd.org/economy/growth/Germany-country-note-going-for-growth-2021.pdf>.

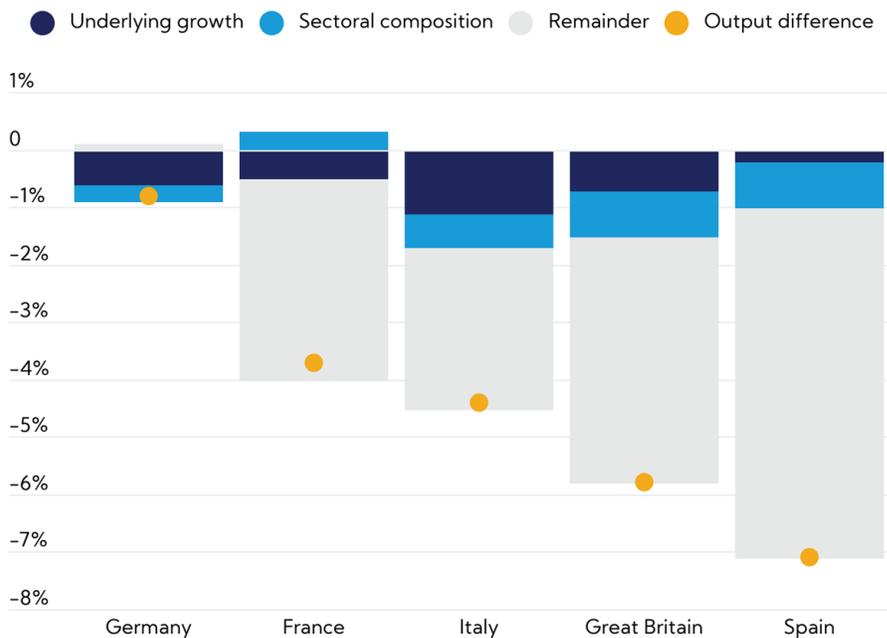
³⁰Carlos Caceres, Mai Chi Dao, and Aiko Mineshima, “Beyond the Pandemic: Five Charts on Germany’s Economic Recovery Plan,” IMF Country Focus, International Monetary Fund, July 15, 2021,

under 5% after the lockdown procedures enacted by the German government, and the lowest it ever got was a GDP contraction of 11.3 percent in Q2 of 2020.³¹ The German industries that were most affected by the pandemic included tourism, travel, and hospitality (restaurants, hotels, etc.).

Smaller output loss

Germany outperformed many of its European peers in 2020.

(GDP growth relative to the US)



Source: IMF staff calculations.



Figure 2. Smaller Output Loss: Germany Outperformed Many of its European Peers in 2020.³²

Within Germany's GDP, the country's net exports fell tremendously. Germany is an export-reliant country with most of the income it receives deriving from exporting goods. Due to the pandemic, Germany's exports decreased significantly, reducing their trade surplus from 20.8

[https://www.imf.org/en/News/Articles/2021/07/13/na071521-beyond-the-pandemic-five-charts-on-germanys-economic-recovery-](https://www.imf.org/en/News/Articles/2021/07/13/na071521-beyond-the-pandemic-five-charts-on-germanys-economic-recovery-plan#:~:text=Germany's%20economy%20contracted%20by%20just,rebound%20from%20the%20first%20wave.)

[plan#:~:text=Germany's%20economy%20contracted%20by%20just,rebound%20from%20the%20first%20wave.](https://www.imf.org/en/News/Articles/2021/07/13/na071521-beyond-the-pandemic-five-charts-on-germanys-economic-recovery-plan#:~:text=Germany's%20economy%20contracted%20by%20just,rebound%20from%20the%20first%20wave.)

³¹"Germany Economic Overview," Market Intelligence, International Trade Administration, June 16, 2021,

[https://www.trade.gov/market-intelligence/germany-economic-overview.](https://www.trade.gov/market-intelligence/germany-economic-overview)

³²Caceres, Dao, and Mineshima, "Beyond the Pandemic."

billion USD to 4.1 billion USD.³³ Figure 8 below depicts Germany's export heavy economy as well as the significant dip in 2020 and 2021. The import and export trend lines become significantly closer during the pandemic years indicating a severe fall in their normal trade surplus.

