Figures 1 and 2

As of 2024, Slovenia has a population of 2.118 million people (Worldometer, 2024). I measure the change in population of Slovenia between 1990 and 2022.

Figure 1.1 shows the population of Slovenia between 1990 and 2022. This data is provided by Eurostat. The period begins with decrease in population until 1999, after which the population increases. In absolute terms, there has been an increase of 120595 in population between 1990 and 2022. This adds up to an approximate of 3769 rise in absolute population per year, or a 0.1834578531% increase in population per year. This is found through using the compounding formula.
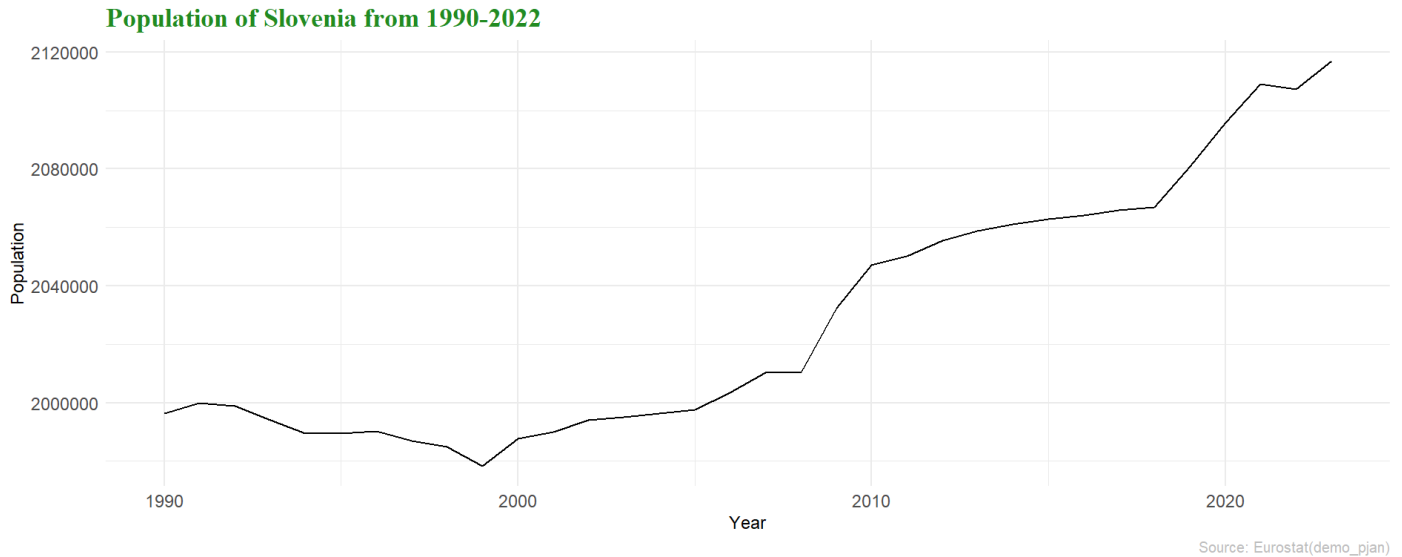

Figure 1.1

Population can increase or decrease due to an array of reasons – change in net immigration flows or change in net births. The total population of a country is usually measured as a sum of net immigration and net births. This can be expressed as:

Population = Immigration – Emigration + Births – Deaths + Statistical Adjustment

Here,

Net Immigration = Immigration – Emigration and

Net Births = Births – Deaths

An additional term called Statistical Adjustment is added to denote any unaccounted change in population. This is usually a small value as it is covering only the errors made in calculations.

Hence, over years, a change in population can be expressed as:

$$\Delta Population = \Delta Immigration - \Delta Emigration + \Delta Births - \Delta Deaths + Statistical\ Adjustment$$
$$\Delta Population = \Delta Net\ Immigration + \Delta Net\ Births + Statistical\ Adjustment$$

