The Principality of Andorra: A Comparative Macroeconomic Analysis

Aquest treball de recerca és un treball impulsat per l'Empresa Familiar Andorrana (EFA), que, com associació privada, té interès a desenvolupar estudis que puguin aportar informació objectiva i d'interès general per a la seva divulgació, i sobretot per a l'ús específic dels que dissenyen les polítiques del país. És una proposta per enriquir el debat tècnic i polític.

Quan vam iniciar els preparatius per a aquest estudi, que va tenir lloc a final del 2021 però que es va desenvolupar durant el 2022, la idea era poder emmarcar en un treball determinades variables i valors, com són els que es podrien considerar propis d'un quadre clàssic de macroeconomia d'un país.

A les empreses familiars, és evident que ens preocupa el deute i la seva evolució, ens preocupa el producte interior brut i la composició, quines són les tendències i l'evolució, també com es tradueix en termes de riquesa per persona, de renda nacional i saber si això és comparable amb altres països. Per tenir aquest element de comparabilitat, s'han analitzat les dades de països que d'alguna manera es puguin comparar amb Andorra, ja sigui per la dimensió geogràfica o dimensió poblacional, per veure quines són les seves dades macroeconòmiques, i això amb una perspectiva temporal, que permeti veure quina és l'evolució, quins són els creixements o decreixements.

Tot això es fa amb l'ànim de proporcionar informació valuosa per a una anàlisi crítica de com estem fent la política econòmica els darrers cinquanta anys al nostre país. L'IESE és una institució de prestigi, reputada, independent, amb capacitat d'anàlisi i amb capacitat tècnica per desenvolupar un treball d'aquest tipus.

No hi ha tota la informació estadística que voldríem de base, malgrat haver fet un esforç els darrers anys. La que tenim i la que s'ha utilitzat és la que d'alguna manera surt del Servei d'Estadística del Govern d'Andorra, de les dades que el Consell General va aprovant en les liquidacions dels pressupostos de l'Estat i, de forma molt important, del Fons Monetari Internacional, del qual Andorra és membre.

Per tant, l'EFA va creure oportú fer un balanç macroeconòmic i comparable amb altres països en aquest moment en el qual estem a punt de prendre una decisió política important que afecta la sobirania, com ho és un acord amb la

Unió Europea. Per tant, l'informe constata un perfil de renda per càpita moderada, perquè no ha crescut molt des del 1970 i menys si la comparem amb països similars, on ha crescut molt més. Altrament, hem de fer una lectura positiva, tenim moltes més persones, tenim més recursos humans que fa cinquanta anys, però també tenim amenaces, com són la legislació vigent en matèria de protecció i de seguretat social que posa en dubte la capacitat financera de la pròpia CASS per resoldre els compromisos adquirits i per extensió el mateix Govern, perquè és d'alguna manera subsidiari de la CASS pel que fa als compromisos adquirits, tant en l'àmbit de malaltia com en el de la vellesa.

Estimem el nostre país, ens agrada la nostra sobirania i sabem que la sobirania té un cost, i aquest cost és ser capaços de poder pagar el deute, i per tant, de fer front als compromisos adquirits. La pregunta seria si som més solvents avui que fa cinquanta anys des del punt de vista de gestió del deute. També si hem pres les millors decisions per al progrés dels sectors econòmics durant aquests anys a Andorra i si podem desenvolupar altres sectors amb més valor afegit complementaris al sector del comerç, el qual manifesta una certa disminució actualment en el seu pes. I la pregunta és si la creixent tendència d'increment de la despesa pública sobre el PIB i que creix per sobre dels IPC ha sigut així durant els últims vint anys i és una tendència a la qual ens hem de resignar. Això hauria de proporcionar replantejaments alternatius a la inèrcia del model al qual hem anat assistint durant el segle XXI.

L'EFA agraeix la voluntat de divulgar aquest estudi per part de Crèdit Andorrà, amb el qual tenim un conveni de cooperació i amb el qual treballem en molts esdeveniments i molts dossiers des de la nostra fundació. Per tant, per a nosaltres és una bona notícia que Crèdit Andorrà vulgui esponsoritzar aquesta publicació i vull pensar que hi haurà edicions ulteriors millorades al servei de les persones i entitats interessades, dels polítics i de les institucions del nostre país.

Joan Tomàs
Secretari de l'Empresa Familiar Andorrana

Et quuntio que eos que sequia conseque conest latur?

Delisitas quis minis sitaturem repe num, oditae. Vitatus, senimus, aut a doluptat.

Udam auta conseditati id que pror adis dolupic tem untium apiendic to tectur adicipsam ea volorrovitas a pe velit doluptium am fuga. Nemquis sit recestios eneceraectem ad molorerfero dus earcitatis simus dolorep elluptat ex estem. Rerum as verectur, optatus ipis dus sant.

Et ut voles milluptus consent eriatur solorianto etur, comnisqui utem vellant faccum quia dust arum as rerum id et alit, te entiam quisqui dolorempero etur aut ium aliquaspero quas voluptatecus veritiore dolupta nus apererc hilloritiis dis quiam, qui nobit deligento eum faceat.

Udani blabo. Mene modit velique ipit lati comnihit, odipicit, sinitem. Mossundi dolorecatur, ut rest, volupie ndendit que debitemquo officto tatias minvent voluptiata aliti aut ipideles debitatet fugit repero bla ea sundaes cidendis dolecae magnis magnim ut ant maxim intenihilit, corest, torum rem iur audigent.

Eribus, eiumquam verumenist eveliquodiae sundaepuda id quam dolor aut omnis evendam repro ernat la aut a dit eiumet ide neceaque verecus doluptaqui ad ut quam hicienimusam assim adias am, voloriatur sitaqui aborit laut faccusanisi sus etur, qui cus dolut quidest otataecatur? Quistem re re conetur reperum quia parchil molenderum id quat.

Dolumqui derupici a doluptatur mint reperum sinullu ptaepudis que que volupis cilibus et rest, consecto quias nimusant harumque volupite plitat officiur, sus aut alibusd aessitas inistem simusdae. Ut et, velignatur, volorem volo dendel inctium verem ipid utatus est officiu mquidem as namus eumque dolorem ipsum aut eos enis nemposte simpossus nullent ex est, untur?

