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Forecasting macroeconomic indicators for seven major economies using the ARIMA model

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Abstract

Economic predicting has existed for ages. It was the Great Depression of the 1930s that gave rise to the current levels of formal forecasting analysis. Following the economic crisis, a greater focus was placed on knowing how the economy works and where it is headed. This resulted in the development of a broader range of statistical and analytical approaches. The current COVID-19 pandemic is projected to put significant strain on the economic performances around the world. There is a need for prediction studies so that the countries can navigate their macroeconomic policies to maintain the current trends of economic performances even after they are hit by the pandemic. This study is an effort to forecast major macroeconomic indicators for seven major economies, namely, the US, UK, China, France, Japan, Russia, and India. We used WDI datasets for the period 1972-2019 and forecasted for the period 2020-2024 using the Automatic ARIMA forecasting technique. The findings show that employment and inflation in the USA will continue to decrease. The other macroeconomic indicators are expected to have positive trends according to the results. The UK GDP is expected to remain steady and the UK inflation will increase and the labor force participation rate will decrease. The inflation rate in China, according to our analysis, will be close to 5% at the end of 2024. Employment is also expected to decrease. The inflation rate in France will remain below 1% from 2020 to 2024. The projected inflation rate in 2024 is 0.451 percent. The inflation rate in Japan will continue to increase till 2021. It will fall in 2022 and will continue falling until it reaches 0.014 in 2024. The labor participation rate in Russia is expected to fall. The Russian currency is expected to depreciate from 68.2 to 105.3. One of the noticeable projected trends in the Russian economy is that the inflation rate is expected to fall from around 4 percent in 2020 to 1.62 percent in 2024. The inflation rate in India will increase from a projected 6.19 percent in 2020 to reach 7.842 percent in 2021 and subsequent years, indicating that the inflation rate will become stable during the period from 2021 to 2024. The Indian currency is expected to become weaker, and the employment rate is expected to decrease. This study used univariate time series analysis without controlling for Covid-19 disruptions, study hopes to contribute to measuring the deviations of post-Covid-19 economic performances from the current projected trends.

Keywords: ARIMA, China, Employment, Forecast, France, GDP, Japan, India, Inflation, Russia, UK, US.

1. Introduction

COVID-19 has resulted in a devastating loss of human life and poses enormous challenges to global health, food systems, and the workplace. The pandemic's economic and social impact is devastating: millions face acute poverty, whereas the number of undernourished individuals, presently estimated at almost 690 million, might rise to more.

Apart from the significant strain on health care, COVID-19 has had a significant economic impact on the afflicted nations. The COVID-19 outbreak has had a direct effect on income due to early deaths, absence from work, and decreased productivity. It has also generated a severe supply shock, with industrial productive activity decreasing as a result of worldwide supply disruptions and factory closures. Energy and industrial commodity exporters will be especially heavily impacted. The epidemic and attempts to manage it have resulted in an unparalleled decrease in oil consumption and a price crash. Metals and transportation-related products used in car components have also seen a decline in demand. While global agricultural markets are amply supplied, trade restrictions, as well as supply chain interruptions, might still create food security concerns in certain areas.

Many businesses are threatened with extinction. Many workers are in danger of losing their jobs. Workers in the informal sector are especially vulnerable, since most lack social security, lack access to adequate health care, and have lost productive assets. Many people are still unable to feed themself and their families during lockdowns because they lack the means to produce an income. For the majority, a lack of money equates to a lack of food or, at best, less nutrition that is less healthy.

A further obstacle is uncertainty surrounding COVID-19, including the speed and scale of infection; the length and breadth of the shutdown measure required; the opportunities for treatments to manage symptoms more effectively, designed to allow health care services to focus on the most severe cases; as well as the risk of second wave diseases as the virus spreads around the world. The epidemic spreads in waves, with nations falling – and recovering – at various points. What is certain is that the infection and its consequences are expected to remain for an extended period of time.

Greater economic concerns are related to present and future oil consumption, which results in changes in oil prices as a result of diminished economic activity caused by the COVID-19 outbreak. Expected surplus supply also contributed significantly to price declines. If oil prices remain lower than predicted, many oil-dependent countries may decline as a result of less trade and investment (Vafin, 2017, 2018). Labor market shocks will be severe, particularly in nations that rely heavily on migration. In light of this, it is evident that commerce must continue to flow, both to secure the supply of necessary items and to convey a message of confidence to the global economy.

2. Methodology

The time series x_t is an $ARIMAX(p, d, q)$, if,

$$D(x_{1t}, d) = \beta x_2 + v_t$$

Where,

$$v_t = \gamma_1 v_t + \gamma_2 v_{t-1} + \cdots + \gamma_p v_{t-p} + \delta_1 \epsilon_{t-1} + \cdots + \delta_q \epsilon_{t-q}$$

The size of AR and MA terms may be determined in many ways, one of which is via model selection/evaluation procedures.

ARIMAX models may be estimated in a variety of ways, including by translating the equation into a non-linear equation or by estimating the model using GLS or ML estimation. Due to the fact that ML estimation does not involve removing data from the start of the sample or backcasting to generate new observations, it lends itself well to model selection/comparison methods.

