



Cornell University

CRP 5250: INTRODUCTORY METHODS OF PLANNING ANALYSIS

International Development

Technical Essay 1

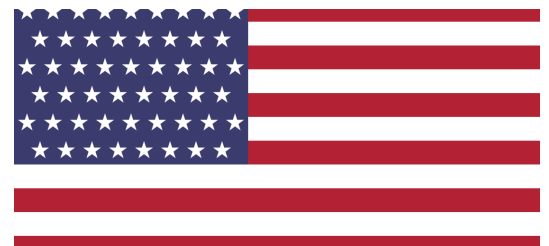
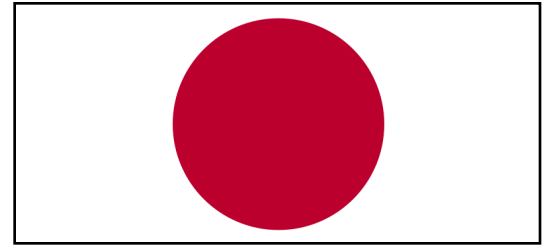
- RISHABH SINGH
M.R.P. 2022, CORNELL UNIVERSITY

INTRODUCTION

This paper aims to examine the development of 5 individual nations using data from the World Development Indicator database developed by World Bank. Development indicators such as Population, GDP, GDP per capita, Urban Population percentage, are analyzed for a period of 60 years starting from 1960 to 2020. Analyzing the individual nation's growth in comparison to other nations and its own past gives a sense of how the nation performs overall and what issues it ails with. It also hints at the major problems that plague a country. While we agree that this data is not at all sufficient to analyze and conclude specific problems and solutions, they act as starting point of the knowledge required to understand the underlying processes happening in the country and devise policies for the same.

As we examine five varied nations that are both similar and dissimilar in many ways, we discover some intriguing facts. While Japan, with its high life expectancy, quality of life, and GDP, faces a future filled with climate instabilities and a declining urbanization rate, South Africa and India face a future in which they will not be able to control their own country for more than 100 years. These countries are responsible for providing food, shelter, employment, and safety to starving, oppressed people who have suffered for years as a result of life's injustices and tortures. They lack the resources or technology of stronger nations to do so. Even among them, while South Africa and India are both heavily populated, India ranks 2nd in the world and is on its way to soon become the most populated country in the world. The levels of the problems faced by the governments and the citizens vary at every level. The analysis sums up the major problems of each of the nations, to try and cover most of the problems that plague most nations today.

The 5 nations have been chosen to accommodate for maximum variability in the types of countries. Graphs between multiple demographic variables and development indicators have been included along with population distribution according to age and time, to show the trends of the growth/decline of different parameters. Linear regression models have been used to forecast the change of these parameters for the future years up till 2050. Finally, maps have been included to compare the 5 nations' growth from 1990 to 2020 comprising of changes in different demographic parameters with time.



JAPAN

Background

Japan rebounded from its defeat in World War II to become an economic power and a US ally. While the emperor's throne serves as a symbol of national unity, elected lawmakers are in charge of making decisions. Japan's economy began to stagnate in the 1990s after three decades of unparalleled development, yet the country remains a global economic power. The greatest earthquake and tsunami in Japan's history struck the northeastern region of the island of Honshu in March 2011, killing thousands and damaging many nuclear power reactors. Prime Minister Shinzo ABE was re-elected in December 2012, and since then, he has pursued ambitious economic and security reforms to strengthen Japan's economy and international status.¹

Population

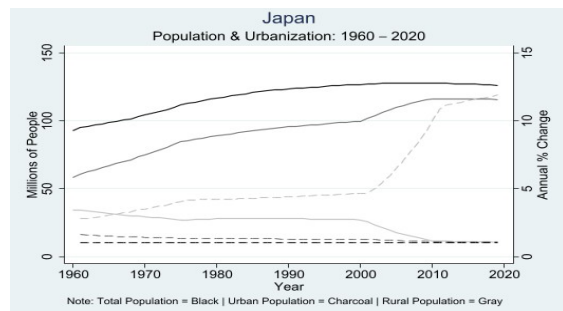
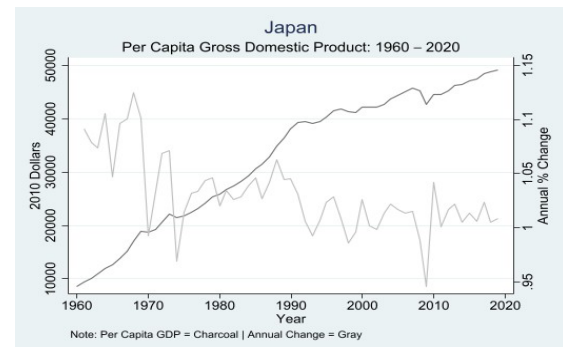
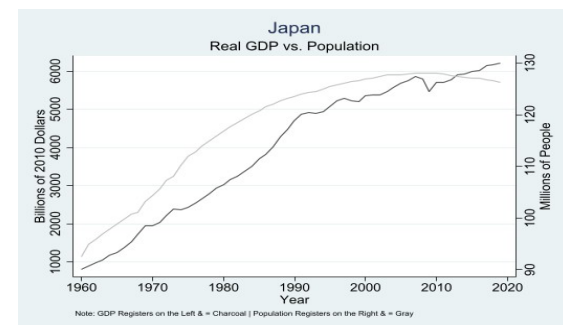
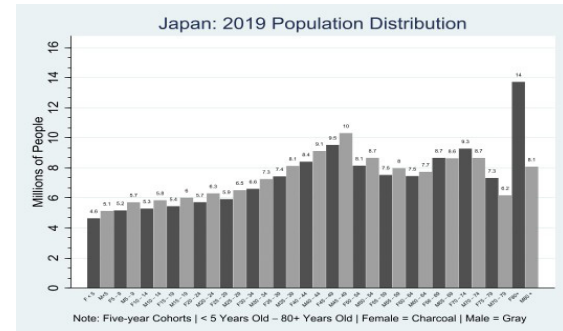
Japan is the 11th most populated country in the world. Despite being situated in the 'ring of fire' of Earthquakes, Japan is moving ahead with major progress despite numerous climate hazards and risks. As the population distribution shows, Japan has a major middle aged population with almost 40% of the population aged between 25-54 years. Comparing the growth over the 60 year period we see that the boom population of Japan started right after the World War II that has reached to the age of around 60 attributing to the larger percentage of people in the older middle-aged group. Policy planners will have to take into account the aging working population and the changing attitudes of people towards staying in rural areas and progressing there.

GDP

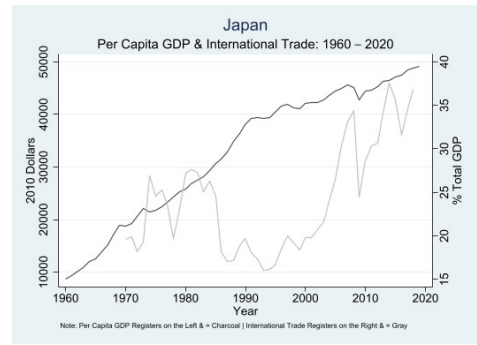
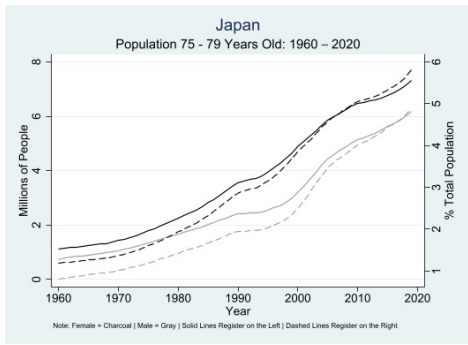
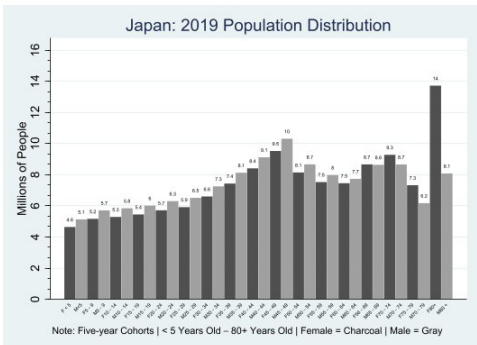
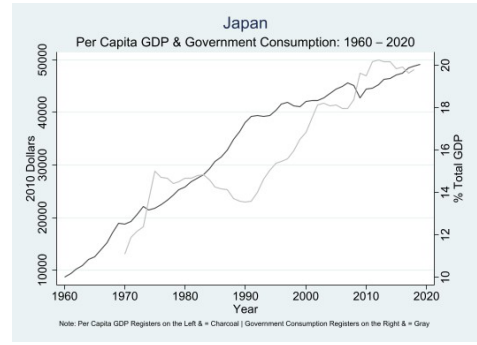
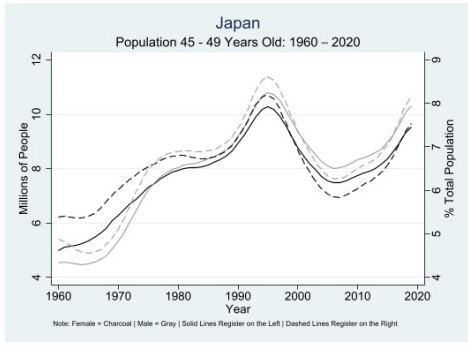
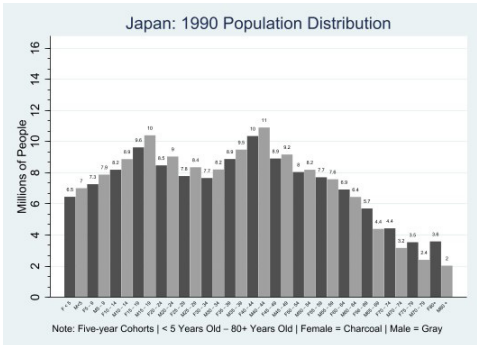
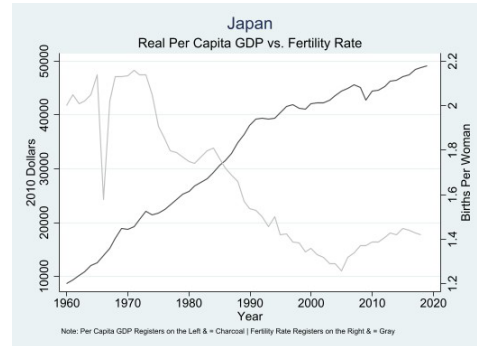
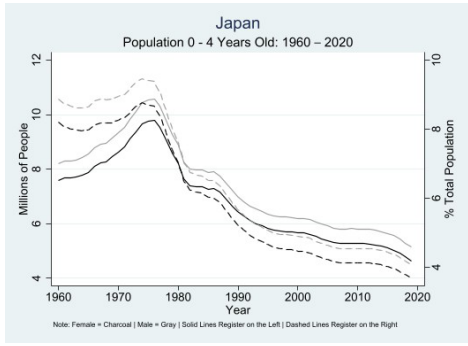
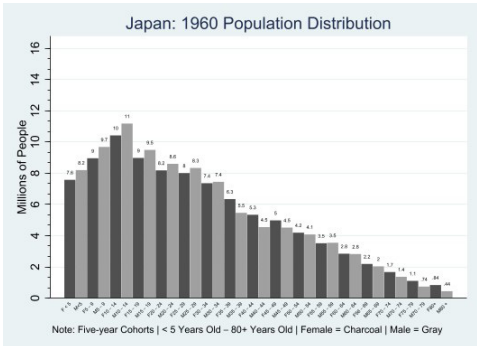
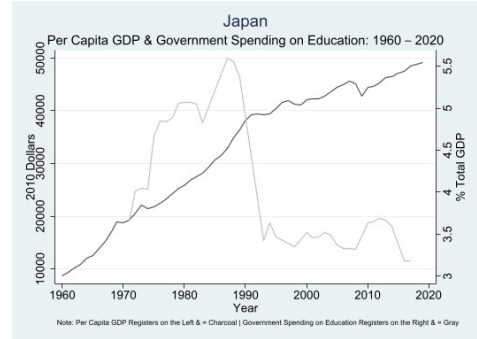
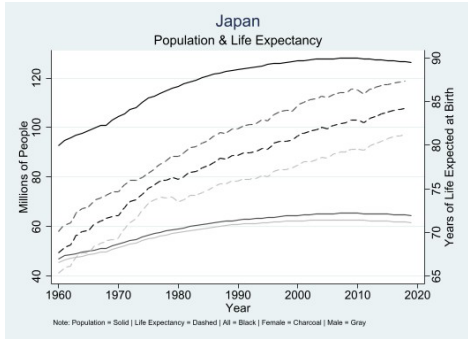
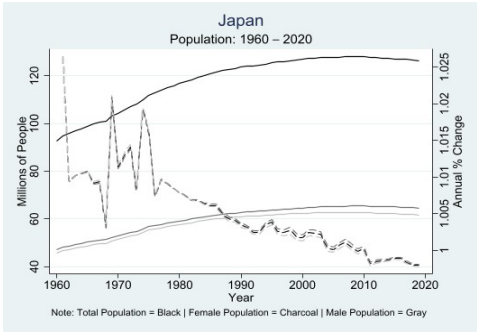
While the overall GDP has seen a strong growth in the 60 year period we can see the biggest abrupt movement happened in 2010-11 period which was when the massive earthquake hit Japan and saw huge loss of lives and livelihood thus attributing for the decrease in gdp, overall and in percentage change both. Overall, Japan's gdp annual % change decreases with an increase in population and recently has seen a slight increase with the population starting to decrease now. However, policy planners need to take into account the rising loss to the economy and livelihood with the worsening climate and associated disasters. The lowering urbanization trend in the country is one indication of the change in people's attitudes towards migrating to the urban centers.

Urbanization

Japan's urbanization trend (on the right) shows an interesting find. We can see that while the urbanization rose from 1960 it experienced the maximum growth in the initial 10-15 years. Upon close observation, we can see that during this time period, urban population increases with a decrease in rural population. Hence, this was the major period of urbanization with people moving from rural areas to urban areas. Post this, major urbanization took place starting from 2010. However, interestingly, in this time period, there is growth in urban population along with a higher growth in rural population. With higher standards of sanitation, cleanliness and health even in the rural areas, Japan is seeing a decreasing urbanization rate. Policy planners need to take this into account that for the country moving forward, it can see a urbanization of the rural sector of the country.