Endant as volestis volore

dolorero blaut omni diossequis

Executive Summary

In 1970, according to the World Bank, Andorra had a population of 24,270 people and a GDP *per capita* of 35,391 dollars. Fifty years on, in 2019, the Andorran population had multiplied by 3.2, to 77,146 people, but its Gross Domestic Product (GDP) *per capita* had only grown by 10 per cent, to 39,004 euros.

Other World Bank data, also from 1970, tells us that the GDP *per capita* of Luxembourg was 35,514, almost identical to that of Andorra. In contrast, however, in 2019, the Luxembourg population had grown 80 per cent and its GDP *per capita* had tripled to 108,570 dollars. In the fifty years between 1970 and 2019, Andorra opted to triple its population at the expense of limiting its GDP *per capita* growth to 10 per cent, while Luxembourg tripled its GDP *per capita* and limited its population growth to 80 per cent. The aims of this study are to identify the barriers that have inhibited Andorra's GDP *per capita* growth and to propose solutions that will help lower these barriers and thus prevent such an outcome from recurring in the future.

To this end, we are going to study the historical data of the Andorran economy and compare them with those of seven other small European states, France and Spain. The small states to which we will be comparing the Andorran economy are the Isle of Man, Iceland, Liechtenstein, Luxembourg, Malta, Monaco and San Marino.

This report considers two periods: the long term and the medium term. In our long-term analysis, we analyse the period from 1970 to 2019, and our medium-term analysis covers the period from 2000 to 2019. We have started in 1970 because data prior to this year are scarce and would pose doubts about their homogeneity. We have analysed up to 2019 in order to avoid possible distortions due to COVID.

As we have mentioned, the stagnation of Andorra's GDP *per capita* can partly be explained by the evolution of the population. Between 1970 and 2019, the Andorran population multiplied by a factor of 3.2, while in Luxembourg it only increased by 83 per cent. This is particularly striking if we consider that Luxembourg was the sample country with the second largest population growth after Andorra.

The intensive growth of the Andorran population was interrupted in 2010, and between that year and 2019, the country's population fell 8.7 per cent. Furthermore, according to the Andorran Department of Statistics, 539 babies were born in Andorra in 2019. As we explain in the text, if the number of births remained constant and Andorran did not admit immigrants, over the next 85 years, the country's population would fall by 35 per cent. These data suggest that designing demographic policies in line with Andorra's macroeconomic objectives is one of the pending issues for Andorran economic policy.

Another explanation of Andorra's stagnated GDP *per capita* can be found in the evolution of its GDP. Out of all the small states in the sample, we have only found complete data for the period between 1970 and 2019 for Malta, Luxembourg, Monaco and Andorra. During that period, Malta's GDP multiplied by a factor of 15.1, Luxembourg's by 5.6, Monaco's by 4.0 and Andorra's by 3.5. Something similar happened between 2000 and 2019. The Isle of Man's GDP multiplied by 2.3, Malta's by 2.1, Luxembourg's by 1.7 and Andorra's by 1.3, just ahead of San Marino, which only returned to its GDP value of the year 2000 in 2019. These figures suggest that Andorra's growth has been in labour-intensive activities with low productivity. Hence, between 1970 and 2019, Andorra's population increased considerably, but the country has not managed to increase the standard of living of its inhabitants to the same extent.

In terms of the public sector, between 2000 and 2019, there was a considerable increase in the share of the public administrations in the Andorran economy, and the country endowed itself with a welfare state comparable in many respects with that of its European neighbours. Although Andorra's tax rates remain among the lowest in Europe, the government and parishes of Andorra managed to stabilise gross government debt between 2013 and 2019 at around 1 billion euros and reduce it by 7 percentage points relative to its GDP.

Despite the considerable increase in the contribution of the public sector in the Andorran economy during these years, in 2019, Andorran public finances were reasonably balanced. The main threat to the sustainability of Andorra's public sector has been found in the sustainability of its pension system. If the balance of government and parish budgets is maintained over the coming years, we believe that the Andorran public sector should not be a limiting factor in the growth of the country's GDP *per capita*.

With regard to the external sector, we have only found data for Andorra for the years 2019, 2020 and 2021. In these three years, Andorra has recorded large current account surpluses of 18, 15 and 16 per cent of its GDP. This healthy situation of its foreign economic relations means that Andorra does not require foreign financing for the business plans of its companies and the objectives of its households and public administrations.

The current account surplus recorded during these years shows that Andorra's domestic sector savings finance the rest of the world with a significant proportion of its GDP. Moreover, Andorra's net international investment position is among the most positive in the world. As a result, Andorrans enjoy a comfortable external financial buffer that allows them to face possible future adversities with a certain degree of peace of mind.

Lastly, to evaluate the competitiveness of Andorran companies and sectors, we have analysed the evolution of the sectoral composition of its GDP. Andorra is a country that has all but abandoned its agricultural and livestock farming past, whose industry is relatively small and dominated by the construction sector, and whose main branch of activity is services.

Between 2000 and 2019, the share of finance and insurance in Andorra's GDP fell 13 percentage points. This decline in the weight of banking was offset by the growth of 6 points in real estate activities, 5 points in public administration and 3 points in professional activities.

In this same period, the weighting of commerce in Andorra's GDP fell 3 percentage points. This drop is concerning, as it casts doubt on the future of a sector that has traditionally played an important role in the growth of the Andorran economy and in the financing of its public sector.

On the other hand, the increase in professional activities—by 3.4 per cent of GDP between 2000 and 2019—leads us to believe that Andorra could strengthen its GDP composition by becoming a digital hub for start-ups and digital nomads. In addition to seeking a favourable tax environment for their professional activities and businesses, these players are interested in winter sports and the mountains.

Another way to strengthen Andorran GDP could be through a focus on its industry. Liechtenstein, with 47 per cent of its GDP dedicated to industrial activities, and San Marino, with 37 per cent, are examples of small European states that Andorra could emulate in the future. The composition of GDP in these two countries suggests that Andorra could consider strengthening its secondary sector as a strategic objective by finding a large industrial company to establish itself in its territory.