It is interesting to note how much net immigration and net births respectively contribute to this change in population. Fig 1.2 represents net immigration in Slovenia between 1990 and 2022. The top panel shows two lines, one blue and one pink. The blue line shows immigration into Slovenia, and the pink line shows emigration out of Slovenia. The bottom panel shows net immigration into Slovenia.
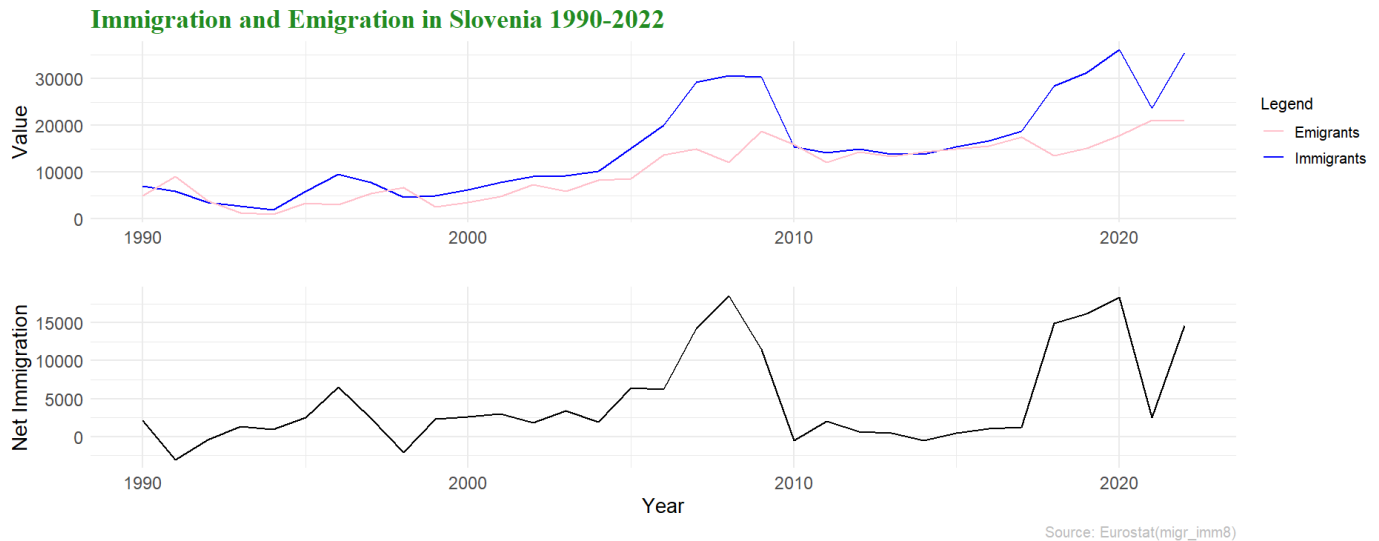
Immigration and Emigration in Slovenia 1990-2022

Source: Eurostat(migr_imm8)

Figure 1.2

For most years, net immigration has been positive – this means that more people have wanted to move into Slovenia than move out. Immigration in outstandingly high on two instances, in 2007-09 and 2018-22. Apart from a few outliers, net immigration has been roughly between -2500 and 7500. These outliers could be because of geopolitical conditions in surrounding countries being poor, or because of stable conditions in Slovenia itself that incentivized people to immigrate to Slovenia.

2007-09 was the time of the Great Recession, which could have also incentivized the increase in net immigration. Also, COVID-19 hit across the world in 2020. Slovenia was able to manage the first wave of COVID-19 promptly (Ružić Gorenjec et al., 2021). This might have incentivised more immigration into the country.

All in all, net immigration plays a major role in net change in population. On average, net immigration across 1990-2022 is about 4671 per year, and hence is a deciding factor in population increase/decrease in Slovenia.

Figures 3 and 4

What is unemployment? How is it measured? Has unemployment increased or decreased over the years? What about poverty? Are they related to each other? Is there a difference between female unemployment vs. poverty and male unemployment vs. poverty? To answer all these questions, I create two figures – both in the time periods 2009 – 2023.

Unemployed are those who are willing to work, but either are out of work, or start working in the next two weeks. This is a proportion of the labour force (World Bank, 2024)

Figure 2.1 shows Unemployment in Slovenia based on sex. Two patterns emerge from the graph. First, since 2011, unemployment in females has been more than unemployment in males. This could be from gender roles rooted in society, among other reasons.

Second, unemployment was increasing till 2013, after which it started decreasing in both sexes, and consequently, in total as well.