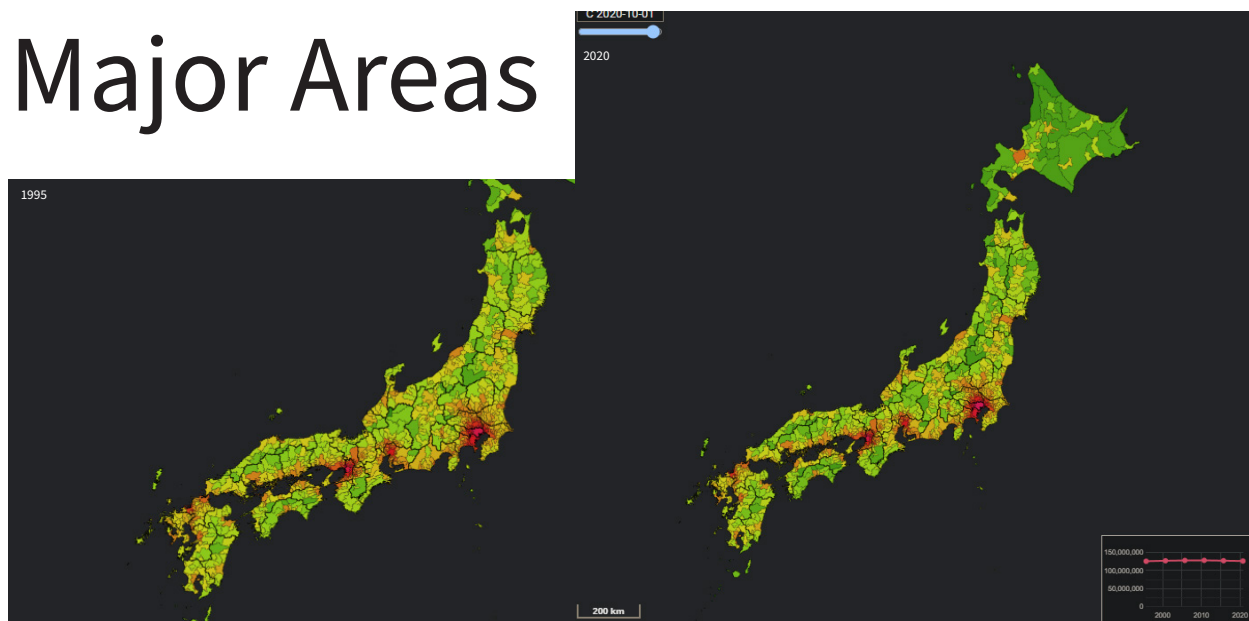


Population, GDP and Urbanization trends

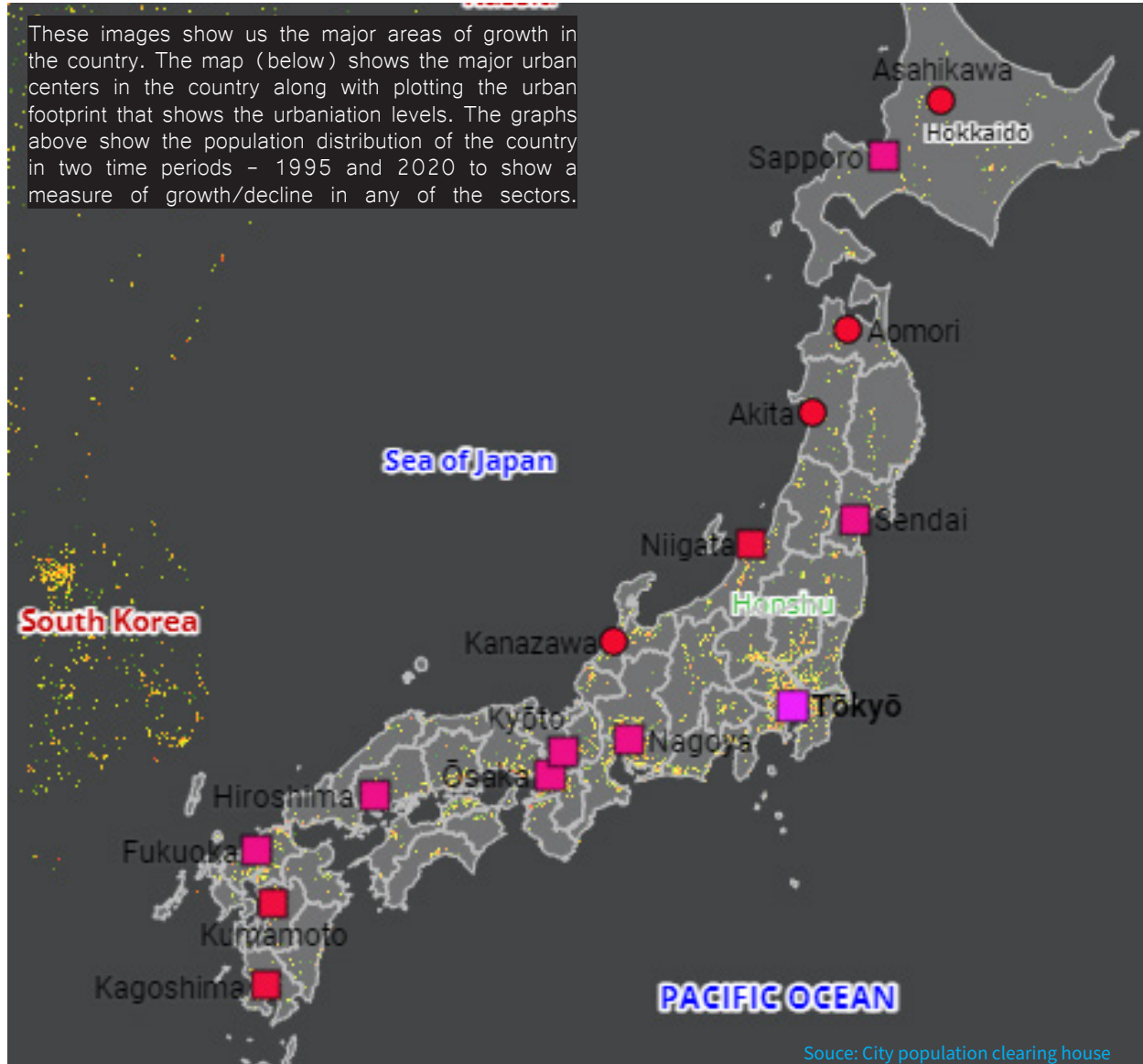


The trends of population graphs show us the distribution of ages in the range of 10 years for the population of the country for three time periods: 1960, 1990, and 2010. The difference in the graphs shows the ages showing growth and decline. The population trajectory graphs in the middle show us the growth and decline of three population ranges, young population, middle aged population and elderly populations. These graphs show us the growth and decline of these populations and the trends of their population growths help us to identify hidden socioeconomic phenomena associated with the problems of that place. These socioeconomic variables are plotted along with GDP, population and Urbanization graphs to highlight key trends of the country.

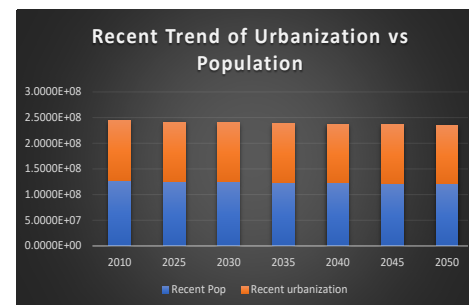
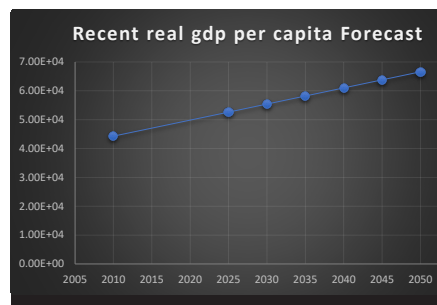
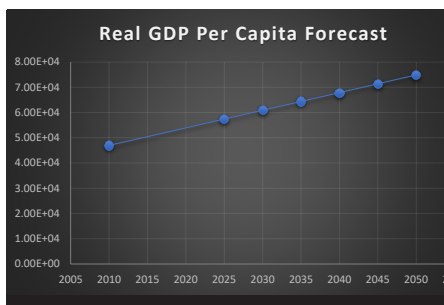
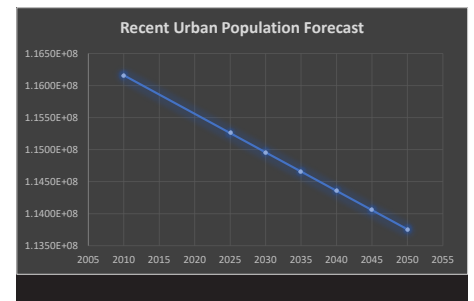
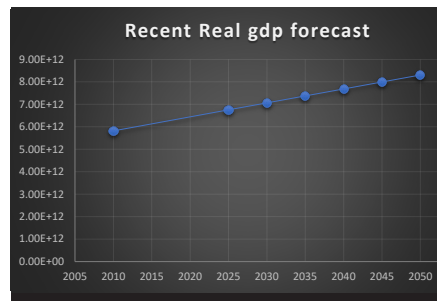
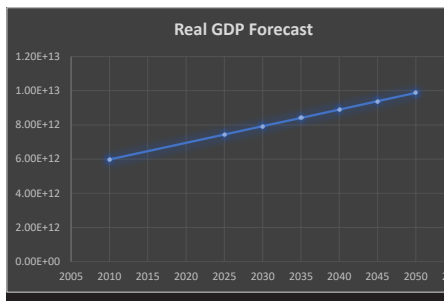
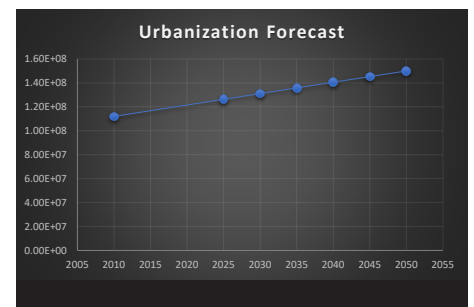
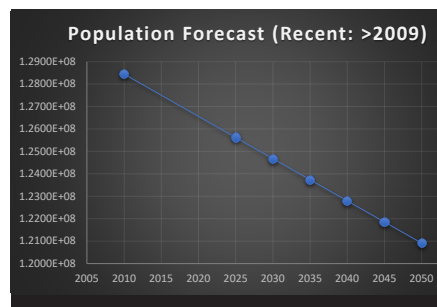
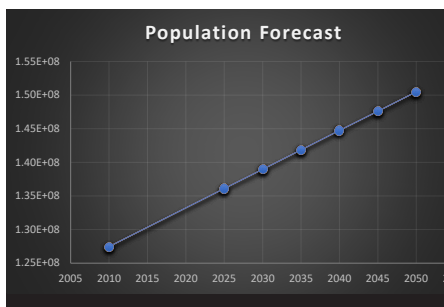
Major Areas



These images show us the major areas of growth in the country. The map (below) shows the major urban centers in the country along with plotting the urban footprint that shows the urbanisation levels. The graphs above show the population distribution of the country in two time periods - 1995 and 2020 to show a measure of growth/decline in any of the sectors.



Japan								
constt	-1.03E+09	5.07E+08	-1.90E+14	-1.19E+14	-1356649	-1075968	-1.80E+09	2.37E+08
Coeff	575849.1	-188335.8	9.75E+10	6.21E+10	698.301	557.3446	951237.5	-60119.05
Year								
	Population	Recent Pop	Real GDP	Recent Real gdp	Real GDP per capita	Recent real gdp per capita	Urbanization	Recent urbanization
2010	1.27E+08	1.2845E+08	5.98E+12	5.82E+12	4.69E+04	4.43E+04	1.12E+08	1.1616E+08
2025	1.36E+08	1.2562E+08	7.44E+12	6.75E+12	5.74E+04	5.27E+04	1.26E+08	1.1526E+08
2030	1.39E+08	1.2468E+08	7.93E+12	7.06E+12	6.09E+04	5.54E+04	1.31E+08	1.1496E+08
2035	1.42E+08	1.2374E+08	8.41E+12	7.37E+12	6.44E+04	5.82E+04	1.36E+08	1.1466E+08
2040	1.45E+08	1.2279E+08	8.90E+12	7.68E+12	6.79E+04	6.10E+04	1.41E+08	1.1436E+08
2045	1.48E+08	1.2185E+08	9.39E+12	7.99E+12	7.14E+04	6.38E+04	1.45E+08	1.1406E+08
2050	1.50E+08	1.2091E+08	9.88E+12	8.31E+12	7.49E+04	6.66E+04	1.50E+08	1.1376E+08



These graphs show the graphs of the values of population, GDP, and Urbanization , in the upcoming future. Forecasting has been done using linear regression in which linear trends of these variables has been used to construct future values. While trends are not at all like linear trends and the lines that we see in the graphs, the values and the overall growth/decline nature of the trend gives us an estimate of the overall situation in order to be able to asses the future conditions and plan accordingly. As we can see, the difference in the growth of the urban population and the real population shows us the pressure that is going to ammount to unhabitable conditions in the urban sector. The last bar graph highlights this issue. However, in the case of Japan, it highlights the decreasing urbanization trend of the populatiion. The recent urbanization forecast shows an approximate decrease of 60000 of the population from the urban sectors every year moving forward.

SOUTH AFRICA

Background

South Africa is the southernmost country in Africa, formally known as the Republic of South Africa (RSA). The country is the world's 23rd most populous, with approximately 60 million people living in an area of 1,221,037 square kilometers (471,445 square miles). Pretoria, Bloemfontein, and Cape Town are the three capital cities of South Africa, with the executive, judicial, and legislative departments of government situated in each. Johannesburg is the largest city. Black South Africans make up about 81 percent of the population. The rest of the population is made up of the continent's largest groups of European (White South Africans), Asian (Indian and Chinese South Africans), and Multiracial (Coloured South Africans) ancestry. The country has a long history of racial segregation and is still struggling to outgrow from the past oppressions.¹

Population

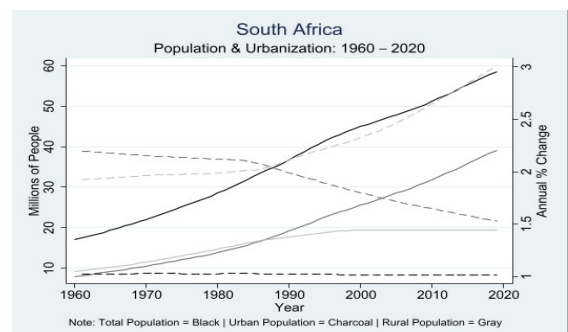
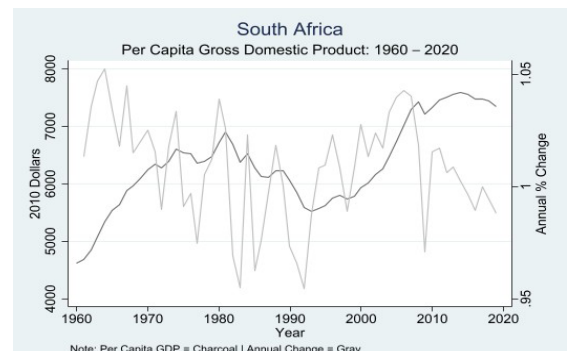
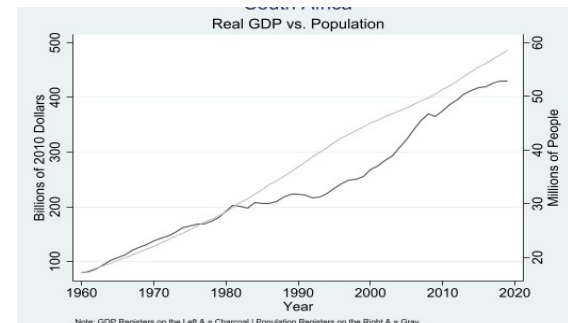
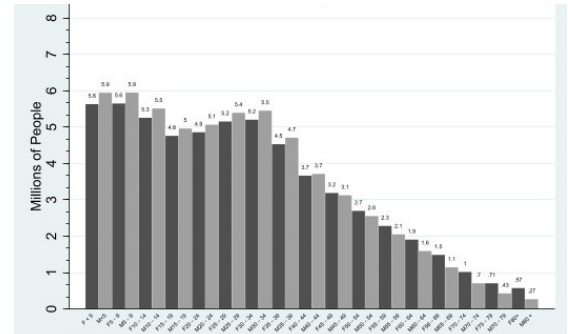
South Africa is the 23rd most populated country in the world. Growing steadily the country has seen growth amidst a lot of corruption and inequalities. The country had a high younger population during the 60s and the 70s due to low health systems availability and quality. This changed over the years as the country stabilised and the population's life expectancy started improving. The middle aged population rise can be seen showing highest growth starting the 2000 period which has stabilised up till the present.

GDP

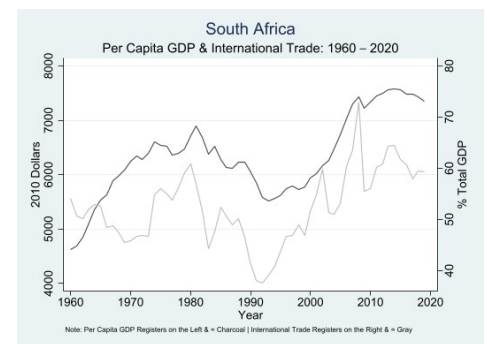
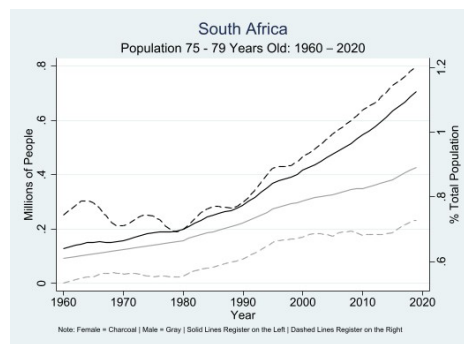
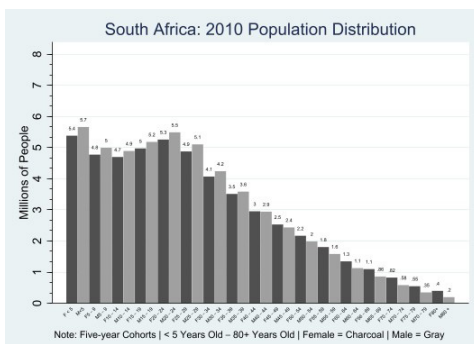
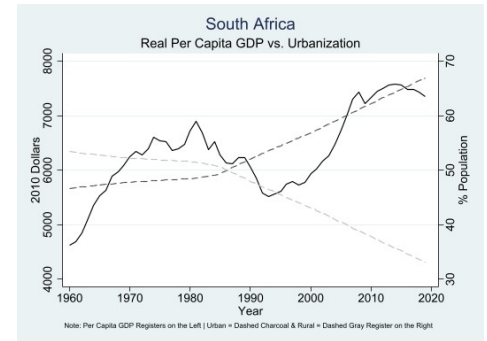
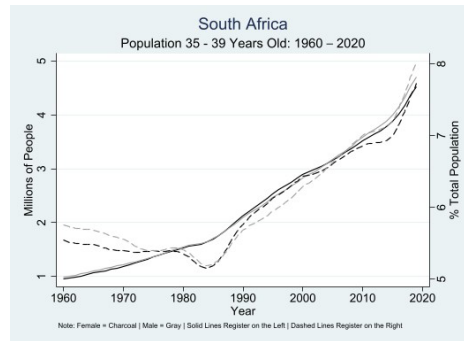
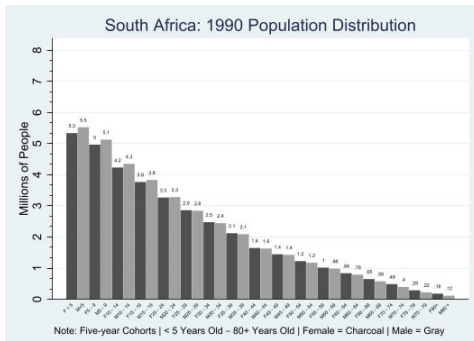
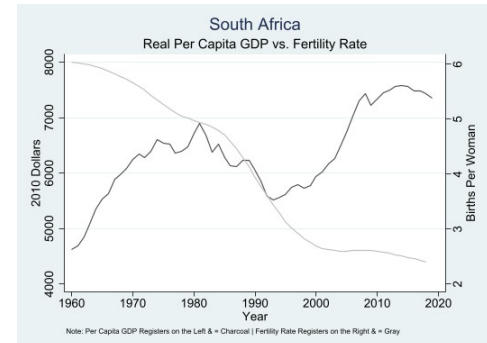
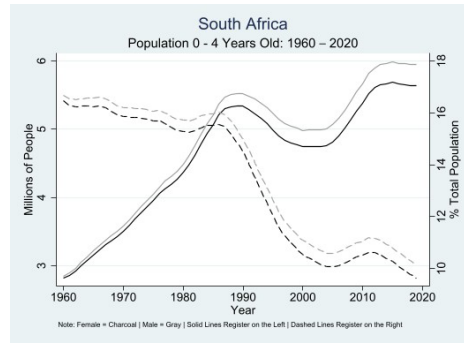
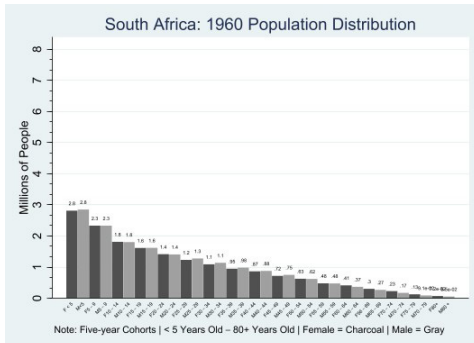
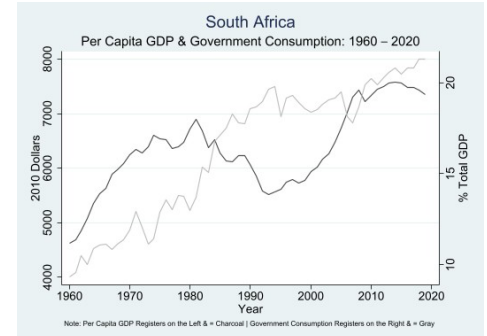
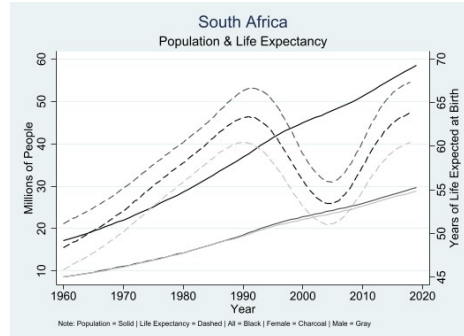
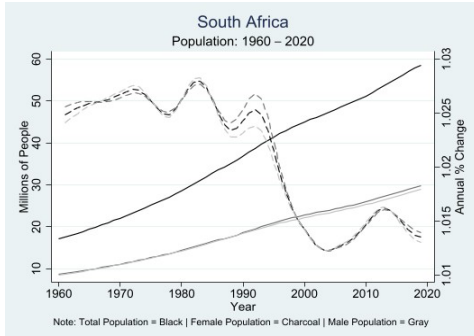
South Africa has been unable to obtain a demographic dividend as the number of working-age South Africans has increased relative to children and the elderly, due to persistently high unemployment and the prevalence of HIV/AIDS, which has resulted in a larger-than-normal dependant population. South Africa's average life expectancy fell to fewer than 43 years in 2008 due to HIV/AIDS; it has since returned to 63 years in 2017. After apartheid was abolished in 1994, the country developed a new inclusive national identity and strengthened its restrictive immigration policy. Despite South Africa's protectionist immigration policy, mine cutbacks and closures, and rising unemployment, migrants from throughout Africa believed the nation offered job prospects.