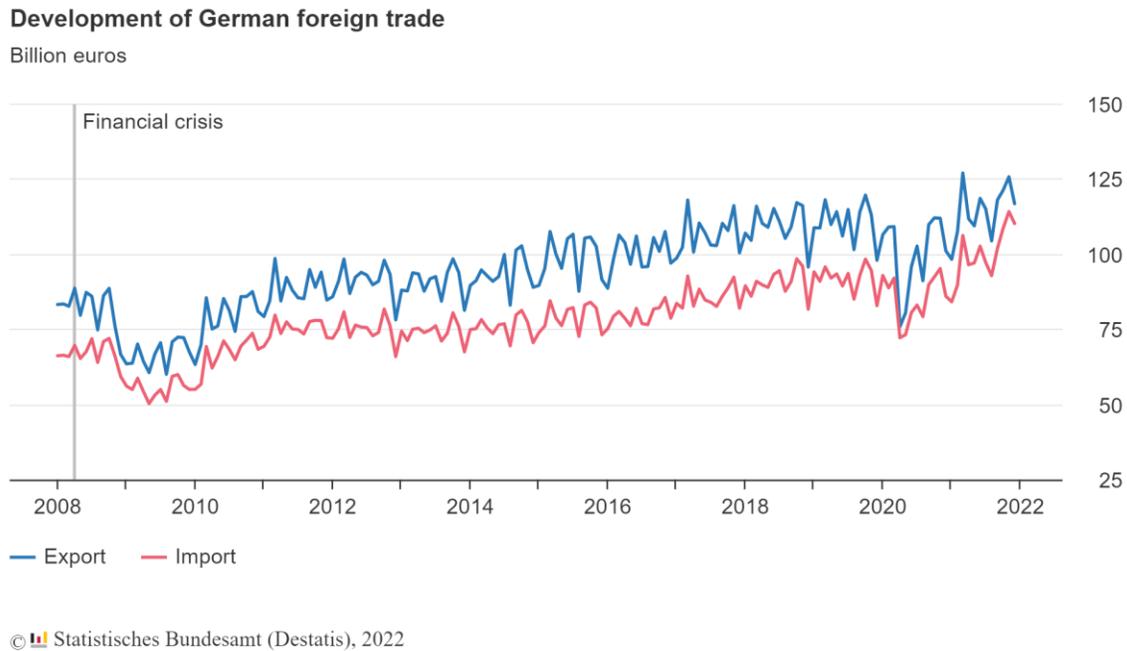


Figure 3. Development of German Foreign Trade.³⁴

Germany initiated the Kurzarbeit program which was intended for workers to keep their jobs through the pandemic by allowing an agreement to be made between the employer and employee of a reduction of hours worked and reduction of wages.³⁵ In return, the worker would not be laid off and would keep his job throughout the pandemic and afterwards. The government would then repay any lost income at a "replacement rate" of 60%. This means that a worker would receive 60% of their pay for the hours they miss due to the agreement, but the worker

³³"Economic impacts: Statistics related to Covid-19," Statistisches Bundesamt (Destatis), Accessed April 23, 2023, <https://www.destatis.de/EN/Themes/Cross-Section/Corona/Economy/context-economy.html#396818>.

³⁴"Economic impacts," Statistisches Bundesamt (Destatis).

³⁵Caceres, Dao, and Mineshima, "Beyond the Pandemic."

would still receive full pay for the hours worked.³⁶ This employment program denies direct fiscal action such as stimulus checks and still gives the free-market economy the reins. This once again echoes the economic work of both Walter Eucken and Ludwig Erhard by trying to deny as much central planning as possible while maintaining price stability and flexibility in a free market economy. If the Kurzarbeit program was not in place, unemployment would have averaged three points higher in every state of Germany.³⁷ Below in Figure 9, the model shows the average hours paid per worker in Germany since 2008. You can see the significant dip during the COVID-19 crisis window, but it still manages to maintain an average hour paid of around 20 hours a week. This dip is not as severe as other European countries due to the Kurzarbeit initiative.³⁸

