**Assignment 1**

**ECO423**

**Germany macroeconomic analysis**

**Overall Summary**

Presented an overall macroeconomic analysis of Germany, including critical overall growth factors and showcasing important county indicators. Done a topical scenario analysis for the country, pertinent to the recent influx of immigrants in the nation, and the best, base and the worst case scenarios that follow. Along with this, we have deep dived into the Automotive industry and the allied industry green energy and renewables, which comprise a significant portion of Germany’s GDP. We delve into regional comparisons with the rest of the European nations and provide an extant demographic.

* **Country Indicators**

Germany maintained its position as a major export economy in 2024, recording a substantial trade surplus of €241.2 billion ($250.2 billion) despite facing economic headwinds. The country's exports totalled €1.55 trillion while imports reached €1.31 trillion, with exports declining by 1.0% and imports falling more sharply by 2.8% compared to 2023. Germany's trade balance showed considerable monthly variation throughout 2024, with surpluses ranging from €14.6 billion in April 2025 to over €27 billion in early 2024, reflecting ongoing challenges in export competitiveness particularly with key partners like the United States and China. The first half of 2024 demonstrated resilience with a foreign trade surplus of €138.8 billion, representing a 28.7% increase compared to the same period in 2023, as imports declined more significantly than exports. Germany's current account balance, which includes trade in goods and services plus investment income, reached $268.67 billion in 2023, maintaining the country's status as one of the world's largest creditor nations. The trade relationship with EU member states remained robust, with Germany exporting €72.4 billion to EU countries and importing €57 billion in December 2024, while trade with non-EU countries showed €59.3 billion in exports and €54.1 billion in imports

* **Scenario Analysis**

We have examined the best, base and worst cases that can arise for Germany in the wake of the large number of immigrants and refugees that the country has a recent history of taking in. We have used data from the *IMF, EU’s immigration report, International Organization of Migration’s report on world migration statistic*s and data from the German government to arrive at our best, base and worst cases. Germany’s future performance amid rising immigration hinges on its ability to integrate newcomers effectively. In the best-case scenario, immigrants fill critical labor gaps in construction, healthcare, and logistics, fueling productivity gains and boosting GDP growth to around 3%. Strong language training, anti-discrimination policies, and workforce upskilling encourage innovation and SME development, lifting GDP per capita and easing demographic pressures.

In the base-case scenario, immigration helps stabilise a stagnating economy (around 0.5% GDP growth) by offsetting native workforce decline. With nearly 18% of the population being foreign nationals, continued inflows—especially asylum seekers—ease sectoral labor shortages but provide only modest net growth.

The worst-case scenario emerges if systemic integration fails: lagging language support, poor recognition of qualifications, and underemployment lead to high dependency ratios, dual labour markets, rising public costs, and social tensions. In this outcome, unemployment among immigrants persists, public debt swells, and social cohesion frays, potentially triggering political backlash and economic decline.

* **Sector Outlook**

We have done extensive data collection from German banks (Deutsche, Commerzbank), IMF, World Bank, alongside reviewing existing companies in the sectors where official data had not been published, to provide a clear understanding of the scope, past performance, current outlook, critical success factors and the growth opportunities for the sectors that come together to represent the Automotive and Green and Renewable energy industry of Germany. The Automotve industry is the largest industry by market share in Germany and Green Energy and Renewables is a rising up and coming industry for Germany. Germany’s automotive sector remains a cornerstone of its economy, undergoing a profound transformation driven by electrification, digitalization, and climate policy. While OEMs like Volkswagen, BMW, and Mercedes-Benz are shifting toward premium EVs and software-defined vehicles, traditional suppliers face pressure unless pivoting to electric and digital components. Between 2019 and 2024, the industry experienced volatility due to COVID-19, supply chain disruptions, and inflation, but EV segments posted double-digit growth. From 2025 to 2029, the outlook is cautiously bullish—EV penetration is expected to surpass 60%, battery systems and mobility services are set to expand, and charging infrastructure will scale up rapidly. However, ICE-related components may continue to decline. Critical success depends on technology adoption, supply chain transition, skilled workforce development, and sustained policy support. Germany’s robust R&D base, strong export ties, and climate-driven investment place the sector in a competitive but demanding trajectory.