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Model Specification

The process of constructing the ARIMAX model that will be used for forecasting may be divided into four steps:
1. Choosing any dependent variable modifications, such as logarithmic transformation.

2. Determining the dependent variable's degree of differentiation.

3. The exogenous regressors are chosen.

4. Order the ARMA components.

Often, the transformation of the dependent variable is chosen in accordance with an economic theory. The most often used transformations are to employ logs or the Box-Cox transformation. However, it may be able to identify whether or not to take logs using a rule-of-thumb strategy that involves running two basic regressions:

This test is frequently used on variables having the rate of change in growth grow or fall with time exponentially. When such data are employed in the least squares estimate containing differences, heteroskedasticity will occur. By converting to logs, the connection is linearized, alleviating the issue of heteroskedasticity.

Differencing

Step 2 is to determine the optimum degree of differencing for the dependent variable (which may have been altered). EViews determines the right degree of differencing via repeated unit root tests. When predicting, HK recommends under-differencing the model rather than over-differencing it. As a result, HK recommends doing a unit-root test against the null hypothesis of no-stationarity, including the KPSS test. The KPSS testing is initially performed on the data without making any distinctions. If the null hypothesis is rejected by the test, differencing is performed and the KPSS test is repeated. This procedure is repeated until the null hypothesis can no longer be rejected.

ARIMA selection

EViews determines the optimal ARMA order by model selection. Model selection is a technique for identifying which sort of model fits a given collection of data the best and is frequently used to determine the right model from which to predict that data.

In econometrics, the most often used model selection method is the information criterion. For the majority of estimate techniques, EViews offers three kinds of information criteria: the Akaike Information Criterion (AIC), the Schwarz Criterion (SIC or BIC), and the Hannan-Quinn Criterion (HQ). Each of these criteria is determined by the model's estimated log-likelihood, the model's parameter count, and the number of instances.

Evaluation of the Mean Square Error (MSE) In-sample forecast assessment is the second way of model selection. Each model is calculated using a subsample of data (often the first 80%–90% of observations), and then predicted across the remaining observations (the remaining 10 percent -20 percent). We may determine the mean square error by comparing the predictions to the actual data for the subsample forecast period (MSE).

Forecasting

After determining the optimal model's transformation, differencing, and ARMA length using either information criteria or MSE, the model is utilized to compute the final forecast.

Forecast Averaging

Rather than picking the "best" ARIMA model and predicting from it, an alternate strategy is to predict from each of the ARIMA models under consideration separately and then average across those forecasts to generate a final prediction. When doing automated ARIMA forecasting, EViews supports two types of forecast averaging: Smoothed Akaike Information Criterion (SAIC) and Bayesian Model Averaging (BMA).

3. Results

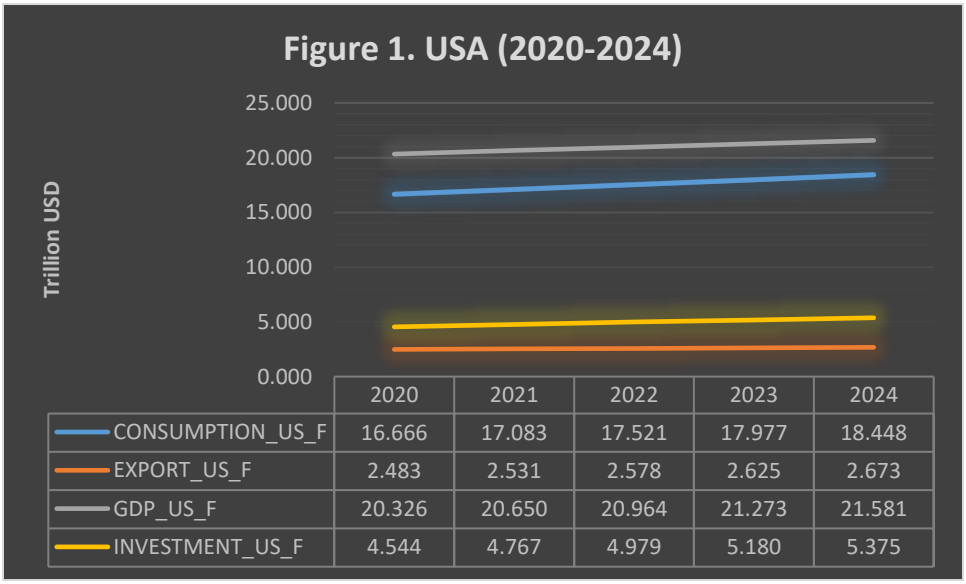
3.1 The USA economy

Americans, who make up less than 5% of the worldwide people, create and generate more than 20% of the globe's total revenue. America has the world's greatest economy and is the world's largest trader (Ustr, 2020). The process of globalization and trade expansion, which began in the United States in 1934 and has been pushed relentlessly since the conclusion of World War II, has been critical in the creation of American wealth. As per the Peterson Institute for International Economics, real earnings in the United States are now 9% higher than they would have been without trade liberalization initiatives since the Second World War. In terms of the US economy in 2013, the 9% increase equates to an extra $1.5 trillion in American income.