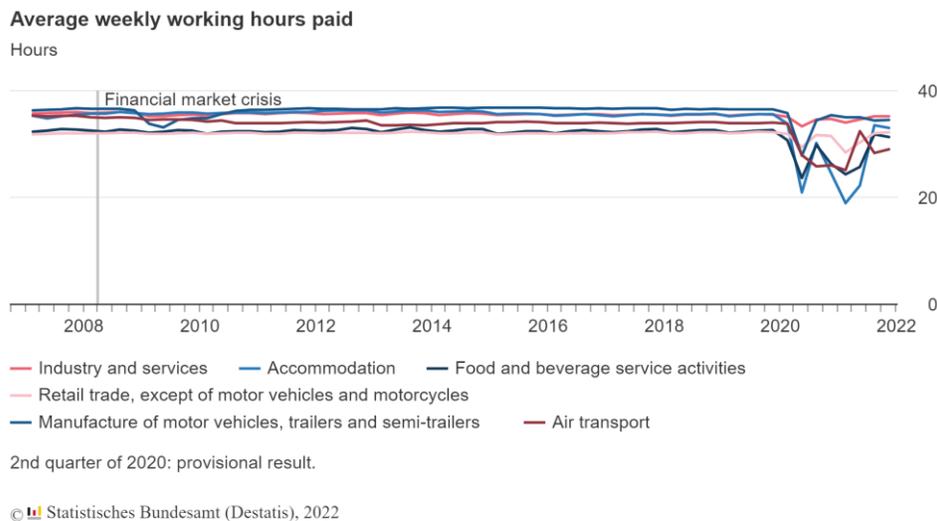


Figure 4. Average Weekly Working Hours Paid.³⁹

³⁶“Kurzarbeit: Germany’s Short-Time Work Benefit,” IMF Country Focus, International Monetary Fund, June 15, 2020, <https://www.imf.org/en/News/Articles/2020/06/11/na061120-kurzarbeit-germanys-short-time-work-benefit>.

³⁷“Kurzarbeit,” International Monetary Fund.

³⁸Caceres, Dao, and Mineshima, “Beyond the Pandemic.”

³⁹“Economic impacts,” Statistisches Bundesamt (Destatis).

Recovery from the COVID-19 pandemic is slow, but certain. The price-adjusted GDP was 2.6% higher in 2021 than in 2020, but it has yet to reach its pre-pandemic levels.⁴⁰ The majority of the country’s economic losses since the start of the pandemic have been due to a slump in private consumer spending and it will take time for consumer confidence to return to normal along with their private consumption.⁴¹ In the meantime, the German parliament temporarily suspended the constitutional debt-brake during the pandemic with a pledge to return to the debt-brake in 2023.⁴² This means that in the next couple of years the federal and state governments will set fiscal restrictions as they will need to save money within their government spending in order to pay off the debt. The federal government will be allowed to spend a little over budget, but all state governments within Germany will be forbidden to do so until the debt is paid.⁴³ This means the government must initiate some sort of austerity policy to repay the COVID-19 debt.

The Current Economy

Inflation

The rise in inflation first began during the COVID-19 crisis. As the government scrambled to put money in the economy, the drastic increase in money supply bolstered the aggregate demand in the short run, but after the pandemic resulted in the Euro losing its value due to inflation. Represented in figure 10 below, an increase in the money supply leads to an increase in aggregate demand, but with real output not changing, we will only see inflation as a result.

⁴⁰Björn Bremer, “A New Fiscal Policy Regime? Germany’s Fiscal Policy in the Wake of the Pandemic,” American-German Institute, May 31, 2022, <https://www.aicgs.org/2022/05/a-new-fiscal-policy-regime-germanys-fiscal-policy-in-the-wake-of-the-pandemic/>.

⁴¹Julia Dahm, “Pandemic tears ‘striking hole’ in German economy,” Euractiv, January 24, 2022, https://www.euractiv.com/section/politics/short_news/pandemic-tears-striking-hole-in-german-economy/.

⁴²Bremer, “A New Fiscal Policy Regime?”

⁴³Bremer, “A New Fiscal Policy Regime?”

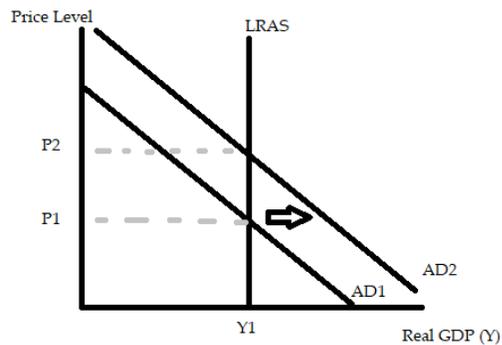


Figure 10. Price Level versus Real GDP.⁴⁴

Right now, inflation and interest rates are both rising. The consumer price index inflation rate saw a 10.4% increase from September 2022 to October 2022 alone.⁴⁵ This number is an all-time high since German reunification in 1989. There is a current economic debate within the country as to whether government spending should increase in response. Some say that more government spending on infrastructure is not only less important but only funnels more money into the economy thus promoting inflation. Others say that the German government should spend more to supply the citizens the money they need to get through the inflation and the government spending would function as a cushion against the price increases.⁴⁶

Dr. Georg Thiel, president of the Federal Statistical Office of Germany, states, “Enormous price rises for energy products still are the main reason for the high inflation.” Looking at the energy sector, prices of energy products in Germany have risen by 43% despite the relief measures enacted by the German government.⁴⁷ These relief measures included a “9-

⁴⁴For more information, see Perkis, “The Science of Supply and Demand.”