Another spike in unemployment is seen in 2020, which could be due to the ongoing COVID-19 pandemic at the time.
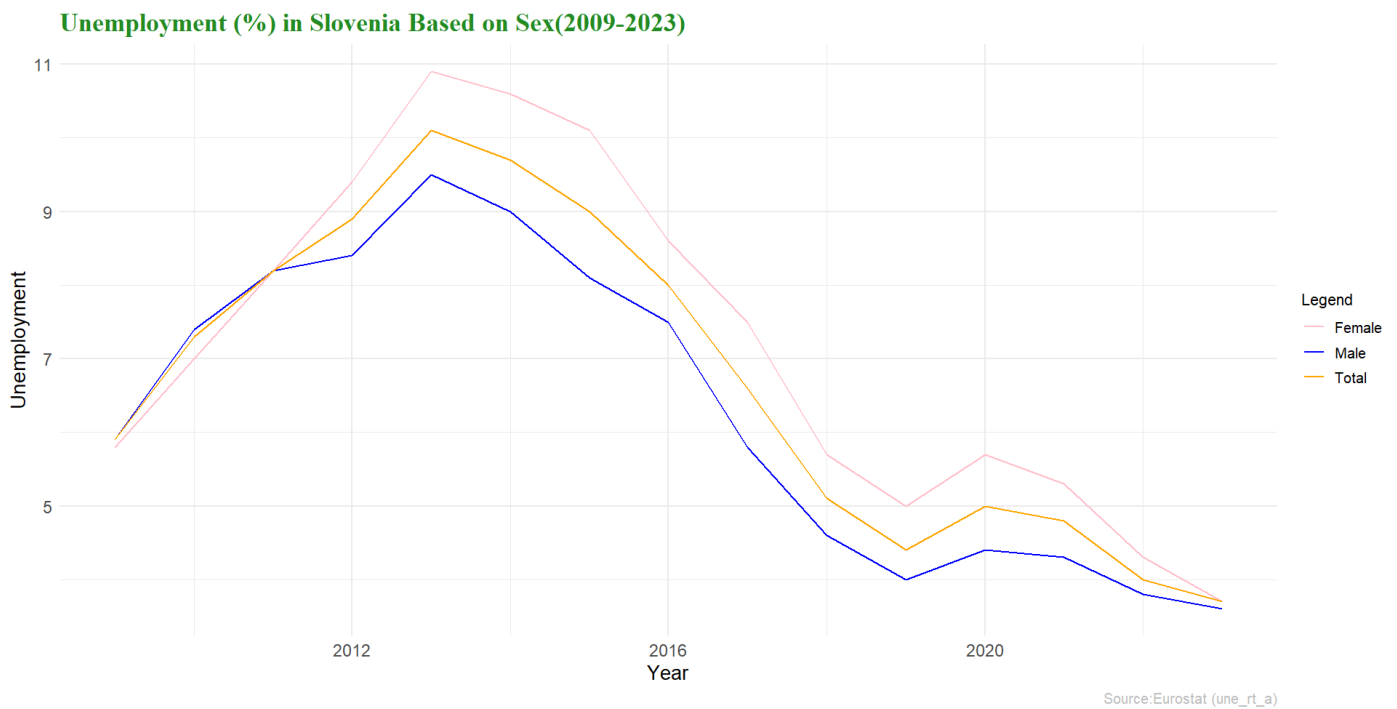
Figure 2.1

Overall, between 2009 and 2023, unemployment has reduced by 2.2 percentage points – 2.1 percentage points in females and 2.3 percentage points in males. This, in percentage, means unemployment for females has decreased by 36.2%. For males, unemployment has decreased by 39%. In total, unemployment decreased by 37.3% in 14 years.

$$Unemployment\ Rate = \frac{Number\ of\ Unemployed\ people}{Labour\ Force}$$

So, unemployment Rate changes when either the number of unemployed people changes or the labour force changes.

Figure 2.2

There are a lot of different ways of measuring poverty, making it essential to mention the way that has been used here. People are said to be in poverty if their income is less than 60% of mean equivalised income.

Figure 2.2 shows three panels. The top panel compares female unemployment with female poverty rate. Although for a few data points, poverty and unemployment are directly related, this is not true for all the points. The second panel compares unemployment in males against poverty in males and the third panel compares total unemployment with total poverty.

There is no clear correlation between the two. However, overall, with an increase in unemployment rate, poverty rate does seem to increase.

In the first panel, with a 7.2 percentage point rise in unemployment in females, poverty rose by 1.7 percentage points. This effect was more pronounced in males – with a 5.9 percentage point rise in unemployment, poverty rose by 1.3 percentage points.