We also looked at the GDP composition of the Isle of Man, which devotes 26 per cent of its GDP to online gaming and Information and communications technologies. As we have mentioned, focusing on fostering the development of ICT and becoming a digital hub could be other ways to supplement commerce and the real estate sector, which remain two of the dominant sectors in the Andorran economy, although their future is in doubt.

1. Introduction

In 1970, according to the World Bank, Andorra and Luxembourg had practically the same GDP *per capita*: Andorra's was USD 35,391 while Luxembourg's was USD 35,514. Fifty years on, in 2019, Andorra's GDP *per capita* was USD 39,004, an increase of just 10 percent. In contrast, Luxembourg's GDP *per capita* had tripled to USD 108,570. This means that, in 2019, Andorrans were living at about the same standard as their grandparents, while Luxembourgers were living three times better.

It is true that Luxembourg is in the heart of Europe and Andorra is much closer to its southern border. It is also true that Luxembourg formed part of the European Union project since its very beginnings, in the early 1950s, and that Andorra in 2022 has not yet finished defining its relationship with the European Union. Another important fact is that, in 1970, Luxembourg had almost 14 times more inhabitants than Andorra. In 2019, this number had been reduced to just over 8 times, but Luxembourg was still a mini-state with over 600,000 inhabitants, while Andorra was a microstate with less than 80,000.

In any case, it is very striking that, in terms of GDP *per capita*, Andorra had missed out on the economic opportunities offered by the last 50 years of prosperity and relative peace in Europe. The aims of this study are to identify the barriers that have inhibited Andorra's GDP *per capita* growth and to propose solutions that will help to prevent this outcome from recurring in the future.

To this end, we are going to study the historical data of the Andorran economy and compare them with those of seven other small European states, France (FRA) and Spain (ESP). The small states to which we will be comparing the Andorran economy are the Isle of Man (IMN), Iceland (ISL), Liechtenstein (LIE), Luxembourg (LUX), Malta (MLT), Monaco (MCO) and San Marino (SMR). Unfortunately, the data for the Isle of Man and Liechtenstein available on international databases are very scarce, so we have had to omit these two states in many of the comparisons.

This report considers two periods: the long term, in which we analyse the period from 1970 to 2019; and the medium term, in which we study the period from 2000 and 2019. We have started in 1970 because earlier data are scarce and would pose doubts about their homogeneity. We have analysed up to 2019 in order to avoid possible distortions due to COVID-19: economic contraction in

1. Si no indiquem el contrari, els dòlars a què fem referència en aquest estudi són dòlars constants del 2015.

2020 due to lockdowns and the rebound in growth that occurred in 2021 with the widespread access to vaccines and the reopening.

In addition, this study has an appendix which is a database with the main macroeconomic data of the Andorran economy, and the economies of the other states in the sample, which will serve to update this study and may help in carrying out other research.

1.1. Sample states

In Table 1 we have tabulated the population and GDP *per capita* of the sample states in 2019. According to their 2019 populations, the sample states can be classified into four groups: France and Spain are, by some margin, the two most populous states. These two states are not small states. On the contrary, they are two of the four largest states in the European Union. We have included them in this study because they are Andorra's neighbours and surround the country entirely.

Table 1: Population and GDP *per capita* and 2019

	Població	% AND
FRA	67,248,926	87,171.0
ESP	47,134,837	61,098.2
LUX	620,001	803.7
MLT	504,062	653.4
ISL	360,563	467.4
IMN	84,589	109.6
AND	77,146	100.0
MCO	38,967	50.5
LIE	38,020	49.3
SMR	33,864	43.9

	PIBPC	%AND
MCO	181,709	465.9
LIE	167,313	429.0
LUX	108,570	278.4
IMN	96,105	246.4
ISL	57,819	148.2
SMR	44,552	114.2
AND	39,004	100.0
FRA	38,912	99.8
MLT	28,364	72.7
ESP	28,102	72.0

GDP is measured in constant 2015 US$. The source of the population data is the World Bank (https://data.worldbank.org/indicator/SP.POP.TOTL). The source of the GDP data is the World Bank (https://data.worldbank.org/indicator/NY.GDP.MKTP.KD).

Luxembourg, Malta and Iceland form the next group of states. In 2019, these three states had populations of between 350,000 and 650,000. These are followed by the Isle of Man and Andorra with approximately 80,000 inhabitants. Lastly, Monaco, Liechtenstein and San Marino are the least populous states in the sample, with between 30,000 and 40,000 inhabitants.

The Isle of Man is the state that is most similar to Andorra in terms of population size in 2019. For this reason, we wanted to focus our analysis on the comparisons between these two states. However, macroeconomic data on the Isle of Man are not available on international databases, which has forced us to leave the detailed comparison of Andorra with the Isle of Man for another time.

The sample states can also be grouped according to their GDP *per capita* in 2019. Based on this variable, Monaco and Liechtenstein are the two wealthiest states in the sample, with *per capita* GDPs exceeding 170,000 dollars. These states exceed Andorra's GDP *per capita* by more than four times. Luxembourg and the Isle of Man are next, with *per capita* GDPs close to 100,000 dollars. This is followed by San Marino, Andorra and France, with *per capita* GDPs of around 40,000 dollars, and at the bottom of the table we have Malta and Spain with GDPs of approximately 30,000 dollars *per capita*.

San Marino is the state that most closely resembles Andorra in terms of GDP *per capita*. If we consider both population and GDP *per capita*, the two states in the sample that are most similar to Andorra are the Isle of Man and San Marino. Whenever data availability allows, we will pay special attention to these two states.

1.2. Analysis periods

Our initial intention was for this analysis to begin in 1960. However, the availability of historical macroeconomic data on the small European states in the sample is limited. This limitation forced us to narrow the scope of our study and to consider two periods: the long term and the medium term. Our long-term analysis starts in 1970 and ends in 2019, and our medium-term analysis starts in 2000 and ends in 2019. As we have mentioned above, we preferred to end the study period in 2019 to avoid any distortions caused by the contraction in activity and subsequent rebound caused by the COVID-19 pandemic.