⁴⁵“Inflation rate at +10.4% in October 2022,” Press, Statistisches Bundesamt (Destatis), November 11, 2022, https://www.destatis.de/EN/Press/2022/11/PE22_472_611.html#:~:text=Press%20release%20No.,472%20of%2011%20November%202022&text=WIESBADEN%20E2%88%92The%20inflation%20rate%20in,10.0%25%20increase%20in%20September%202022.

⁴⁶Bremer, “A New Fiscal Policy Regime?”

⁴⁷“Inflation rate at +10.4% in October 2022,” Statistisches Bundesamt (Destatis).

Euro-Ticket” which allowed passengers to travel for nine euros per month on local and regional transport in all of Germany and the German government incurs the other costs needed as well as a reduction in the gas and heating tax from 19% to 7%. The “9-Euro-Ticket” program ended in August of 2022. The increase in price of energy related products can be attributed to the large increases of international purchase prices (see Figure 11 below), increase in the country’s CO₂ tax to incentivize the reduction of carbon emissions, the conflict with Ukraine that resulted in German sanctions on Russia limiting their oil and energy imports, and the current Organization of the Petroleum Exporting Countries (OPEC) standards limiting the amount of oil being produced internationally.⁴⁸ We have also seen the prices rise in the food industry with supply and delivery bottlenecks being the main cause for this. You can see the individual and cumulative effect of inflation in these industries in Figure 12 below.

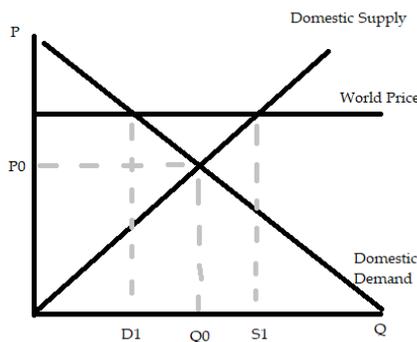
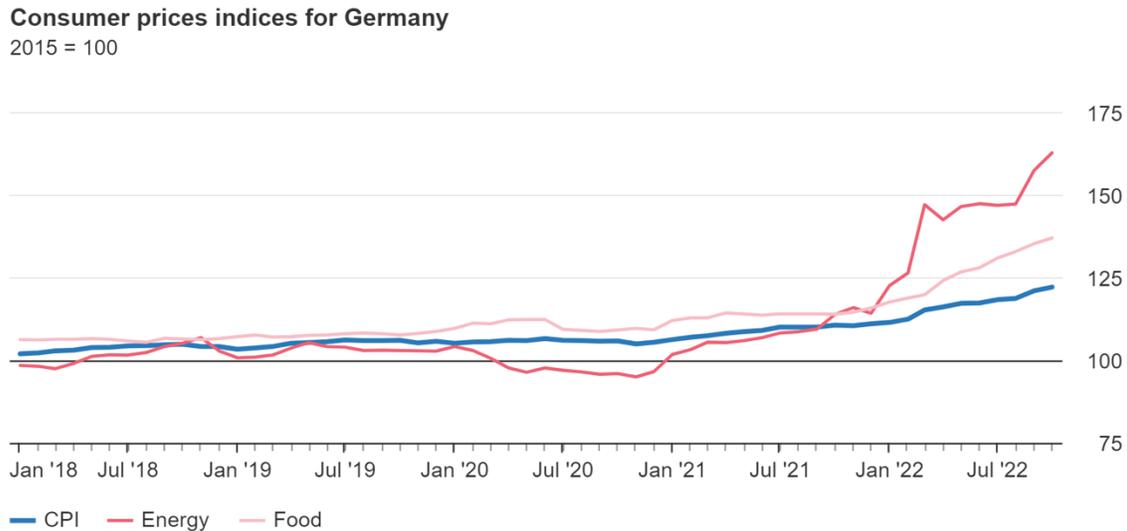


Figure 11. International Price Effects on Price and Quantity.⁴⁹

⁴⁸“Inflation rate at +10.4% in October 2022,” Statistisches Bundesamt (Destatis).

⁴⁹For more information, see Perkis, “The Science of Supply and Demand.”