Urbanization

South Africa's urbanization trend (on the right) shows a constant increasing trend. The country currently stands with 68.3% of population living in urban sectors. The rate of urbanization has been decreasing as the cities get overcrowded. It stands at 1.72% currently. Major Urban areas include: 10.110 million Johannesburg (includes Ekurhuleni), 4.801 million Cape Town (legislative capital), 3.199 million Durban, 2.74 million PRETORIA (administrative capital), 1.281 million Port Elizabeth, 909,000 West Rand (2022)



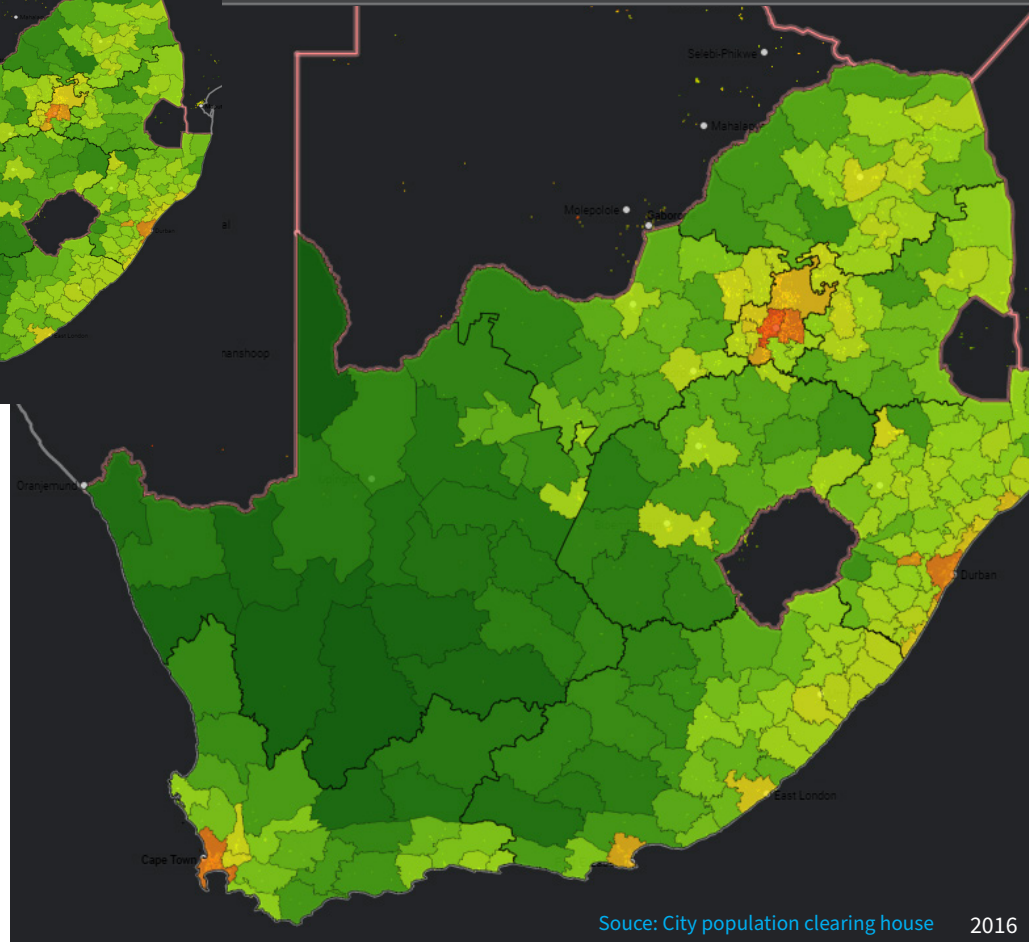
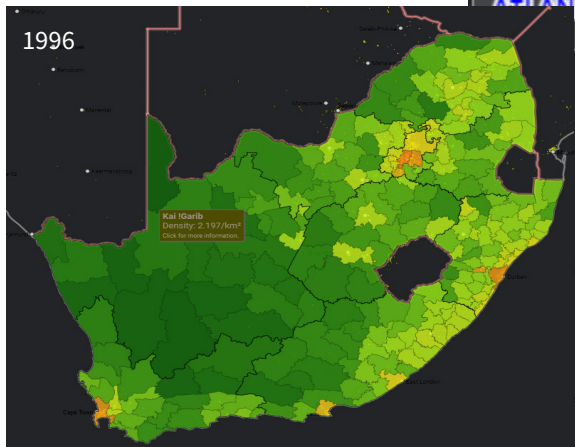
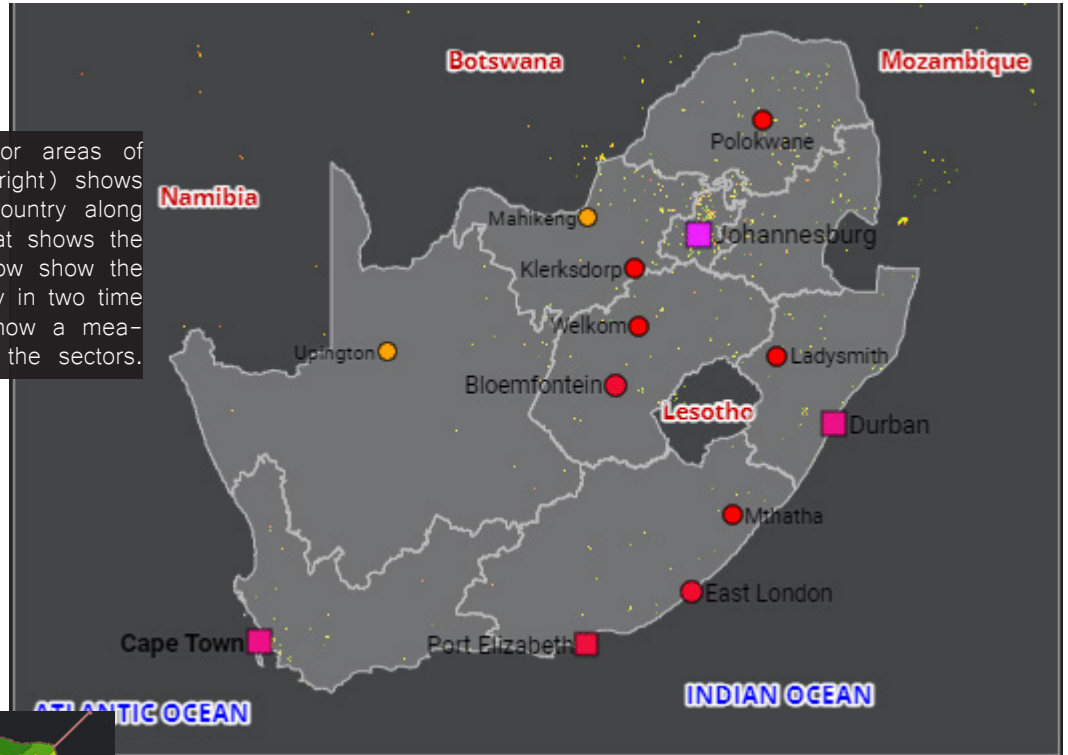
Population, gdp and urbanization trends



The trends of population graphs show us the distribution of ages in the range of 10 years for the population of the country for three time periods: 1960, 1990, and 2010. The difference in the graphs shows the ages showing growth and decline. The population trajectory graphs in the middle show us the growth and decline of three population ranges, young population, middle aged population and elderly populations. These graphs show us the growth and decline of these populations and the trends of their population growths help us to identify hidden socioeconomic phenomena associated with the problems of that place. These socioeconomic variables are plotted along with GDP, population and Urbanization graphs to highlight key trends of the country. The graphs show us that the major social progress was made during the 1990-2000 period which led to an increase in life expectancy as well as stabilising of the GDP in the next years. In the future, South Africa has massive potential for growth and multiple challenges to solve.

Major Areas

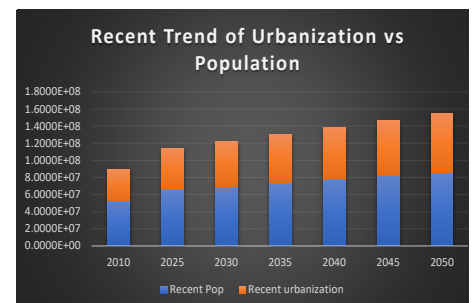
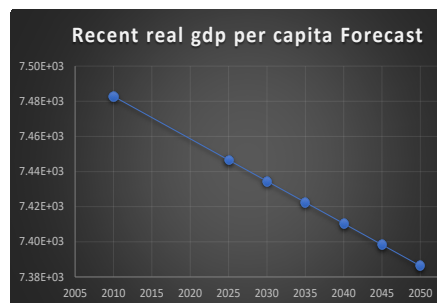
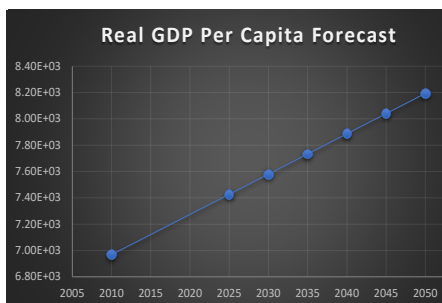
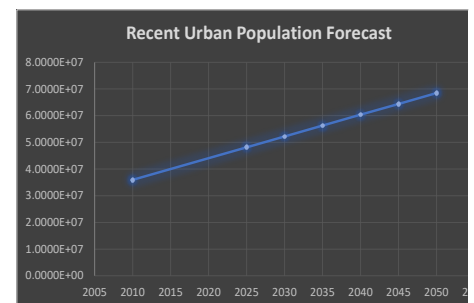
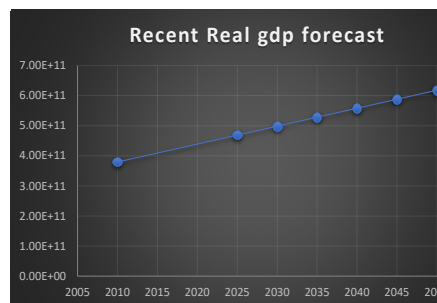
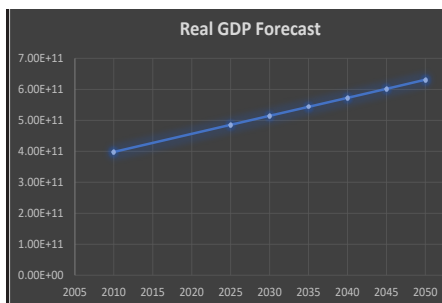
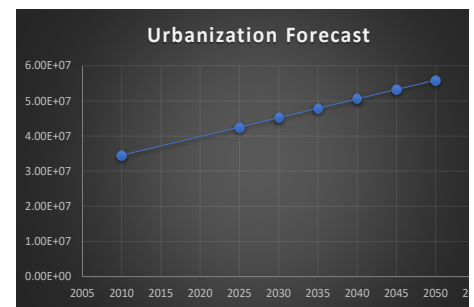
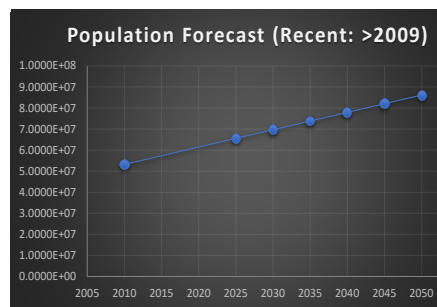
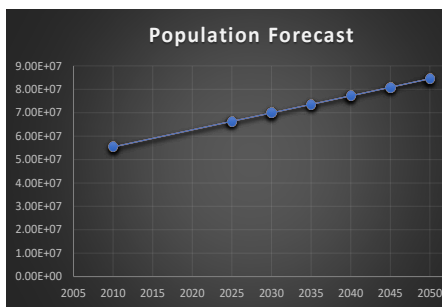
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Source: City population clearing house 2016

Forecasting Population, GDP and Urbanization

IND								
constt	-1.41E+09	-1.60E+09	-1.13E+13	-1.16E+13	-54517.67	12330.08	-1.04E+09	-1.60E+09
Coeff	729046	822519.8	5.82E+09	5.96E+09	30.5905	-2.411586	534602.4	813894.4
Year								
	Population	Recent Pop	Real GDP	Recent real gdp	Real GDP per capita	real gdp per capita	Urbanizati on	Recent urbanization
2010	5.54E+07	5.3265E+07	3.98E+11	3.80E+11	6.97E+03	7.48E+03	3.46E+07	3.5928E+07
2025	6.63E+07	6.5603E+07	4.86E+11	4.69E+11	7.43E+03	7.45E+03	4.26E+07	4.8136E+07
2030	7.00E+07	6.9715E+07	5.15E+11	4.99E+11	7.58E+03	7.43E+03	4.52E+07	5.2206E+07
2035	7.36E+07	7.3828E+07	5.44E+11	5.29E+11	7.73E+03	7.42E+03	4.79E+07	5.6275E+07
2040	7.73E+07	7.7940E+07	5.73E+11	5.58E+11	7.89E+03	7.41E+03	5.06E+07	6.0345E+07
2045	8.09E+07	8.2053E+07	6.02E+11	5.88E+11	8.04E+03	7.40E+03	5.33E+07	6.4414E+07
2050	8.45E+07	8.6166E+07	6.31E+11	6.18E+11	8.19E+03	7.39E+03	5.59E+07	6.8484E+07



These graphs show the graphs of the values of population, GDP, and Urbanization , in the upcoming future. Forecasting has been done using linear regression in which linear trends of these variables has been used to construct future values. While trends are not at all like linear trends and the lines that we see in the graphs, the values and the overall growth/decline nature of the trend gives us an estimate of the overall situation in order to be able to asses the future conditions and plan accordingly. As we can see, the difference in the growth of the urban population and the real population shows us the pressure that is going to ammount to unhabitable conditions in the urban sector. The last bar graph highlights this issue. Policy planners will need to take into account South Africa's falling per capita GDP and the future leaders will have this challengee at their hands .With the country looking at major urbanization omving forward, multiple urban centers should be planned for ahead of time, along with finding ways to employ the rising urban population.

INDIA

Background

Having been ruled for centuries by numerous different types of rulers, the Aryans, the Mughals, as well as the British, India, which got its independence in the year 1947, is a nation filled up of diverse people following diverse different religions and speak hundreds of different languages. The societies see further subdivisions in terms of class, color and caste. Hence, as a result, while Indians possess a diverse sense of nature and competitive attitude in life, the economic growth of the country is being restricted by numerous problems such as environmental degradation, extensive poverty, and widespread corruption.

Population

With a staggering population of 1.3 Billion people, India stands at the number 2 spot in the list of most populous countries in the world. With the exception of the deserts in the northwest, including the Thar Desert, and the mountain fringe in the north, most of the country has a very high population density; the population core is in the north along the Ganges River, with other river valleys and southern coastal areas also having large population concentrations.

Age structure-

0-14 years: 26.31% (male 185,017,089/female 163,844,572)

15-24 years: 17.51% (male 123,423,531/female 108,739,780)

25-54 years: 41.56% (male 285,275,667/female 265,842,319)

55-64 years: 7.91% (male 52,444,817/female 52,447,038)

65 years and over: 6.72% (2020 est.) (male 42,054,459/female 47,003,975)

GDP

While the overall GDP has seen a strong growth in the 60 year period, the economy started actually booming after the 1990 policy changes. In the recent times - India gdp growth rate for 2020 was -7.96%, a 12.01% decline from 2019.

India gdp growth rate for 2019 was 4.04%, a 2.49% decline from 2018.

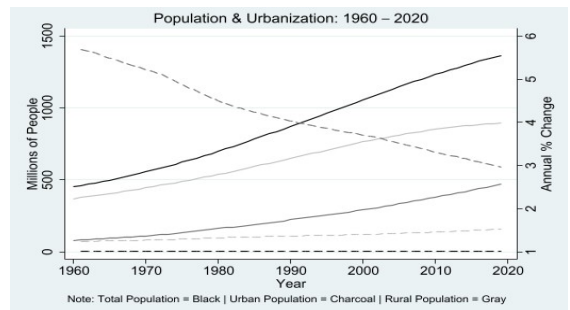
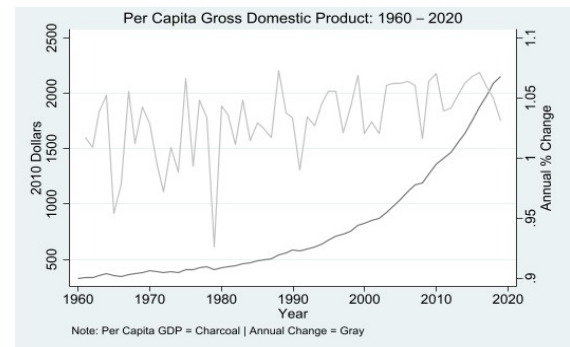
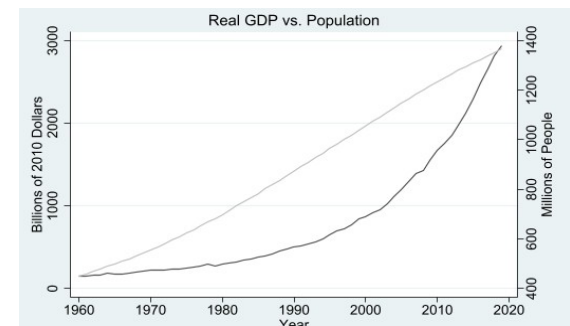
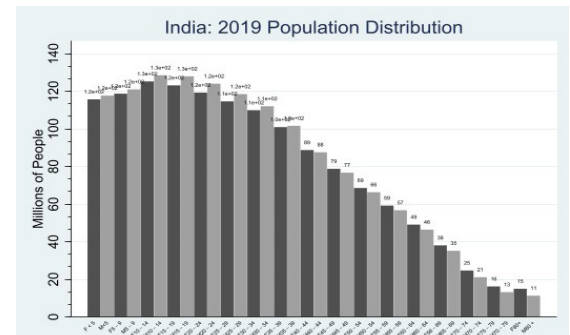
India gdp growth rate for 2018 was 6.53%, a 0.26% decline from 2017.