These improvements occur in a variety of ways. Exporting the most competitive sectors and goods in America increases US earnings. By relocating manufacturing to the most efficient sectors of our economy, we can increase the ordinary American worker's productivity and, therefore, their income. With the potential to service a worldwide market, investment in our developing export industries is encouraged, and the increasing scale of production contributes to reduced average production costs. These consequences contribute to the strengthening of America's economic growth rate. Additionally, imports broaden customer choice and help keep costs low, enhancing consumers' buying power. Additionally, imports give high-quality inputs to American firms, assisting enterprises and their American workers in becoming or remaining incredibly competitive in both local and international markets.

Around three-quarters of global buying power and more than 95% of global customers are located outside of America's boundaries. Additionally, the Peterson Institute report predicted that eliminating remaining global trade obstacles would enhance America's already substantial profit from trade by 50%. America's economy continues to thrive as a result of trade. Additional advantages may be realized via the negotiation of future global barrier reductions and the efficient execution of current agreements.

Figure 1 and Table 1 present the results of this study in the context of the US economy. Figure 1 shows the forecasted real consumption, real exports, real GDP, and real investment for the USA in terms of trillion-dollar USD for the period from 2020 to 2024. Table 1 shows the forecasted labor force participation rate and the forecasted inflation rate. It can be seen from the figure 1 that the USA's real GDP will surpass the 21.581 trillion USD. The table shows that employment and inflation in the USA will continue to decrease.



	2020	2021	2022	2023	2024
CONSUMPTION_US_F	16.666	17.083	17.521	17.977	18.448
EXPORT_US_F	2.483	2.531	2.578	2.625	2.673
GDP_US_F	20.326	20.650	20.964	21.273	21.581
INVESTMENT_US_F	4.544	4.767	4.979	5.180	5.375

Table 1 USA

	EMPLOYMENT_US_F	INFLATION_US_F
2020	62.220	0.578
2021	62.323	0.145
2022	62.222	0.038
2023	62.122	0.015
2024	62.021	-0.087

3.2 The UK economy

The United Kingdom has a strongly autonomous, sophisticated, and global trade sector that was at the center of the Industrial Revolution in the nineteenth century. After World War II, the nation emerged as a military conqueror but with a crippled industrial sector.

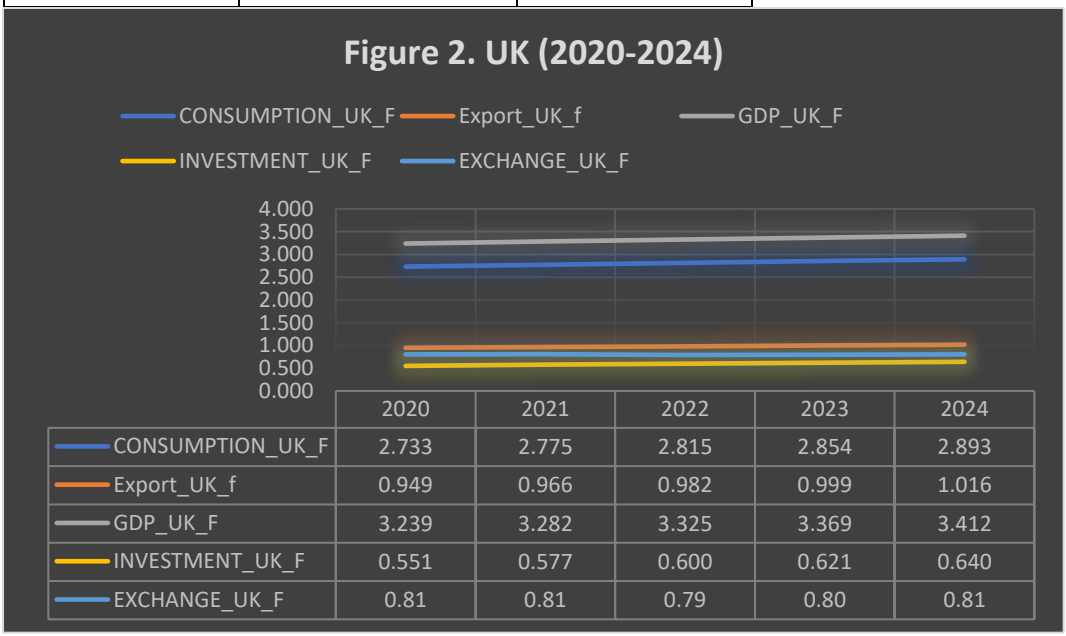
Domestic demand is the primary driver of the British economy. While the nation is a net exporter of services, particularly those related to the finance and information technology industries, its ability to buy via consumption keeps the external segment in a roughly steady deficit. Given London's status as one of the world's top three financial centers, it is often simpler for local enterprises to acquire external finance than it is for firms in other countries; this increases credit supply and investing prospects. This is often seen as a critical aspect in the country's economic success and as one of the factors why the UK looks to have emerged stronger from the current financial crisis than most of its European competitors.