© Statistisches Bundesamt (Destatis), 2022

Figure 5. Consumer Prices Indices for Germany.⁵⁰

Unemployment

Germany is currently experiencing an all-time high in employment numbers and a low in unemployment rate. With the unemployment rate hovering around 3%, it is the lowest it has ever been in German history. The record was previously held in 2019 just before the pandemic hit.⁵¹ We can reasonably conclude from this that their unemployment statistics were not heavily crippled by the COVID-19 pandemic and Germany has remained well-employed. This is partially due to the Kurzarbeit laws we discussed in the section above. It was this policy that kept the German workforce employed. The amount of income they were making was severely lowered during the pandemic, but nonetheless, they remained employed. This protected against massive amounts of companies laying off their employees to make ends meet as they no longer

⁵⁰“Inflation rate at +10.4% in October 2022,” Statistisches Bundesamt (Destatis).

⁵¹“September 2022: employment in Germany at a record high,” Press, Statistisches Bundesamt (Destatis), November 2, 2022, https://www.destatis.de/EN/Press/2022/11/PE22_464_132.html.

needed to pay them as much but could keep them employed to have them after the pandemic was over and business could return to normalcy. Thus, unemployment was unaffected greatly by the pandemic and continues to lower. This makes sense regarding the seemingly inverse relationship that the unemployment rate and inflation rate have. With the unemployment rate already low after the pandemic, the increase in the inflation rate has only pushed the unemployment rate lower. You can view this inverse relationship in the German economy in Figure 13 below.

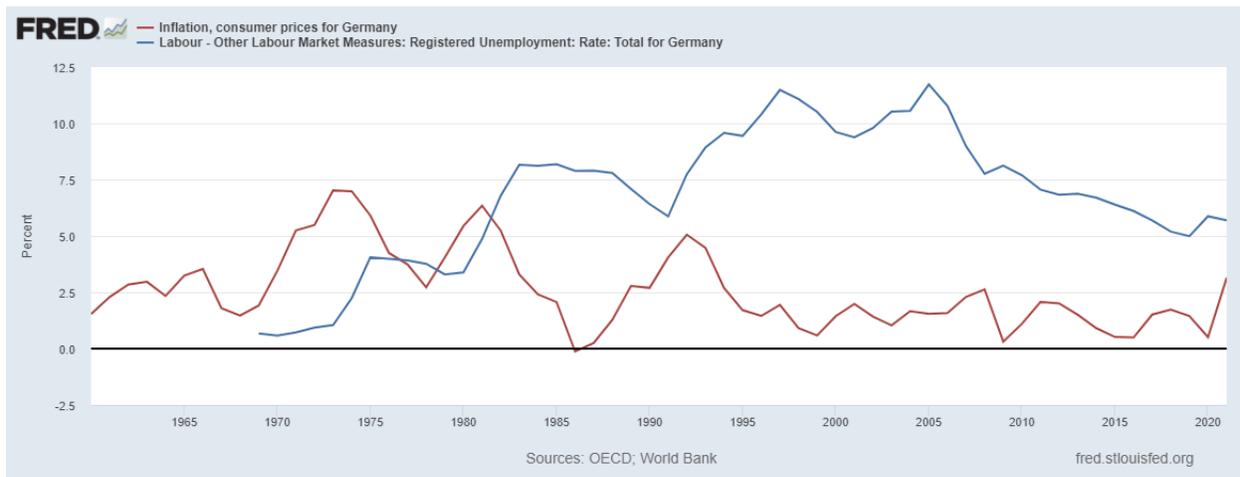


Figure 6. Inflation, Consumer Prices and Labour.⁵²

Domestic Factors

Domestic policy is integral to the economic stability and growth of Germany. In 2016 German Prime Minister Angela Merkel stated that the principles of the ‘Freiburger Schule’ (the school which Walter Eucken taught at) had lost nothing in relevance and importance.⁵³ The pillars of Eucken’s free-market economic thought still hold true in German economics to this day. These three pillars of domestic macroeconomic policy are a balanced fiscal budget, maintaining price stability, and always allowing for the flexibility of price and wages. You can

⁵²For more information, see “FRED Graph,” Federal Reserve of St. Louis, accessed April 23, 2023, <https://fred.stlouisfed.org/series/CLVMNACSCAB1GQDE#>.

⁵³Lars P. Feld, “Is German (macro-) economic policy different?” in *German macro: how it’s different and why that matters*, eds. George Bratsiotis and David Cobham (European Policy Centre, 2017), 42-54.

see all three of these pillars in their domestic affairs. The idea of a balanced fiscal budget is clearly prioritized in their "debt-brake" system that has been introduced into the country's constitution that we discussed earlier. By analyzing government spending and investing in profitable investments, the German government always strives to maintain zero government debt. Below in Figure 14 you can see Germany's attempt to always maintain fiscal balances of 0.0 or above.