India gdp growth rate for 2017 was 6.80%, a 1.46% decline from 2016.

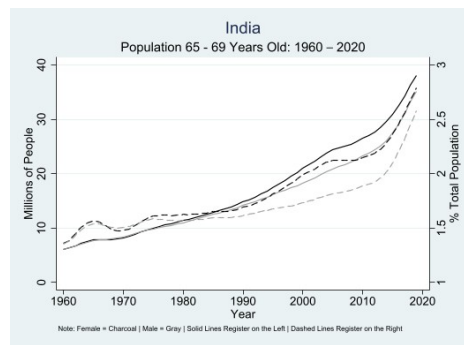
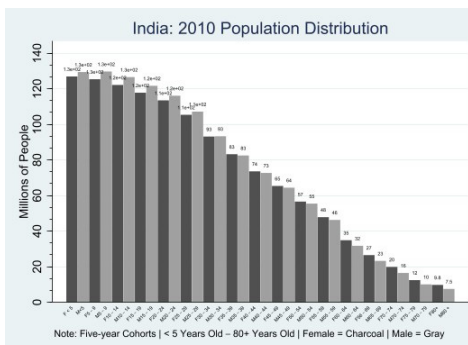
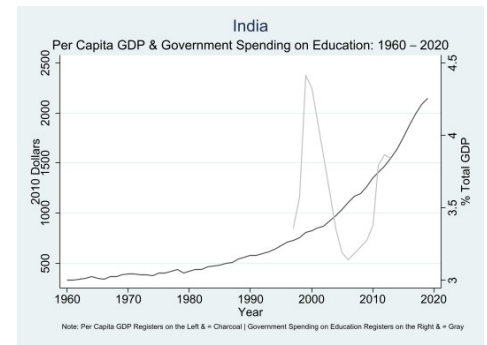
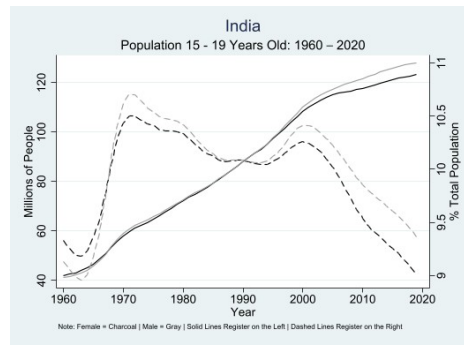
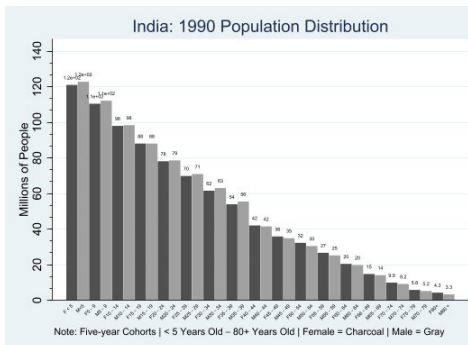
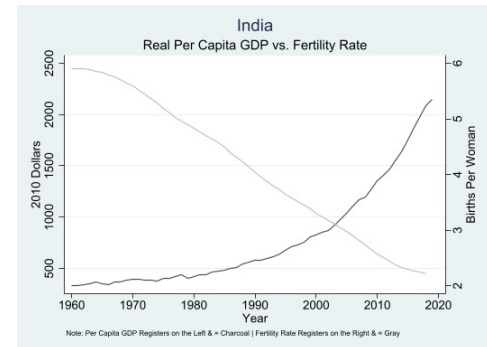
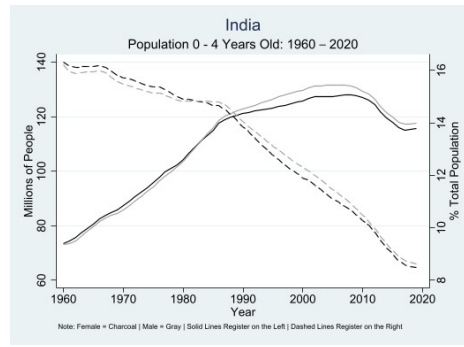
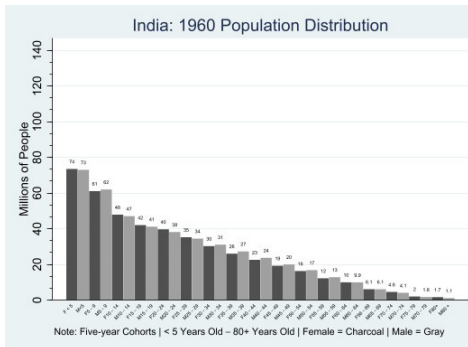
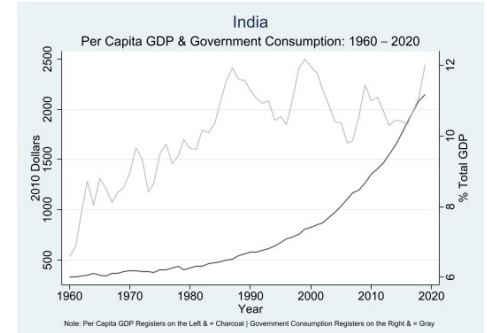
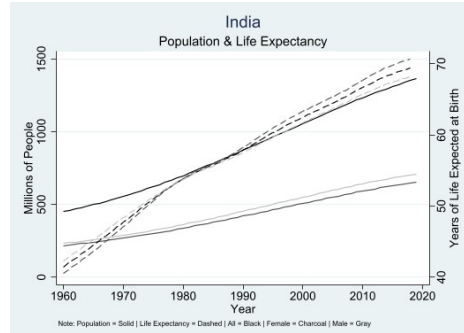
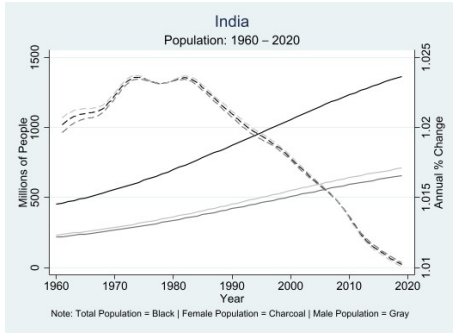
Covid 19 and its aftermath has left the country in peril with health systems overburdened and unemployment at an all time low. Policy planners will have to account for the country's increasingly modernizing and privatizing economy which is posing problems for the most vulnerable of the society with an increasing gap between the rich and the poor.

Urbanization

Indias urbanization trend (on the right) shows a constant increasing trend. However, the country currently stands with only 35.9 % of population living in urban sectors. The rate of urbanization has been decreasing slightly as the cities begin to get overcrowded, but the overall urbanization rate is increasing. It stands at 2.33% currently. Major Urban areas include: 32.066 million NEW DELHI (capital), 20.961 million Mumbai, 15.134 million Kolkata, 13.193 million Bangalore, 11.503 million Chennai, 10.534 million Hyderabad (2022).

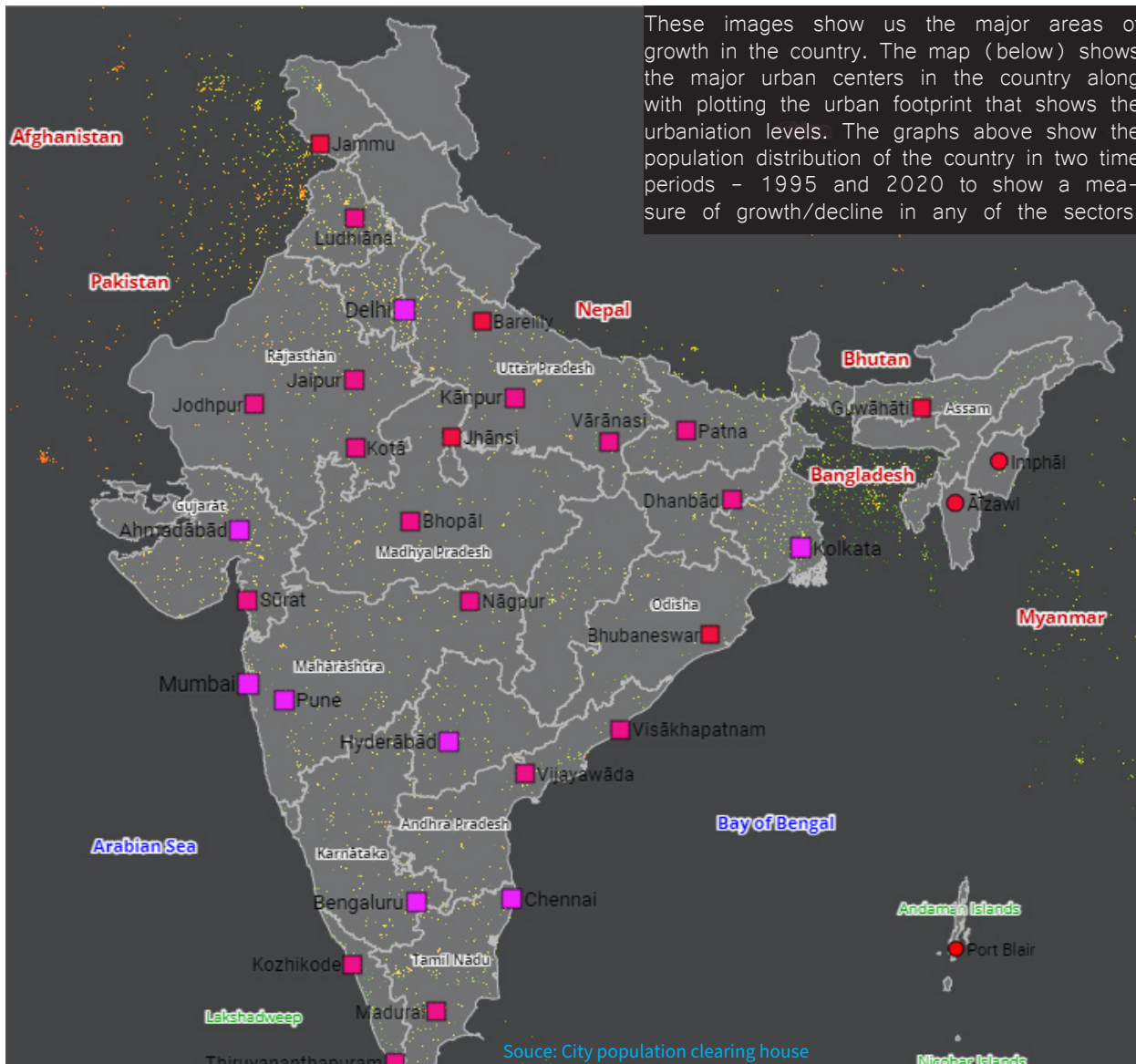
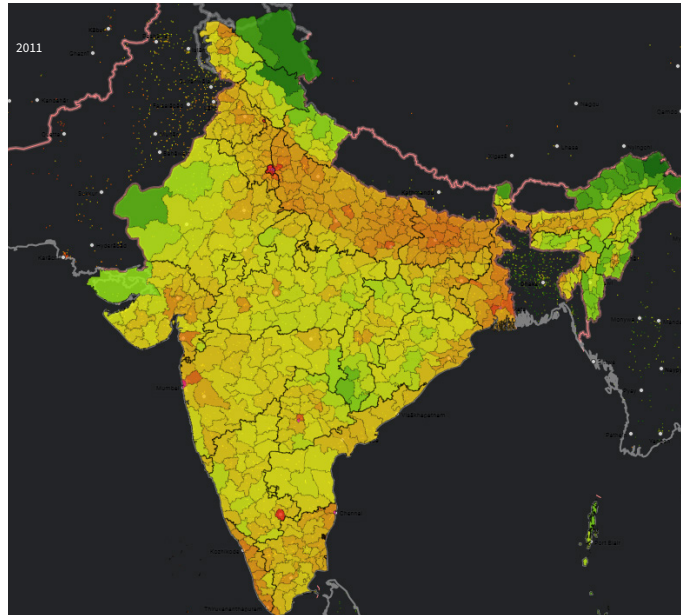
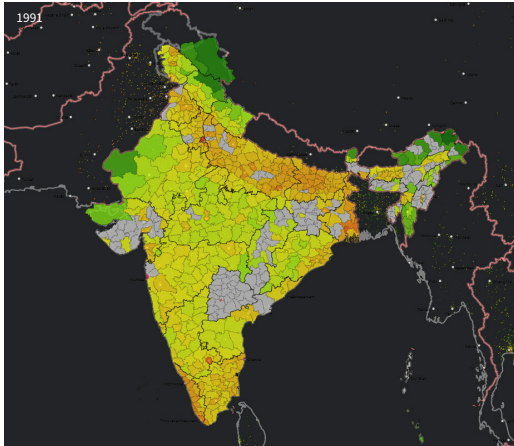


Population, gdp and urbanization trends



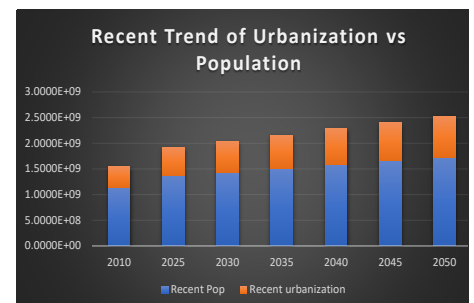
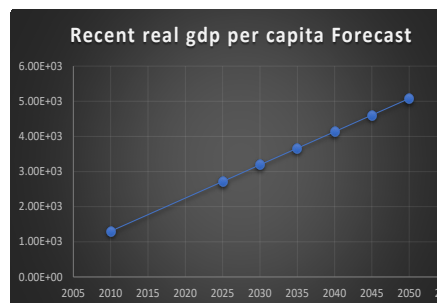
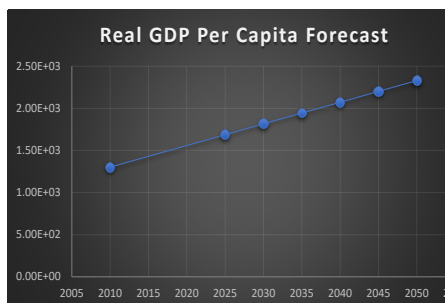
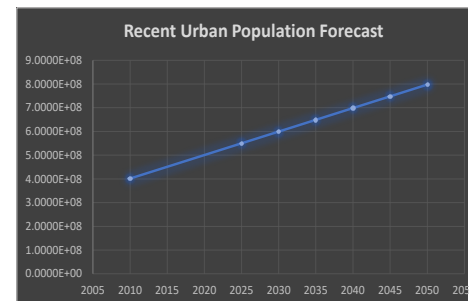
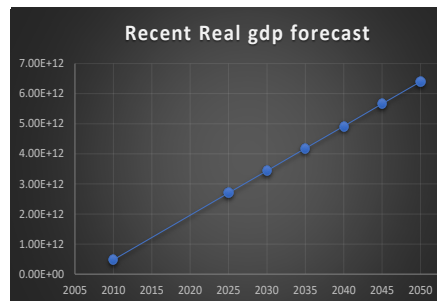
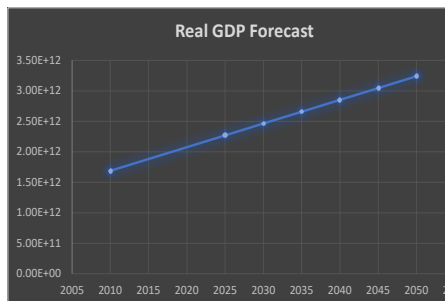
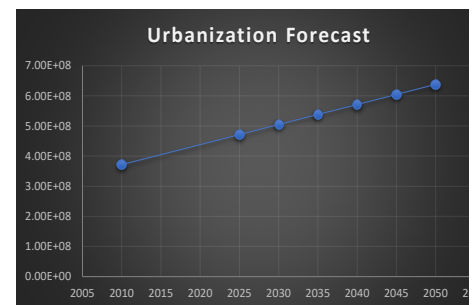
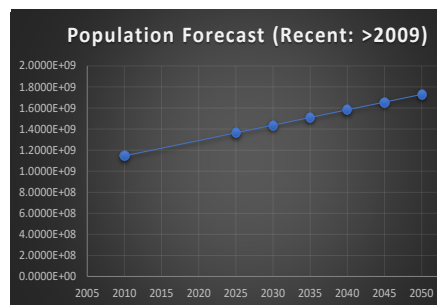
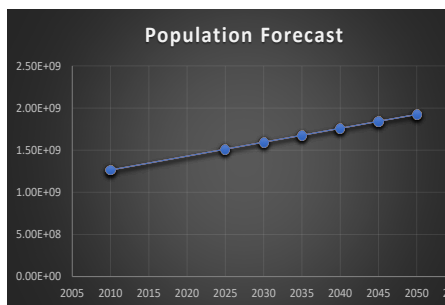
The trend of population graphs show us the distribution of ages in the range of 10 years for the population of the country for three time periods: 1960, 1990, and 2010. The difference in the graphs shows the ages showing growth and decline. The population trajectory graphs in the middle show us the growth of the growth and decline of three population ranges, young population, middle aged population and elderly populations. These graphs show us the growth and decline of these populations and the trends of their population growths help us to identify hidden socioeconomic phenomena associated with the problems of that place. These socioeconomic variables are plotted along with GDP, population and Urbanization graphs to highlight key trends of the country. As we can see, the increasing GDP, urbanization rate, as well as the overall population of the country does not align with the increase in the quality of the health systems of the country or the sanitation facilities, as can be seen looking at the life expectancy graph. This tells a lot about the country. While there is growth in the country with a rising young population willing to educate and work, the supporting systems of the country haven't improved at the same time, putting further pressure on these people. These rises further numerous issues that take form in the form of corruption and further degradation of other systems and services.