Private investment and consumption are the primary drivers of GDP growth, whereas governmental spending has been limited and even declined in recent years. Economic activity is becoming more focused in London, which helps to explain why the services sector accounts for the majority of economic growth. This sector is responsible for the lion's share of economic production. The services sector generates more than three-quarters of the country's GDP, while manufacturing and construction account for the remainder.

Figure 2 and Table 2 illustrate the study's findings in relation to the UK economy. Figure 1 depicts the anticipated real consumption, real exports, real GDP, exchange rate, and real investment in the United Kingdom in trillion-dollar values for the years 2020–2024. The predicted labor force participation rate and inflation rate are shown in Table 2. The UK GDP is expected to remain steady. However, our ARIMA analysis shows that the UK inflation will increase and the labor force participation rate will decrease.

Table 2 UK

Year	EMPLOYMENT_UK_F	INFLATION_UK_F
2020	63.19	-0.31
2021	63.16	-0.52



	2020	2021	2022	2023	2024
CONSUMPTION_UK_F	2.733	2.775	2.815	2.854	2.893
Export_UK_f	0.949	0.966	0.982	0.999	1.016
GDP_UK_F	3.239	3.282	3.325	3.369	3.412
INVESTMENT_UK_F	0.551	0.577	0.600	0.621	0.640
EXCHANGE_UK_F	0.81	0.81	0.79	0.80	0.81

2022	63.05	0.46
2023	62.92	0.70
2024	62.82	0.62

3.3 The economy of China

China was not among the world's top eight economies forty years ago, after a prolonged period of economic stagnation. China is on course to replace the United States as being the world's largest economy within several decades, if not sooner, as a result of a spectacular social and economic revolution that started in the late 1970s. By some accounts, it has already accomplished this. We are now experiencing what many refer to as 'The Chinese Century.'

China's economy is the world's second-biggest, after only the U.s. However, after thirty years of phenomenal expansion, China is now entering a period of slower growth - an unavoidable consequence of the country's shift from a developing to a more mature, established economy. China's annual GDP growth routinely topped 10% in the 1980s, 1990s, and early 2000s, with an expected 2019 growth of 6.3%, however, this is expected to be closer to 6% due to the effect of the US-China trade conflict (IMF, 2018a).

The nation is now responsible for a third of the world economy. Around 800 million citizens have been pulled out of poverty, and the nation has moved up to the upper-middle class. China's per capita GDP maintains to converge with the US, but at a slower pace in recent years.

Despite a robust recovery in GDP Growth and manufacturing earnings, overall nonfinancial sector debt increased substantially faster than nominal GDP in 2017. While business debt to GDP has steadied, government and, in particular, family debt continues to grow, owing to ongoing high off-budget investment expenditure and fast growth in housing and consumer loans. It may require concerted measures overtime to resolve fundamental issues. China's economy lost momentum significantly during 2018, with the economic cycle retreating from its previous high in 2017 (Economist, 2019). Real GDP increased by 6.6%. Domestic factors contributed to the downturn, with business and consumer optimism continuing to weaken as a result of tighter financial circumstances brought about by the disinvestment program. The slow decline in economic ties between the United States and China added to the worry, despite the fact that foreign trade flows remained healthy throughout the year(Economist, 2019).

The study's conclusions in regard to the Chinese economy are shown in figure 3 and table 3. Figure 3 displays the projected real consumption, real exports, real GDP, exchange rate, and real investment of China in trillions of dollars for the years 2020–2024. Table 3 shows the anticipated labor force participation rate and inflation rate. The inflation rate in China, according to our analysis, will be close to 5% at the end of 2024. Employment is also expected to decrease.

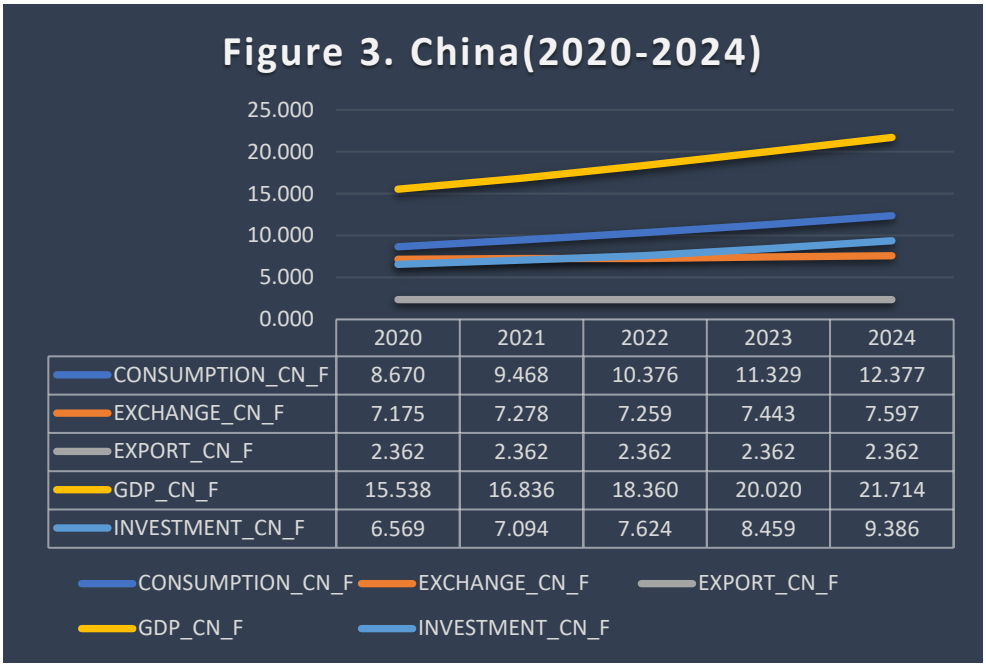


Table 3 China

Year	EMPOYMENT_CN_F	INFLATION_CN_F
2020	68.797	2.714
2021	68.410	3.622
2022	67.982	4.032
2023	67.522	4.483
2024	67.041	4.974