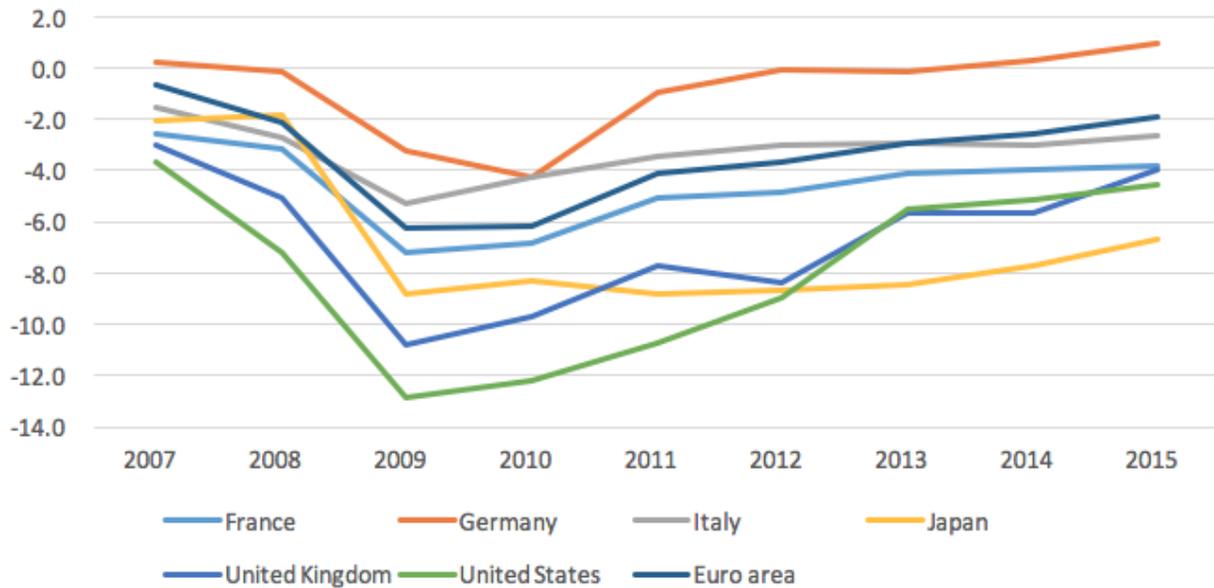


Figure 7. Fiscal Balances as a Percent of GDP.⁵⁴

Price stability is seen via the European Central Bank's commitment to an inflation target of "below, but close to 2%."⁵⁵ This sentiment echoes Eucken's theory that inflation destroys "all free types of economic order" and still shapes the German attitude towards monetary policy. Germany continues to promote price and wage flexibility through unemployment fixes such as the Kurzarbeit and even through various wage moderations done through 2000-2007.⁵⁶ You can observe these two pillars in Figure 15 below which depicts Unit Labor Cost. It shows that

⁵⁴Bofinger, "German macroeconomics."

⁵⁵Feld, "Is German (macro-) economic policy different?"

⁵⁶Feld, "Is German (macro-) economic policy different?"

Germany, with flexible wages and prices, has maintained their Unit Labor Cost, how much a business pays its workers to produce one unit of output, lower than almost any other country.