Major Areas



Forecasting Population, GDP and Urbanization

IND								
constt	-3.19E+10	-2.82E+10	-7.63E+13	-2.97E+14	-50289.95	-188389.3	-1.30E+10	-1.95E+10
Coeff	1.65E+07	1.46E+07	3.88E+10	1.48E+11	25.66789	94.37413	6652712	9901152
Year								
	Population	Recent Pop	Real GDP	Recent real gdp	Real GDP per capita	real gdp per capita	Urbanization	Recent urbanization
2010	1.27E+09	1.1460E+09	1.69E+12	4.80E+11	1.30E+03	1.30E+03	3.72E+08	4.0132E+08
2025	1.51E+09	1.3650E+09	2.27E+12	2.70E+12	1.69E+03	2.72E+03	4.72E+08	5.4983E+08
2030	1.60E+09	1.4380E+09	2.46E+12	3.44E+12	1.82E+03	3.19E+03	5.05E+08	5.9934E+08
2035	1.68E+09	1.5110E+09	2.66E+12	4.18E+12	1.94E+03	3.66E+03	5.38E+08	6.4884E+08
2040	1.76E+09	1.5840E+09	2.85E+12	4.92E+12	2.07E+03	4.13E+03	5.72E+08	6.9835E+08
2045	1.84E+09	1.6570E+09	3.05E+12	5.66E+12	2.20E+03	4.61E+03	6.05E+08	7.4786E+08
2050	1.93E+09	1.7300E+09	3.24E+12	6.40E+12	2.33E+03	5.08E+03	6.38E+08	7.9736E+08



These graphs show the graphs of the values of population, GDP, and Urbanization , in the upcoming future. Forecasting has been done using linear regression in which linear trends of these variables has been used to construct future values. While trends are not at all like linear trends and the lines that we see in the graphs, the values and the overall growth/decline nature of the trend gives us an estimate of the overall situation in order to be able to asses the future conditions and plan accordingly. As we can see, the difference in the growth of the urban population and the real population shows us the pressure that is going to ammount to unhabitable conditions in the urban sector. The last bar graph highlights this issue. The accompanying gdp graphs show the hinderance and the lag in growth that can be attributed to one of the obvious reason as such, or some can be attributed to underlying phenomena that are yet to be researched.

CANADA

Background

Canada, a region of wide distances and abundant natural resources, gained self-government in 1867 while maintaining links to the British crown. In 1931, Canada obtained legislative independence from the United Kingdom, and in 1982, the Canada Act confirmed its constitutional independence from the United Kingdom. Economically and technologically, the country has progressed in lockstep with the United States, its southern neighbor with the world's longest international border. Canada confronts political obstacles in addressing public expectations for better health care, education, social services, and economic competitiveness, as well as responding to the concerns of Quebec's largely francophone population. Canada also wants to utilize its diversified energy resources while remaining environmentally conscious.⁴

Population

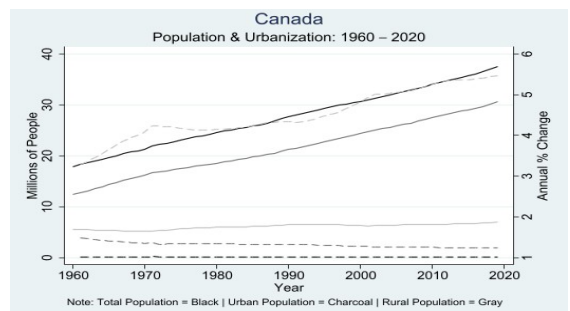
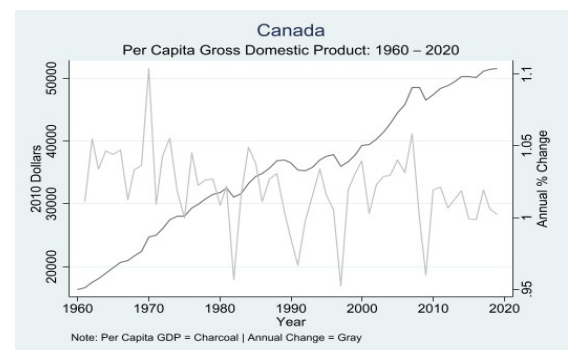
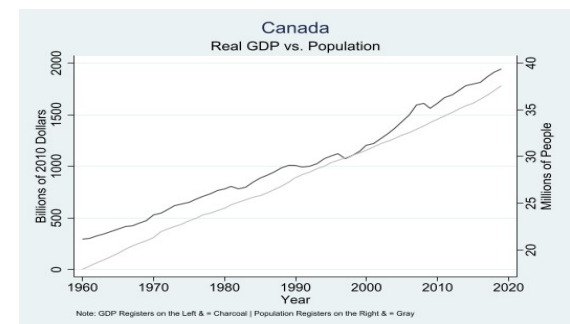
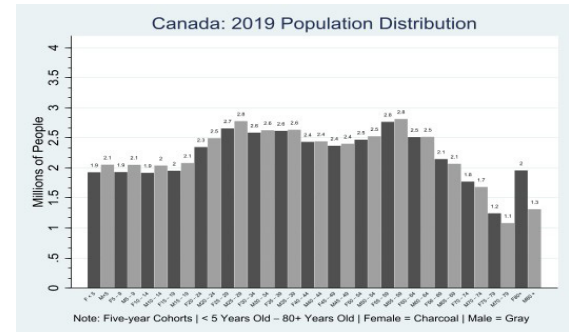
Canada, the 38th most populated country in the world, is only the world's second-largest country by total area. Its southern and western border with the United States, stretching 8,891 kilometres (5,525 mi), is the world's longest bi-national land border. Canada's capital is Ottawa, and its three largest metropolitan areas are Toronto, Montreal, and Vancouver. The age structure as can be seen in the graph on the right, is such that all ages have an equal distribution among the population. Hence, the country needs to address challenges of an aging population of bloomers and increase competitiveness by acknowledging the talent of the youth and providing services to nurture the same.

GDP

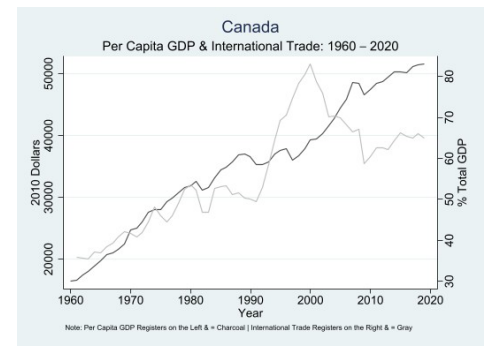
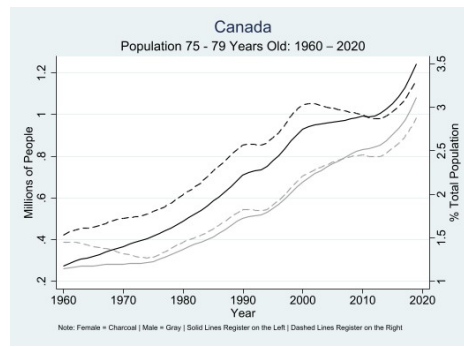
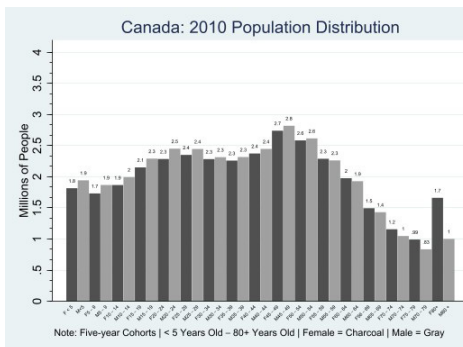
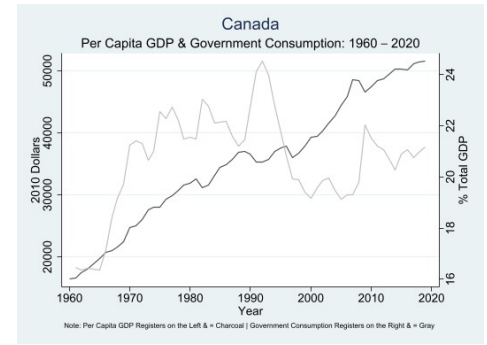
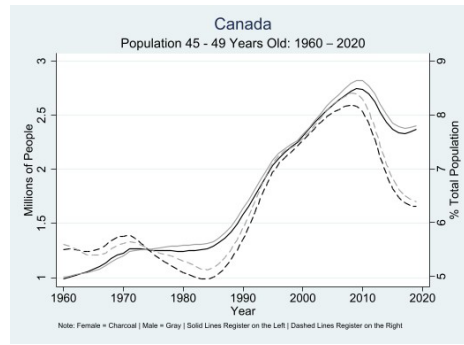
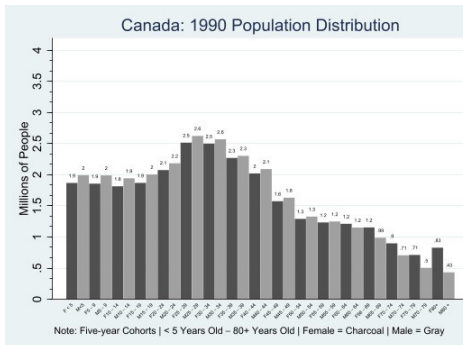
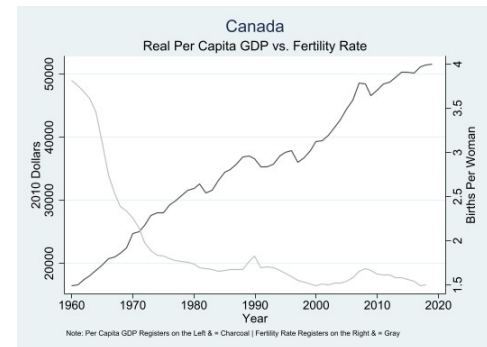
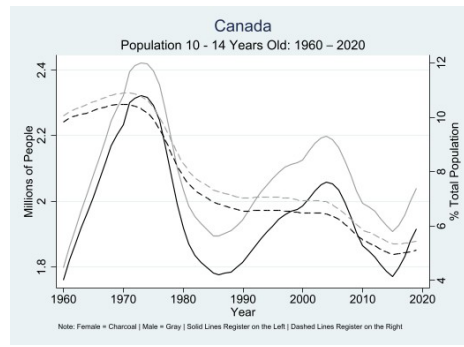
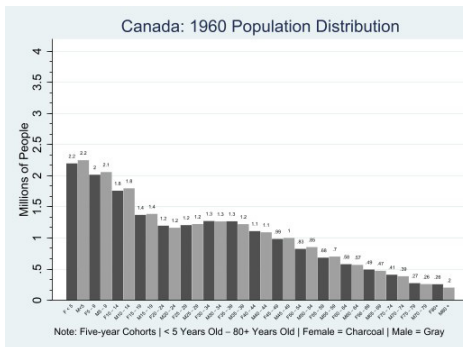
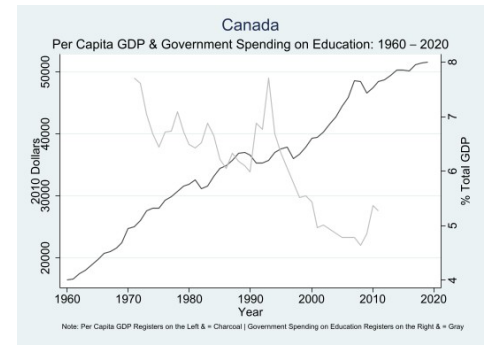
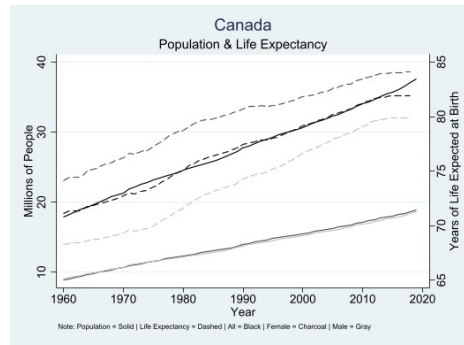
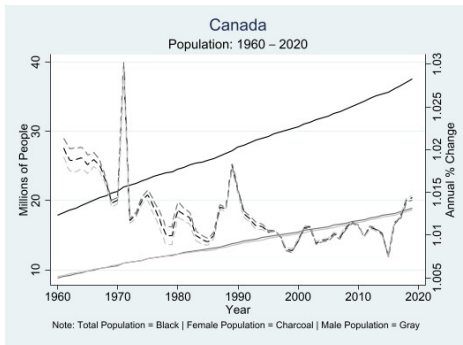
While the overall GDP has seen a strong growth in the 60 year period we can see the instability in the graph on the right that captures on the right axis the annual % change. Hence, the overall increase in the gdp has been accompanied by numerous ups and downs. The increase as seen in the government consumption per capita GDP in the recent years can be attributed to the recent increase of [er capita gdp, as the political environment of the nation stabilises.

Urbanization

Canada has seen a slow and steady rise in urbanization with 81% of population already living in urban settings. The urbanization rate saw a maximum rise around the 2000 mark. The current rate of urbanization of Canada stands at a low of 0.95%. The country's major source of incoming talent is from past the borders where the country has kept a lenient policy to welcome people to work in Canada and add to its labor force. The makor urban centers include: 6.313 million Toronto, 4.277 million Montreal, 2.632 million Vancouver, 1.611 million Calgary, 1.519 million Edmonton, 1.423 million OTTAWA (capital) (2022)