3.4 The economy of France

France's economy is one of the biggest in the world and accounts for around one-fifth of Eurozone GDP (GDP). Currently, services account for the majority of the economy's output, accounting for more than 70% of GDP. France is a worldwide leader in manufacturing, particularly in the automotive, aircraft, and railway industries, as well as in beauty and luxury products. Additionally, France has the most educated workforce in Europe, with the largest concentration of scientific degrees per thousand employees.

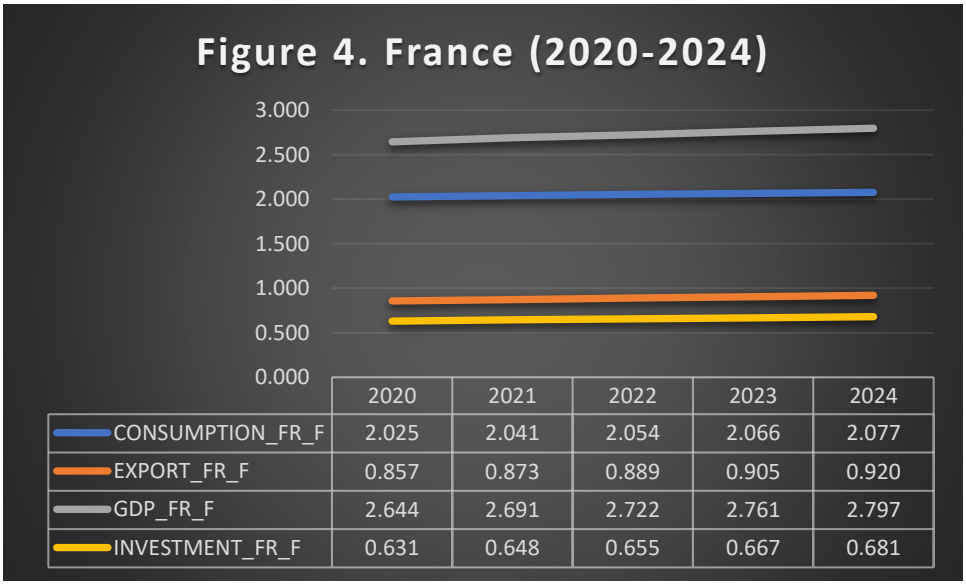
France's government has promoted capitalism and market-oriented policies since the 1980s. Numerous national enterprises, like Air France, France Telecom, and Renault, have been partly or completely privatized by the government, and France's leaders remain devoted to capitalism today. The French government, however, retains a role in some vital sectors, such as farming, and will engage in the market to mitigate certain social-economic inequities.

After a steady rebound, economic growth has halted. In recent years, global economic circumstances, monetary policy, and structural changes have boosted exports and investment. Global uncertainty and the impact of societal instability, on the other hand, impacted output in 2018. Employment rates continue to

be below, and the budgetary position has not improved much. Despite a minor uptick in 2017-18, change in wage and productivity increases have not recovered to pre-crisis levels. After expanding by 2.3 % in 2017, the French economy contracted to 1.7 % last year, owing to slower global growth and certain one-off internal reasons. Nonetheless, economic growth stayed relatively resilient in comparison to France's rivals, and the job market continued to steadily improve.

Growth is forecast to average between 1.3 and 1.4 % this year and next, before gradually resuming its long-term potential of 1.5 % by 2021, aided by continued tax reductions and structural changes. However, risks have increased as a result of a disruptive Brexit, trade wars, and a slowdown of eurozone activity (IMF, 2019).

The study's findings on the French economy are shown in Figure 4 and Table 4. For the years 2020–2024, Figure 4 shows China's anticipated real consumption, real exports, real GDP, and real investment in billions of dollars. The expected labor force participation rate, exchange rate, and inflation rate are shown in Table 4. The inflation rate in France will remain below 1% from 2020-to 2024. The projected inflation rate in 2024 is 0.451 percent.