Furthermore, it cannot be denied that Andorra is in the midst of a period of transition that will end when Andorrans conclude their negotiations with the

European Union and decide how much sovereignty they are willing to give up in exchange for what benefits of association with EU member states.

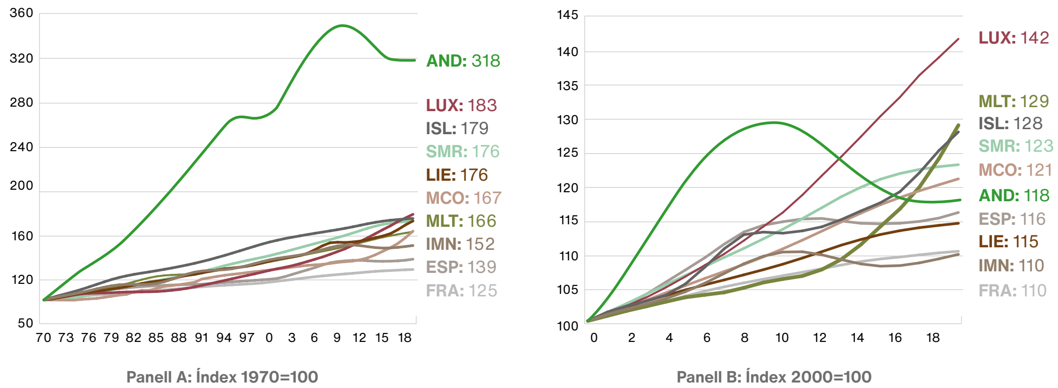
The main recent milestones in the Andorran economy are as follows: Andorra adopted the euro currency on 1 January 2002, at the same time as France and Spain. In 2012, Andorra partially liberalised foreign investment and introduced corporation tax. A year later, in 2013, it introduced value added tax (known in Andorra as the General Indirect Tax, or IGI), and in 2015, it introduced personal income tax. Finally, in 2017, Andorra made a commitment to the European Union to end banking secrecy.

All these changes have substantially changed the incentives to work, spend, save and invest in Andorra, and Andorran households, companies and public administrations are still adapting to these new economic circumstances. Ideally, this study should be complemented by a more short-term study analysing in detail the evolution of the Andorran economy from 2010 onwards.

2. Population

In figure 1, we have plotted the evolution of the population in the sample states. Panel A illustrates the long-term evolution of the population and partly explains the enigma of the five lost decades in Andorra's GDP *per capita*. Between 1970 and 2019, the Andorran population grew by 218 percent, while the growth rates of the other sample states were much lower: between 25 percent (in France, the country that grew the least) and 83 percent (in Luxembourg, the country the grew the most). In this same period, the population of the Isle of Man, which was the most similar to Andorra's in 1970, grew just 52 percent.

Figure 1: Population in the sample states



The source of the population data is the World Bank (https://data.worldbank.org/indicator/SP.POP. TOTL).

Panel B of Chart ? shows this trend of higher growth in the population of Andorra reversed in 2009. From that year onwards, the Andorran population declined substantially until 2017 and has since stabilised.

The evolution of the population of the Isle of Man since the year 2000 was similar to that of Andorra, although with substantially lower growth rates. It grew until 2010, then declined until 2015 and then recovered again. However, while the evolution was similar, between 2000 and 2019, the Andorran population crew 18 per cent and the population of the Isle of Man grew 10 per cent.

There is a possibility that Andorra's population data may reflect a measurement problem. It is possible that the differences between the resident population and the effective population in Andorra are greater than in other states. Determining this would require a thorough study of the data and is beyond the scope of this paper.

In any case, the growth in Andorra's population between 1970 and 2019 has been clearly greater than that of the other states in the sample. This differential behaviour partly explains the stagnation of Andorran GDP *per capita* mentioned in the introduction.

2.1. The Rule of 85

According to Augusto Comte, demographics are destiny. We share this view, albeit with a few nuances. We agree that demographics are a fundamental part of the destiny of a society, but they do not explain everything. If we want to speculate about where a country's demography is heading, the Rule of 85 offers a reasonable approximation to help us imagine its future.

Table 2: The Rule of 85 and the future of the population

	Naixements el 2019	Esperança de vida el 2019	Població el 2019	Població Regla 85	Població (%)
ISL	4,402	82.4	360,563	374,170	3.8
FRA	701,300	82.7	67,248,926	59,610,500	-11.4
LUX	6,167	82.1	620,001	524,195	-15.5
LIE	352	84.3	38,020	29,920	-21.3
IMN	745	80.7	84,589	63,325	-25.1
MLT	4,318	83.2	504,062	367,030	-27.2
MCO	331	86.5	38,967	28,135	-27.8
AND	590	83.0	77,146	50,150	-35.0
ESP	354,681	83.5	47,134,837	30,147,885	-36.0
SMR	209	83.0	33,864	17,765	-47.5

The source of the data on births and life expectancy at birth in 2019 is the United Nations (https://population.un.org/wpp/Download/Standard/MostUsed/). The source of data on population in 2019 is the World Bank (https://data.worldbank.org/indicator/SP.POP. TOTL).

The Rule of 85 is as follows. Let us imagine that exactly 1000 people are born on an island every year, all these people live for exactly 85 years and, because of its mysterious and remote location, the island experiences no immigration or emigration. For the sake of precision, let us assume that all the islanders die on their 86th birthday. What will the long-term population of this island be? The island's population will be exactly 85,000 people. One thousand people are born and one thousand people die every year. The population pyramid would be rectangular because every age group would contain exactly 1000 people.

Another way to visualise the Rule of 85 is this: in Andorra in 2019, 590 children were born, so in that year there were 590 children under the age of one in Andorra. Suppose that no immigrants have come to Andorra and no one has emigrated from Andorra. This means that in 2020, the number of 1-year-olds was at most 590. In 2021, Andorra had at most 509 2-year-olds, and so on until the year 2100, when there will be 509 81-year-olds in Andorra (in reality, this would be minus people who die and emigrants who were born in 2019 and plus the immigrants who were born in the same year).