It is interesting that at 5.8% unemployment in females, 16% females were in poverty. When the same figure is compared for males – at 5.8% unemployment in males, only 14.5% of them were in poverty. This is consistently true for all values, that is, an unemployment rate translates to a lower poverty rate in males than it does in females. Unemployed are those who are actively seeking work. This again could be explained by social norms. If a female is actively seeking work, chances are she doesn't have a choice but to work, that is, current household income is not enough. It is a necessity for the female to work. Another reason of this could be, females are more likely to head a single parent household, associated with higher poverty risks.
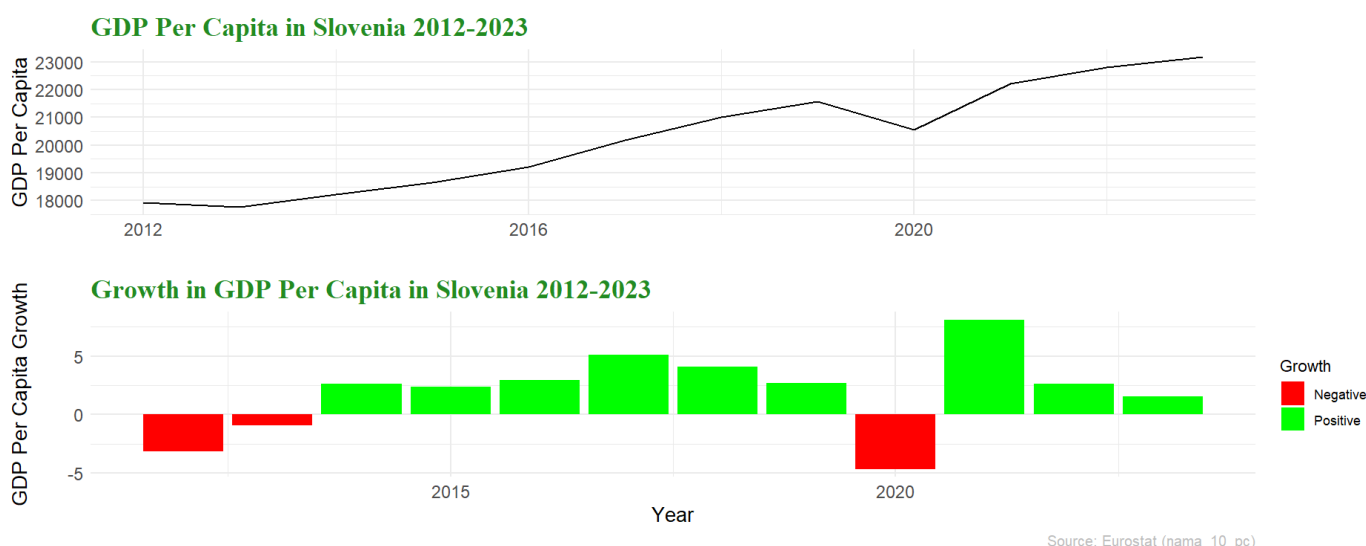
Figures 5 and 6

GDP Per Capita in Slovenia 2012-2023

Growth in GDP Per Capita in Slovenia 2012-2023

Source: Eurostat (nama_10_pc)

Figure 3.1

Assessing the growth in GDP per capita in Slovenia, the natural first question is – what is GDP per capita?

GDP per capita can intuitively be understood as how much every person on average contributes to the GDP of Slovenia. In figure 3.1, there are two panels. The top panel shows GDP per capita in absolute numbers. GDP per capita falls from 2012-2013 and then rises. It falls again in 2020. The bottom panel shows the growth percentage of the GDP per capita represented on the top panel. We see that there is negative growth in the first two periods, 2012 and 2013. This means GDP per capita decreased in the next year as compared to the base year. After 2013, is positive and increasing for most years until 2018. Growth becomes negative again in 2020, which can be justified by the hit of the COVID 19 pandemic. Slovenia was quick at managing the first wave and hence the GDP per capita grew immediately next year in 2021. However, Slovenia did not handle the second wave well, which explains the fact that GDP growth fell massively again (Ružić Gorenjec et al., 2021). This is calculated from the formula:

$$GDP\ Growth\ \% = \frac{GDP_t - GDP_{t-1}}{GDP_{t-1}} \times 100$$

There are three main methods of calculating GDP – expenditure, income and production method. We pick the expenditure method to see how much this growth depends on factors.