	2020	2021	2022	2023	2024
CONSUMPTION_FR_F	2.025	2.041	2.054	2.066	2.077
EXPORT_FR_F	0.857	0.873	0.889	0.905	0.920
GDP_FR_F	2.644	2.691	2.722	2.761	2.797
INVESTMENT_FR_F	0.631	0.648	0.655	0.667	0.681

Table 4 France

Year	EMPLOYMENT_FR_F	INFLATION_FR_F	EXCHANGE_FR_F
2020	55.384	0.597	5.769

2021	55.459	0.505	5.760
2022	55.404	0.486	5.752
2023	55.390	0.468	5.744
2024	55.462	0.451	5.738

3.5 The Japanese economy

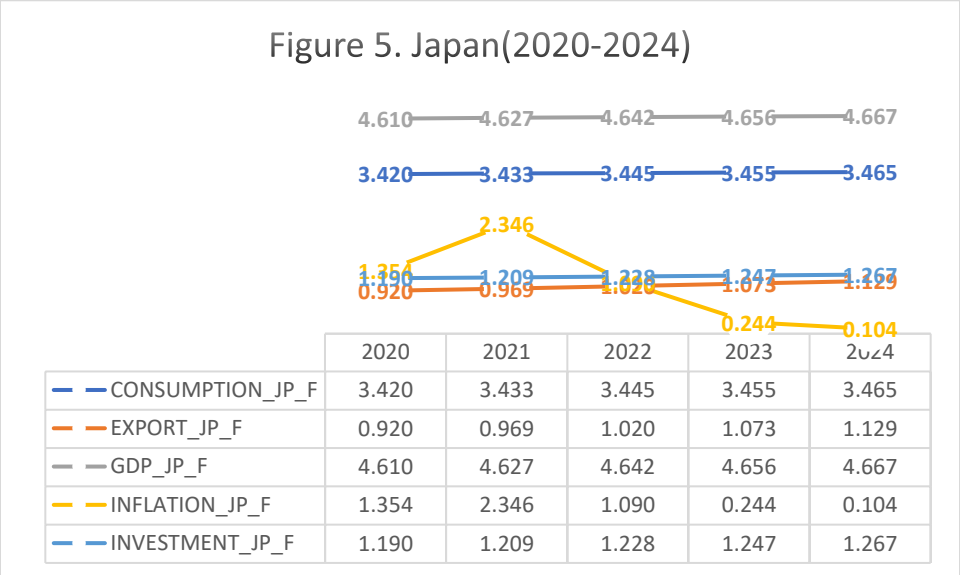
Once a primarily agricultural nation, Japan started modernization in the late nineteenth century by embracing Western technology, and by the first decade of the twentieth century had evolved into a significant industrial power. Its financial and political might continued to rise in the decades that followed, allowing it to develop as a worldwide power in the early 1900s. Numerous causes contributed significantly to Japan's economic renaissance in the 1950s and 1960s. One was the war's annihilation of the nation's industrial foundation. This meant that Japan's new factories, which included cutting-edge technology, were much more successful than their overseas counterparts.

While economic expansion is anticipated to stay robust, there are potential negative concerns. The projected hike in the consumption tax in 2019 might derail near-term GDP momentum. Poorer global growth and more uncertainty—as a result of trade or political tensions further impair growth, precipitate yen appreciation and stock market shocks, and reintroduce deflationary concerns. The fiscal surplus objective was also pushed back from FY2020 to FY2025 (IMF, 2018b).

Japan has one of the world's biggest and most sophisticated economies. It boasts a highly educated and entrepreneurial workforce, and its vast, wealthy citizenry causes it to become one of the world's largest consumer marketplaces. From 1968 until 2010, Japan's economy was the world's second-biggest (after the United States), until it was surpassed by China (AsialinkBusiness, 2018). Japan was among the first Asian nations to ascend the value chain from low-cost textiles to sophisticated manufacturing and services, which today account for the bulk of Japan's GDP and jobs. Agriculture and primary industries together account for less than 1% of GDP.

Economic development has been weak during the last two decades, dropping Japan's relative economic status from a level comparable to the upper half of OECD nations in the 1990s to 14% behind (OECD, 2015).

Figure 5 and Table 5 demonstrate the study's conclusions on the French economy. Figure 5 depicts China's expected real consumption, real exports, real GDP, and real investment in billions of dollars for the years 2020–2024. Table 5 shows the predicted labor force participation rate, exchange rate, and inflation rate. The inflation rate in Japan will continue to increase till 2021. It will fall in 2022 and will continue falling until it reaches 0.014 in 2024. The other macroeconomic indicators are expected to remain stable.



	2020	2021	2022	2023	2024
CONSUMPTION_JP_F	3.420	3.433	3.445	3.455	3.465
EXPORT_JP_F	0.920	0.969	1.020	1.073	1.129
GDP_JP_F	4.610	4.627	4.642	4.656	4.667
INFLATION_JP_F	1.354	2.346	1.090	0.244	0.104
INVESTMENT_JP_F	1.190	1.209	1.228	1.247	1.267

Table 5 Japan

Year	EMPLOYMENT_JP_F	EXCHANGE_JP_F
2020	62.604	101.659
2021	63.030	92.557
2022	63.393	90.493
2023	63.703	86.954
2024	63.972	84.857

3.6 The Russian economy

Between 1999 and 2008, Russia had a decade of fast economic expansion. Russia gradually recovered from a crisis in 2009 until the later part of 2014. Russia entered another downturn in 2015, primarily as a result of the sharp decline in the price of oil; the subsequent depreciation of the Russian currency and associated rises in inflation; soaring policy barriers to personal economic activity; a decline of investor confidence as a result of Putin's economic, institutional, and trade policies; and international sanctions targeting key sectors of the Russian economy and energy sectors (Crane *et al.*, 2016) (Vafin, Morozov and Galeeva, 2012; Galeeva, Ivanov and Vafin, 2016).

