

Is immigration the main cause for economic growth?

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Abstract

This study examines the different causes of economic growth for 35 countries. Looking at the secondary data collected and regression analysis produced by STATA has concluded that Democracy Index and migration makes the most contribution to the growth of the economy. From these variables we can conclude that migration contributes to economic growth the most by taking work from industries that are declining and increasing consumption in the economy causing an increase in output. We can also conclude that participation rate, mortality rate, average age and tertiary education are not significant in this study that I conducted. This can suggest that these independent factors do not have a strong relationship with GDP per capita.

Literature Review

Why do people move from one country to another? Does it have an impact on economic development? In this paper I am going to analyse to what extent immigration contributes to a country's economic growth. I care about this question because I want to know what causes us to have a better standard of living and help create new jobs and opportunities as a result of economic growth. I decided to conduct a study on what factors contribute to the economic growth of a country. Whether or not immigration is the main driver of growth in the economy which is measured with GDP per capita.

Why do we care about economic growth? Economic growth enables us to have a better standard of living and increase consumption which reduces poverty levels in the economy. As a result of increased consumer spending on goods and services it will lead to new job opportunities. Hence reducing the amount of people unemployed in the economy. This will improve public services because the tax revenue collected by the government will increase which can be used in the public sector. Certain countries with positive rates of economic growth will create a virtuous cycle. Economic growth will encourage inward investment as firms seek to benefit from rising demand. Higher growth leads to improved tax revenues which can be spent on long-term public sector works, such as improved transport and communication. This helps long-term growth when businesses are confident to invest. Higher growth encourages firms to take risks - innovate and invest in future products and increase productive capacity.

From what I have researched immigration does contribute to economic growth. Primarily, immigrants choose to leave their home country in order to improve their quality of life. Economic reasons for immigrating include seeking higher wage rates, better employment opportunities, a higher standard of living and educational opportunities. As a result of these inward migration there will be a larger labour force and the new skills they bring into different countries even if they move to seek new opportunities they still can bring new ideas to expand the economy further. Inward migration will shift the long run aggregate supply (LRAS) to the right which is an increase in the economy's productive potential. When they start to work and earn higher wage rates they will start to have more disposable income which will then lead to more consumption of goods and services in the economy. This will cause an increase in aggregate demand (AD) levels in the economy. This will then result in multiple rounds of consumption. As a result a positive multiplier effect and it will keep shifting AD further but the shift gets smaller as you keep increasing AD. Since the LRAS shift before the AD shift it will not cause lots of inflationary pressure in the economy at the start. Furthermore immigration boosts the working age population and technological processes. I am testing the factors that affect economic growth particularly related to immigration. For example, the percentage of foreign born participation rate and percentage of migrants in each country.

Immigration is an important factor to economic growth because it helps to bring in innovation and boost consumption in the economy which will cause economic growth (*ceteris paribus*).

Data

I collected a range of secondary data from the internet using reliable sources such as Office of National Statistics, Organisation for Economic Co-operation and Development and others for 35 countries which included both low economically developed countries and most economically developed countries. I used an econometric software (STATA) to perform a regression on this collected data. Regression analysis is a form of inferential statistics. STATA has generated p-values to help me understand how significant the coefficient of the independent variable is. P value less than 0.05 is statistically significant; anything above can show that it may not be as significant. This lets me analyze the relationship between the independent variables and dependent variables. Furthermore, STATA will generate a t value where the coefficient is divided by the standard error. Standard error is the typical distance my data values are from the regression line. I can then observe which independent variables have a strong relationship between economic performance for a country.

The independent variables I used were migration, foreign born participation rate, mortality rate, tertiary education which are all measured in percentages and average age measured in years also Democracy Index. The dependent variable is economic growth measured in GDP per capita. I included migration because it is what I want to find out if it is the main effect of economic growth. Participation rate of foreign born workers because it is important to observe if they contribute to the labour force. Additionally if they help the production of goods and services in the economy. Mortality rate was one of my variables because healthcare can have an impact on the economy's productive potential which forecasts the real output. I look into account tertiary education as education can have a massive impact on skills used within the labour force. Age has an effect on the economy as if most of the population is in their working age then they are actively working which increases real national output. The Democracy Index was significant to include as it has an impact on freedom in the economy. It promotes oversea investments and improves the public sector causing economic growth.