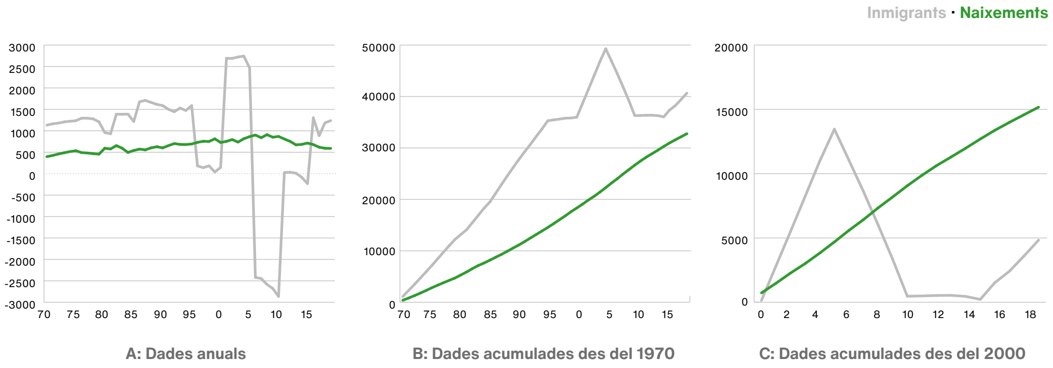
If we use the Rule of 85, with data from a real economy, we can anticipate the long-term population of that economy assuming its birth rate and life expectancy remained constant. In Chart ?, we have done this exercise with the sample states, assuming that the number of births will remain constant at the 2019 value and that the life expectancy is 85 years in all the countries considered.

What would the future population of Andorra be? In 2019, 590 Andorrans were born. If we multiply this number by 85, we get 50,150. In 2019, there were 77,146 Andorrans. This means that, if the birth rate does not change, life expectancy is 85 years, and Andorra admits no immigrants, it would lose 35 per cent of its population in the next 85 years. If Andorra is striving to be a country with around 80,000 inhabitants, it will need to supplement births with immigrants.

2.2. Births and immigrants

To better understand the evolution of the Andorran population, in figure 2, we have plotted the evolution of births and immigrants.

Figure 2: Births and immigration in Andorra



The source of the births and immigration data is the UN (https://population.un.org/wpp/Download/ Standard/MostUsed/)

What strikes us most about Panel A in this chart are the large variations in the number of immigrants that occurred between 1996 and 2000, between 2001 and 2005, between 2006 and 2010 and between 2011 and 2015. It would be very interesting to determine the causes of these fluctuations.

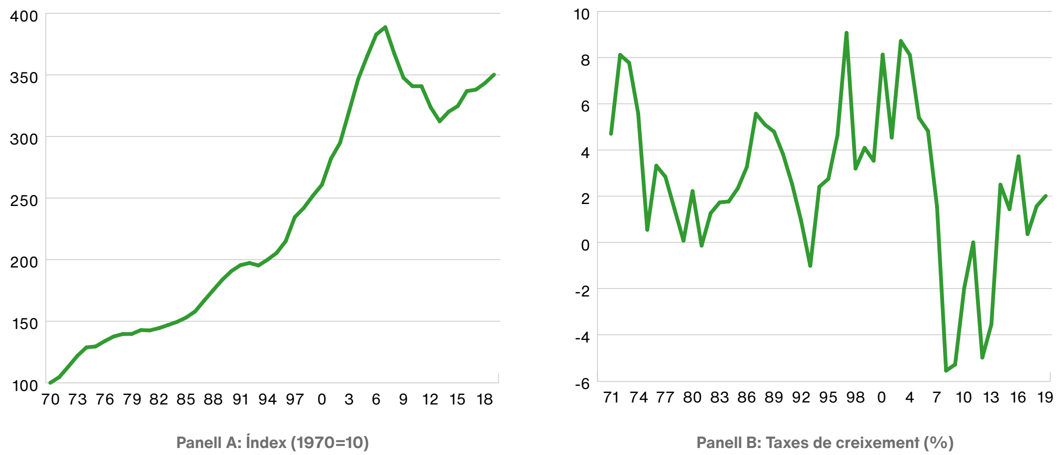
In any case, the data show that immigration has dominated the birth rate as the cause of the increase in the Andorran population. Between 1970 and 2019, 32,769 people were born in Andorra and 40,661 immigrants arrived in Andorra. In the last two decades, this result has been completely reversed and the birth rate has been much higher than immigration. In particular, between 2000 and 2019, 15,175 people were born in Andorra and just 4,835 immigrants arrived in Andorra.

As we said in the previous section, the fall in the birth rate that has occurred in Andorra since 2008 points to a worrying demographic future. For this reason, we believe that a clear policy on the quantity and type of immigrants that Andorra is willing to receive is essential to ensuring Andorra's demographic future since, as we have mentioned, it is a fundamental part of its destiny.

3. Gross Domestic Product

In figure 3, we have plotted the evolution of Andorran Gross Domestic Product (GDP). Panel A of this chart shows four clearly distinct phases in the growth of real GDP in Andorra. Between 1970 and 1996, real GDP in Andorra grew at an average annual rate of 3.0 per cent. Between 1996 and 2007, the average growth rate of Andorran real GDP increased to 5.5 per cent annual. Between 2007 and 2013, the Andorran economy entered a crisis and its real GDP contracted at an average annual rate of -3.6 per cent. Lastly, between 2013 and 2019, the Andorran economy recovered and its real GDP grew at an average annual rate of 1.9 per cent.

Figure 3: Gross Domestic Product in Andorra



GDP is measured in constant 2015 US$ and the source of the data is the World Bank (https://data.worldbank.org/indicator/NY.GDP.MKTP.KD).

In Panel B of this chart, we have plotted the annual growth rates of Andorran real GDP. These rates tell a more detailed story of the economic cycles in Andorra. If we disregard the sawtooth patterns, the period between 1972 and 1981 saw an intense slowdown in the growth rates of Andorran GDP, falling from 8 per cent to zero. Between 1981 and 1987, the growth rates increased again to almost 6 per cent at the end of the period. Between 1987 and 1993, there was another period of slowdown and Andorran economic growth waned again to -1 per cent at the end of this period.