The weak growth prospects are due to a number of factors, including the following: (i) adverse demographic trends – a declining working-age population and population aging; (ii) an unfavorable business and investment climate; (iii) difficulty diversifying away from the hydrocarbon sector's dominant role; and (iv) Western sanctions against Russia (Dabrowski and Collin, 2019). Since the early 1990s, Russia's population has been dropping, particularly the working-age population began to decrease in 2010. The forecasts are considerably direr. Russia is comparable to other European nations in this regard. This negative demographic change has two significant ramifications for the Russian economy: (i) labor supply contraction and (ii) population aging (Dabrowski and Collin, 2019).

While external forces such as sanctions have an impact on Russia's economy, the primary impediments to development originate inside the nation and are the consequence of long-standing difficulties, many of which date all the way back to the Soviet era or even before (Russell, 2018). Despite early 1990s market-

economy reforms, Russia continues to be dominated by huge and inefficient state-controlled firms. While regulatory changes have enhanced the regulatory structure and reduced red tape, these benefits have not been complemented by progress against corruption, which continues to be a serious scourge for business. In terms of human resources, economic progress is predicted to be stifled by a catastrophic contraction in the workforce induced by low birth rates. Inequality persists, and the economic growth has not yet helped Russia's almost 20 million impoverished citizens. A lack of competitiveness is associated with a broad lack of innovation, insufficient investment, and dependence on natural-resource exports (Russell, 2018).

Figure 6 and Table 6 demonstrate the study's conclusions on the French economy. Figure 1 depicts China's predicted real consumption, real exports, real GDP, and real investment in billions of dollars for the years 2020–2024. Table 6 shows the predicted labor force participation rate, exchange rate, and inflation rate.

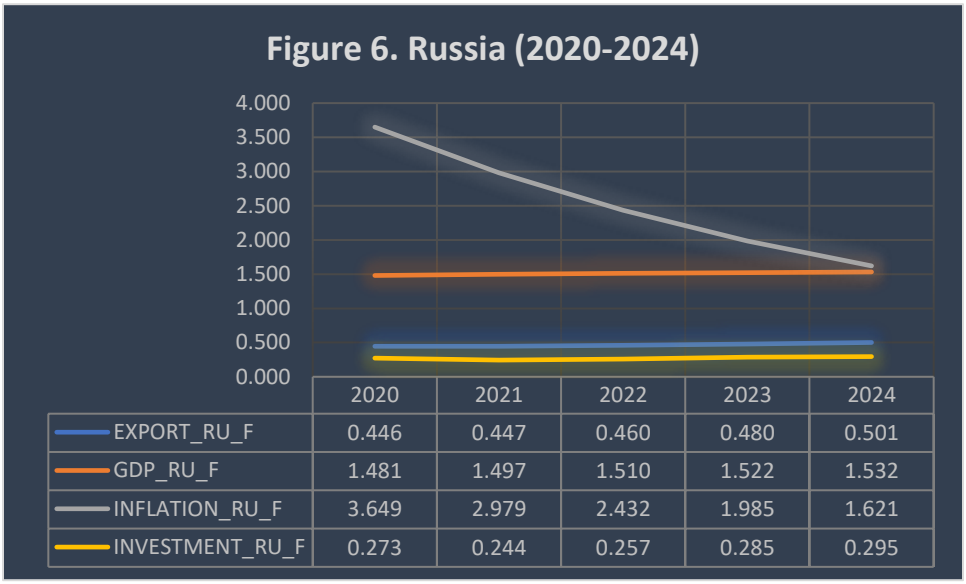


Table 6 Russia

Year	EMPLOYMENT_RU_F	EXCHANGE_RU_F
2020	61.77198	68.19424
2021	61.48798	76.01516
2022	61.19837	84.73304
2023	61.04011	94.45073
2024	60.93374	105.2829

The labor participation rate is expected to fall. The Russian currency is expected to depreciate from 68.2 to 105.3. One of the noticeable projected trends in the Russian economy is that the inflation rate is expected to fall from around 4 percent in 2020 to 1.62 percent in 2024.

3.7 The Indian economy

India is often recognized as among the world's fastest developing major economies. While the growth rates of the majority of developing countries have been dropping since 2010, India's growth rate has improved. This resulted in global policymakers attempting to have a better understanding of the Indian economy. India is the world's second-most populous nation, after China. According to the 2011 census, India's population is around 121 crores. Between 1990 and 2001, it climbed at a pace of 1.03 percent. The primary reason for India's rapid population growth is a substantial fall in the mortality rate, while the fertility rate has remained relatively stable. The mortality rate is determined as the number of people who die per 1,000 population, while the birth rate is described as the number of people who give birth per 1,000 population.