Results

Variables	Mean	Standard Deviation	Minimum	Maximum
GDP per capita (\$)	44940.56	17102.63	18656	107641
Migration (%)	14.44412	9.364025	0.9	47.3

Participation Rate (%)	75.53529	7.168022	51.7	86.5
Mortality Rate (%)	79.94118	29.41031	49	155
Average Age (years)	39.47647	4.443794	27	48.2
Tertiary Education (%)	34.97059	8.266344	19	55
Democracy Index	8.046176	1.114823	4.48	9.81

Variables	Coefficient	Standard Error	t	P> (t)
Migration (%)	1072.702	262.1055	4.09	0.000
Participation Rate (%)	-558.214	307.7977	-1.81	0.081
Mortality Rate (%)	-24.589	97.05735	-0.25	0.802
Average Age (years)	9.975375	471.3133	0.02	0.983
Tertiary Education (%)	323.7381	283.5171	1.14	0.264
Democracy Index	4791.82	2807.123	1.71	0.099

A multiple regression analysis from Stata has shown that for every one percent increase in migration, GDP increases by \$1072.70. It also has a p value of 0, the significant level is $p < 0.05$ which means that the data is very statistically significant and that it has a strong positive relationship. Although the mean of this data is 14.4% and the standard deviation is 9.36 it shows that the data values are spread out over a range of values which is interesting to see that not all countries have inward

migration. For every one percent increase in foreign born participation rate, GDP decreases by \$558.21. Foreign born participation rate has a p value of 0.081 which is $p > 0.05$, however it doesn't mean it is not significant. There is still an 8% chance that it has an effect on economic growth. That might be because there was not enough data to suggest that the participation rate of foreigners has an impact on GDP per capita. It has a mean of 75.54% which is a high

percentage of foreign born workers in the labour force. However, the standard deviation is 7.17 which shows a wide spread

of values may be due to how highly skilled the workers are. Foreign born participation rates are high in the countries I have collected data from. The minimum was 51.7% and 86.5% I would expect to see a relationship between foreign born participation and GDP.

In terms of mortality rates for each one percent increase there is a decrease of \$24.59 in GDP per capita. The mean for this set of data was 79.94% and the standard deviation is 29.41. It has a wide spread which indicates that LEDCs may have weaker health care systems compared to MEDCs. Therefore as the healthcare system increases by one point there is a fall in GDP. Which shows that the data values collected are really spread out and that shows that there is a massive variation around the mean. As a result of less developed and more developed countries. Mortality rates have a p value of 0.802 which is greater than 0.05 significant therefore it means that this data is not statistically significant.

For a one year increase in average age of the population, GDP increases by \$9.98. This tells us that age of the population doesn't make much of a difference in GDP per capita. The p value is 0.983 which is above the significance value so therefore average age is not significant at all. It also has a mean value of 39.48 which shows that on average most of the countries population is in their working age as there is not a huge spread of data values as it has a standard deviation of 4.44. This is interesting as this means that there is not much pressure on supporting elderly people as most people are still in the labour force working and factors of production are used at its maximum.

If you increase the tertiary education level by one percent it will lead to an \$323.78 increase in GDP per capita. This has a p value of 0.264 shows that it is 26.4% significant which is not below 5% therefore we can not conclude that there is a relationship between tertiary education and GDP per capita. It is unusual to see that tertiary education is not at a higher percentage; it has a mean of 34.97% and a standard deviation of 8.27. As tertiary education can help promote economic growth through the skills and knowledge they have to best help the allocation of resources.

Finally a one point increase in the Democracy Index will result in a significant increase in GDP by \$4791.82. The mean for this independent variable is 8.046176 with standard deviation of 1.114823 stating that the data values are widespread; they are all located near the mean value. This set of data values have a p value of 0.099 which is close to 0.05 significance level. It concludes that it has a 9.9% chance of being an effect of economic growth. This is interesting because we will never take the democracy index into account when talking about economic growth.

Discussion

The results collected of the migration variable implies that there is enough evidence to prove that immigration does have an effect on economic growth. Which makes sense because migration leads to an increase in the labour force which is an increase in the factors of production increasing the economy's productive potential which will then lead to successive rounds of consumer spending shifting AD leading to an increase in real national output therefore economic growth is achieved. Migration also boosts the working age population which means people are in work for longer periods. It also fills important niches both in fast growing and declining sectors in the economy. This will reduce structural unemployment for the economy.