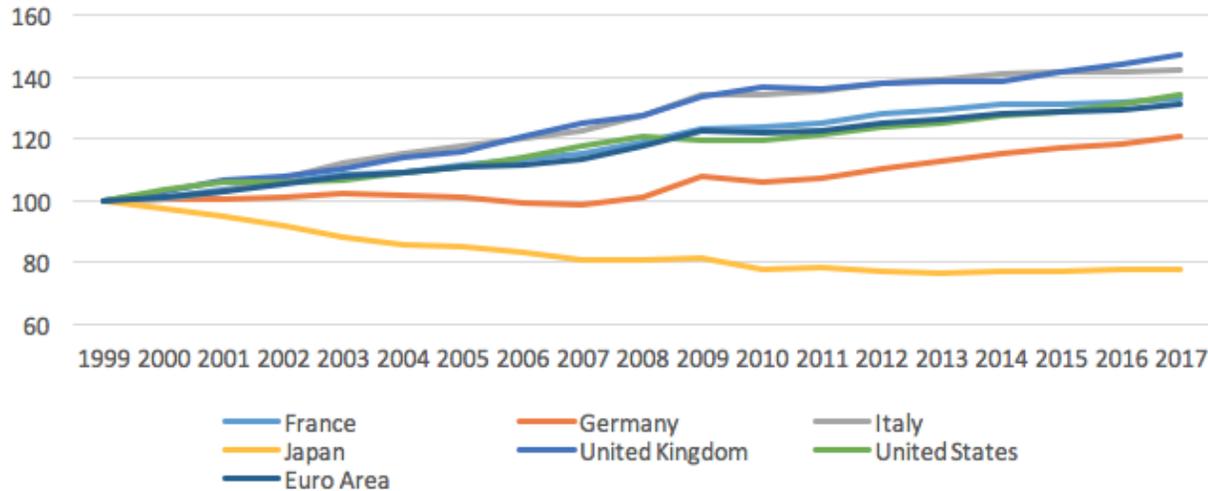


Figure 8. Unit Labor Costs.⁵⁷

International Factors

Germany has maintained its economic success in part from the success and involvement of other countries. With Germany being an export heavy country, they rely on other countries to purchase their goods.⁵⁸ In this way, Germany has a passive macroeconomic policy approach as it strongly benefits from macroeconomic policies pursued in other major countries.

Simultaneously, exports do not take up all of Germany's nominal GDP as you can see in figure 16 below.

⁵⁷Bofinger, "German macroeconomics."

⁵⁸Feld, "Is German (macro-) economic policy different?"

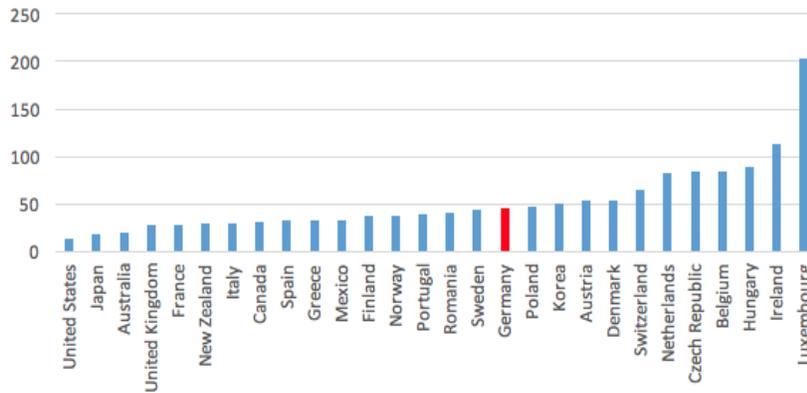


Figure 9. Openness: Exports as a Percentage of GDP.⁵⁹

As we discussed earlier, Germany has been heavily affected due to the world price. Being an export heavy economy, they rely on the world price to dictate a great deal of their income. This also means that they are greatly susceptible to any volatile markets and fluctuations (such as OPEC standards and Ukrainian sanctions) that push prices upwards.

Overall Macroeconomic Performance

Overall, Germany has become an economic powerhouse in the span of one century. Being the fourth largest economy in the world, it has the free-market and anti-central planning paradigm of Walter Eucken that has propelled it to its current standings. According to the European Commission, the current economic forecasts for Germany state that there will be a growth in GDP by 1.6% in the final months of 2022 but decline by 0.6% in 2023 before recovering by 1.4% in 2024.⁶⁰

According to the United Nations Human Development Index, Germany is a top performer with an average of 14.2 years of schooling and an at-birth life expectancy of 81.3

⁵⁹Bofinger, “German macroeconomics.”

⁶⁰“Economic forecast for Germany: The latest macroeconomic forecast for Germany,” Economy and Finance, European Commission, last update February 13, 2023, https://economy-finance.ec.europa.eu/economic-surveillance-eu-economies/germany/economic-forecast-germany_en.

which is among the highest in the world. Germany is acquiring human capital both in population and education to bolster the economic growth to come and generate a movement along the aggregate production function curve (see Figure 17).⁶¹