Between 1993 and 2003, Andorran GDP growth rates saw picked up again with a saw-toothed recovery, reaching rates close to 9 per cent. Between 2003 and 2012, there was a double contraction of GDP, which started to recover in 2013, although the peak growth rate in this period did not exceed 4 per cent.

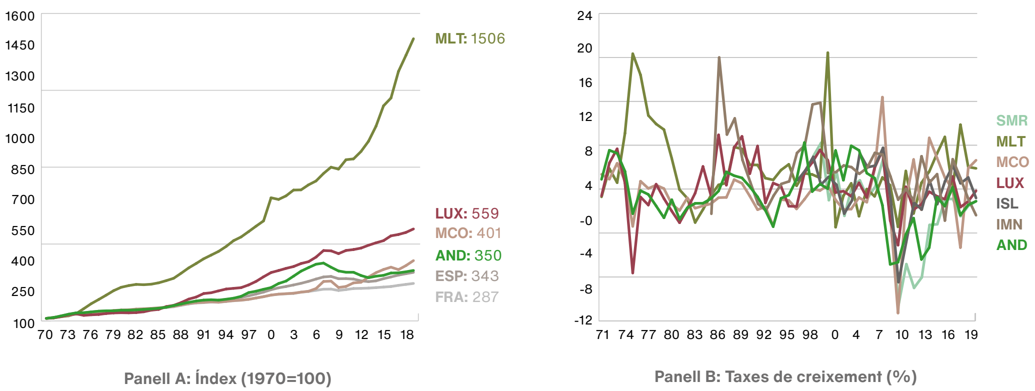
We were struck by the volatility of Andorran GDP growth rates. It would be interesting to find out the underlying cause. To do this, we would have to study each of the economic cycles in Andorra in detail.

3.1. International comparisons

In Panel A of figure 4, we have plotted the evolution of the Gross Domestic Product (GDP) of Malta, Luxembourg, Monaco, Andorra, Spain and France because they are the only states in the sample for which we have complete economic data for the whole period.

What is most remarkable in this chart is the spectacular growth in real GDP in Malta, which increased by a factor of more than 15 between 1970 and 2019. It is true that in 1970, Malta was far and beyond the poorest state in the sample. Its GDP *per capita* at the time was a mere 3,135 dollars, roughly one eleventh of the Andorran GDP of 35,391 dollars. But in 2019, Malta's GDP *per capita* was 27,738 dollars, an impressive 74 per cent that of Andorra's GDP of 37,640 dollars.

Figure 4: Gross Domestic Product of the sample states



GDP is measured in constant 2015 US$ and the source of the data is the World Bank (https://data. worldbank.org/indicator/NY.GDP.MKTP.KD).

It is also true that Malta, with over 500,000 inhabitants, is a much larger state than Andorra. Furthermore, Malta joined the European Union on 1 May 2004. Nevertheless, it cannot be denied that Malta serves as an example of the miraculous growth in GDP that is also possible in the small European states.

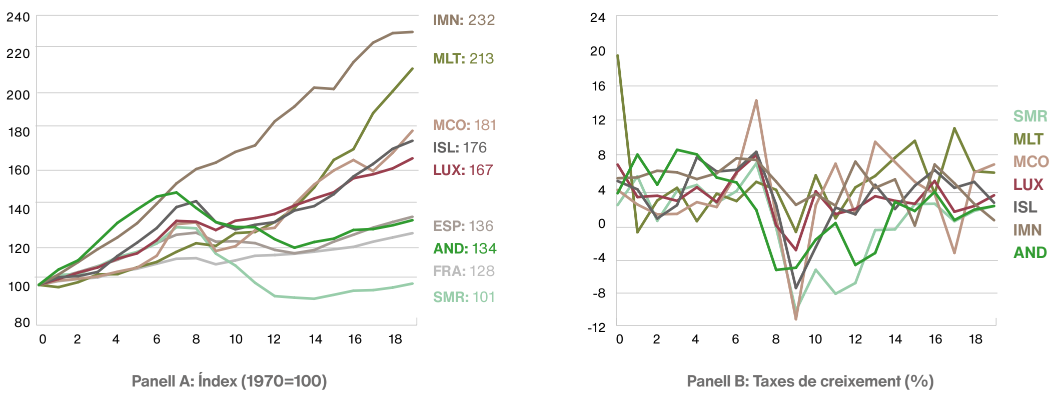
In Panel B of Chart ?, we have plotted the real GDP growth rates of the sample states. To simplify the jumble of data, we have omitted the series for Spain and France, whose economies, given their size, fluctuate considerably less than those of the smaller states. The chart includes all the small states in the samples except Liechtenstein, but the series of each state starts at the time they become available.

In this chart, we can observe that the fluctuations in the growth rate of Andorran GDP—which we had found striking in our analysis of Chart ?—are in fact substantially smaller than those of the other states in the sample, such as Malta, the Isle of Man, Monaco and Luxembourg. The high volatility in their growth rates suggests that this may be a characteristic of the growth processes of small states, which suffer heavily from negative shocks to their dominant productive sectors, but which recover quickly and grow more than larger states when the disruptions are positive.

In figure 4, we have plotted the real GDP indices and real GDP growth rates of all the sample states except Liechtenstein, due to the scarcity of data between the years 2000 and 2019. Panel A of this chart illustrates that the growth trajectories of the sample states have changed considerably in this period, if we compare them with those of figure 4. During these two decades, Malta's GDP growth remains spectacular, but the Isle of Man's growth rate is even greater.

The economy of Andorra more closely resembles that of the Isle of Man than that of Malta. This is for two reasons: because their populations are much more similar and because the Isle of Man does not belong to the European Union. As we have mentioned, we were not able to find detailed macroeconomic data for the Isle of Man. Therefore, we are unsure of the reasons behind the miraculous growth of its economy.

Figure 5: Gross Domestic Product of the sample states



GDP is measured in constant 2015 US$ and the source of the data is the World Bank (https://data.worldbank.org/indicator/NY.GDP.MKTP.KD).

San Marino, on the other hand, shows the other side of the coin. Between 2000 and 2019, its GDP only grew by one per cent. The data suggest that the Great Recession of 2008 caused a sharp contraction of San Marino's economy due to its heavy dependence on the banking sector, and in 2019 it had still not recovered.