* **CSF Structure Values**

The Critical Success Factors for Germany present a mixed but stabilizing picture across key economic dimensions. Germany's GDP contracted by 0.2% in 2024, marking the second consecutive year of decline following a 0.3% contraction in 2023, with manufacturing output dropping significantly by 3.0% and construction declining by 3.8% . However, the services sector, which contributes approximately 70% of Germany's GDP, demonstrated greater resilience with 0.8% growth, while inflation moderated to 2.2% annually from 5.9% in 2023 . The country's unemployment rate increased to 6.0% in 2024, with major corporations collectively cutting over 60,000 jobs, yet foreign direct investment remained robust at €34.8 billion in 2023, representing a 37.5% increase from the previous year . Germany's competitiveness ranking has declined to 24th out of 64 countries in the IMD ranking, down from 10th place in 2015, with energy prices twice as high as the United States and France, and labor costs 20% above the EU average . The housing market showed signs of stabilization with a 1.93% year-on-year increase in the House Price Index in Q4 2024, the first positive change in nine consecutive quarters, while the tourism sector achieved a record 496.1 million overnight stays, marking a 1.9% increase from the previous year . Manufacturing remains challenged by structural pressures including competition from China, elevated energy costs, and uncertain global trade conditions, though industrial output showed improvement with a 3.0% month-on-month expansion in March 2025, the best performance since October 2021

* **Regional Comparisons**

Germany's neighboring countries showed mixed but generally positive economic performance in 2024, outpacing Germany's sluggish growth. Poland led with robust 2.9% GDP expansion, while Denmark achieved impressive 3% growth. France maintained steady 1.1% growth despite political uncertainty, and the Netherlands recorded 0.9% expansion. Switzerland showed resilience with 0.8% annual growth, Belgium projected 1.3% growth, and Austria stabilized at 0.3% growth after 2023's recession. Overall, Germany's neighbors demonstrated more dynamic economic performance, with most countries benefiting from consumer spending resilience.

* **Regional Comparisions (as % of region)**

The country underwent remarkable structural transformation and modernization. **Germany's GDP share grew from 18.2% to 23.1% while population declined from 12.4% to 9.6%**, demonstrating extraordinary productivity gains during the post-war *Wirtschaftswunder* period. The economy successfully transitioned toward services (reaching 28.9% by 2006) while maintaining strong industrial capacity, with **exports expanding dramatically from 15.8% to 28.1%**. **Market capitalization surged from 15.3% in 1980 to peak at 28.4% in 2000**, reflecting sophisticated financial market development and global integration. This represents Germany's successful evolution from post-war reconstruction to becoming Europe's economic powerhouse, combining demographic efficiency, sectoral diversification, and export competitiveness to achieve sustained growth across multiple decades.

* **GDP Composition**

Germany's economy demonstrates a consistent structure dominated by private consumption and the services sector. Private consumption has remained the largest component, accounting for approximately 50-55% of GDP throughout this period, while government consumption has maintained a steady 18-20% share. The manufacturing sector, though still significant at around 20-23% of GDP, has shown some decline from its peak levels, reflecting Germany's gradual transition toward a more service-oriented economy. Net exports, which were historically a major growth driver for Germany, have fluctuated considerably and even turned negative in recent years, particularly during 2020-2022, indicating reduced export competitiveness amid global supply chain disruptions and increased import dependencies. Investment (gross fixed capital formation) has remained relatively stable at 20-22% of GDP, though this level is considered insufficient by many economists for sustaining long-term growth. The data reveals Germany's economic resilience through various crises, including the 2008 financial crisis, the COVID-19 pandemic, and recent geopolitical tensions, with the economy maintaining its fundamental structure while adapting to changing global conditions and domestic demographic shifts.

* **Econometric modelling**

This comprehensive analysis of Germany's economy from 2000Q1 to 2024Q4 reveals several key insights about monetary transmission mechanisms and macroeconomic relationships. The VAR(1) model demonstrates that GDP growth shows moderate persistence (coefficient of 0.542) with limited responsiveness to monetary policy variables, while inflation exhibits strong persistence (0.831), indicating that price dynamics in Germany are highly inertial. The correlation analysis reveals strong negative relationships between inflation and unemployment (-0.511), consistent with Phillips curve dynamics, and the exchange rate shows significant negative correlation with GDP growth (-0.362), highlighting the importance of external competitiveness for Germany's export-oriented economy. The impulse response functions indicate that unemployment responds most strongly to monetary policy shocks, rising by nearly 0.7 percentage points in the first quarter and reaching 2.7 percentage points after two years, while GDP growth shows only a modest initial decline of 0.08 percentage points with effects persisting for several quarters. The monetary transmission channel effectiveness analysis reveals that the exchange rate mechanism is the strongest transmission channel (coefficient of -5.233), followed by moderate effectiveness of credit and asset price channels, while the interest rate channel shows weak transmission strength, suggesting that Germany's monetary policy works primarily through external competitiveness and financial market channels rather than traditional interest rate effects.