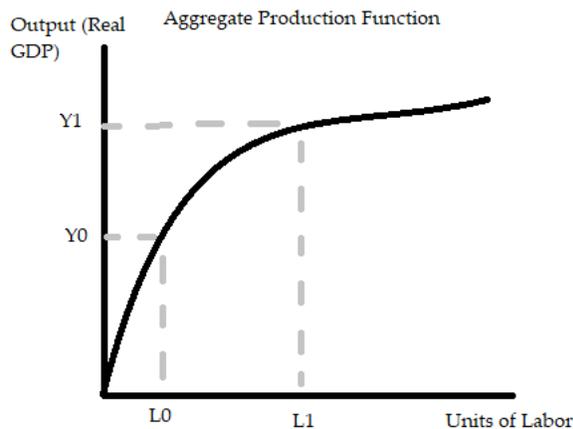


Figure 17. Aggregate Production Function.⁶²

In terms of income inequality, Germany’s inequality is lower than most advanced countries in the world. The poorest 20% of households in Germany make up 8.4% of the country’s total income. This means that even the poorest in the country of Germany still have the financial means to survive unlike most other advanced countries.⁶³

Current Economic Challenges

The current economic challenges for Germany come in the form of response to their policies during the COVID-19 pandemic and the Russian war on Ukraine. During COVID-19 the German government acquired a copious amount of debt through their Kurzarbeit and “9-Euro-Ticket” policies as the government picked up the check for the remaining money owed in each of

⁶¹“Germany: Macroeconomic Country Outlook,” GlobalData, Accessed April 23, 2023, <https://www.globaldata.com/data-insights/macroeconomic/germany-macro-economic-country-outlook/#:~:text=GlobalData%20forecasts%20real%20GDP%20to,in%20the%20GCRI%20Q4%202021>.

⁶²For more information, see Perkis, “The Science of Supply and Demand.”

⁶³“Economic Policy Reforms 2021: Going for Growth.”

these situations. With the debt-brake being reinstated in 2023, the government will be running a tight monetary ship with little to no unneeded investment. There will be a squeeze in monetary policy and the state governments will each see a decrease in government spending policy to ensure they do not exceed their proper amount of spending (see Figure 18).

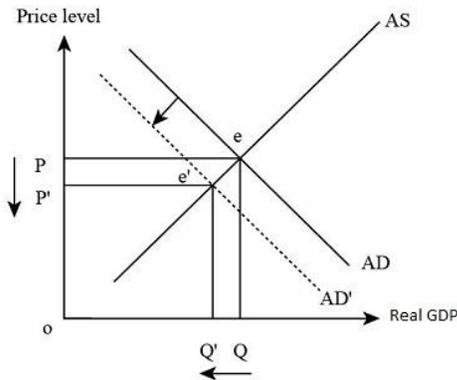


Figure 18. Price Level vs. Real GDP.⁶⁴

Next, Germany will need to decide how to move forward with the sanctions imposed on Russia during the Ukrainian war. Germany has lost 1.5% of all imported oil due to the sanctions.⁶⁵ Germany is a member of the European Union as well as the United Nations and must operate within their conduct as well, so there is no telling when or how the sanctions will be released. Until then, we will see energy prices continue to remain high and inflation continue to compound.

In January of 2021 Germany introduced the Renewable Energy Act which is a policy vehicle to achieve Germany's goal of being at zero net carbon emissions via the phasing out of fossil fuels for renewable energy. The government will need to continue to promote this policy and its implications which will come with an increase in spending in the energy sector alone.

⁶⁴For more information, see Perkis, "The Science of Supply and Demand."

⁶⁵"Germany: Macroeconomic Country Outlook."

There is no straightforward way to forecast how this will interact with the return of the debt-brake or the sanctions on Russian oil, but it will be a variable and a struggle for the German economy.⁶⁶

Conclusion

Summary

Germany’s economic history is a fascinating and exploratory model of what types of economic policy hurt or help the economy. We can look to the historical examples of our past to determine whether or not proposed economic policy will work, and we can clearly see Germany supporting this ideal through the continued usage of Eucken and Erhard’s economic theories that generated the *Wirtschaftswunder*. It is a miracle that not only did Germany survive its dark economic collapse but bounced back and became a nation that thrives. It is through the three pillars of their macroeconomic profile, balanced fiscal budget, maintaining price stability, and always allowing for the flexibility of price and wages, inspired by Eucken and Erhard, that they have maintained their growth initially spurred by these men and will see future growth in the years to come.

Proposed Research

Now, Germany looks to the future of their economic climate with challenges at their doorstep. Perhaps more research is needed to look into the full ramifications of the Russian sanctions imposed by Germany and their confounding variables. Further insight into the German policy surrounding net zero carbon emissions and how this fiscally impacts both the German government, the German citizens, as well as the other countries around Germany would be a beneficial area of study. To be thorough, there should be a cost-benefit analysis done to weigh

⁶⁶“Germany: Macroeconomic Country Outlook.”

the prices and outcomes of these policies and how it will affect Germany's output in the short-run as well as the long-run.

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