Participation rate is the measure of the proportion of the country's working-age population that are engaged in working or actively seeking work. This shows that participation rate has a negative effect on GDP. This could be because the workers are less productive than domestic workers and have less skills to use in the workforce. This may be due to language barriers and geographic immobility of labour; the workers don't have the skills to work in different industries. Therefore less output is produced and that factors of production are not fully employed in the economy; spare capacity in the economy will lead to a decrease in productive capacity.

We also see a negative relationship between mortality rate and GDP. This is realistic because as more people pass away then there will be a fall in output as there will be a decline in the labor force. This can indicate that there is a difference in healthcare systems between developed and developing countries. This is due to how highly the doctors and healthcare professionals are and how equipped they are. The more equipped a system is the more support and help it will provide. Furthermore, it may depend on whether healthcare is free or not and if it's provided by the public sector or the private sector. If it's relatively cheap then more people can afford healthcare which leads to them being highly productive and increasing the real output. For most countries I used to analyze their healthcare system is not affordable compared to others therefore it has a high mean value for mortality rates. This shows that there isn't a strong relationship between mortality rate and GDP per capita.

As economists we assume that as the majority of the population is in their working age, we will think that they will be the most efficient as labour since there will be an increase in productivity which leads to more output produced hence increasing economic growth. Due to the p-value not being statistically significant it means that average age has no impact on the economies GDP level. It may be because the evidence collected wasn't enough. Furthermore may be because there was too much variability.

From the data we can conclude that the more educated the population is the higher the GDP as they will have had the extra skills and knowledge to make the economy more efficient and increase the real national output with less misallocation of resources. However, they may not be able to use the skills and knowledge as industries change over time and maybe the skills they gained are not as sufficient as the time they learnt them. Furthermore there is a time lag in education. It takes time for them to learn and gain these qualifications and then use them in the workforce. There is insufficient evidence and that tertiary education is not an easy variable to measure. I gathered data for 4 year degrees or higher. As some people may ask what is considered as tertiary education so people may decide that a degree counts towards tertiary education so make them think a master degree and further research goes toward this variable.

For the countries I have researched, both LEDCs and MEDCs have a similar Democracy Index as there is not a lot of spread between each country's data value. It does show some relationship between the two variables however not a really strong correlation. The more democratic the country is, the higher the GDP. We can assume that as people have the right to vote for members of the parliament that are most likely to vote for the person who is going to make a significant contribution to the economy. Democracy is associated with higher human capital accumulation, lower inflation, lower political instability, and higher economic freedom. Furthermore, there is more foreign direct investment (FDI) in democratic countries than the non-democratic ones. FDI can promote economic growth by increasing investment on capital stock, improving per capita income and lowering extreme poverty. Therefore how democratic a country does impact the economic development of that country.

Conclusion

My key finding is that migration and Democracy Index are the two independent variables that have the most impact on a country's economic growth. This is because the secondary data collected from reliable sources show that there is a strong relationship between the independent and dependent variables. It has a coefficient over \$1000 which shows that a small increase in the independent factor will cause

the GDP per capita to rise significantly by \$1072.70 and \$4791.82. The p value for migration is zero so it tells us that there definitely is a strong positive relationship. Although the Democracy Index has a p value of more than 5% significance level we can still make a claim that it has a 9.9% chance of having a positive impact on GDP. It may be due to the fact that we didn't have enough data as I only used 35 countries in total for this research project.

These findings are important because it will then allow me to examine further how democracy index and migration lead to a significant increase in gross domestic product. Understanding

that migration is a main contributor to economic growth. The next study I can conduct is where the income they receive ends up going to. Either into the circular flow by injections and withdrawals or going back to their own country- remittance. Furthermore, investigating if migration happens does it improve standard of living and health compared to their original country they were in.

To improve my study I could have collected more data from more countries around the world. This will make it more representative and easier to make conclusions as I will have more data values to conclude my research question. I could have also explored more factors that may have an impact on economic development such as; the availability of land, availability of natural resources, technological advances. Moreover I could have investigated the value of the currency, interest rates, wage rates and features of government spending as it will have an effect on consumption, investment, government spending and net trade which makes up the aggregate demand levels in the economy.

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