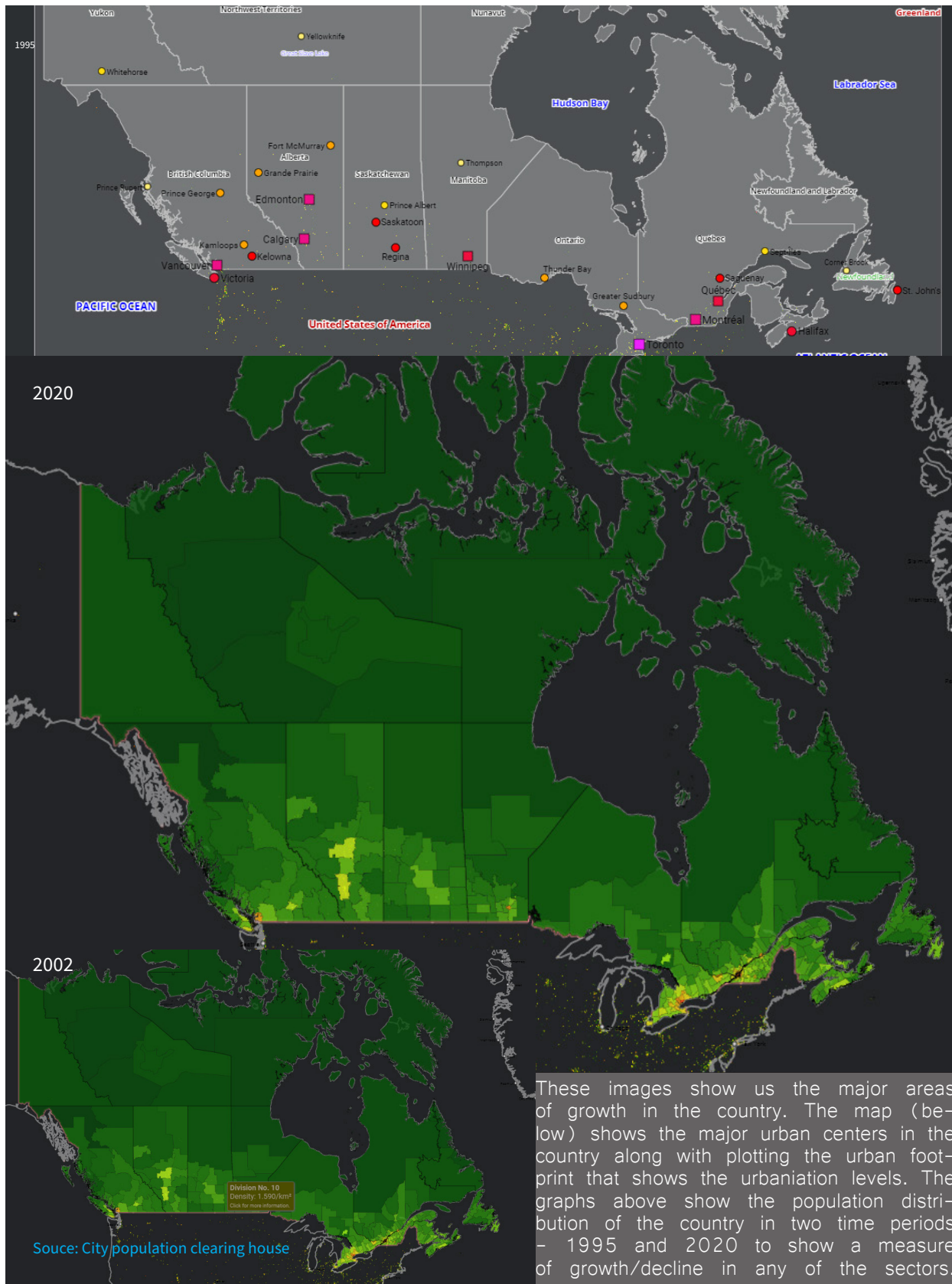


Population, gdp and urbanization trends



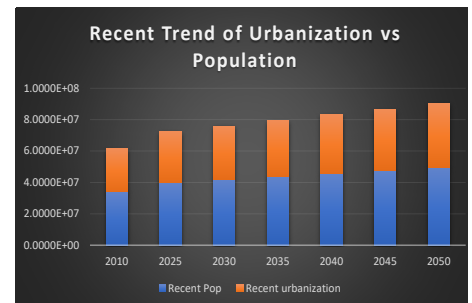
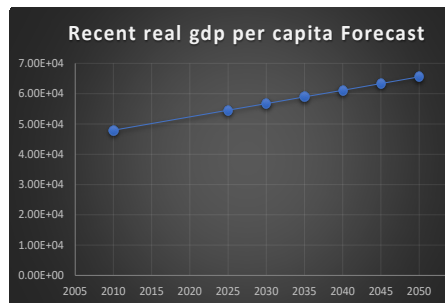
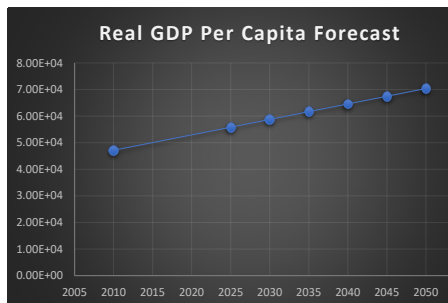
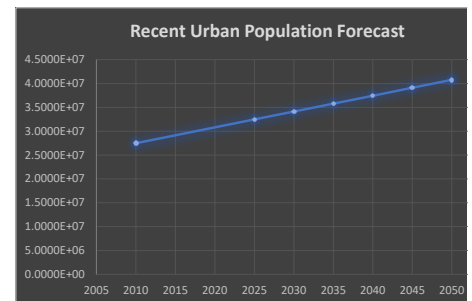
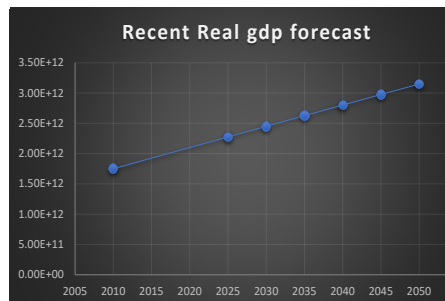
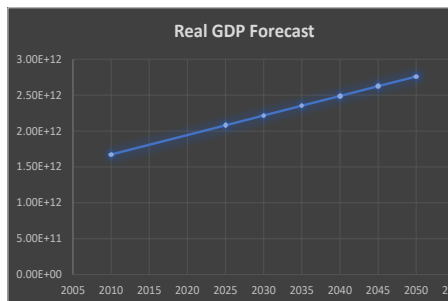
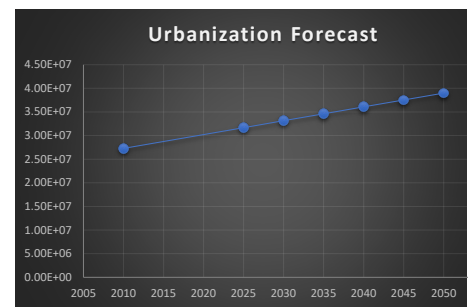
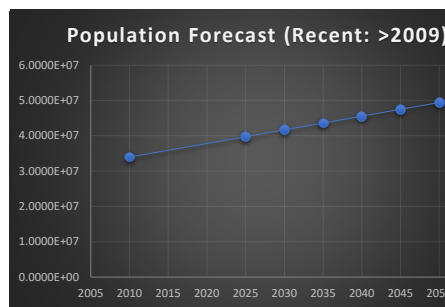
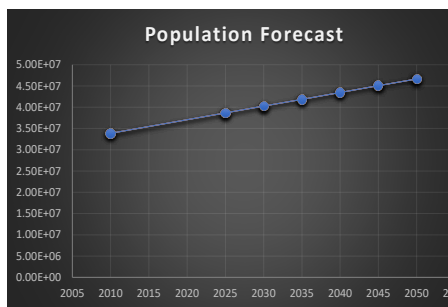
The trend of population graphs show us the distribution of ages in the range of 10 years for the population of the country for three time periods: 1960, 1990, and 2010. The difference in the graphs shows the ages showing growth and decline. The population trajectory graphs in the middle show us the growth of the young population, middle aged population and elderly populations. These graphs show us the growth and decline of these populations and the trends of their population growths help us to identify hidden socioeconomic phenomena associated with the problems of that place. These socioeconomic variables are plotted along with GDP, population and Urbanization graphs to highlight key trends of the country. Policy planners need to take into account of these growth variables and the recent trend that they show given the country's aging population.

Major Areas



Forecasting Population, GDP and Urbanization

IND								
constt	-6.08E+08	-7.43E+08	-5.30E+13	-6.86E+13	-1120099	-836655.3	-5.61E+08	-6.41E+08
Coeff	3.19E+05	3.87E+05	2.72E+10	3.50E+10	580.7288	440.0917	292678.3	332572
Year								
	Population	Recent Pop	Real GDP	Recent real gdp	Real GDP per capita	real gdp per capita	Urbanization	Recent urbanization
2010	3.39E+07	3.3944E+07	1.67E+12	1.75E+12	4.72E+04	4.79E+04	2.73E+07	2.7470E+07
2025	3.87E+07	3.9742E+07	2.08E+12	2.28E+12	5.59E+04	5.45E+04	3.17E+07	3.2458E+07
2030	4.03E+07	4.1675E+07	2.22E+12	2.45E+12	5.88E+04	5.67E+04	3.31E+07	3.4121E+07
2035	4.19E+07	4.3607E+07	2.35E+12	2.63E+12	6.17E+04	5.89E+04	3.46E+07	3.5784E+07
2040	4.35E+07	4.5540E+07	2.49E+12	2.80E+12	6.46E+04	6.11E+04	3.61E+07	3.7447E+07
2045	4.51E+07	4.7473E+07	2.62E+12	2.98E+12	6.75E+04	6.33E+04	3.75E+07	3.9110E+07
2050	4.67E+07	4.9406E+07	2.76E+12	3.15E+12	7.04E+04	6.55E+04	3.90E+07	4.0773E+07



These graphs show the graphs of the values of population, GDP, and Urbanization , in the upcoming future. Forecasting has been done using linear regression in which linear trends of these variables has been used to construct future values. While trends are not at all like linear trends and the lines that we see in the graphs, the values and the overall growth/decline nature of the trend gives us an estimate of the overall situation in order to be able to asses the future conditions and plan accordingly. As we can see, the difference in the growth of the urban population and the real population shows us the pressure that is going to ammount to unhabitable conditions in the urban sector. The last bar graph highlights this issue. The accompanying gdp graphs show the hinderance and the lag in growth that can be attributed to one of the obvious reason as such, or some can be attributed to underlying phenomena that are yet to be researched.

USA

Background

Following the Treaty of Paris in 1783, Britain's American colonies broke away from the mother country in 1776 and the country was recognized as the new nation of the United States of America. During the 19th and 20th centuries, the nation expanded over the North American continent and acquired a number of overseas colonies, adding 37 new states to the original 13. The Civil War (1861-1865), in which a northern Union of states defeated a secessionist Confederacy of 11 southern slave states, and the Great Depression of the 1930s, an economic downturn in which about a quarter of the labor force lost their jobs, were the two most traumatic events in the country's history. Since WWII, the economy has experienced relatively stable growth, minimal unemployment and inflation, and tremendous technological advancements. Currently the country plagues with issues of social development for the weakest sector where due to the increasing gap between the rich and the poor, the rising economy costs are becoming a burden for one living in the major urban centers of the country. This is a challenge in the face of climate change that the country has to solve along with transitioning the overall mass production attitude towards sustainable development and waste reduction. 5

Population

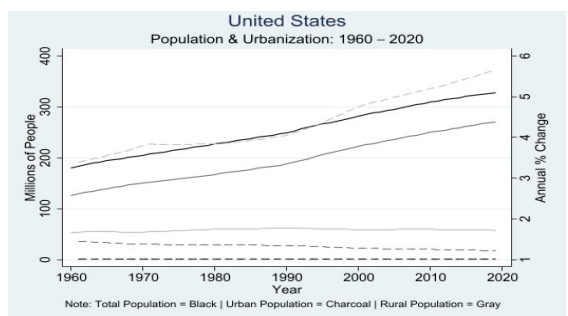
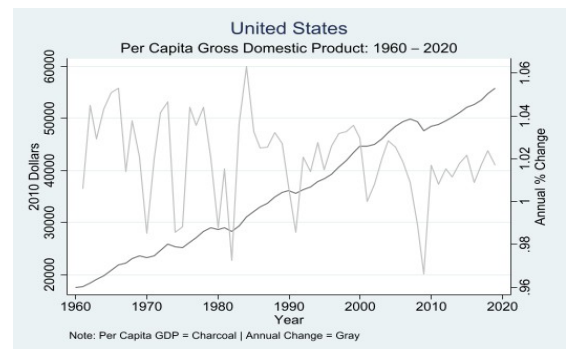
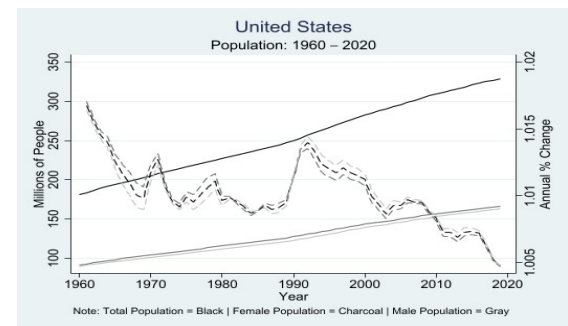
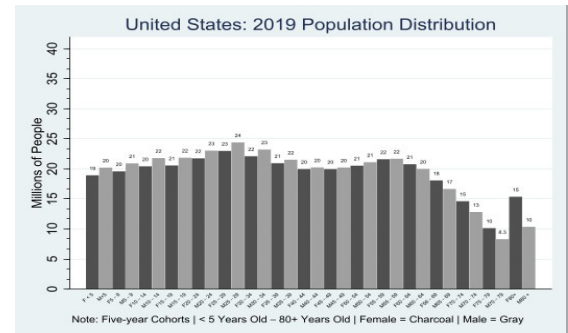
USA is the third largest country in the world in terms of number of people, behind India and China. However, it has a population of 300 million people which is almost a fifth of the second ranked India's population but is expanded in an area thrice India's size. This unique advantage is what drives the country as one of the world's largest economies and its drivers.

GDP

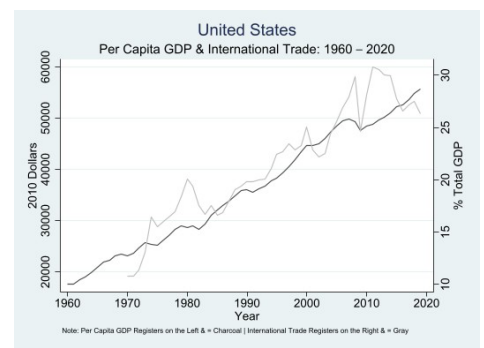
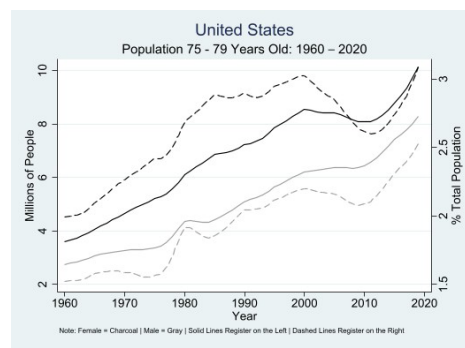
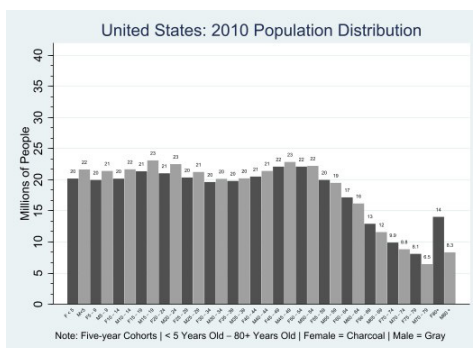
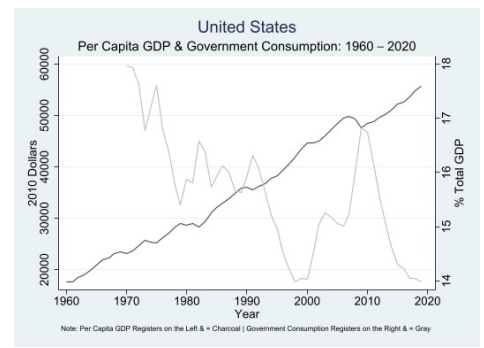
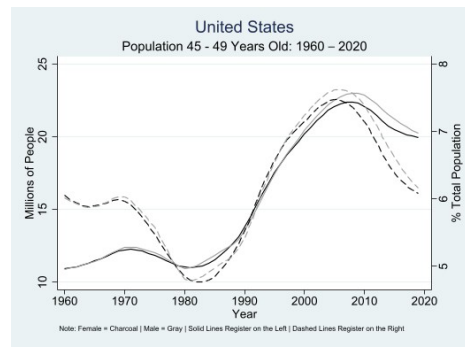
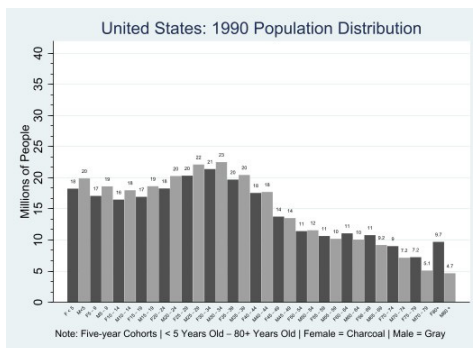
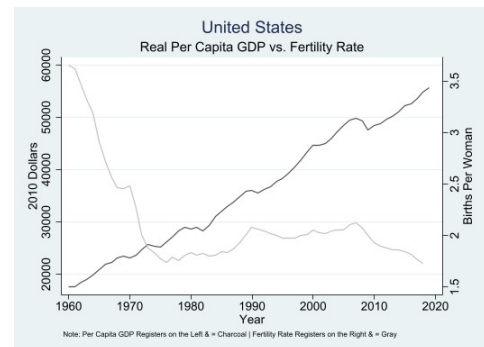
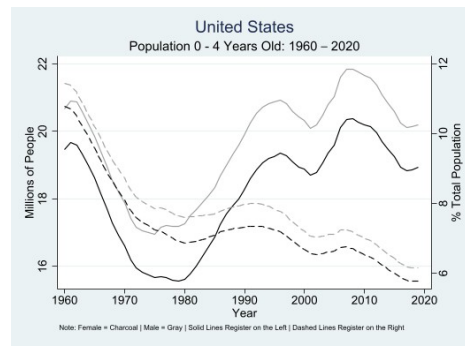
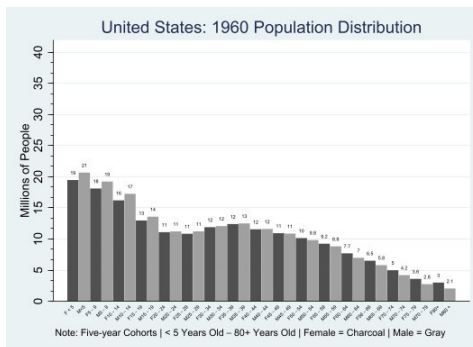
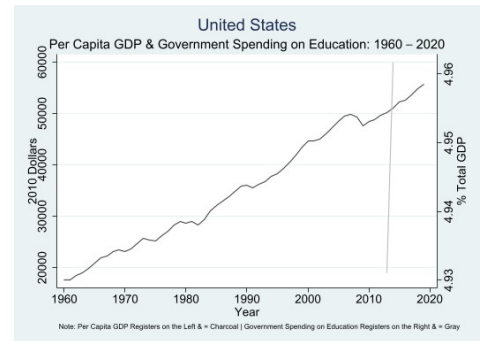
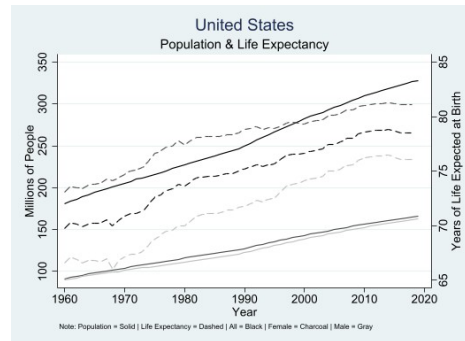
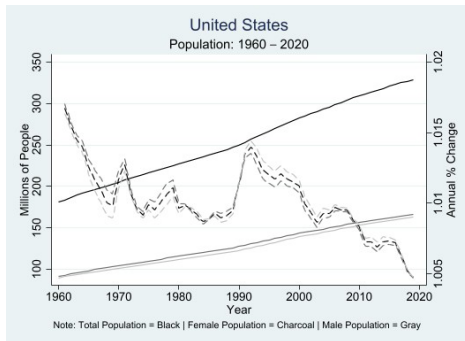
USA has the most technologically powerful economy in the world, with a per capita GDP of \$59,500. However, although American companies are at or near the forefront of technological advancements, particularly in computers, pharmaceuticals, medical, aerospace, and military technology, their edge has decreased since WWII. The country is seeing major weaknesses in the systems popping up in the form of disparities in the society leading to an increase in violence.

Urbanization

USA has been the dream place to be for the world for a long time. 'The American Dream' it used to be to own a house in the suburbs and a car with long roads to chase and peace to pride in. USA currently stands with a high 83% of population living in the urban settings. Its current rate of urbanization is 0.96% with major cities still seeing increase in population.