$$GDPPC = \frac{Consumption + Investment + Government\ Expenditure + Net\ Exports}{Population}$$

So, $\Delta\ GDPPC = \frac{\Delta\ Consumption + \Delta\ Investment + \Delta\ Government\ Expenditure + \Delta\ Net\ Exports}{\Delta\ Population}$
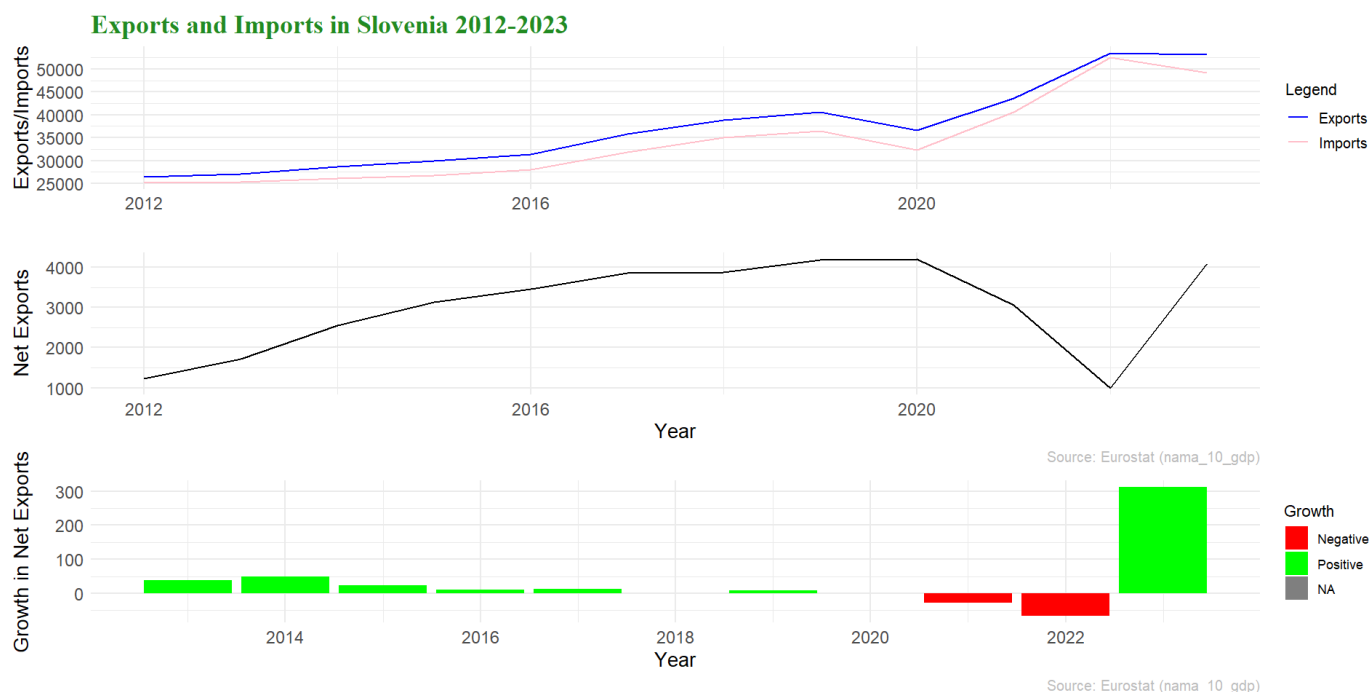
Where net exports = exports – imports

Figure 3.2

Figure 3.2 has three panels, the first one shows exports and imports for each year separately. For all years, exports of Slovenia are more than imports of Slovenia. This is a good sign for their GDP growth. The second panel shows Net Exports, which as anticipated are positive for all years. Net exports increase continuously till 2020, after which they fall sharply in 2021. However, they quickly catch the momentum of 2020 and increase again in 2022. The first panel shows that the reason for net exports going back to being at high levels in 2022 is because of imports decreasing (compared with 2021), not exports increasing. The third panel shows the growth in net exports in these years. The growth almost consistently decreased till 2018. 2022 to 2023 had a growth rate of approximately 313%.