India has accomplished a great deal during the previous several decades. Nonetheless, a recent economic slowdown has raised concerns about India's development prospects. Our review of over five decades of data, however, reveals that India's long-term economic process is consistent, stable, diverse, and robust. India's growth rate has slowed. This is partial because growth has stabilized inside every sector – agriculture, industry, and services – and partly because the economy has shifted toward the services sector, which has more steady growth. The dramatic rise in the steadiness of GDP growth after 1991 is particularly noteworthy. Prior to this, growth occurred in spurts, was marked by substantial yearly changes, and often struggled to keep. Thus, post-liberalization growth has not only increased but also grown steadier.

Figure 7 and Table 7 illustrate the study's findings on the French economy. China's real consumption, real exports, real GDP, and real investment in billions of dollars for the years 2020–2024 are shown in Figure 7. The expected labor force participation rate, exchange rate, and inflation rate are shown in Table 7. The figure shows that the inflation rate in India will increase from a projected 6.19 percent in 2020 to reach 7.842 percent in 2021 and subsequent years, indicating that the inflation rate will become stable during the period from 2021 to 2024. The Indian currency is expected to be weaker, and the employment rate is expected to decrease.

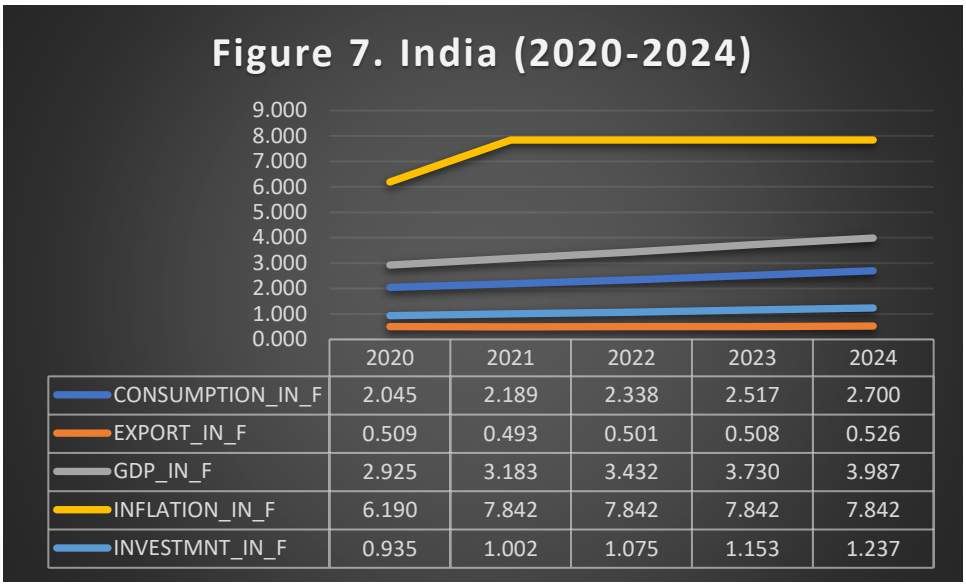


Table 7 India

Year	EMPLOYMENT_IN_F	EXCHANGE_IN_F
2020	48.221	69.722
2021	48.239	70.913
2022	48.206	71.980
2023	48.133	71.984
2024	48.027	72.753

Conclusion

The present COVID-19 epidemic is predicted to impose a severe impact on the economic performances throughout the globe. There is a necessity for prediction research so that the nations can guide their macroeconomic policies to retain the existing trends of economic performance even after they are affected by the pandemic. This research is an attempt to anticipate significant macroeconomic indices for seven major economies, namely, the US, UK, China, France, Japan, Russia, and India. We utilized WDI datasets for the period 1972-2019, then projected for the year 2020-2024 using the Automatic ARIMA forecasting approach. The research suggests that employment and inflation in the USA will continue to drop. The other macroeconomic indicators are predicted to have favorable developments according to the findings. The UK GDP is projected to stay stable and the UK inflation will climb and the labor force participation rate will decline. The inflation rate in China, according to our calculations, will be close to 5 percent by the end of 2024. Employment is also predicted to drop. The inflation rate in France will stay below 1 percent throughout 2020-2024. The anticipated inflation rate in 2024 is 0.451 percent. The inflation rate in Japan will continue to climb through 2021. It will plummet in 2022 and will continue declining until it hits 0.014 in 2024. The workforce participation rate in Russia is predicted to decline. The Russian currency is anticipated to depreciate from 68.2 to 105.3. One of the most notable forecasted developments for the Russian economy is that inflation would decline from over 4% in 2020 to 1.62 percent in 2024. In India, inflation would grow from a forecast of 6.19 percent in 2020 to 7.842 percent in 2021 and in succeeding

years, suggesting that inflation will stabilize between 2021 and 2024. India's currency is predicted to depreciate, and employment is likely to decline. Using univariate time series analysis without accounting for Covid-19 disruptions, this research aimed to quantify the differences between post-Covid-19 economic performance and current expected trends.

Rising volatility, weakening confidence and tighter financial conditions might aggravate the first losses in spending and output. For example, people may save extra as a safeguard and certain enterprises may sell capital assets. While activity should rebound when lockdowns are relaxed, there might be longer-lasting scarring impacts on the economy, although special action by monetary authorities to alleviate the severity of the slump should assist to minimize this.

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