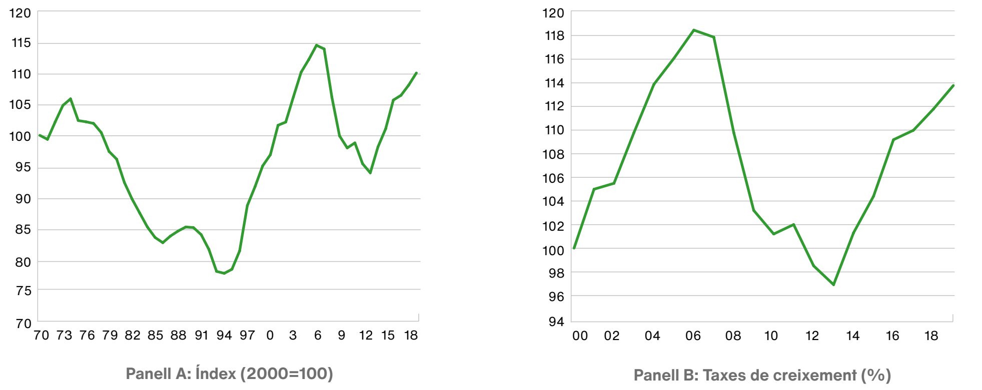
In Panel B of figure 5, we have plotted the GDP growth rates of the sample states between 2000 and 2019, again without including Spain and France. If we compare this chart with Panel B of figure 5, we see that the amplitude of the fluctuations in GDP of the small European states has been greatly reduced. This result shows that the 2001 dotcom bubble crash and the Great Recession of 2008 were two more benign shocks for the small European states than the oil crisis and the end of the Soviet Union and the fall of the Iron Curtain.

Panel B of figure 5 also suggests that the amplitude of the fluctuations of Andorran GDP are no exception. They closely resemble those of the small European states in the sample, and are in fact lower than those of some of them.

4. GDP *per capita*

In figure 6, we have plotted the evolution of GDP *per capita* (GDPPC) in Andorra. The first thing that strikes us in this chart is that in fifty years the GDPPC of the Andorran people has grown by just 10 per cent. The second is the pronounced sawtooth pattern in the time series of this variable.

Figure 6: Indices of GDP *per capita* in Andorra



GDP is measured in constant 2015 US$. The source of the GDP data is the World Bank (https://data.worldbank.org/indicator/NY.GDP.MKTP.KD). The source of the population data is the World Bank (https://data.worldbank.org/indicator/SP.POP.TOTL).

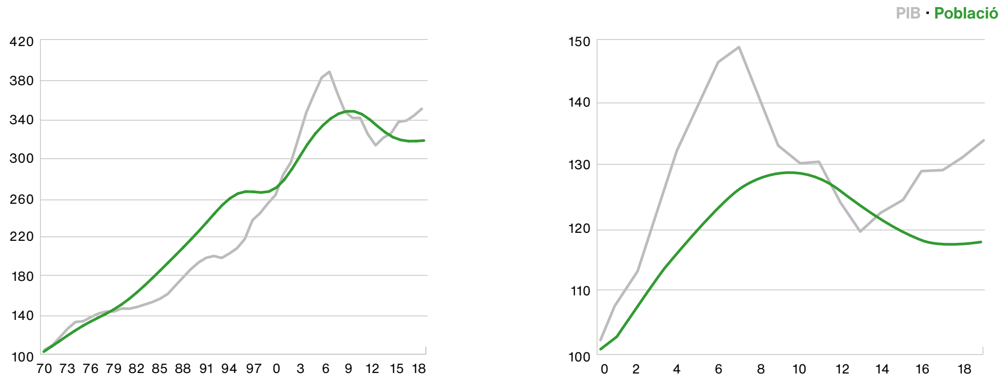
Between 1970 and 1974, Andorra's GDPPC grew by 5 per cent. This was followed by 20 years of decline in the GDPPC between 1974 and 1994. In the latter year, the value of the GDPPC index was 77.4, 22.6 per cent less than in 1970. Twelve years of GDP growth followed, until 2006. This year, the GDPPC index for Andorra reached 115, the highest point in the series.

However, from 2006 onwards, there was a further period of decline in the GDPPC, which reached 94 in 2013, 6 per cent less than in 1970, some 43 years later. In the latter end of the series, the Andorran GDPPC grew again to reach a value of 110 in 2019.

As we can observe in Panel C of figure 5, the behaviour of Andorra's GDPPC is unique among all the sample states with the sole exception of San Marino. This raises the question of whether Andorra has fallen into a Malthusian trap in which GDP growth is only achieved with an approximately proportional increase in population. This form of growth is a trap because it impedes growth of GDPPC.

To determine whether this is the case, in figure 7 we have plotted the indices of GDP and population in Andorra. This chart shows that our conjecture holds between 1973 and 1994, and ceases to hold true between 1994 and 2007, although in that period, GDP and population in Andorra grew at the same time. This graph also illustrates that the Andorran economy saw a period of virtuous growth between 2013 and 2019 because during these years, Andorran GDP grows again, despite the fact that the population decreases or stagnates. It would be very interesting to study how Andorra grew during this period in more depth.

Figure 7: Indices of population and GDP in Andorra



Panell A: Índex (1970=100)

Panell B: Índex (2000=100)

GDP is measured in constant 2015 US$. The source of the GDP data is the World Bank (https://data.worldbank.org/indicator/NY.GDP.MKTP.KD). The source of the population data is the World Bank (https://data.worldbank.org/indicator/SP.POP.TOTL).

If in Section ? we concluded that the destiny of Andorra's economy was partially determined by the evolution of its population, the data we have studied in this section suggest that Andorra should pay special attention to the productivity of its companies. When taken as a whole, their productivity has been insufficient to achieve sustained growth in Andorra's GDPPC over the last fifty years.