For the given years, mean GDP per capita in Slovenia is 20277.5 euros, whereas the mean net exports are 3027.483 euros. This illustrates that net exports do not play a role as big as consumption, investment or government expenditure in the GDP per capita, and consequently its growth.

Figures 7 and 8

Now, I compare the change in prices of Slovenia, along with where it stands in terms of growth in prices with its neighbouring countries.

HICP is the Harmonized Index of Consumer Prices, an index used to measure inflation in countries across the EU. It takes a standardized basket of goods and tracks how prices have changed over time. This basket includes food, housing, transportation, education and other goods and services.

Figure 4.1 shows the HICP of Slovenia between 1996 and 2024. The base year is taken as 2015, where the HICP is 100. For the most part, there has only been an increase in the HICP. Exception to this is the period of 2014-16, where the HICP decreased and 2021 where it decreased again. This could be because of deflationary pressures

in the economy. From 1996 to 2024, the price of the same basket of goods has increased from 43.88 to 129.08. This is a 194.2% increase in 28 years. This equates to an average of 6.9 percentage points growth per year. This growth has been fairly consistent – showing steady inflation. This could reflect growth and efforts by the government to keep inflation in check.
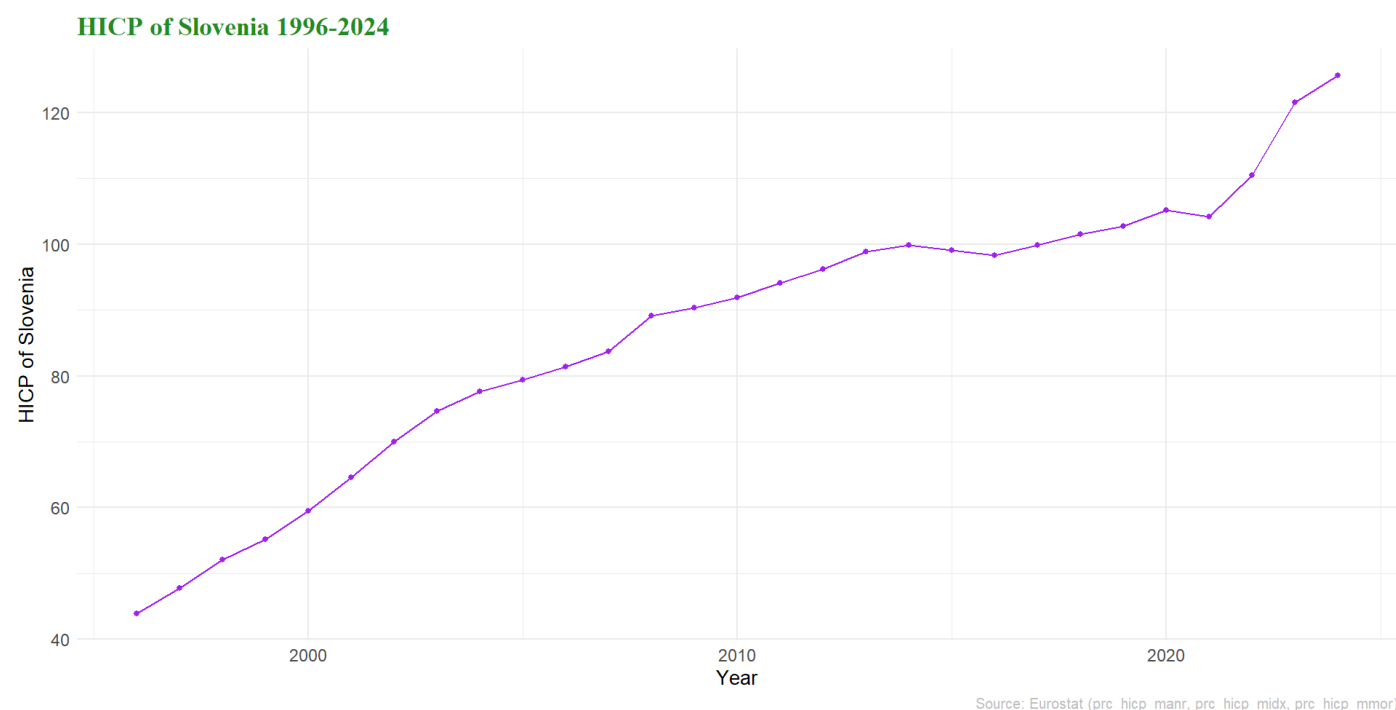

HICP of Slovenia 1996-2024

Source: Eurostat (prc_hicp_manr, prc_hicp_midx, prc_hicp_mmor)

Figure 4.1

Another interesting observation is the spike in HICP post 2021. This could be explained by post COVID 19 pressures, since there were disruptions in global supply chains during the pandemic which could have caused inflation.