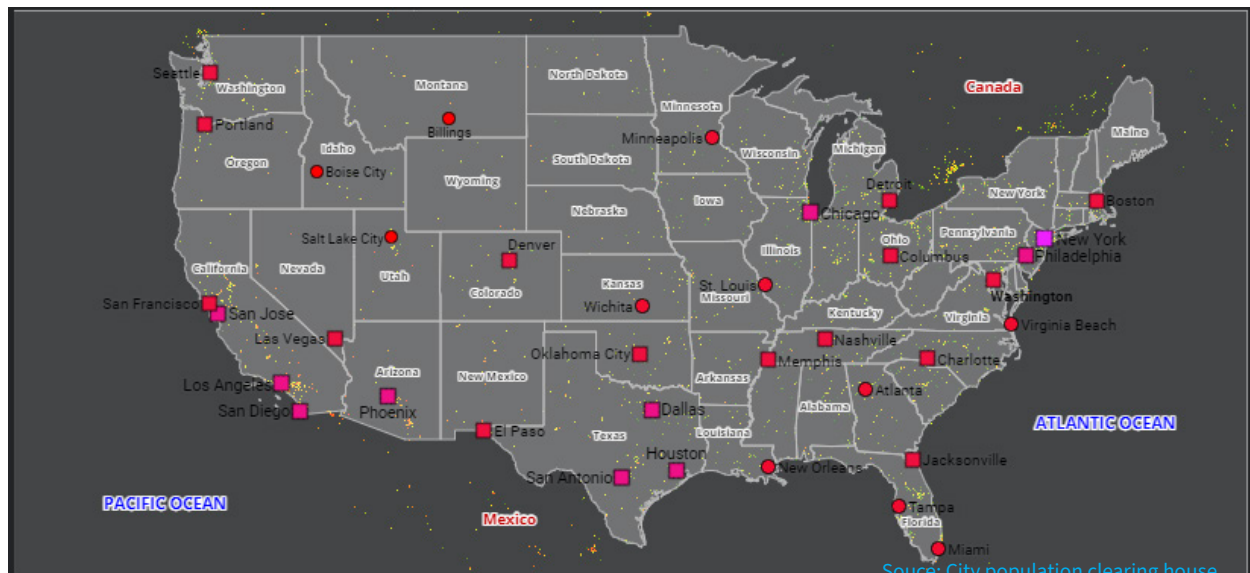


Population, gdp and urbanization trends



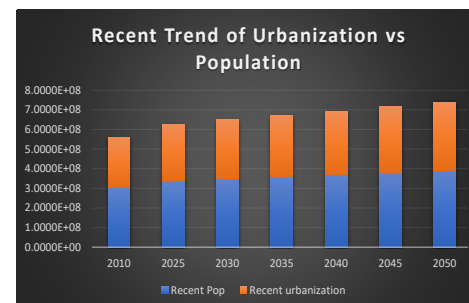
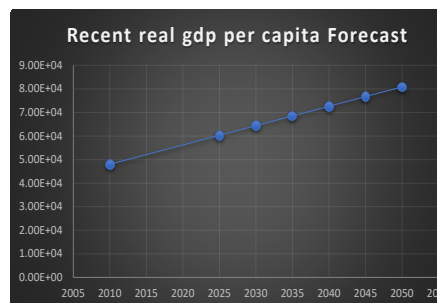
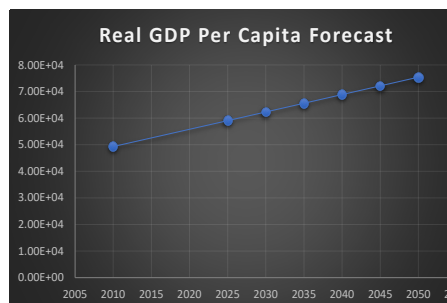
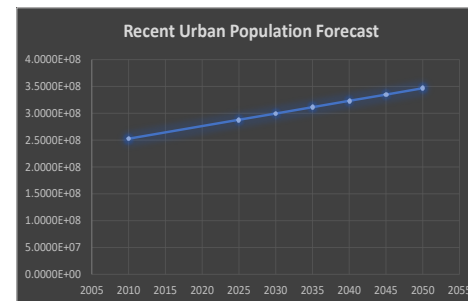
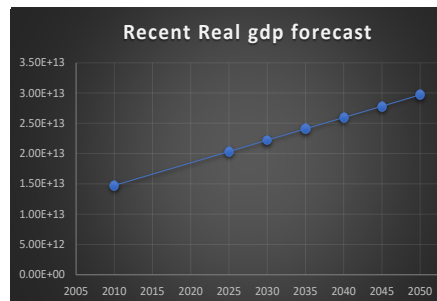
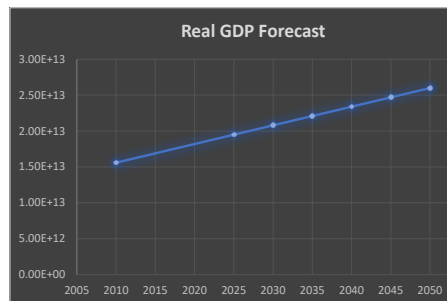
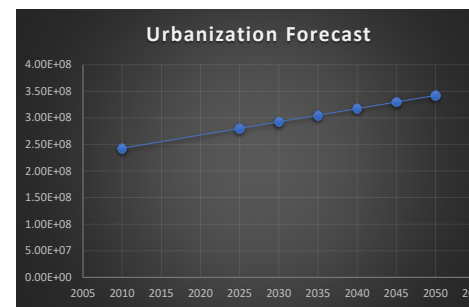
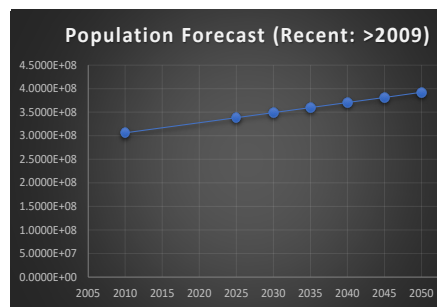
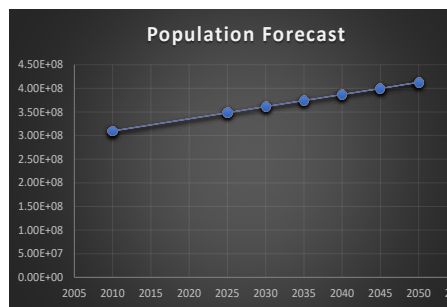
The trends of population graphs show us the distribution of ages in the range of 10 years for the population of the country for three time periods: 1960, 1990, and 2010. The difference in the graphs shows the ages showing growth and decline. The population trajectory graphs in the middle show us the growth and decline of three population ranges, young population, middle aged population and elderly populations. These graphs show us the growth and decline of these populations and the trends of their population growths help us to identify hidden socioeconomic phenomena associated with the problems of that place. These socioeconomic variables are plotted along with GDP, population and Urbanization graphs to highlight key trends of the country.

Major Areas of growth



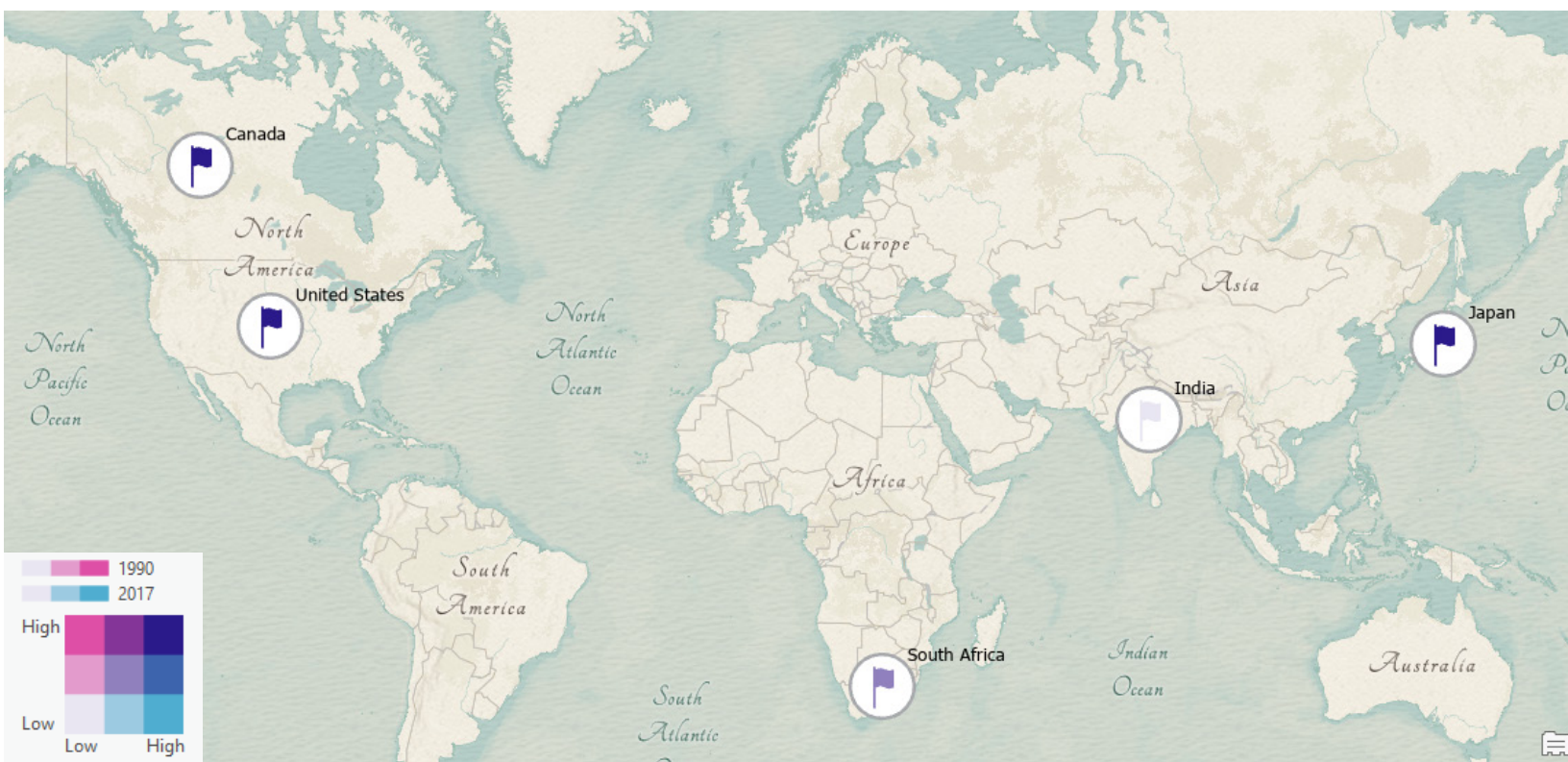
Forecasting Population, GDP and Urbanization

CAN								
constt	-4.85E+09	-4.02E+09	-5.07E+14	-7.37E+14	-1263608	-1603910	-4.75E+09	-4.48E+09
Coeff	2.57E+06	2.15E+06	2.60E+11	3.74E+11	653.1852	821.853	2483996	2354536
Year								
	Population	Recent Pop	Real GDP	Recent real gdp	Real GDP per capita	real gdp per capita	Urbanization	Recent urbanization
2010	3.10E+08	3.0606E+08	1.56E+13	1.47E+13	4.93E+04	4.80E+04	2.43E+08	2.5262E+08
2025	3.49E+08	3.3835E+08	1.95E+13	2.04E+13	5.91E+04	6.03E+04	2.80E+08	2.8794E+08
2030	3.61E+08	3.4911E+08	2.08E+13	2.22E+13	6.24E+04	6.45E+04	2.93E+08	2.9971E+08
2035	3.74E+08	3.5987E+08	2.21E+13	2.41E+13	6.56E+04	6.86E+04	3.05E+08	3.1148E+08
2040	3.87E+08	3.7063E+08	2.34E+13	2.60E+13	6.89E+04	7.27E+04	3.17E+08	3.2325E+08
2045	4.00E+08	3.8139E+08	2.47E+13	2.78E+13	7.22E+04	7.68E+04	3.30E+08	3.3503E+08
2050	4.13E+08	3.9216E+08	2.60E+13	2.97E+13	7.54E+04	8.09E+04	3.42E+08	3.4680E+08

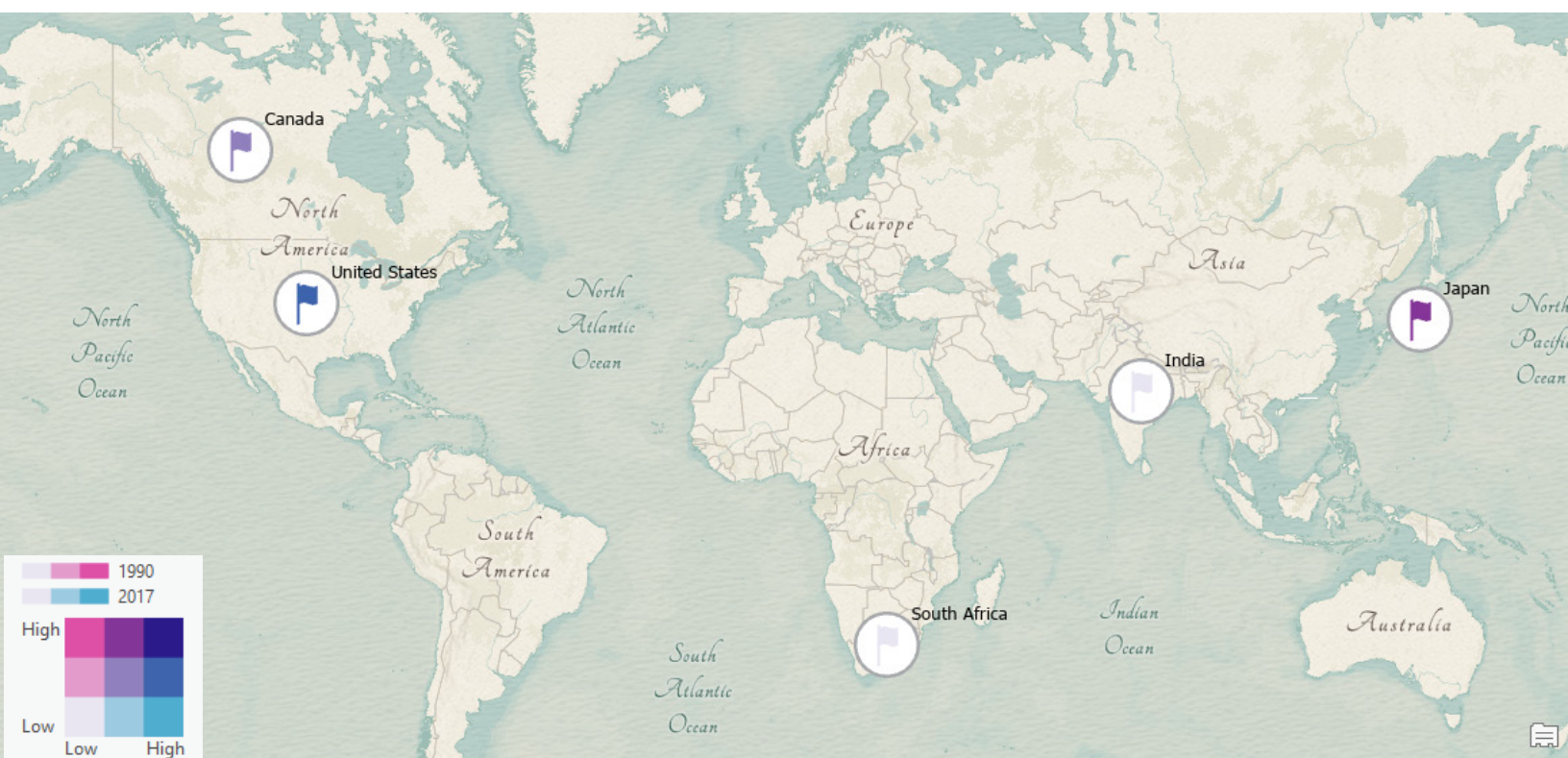


These graphs show the graphs of the country's population, GDP, and Urbanization, as forecasted in the upcoming future. Forecasting has been done using linear regression in which linear trends of these variables has been used to construct future values. In real life, trends are not at all like linear trends as the lines that we see in the graphs, however, the values and the overall growth/decline nature of the trend gives us an estimate of the overall situation in order to be able to assess the future conditions and plan accordingly. As we can see, the difference in the growth of the urban population and the real population shows us the pressure due to urbanization that is going to make urban places uninhabitable conditions. The last bar graph highlights this issue. The accompanying GDP graphs show the hindrance and the lag in growth that can be attributed to one of the obvious reason as such, or some can be attributed to underlying phenomena that are yet to be researched.

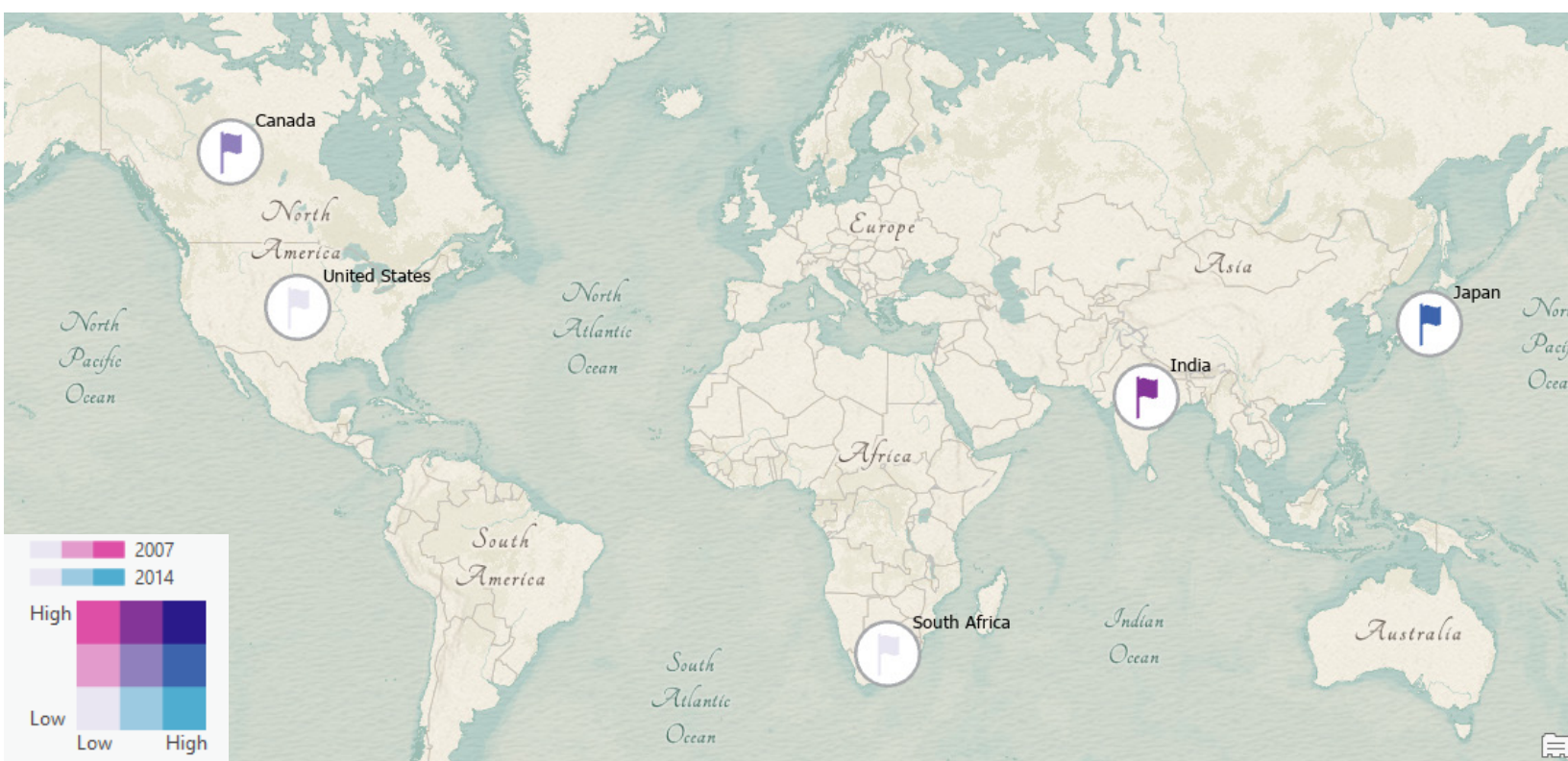
Socioeconomic Outcomes: Country Comparisons