Although HICP does not indicate how expensive a country is, or how expensive it has gotten over time, it is still a great measure to see change in prices over time – which shows how much more expensive it has gotten than it was a certain number of years ago.

HICP in Slovenia and Neighbouring Countries

Source: Eurostat (prc_hicp_manr, prc_hicp_midx, prc_hicp_mmor)

Figure 4.2

Slovenia has four neighbouring countries – Austria, Croatia, Hungary and Italy. To compare how their prices have increased, look at figure 4.2. This figure has three panels, the top one shows the HICP of these countries in 2024. Hungary is on top, indicating it has had the greatest change in prices (considering 2015 = 100), whereas Italy has had the least. This does not mean that Italy is the least expensive, it just illustrates that it has undergone the least inflation of the five countries shown. The graph on the bottom panel shows the HICP of the same countries in 1998. Here, Hungary has the least HICP, which is more than 30 points less than Austria, with the highest HICP – indicating that Hungary had lower inflationary pressures at the time. The middle panel shows HICP of these five countries in 2011, the year between 2024 and 1998. All four countries have very close HICPs – with Slovenia being the highest and Austria being the lowest.

Overall, Slovenia has been able to manage its inflation well. Although it had the highest HICP of its neighbours in 2011, it likely introduced policies to manage this inflation and contained inflation to have the 2nd lowest inflation among its neighbours.

References

European Commission (2024). *Emigrants by age, sex and broad group of citizenship* [online]. Available at: https://ec.europa.eu/eurostat/databrowser/view/migr_emi2__custom_13974728/default/table?lang=en [Accessed 3 Dec. 2024].

European Commission (2024). *General government expenditure by function* [online]. Available at: https://ec.europa.eu/eurostat/databrowser/view/tipsna40__custom_13994617/default/table?lang=en [Accessed 3 Dec. 2024].

European Commission (2024). *Harmonised indices of consumer prices (HICP) – monthly data* [online]. Available at: https://ec.europa.eu/eurostat/databrowser/view/ei_cphi_m__custom_14034181/default/table?lang=en [Accessed 3 Dec. 2024].

European Commission (2024). *Immigrants by age, sex and broad group of citizenship* [online]. Available at: https://ec.europa.eu/eurostat/databrowser/view/migr_imm8__custom_13974725/default/table?lang=en [Accessed 3 Dec. 2024].

European Commission (2024). *People at risk of poverty or social exclusion* [online]. Available at: https://ec.europa.eu/eurostat/databrowser/view/ilc_li02__custom_13995601/default/table?lang=en [Accessed 3 Dec. 2024].

European Commission (2024). *Population on 1 January by age and sex* [online]. Available at: https://ec.europa.eu/eurostat/databrowser/view/demo_pjan__custom_13974720/default/table?lang=en [Accessed 3 Dec. 2024].

European Commission (2024). *Real GDP per capita* [online]. Available at: https://ec.europa.eu/eurostat/databrowser/view/tec00110__custom_13994344/default/table?lang=en [Accessed 3 Dec. 2024].

European Commission (2024). *Unemployment rates by sex and age – annual data* [online]. Available at: https://ec.europa.eu/eurostat/databrowser/view/tesem120__custom_13995330/default/table?lang=en [Accessed 3 Dec. 2024].

Ružić Gorenjec, N., Kejžar, N., Manevski, D., Pohar Perme, M., Vratanar, B. and Blagus, R. (2021). *COVID-19 in Slovenia, from a Success Story to Disaster: What Lessons Can Be Learned?* Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC8541564/ [Accessed 3 Dec. 2024].

World Bank (2024). *Unemployment, total (% of total labor force) (national estimate)* [online]. Available at: https://databank.worldbank.org/metadataglossary/world-development-indicators/series/SL.UEM.TOTL.NE.ZS [Accessed 3 Dec. 2024].

Worldometer (2024). *Slovenia population* [online]. Available at: https://www.worldometers.info/world-population/slovenia-population/ [Accessed 3 Dec. 2024].