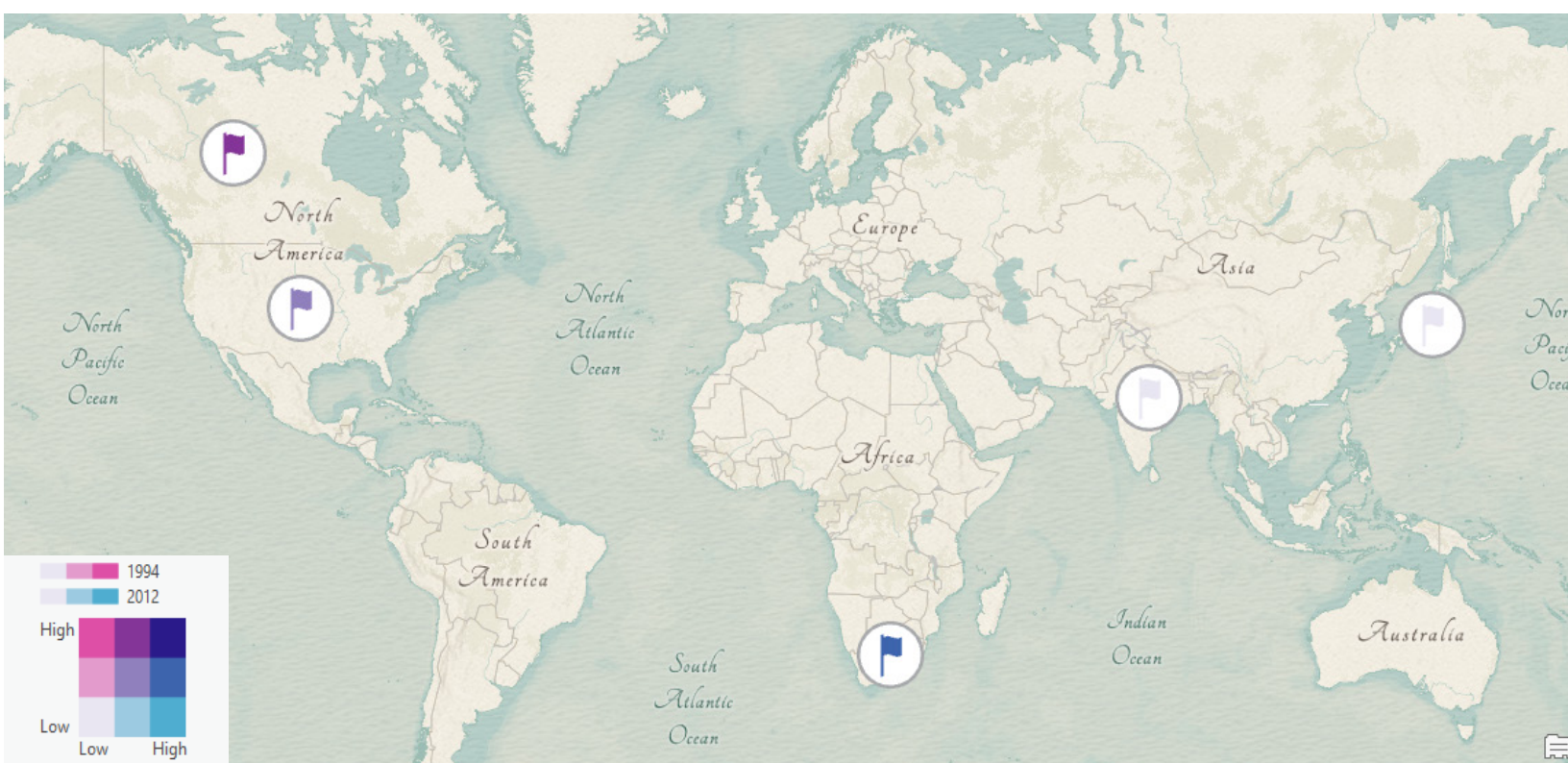
Map 1: Urban population (% of total)



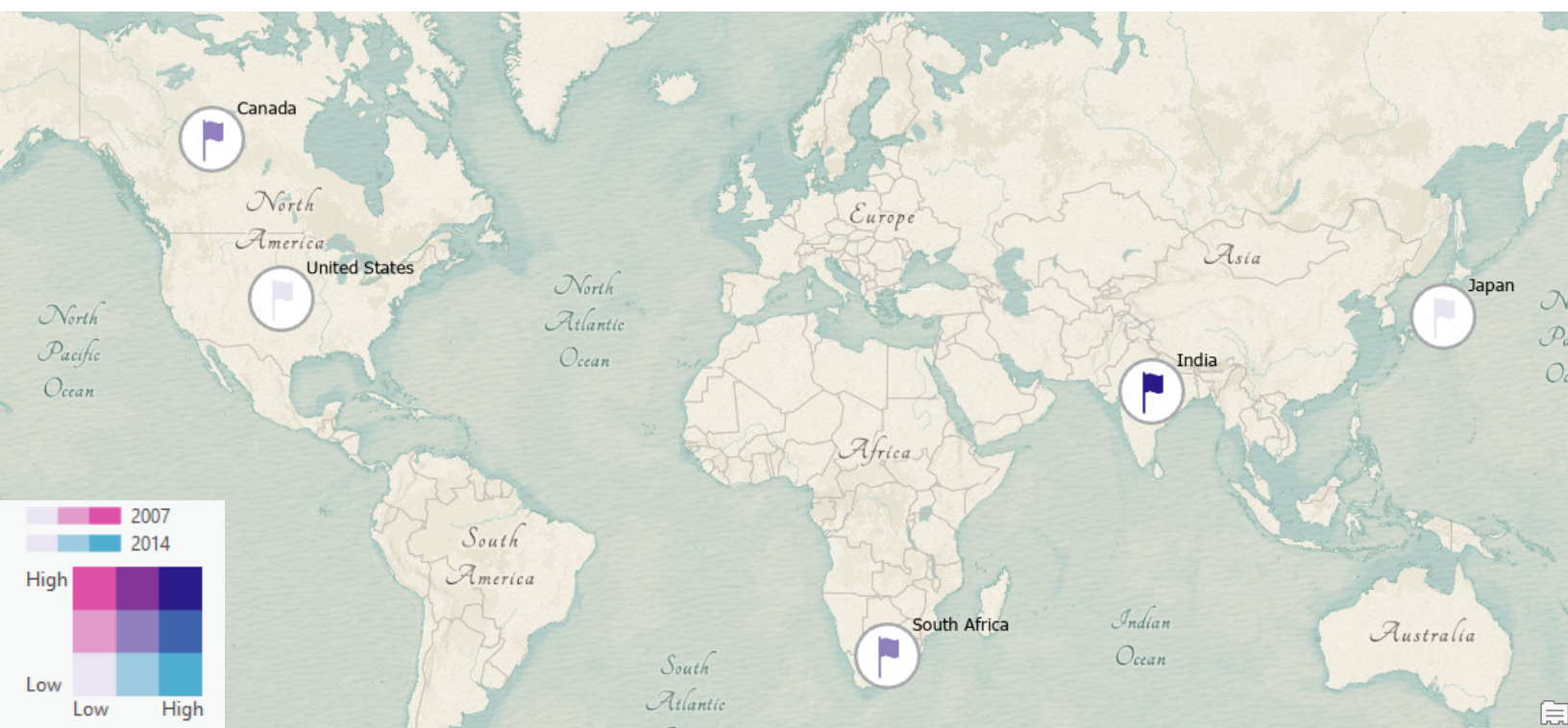
Map 2: GDP per capita (constant 2010 US\$)



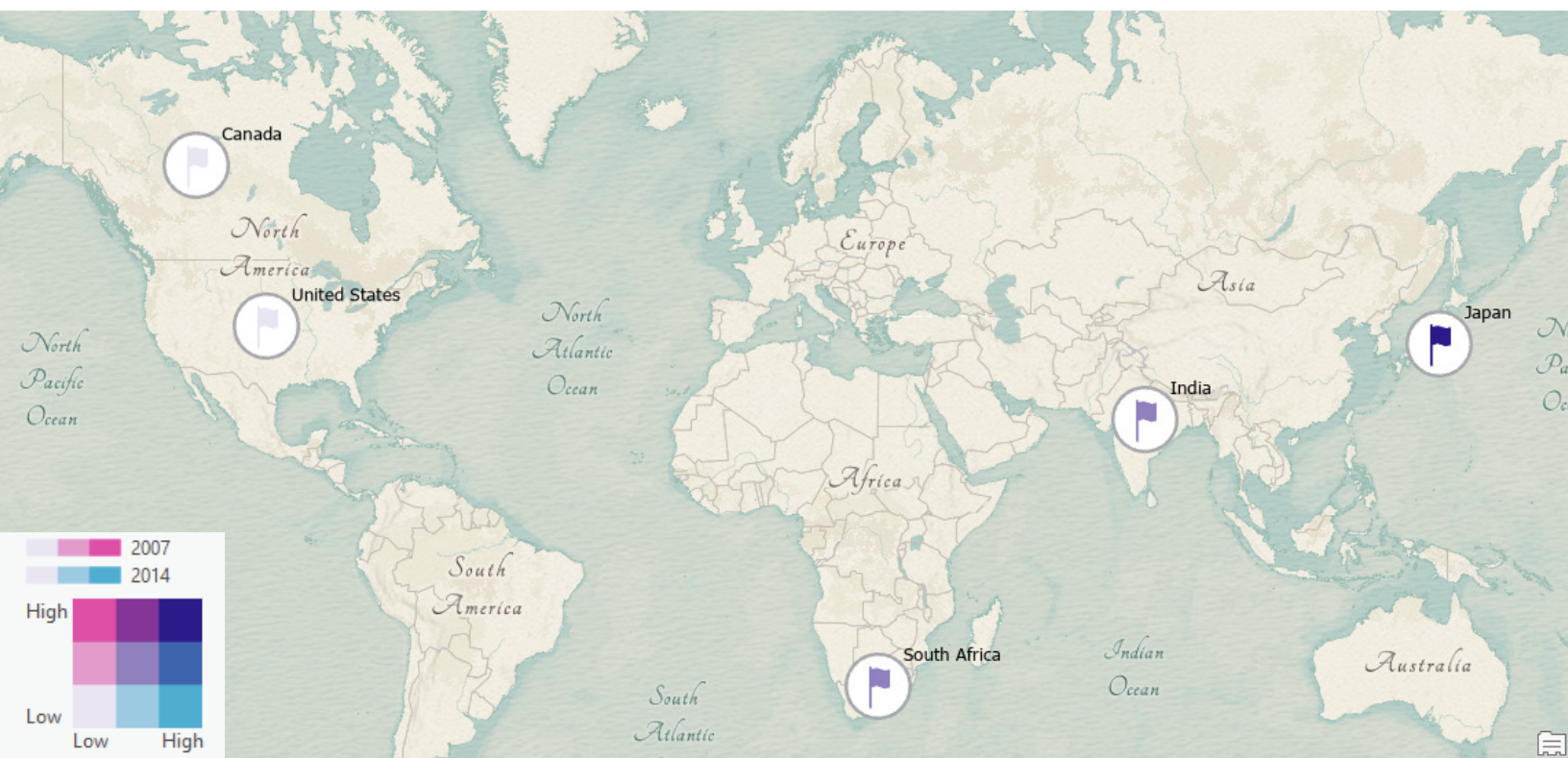
Map 3: Industry (including construction), value added (% of GDP)



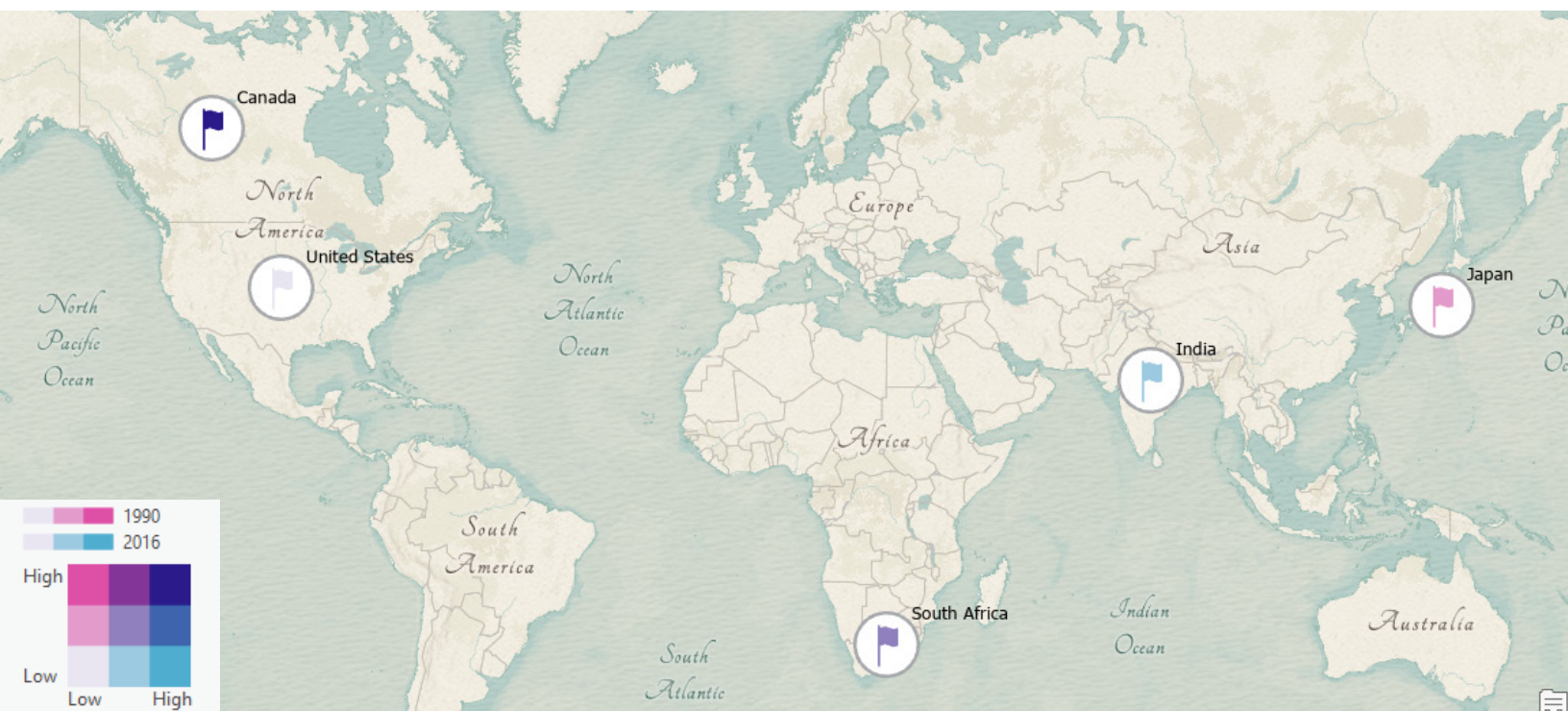
Map 4: Unemployment, total (% of total labor force) (national estimate)



Map 5: Agriculture, Value Added (% of GDP)



Map 6: Value Added, Manufacturing (% of gdp)



CONCLUSION

The article gives us a good picture of the 5 nations' major socioeconomic and development indicators. The 5 nations from different parts of the world have been analyzed using a temporal analysis where socioeconomic parameters have been analysed for all the 5 nations using World Development Indicator Data developed by World Bank. The analysis shows us how the 5 nations stand at different stages of development and growth and face different challenges going forward, and also the ones they have faced in the past.

Japan faces an aging population and is actually the only among the 5 nations showing a decreasing rate of urbanization. The recent urbanization forecast show an approximate decrease of 60000 of the population from the Urban sectors every year moving forward. The overall country is very modern with high life expectancy due to better life and health systems. The major of the threats to Japan in the future stand from climate change and its associated impacts to the oceans and the earthquakes either of the ones that have been devastating Japan since a long time in the past. However, the country still moves ahead spearheaded by its technological advances.

South Africa currently stands with 68.3% of population living in urban sectors. The rate of urbanization has been decreasing as the cities get overcrowded. It stands at 1.72% currently. The graphs show us that the major social progress was made during the 1990-2000 period which led to increase in life expectancy as well as stabilising of the gdp. in the next years. In the future, South Africa has massive potential for growth and multiple challenges to solve. Policy planners will need to take into account South Africa's falling per capita GDP and the future leaders will have this challenge at their hands. With the country looking at major urbanization moving forward, multiple urban centers should be planned for ahead of time, along with finding ways to employ the rising urban population.

In India, Covid 19 and its aftermath has left the country in peril with health systems overburdened and unemployment at an all time low. Policy planners will have to account for the country's increasingly modernizing and privatizing economy which is posing problems for the most vulnerable of the society with an increasing gap between the rich and the poor. While there is growth in the country with a rising young population willing to educate and work, the supporting systems of the country haven't improved at the same time, putting further pressure on these people.

Canada has seen a slow and steady rise in urbanization with 81% of population already living in urban settings. The urbanization rate saw a maximum rise around the 2000 mark. The current rate of urbanization of Canada stands at a low of 0.95%. The country's major source of incoming talent is from past the borders where the country has kept a lenient policy to welcome people to work in Canada and add to its labor force.

USA has been the dream place to be for the world for a long time. 'The American Dream' it used to be to own a house in the suburbs and a car with long roads to chase and peace to pride in. USA currently stands with a high 83% of population living in the urban settings. Its current rate of urbanization is 0.96% with major cities still seeing increase in population. However the country lags from major issues of income inequality and racial segregation that has led to increasing violence and protests.

Hence, we can see the different challenges faced by all the countries and the diversity of the levels of development of all the different nations. Looking at the World Development Indicator data, we get a pretty good idea of the set of recommendations required for each of the country. The article serves to point the reader into the correct direction looking to find the major problems and solutions for each of the problems that plague the nation.

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Graphs created from: STATA software
Data: World Development Indicator by World Bank
Growth Maps: City population clearing house