4.1. International comparisons

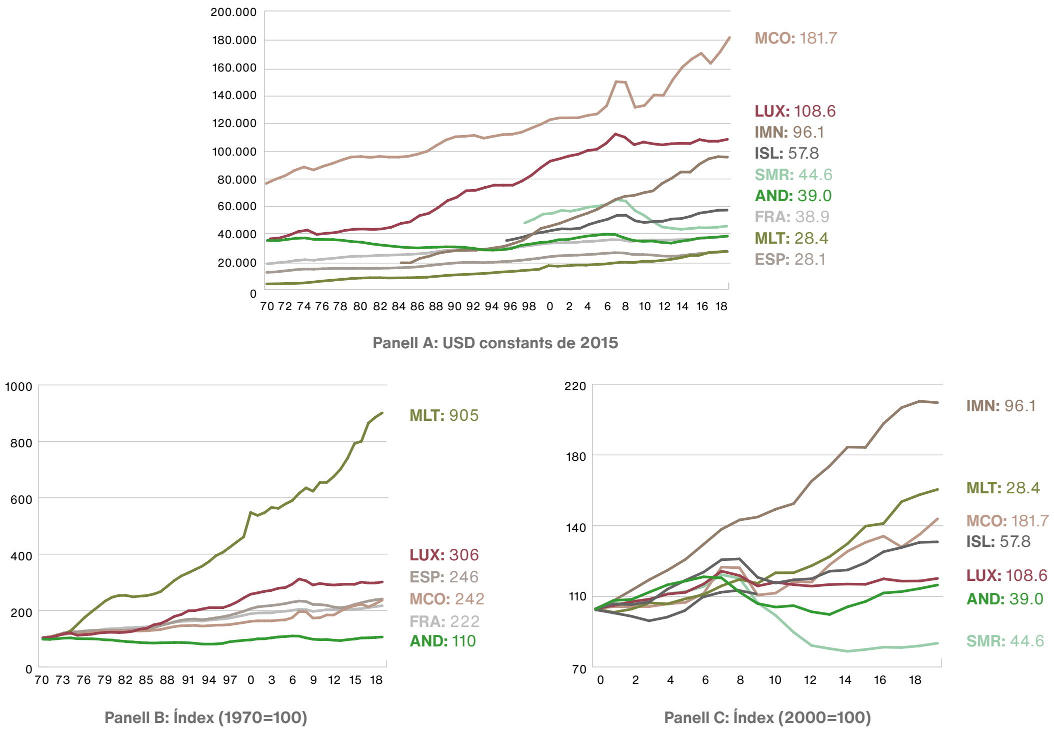
Panel A of figure 8 shows the GDPPC of all states in the sample except Liechtenstein, again because of lack of data. The series for Monaco, Luxembourg, Andorra, France, Spain and Malta start in 1970, the Isle of Man in 1984, Iceland in 1995 and San Marino in 1997.

In this chart we see the growth trajectories of the GDPPC of the eight sample states. These trajectories are the best macroeconomic summary of what has happened in those states. Monaco stands out at the top. It started as the wealthiest economy in the sample in 1970, and remained so in 2019 and, moreover, its GDPPC had multiplied by 2.4.

Luxembourg is another example of a raising trajectory, with a GDPPC that was indistinguishable from Andorra's in 1970 and 2.8 times higher in 2019. What factors caused these differences? What decisions were made by Luxembourg families, companies and public administrations that allowed them to grow in this way, and what decisions by Andorran families, companies and public administrations impeded their growth?

The series for the Isle of Man is shorter, but it is another clear success story. San Marino, however, provides an example to avoid. In 2007, its GDPPC exceeded 65,000 dollars, and it 2019 it had fallen to 44,500 dollars.

Figure 8: GDP *per capita* of the sample states



GDP is measured in constant 2015 US$. The source of the GDP data is the World Bank (https://data.worldbank.org/indicator/NY.GDP.MKTP.KD). The source of the population data is the World Bank (https://data.worldbank.org/indicator/SP.POP.TOTL).

But although the scale of Panel A of figure 8 does not allow us to appreciate it, the most striking growth among the sample states is that of Malta. This is illustrated in Panel B of this chart, where we have plotted the GDPPC indices in the sample countries between 1970 and 2019.

What is most remarkable in this chart is the spectacular growth in GDPPC in Malta, which increased more than ninefold in this period. As we have mentioned above, in 1970, Malta was by far the poorest state in the sample, but this does not prevent its GDPPC growth from still seeming miraculous. Among the states for which long series are available, Luxembourg is also a success story because it managed to multiply its GDPPC by more than three times. The records for Andorra are disappointing, considering that they are by far the worst among this group of states.

In Panel C of figure 8, we have plotted the GDPPC indices of the sample states between 2000 and 2019. These results are consistent with those discussed above in Section ?. The Isle of Man, Malta and Monaco are notable for their GDPPC growth. San Marino, however, is the example to avoid. In this period, Andorra's GDPPC increased by 14 per cent. However, if we consider than in 2000 the value of this variable in Andorra was 97, three per cent lower than in 1970, between 2000 and 2019 the evolution of GDPPC in Andorra has experienced a considerable improvement, giving hope for the future.

5. The public sector

The Andorran public administrations consist of the Government, the Parishes, the Andorran Social Security Fund (CASS) and the Non-Market Entities. Unfortunately, the Department of Statistics does not publish disaggregated data for these sub-sectors. On the one hand, it publishes the cash budget of all consolidated public administrations and, on the other, the balance of the gross public debt issued by the Government and Parishes. To adapt to this limitation in the availability of the data, in the following sections we analyse separately first the accounts of the consolidated public administrations, then the accounts of the Government and Parishes, and, lastly, we make a brief comment on Andorra's Social Security, a detailed analysis of which is expressly excluded from the objectives of this study.

5.1. Consolidated public administrations

In Figure 9, we have plotted the evolution of the expenditure and revenue and deficit of the consolidated Andorran public administrations, i.e., the Government, Parishes, Non-Market Entities and the CASS considered as a whole. In Panels A and B, we have plotted their expenditure and revenue, expressed in millions of current euros and as percentages of nominal GDP; in Panel C, we have plotted these same variables but in index numbers to visually quantify their evolution; in Panel D, we have plotted the balances expressed as a percentage of GDP; Panel E shows this same variable expressed in millions of current euros; and, lastly, Panel F shows the accumulated balance between 2001 and 2019, measured in 2021 euros.

It is clear that between 2000 and 2019, the share of the public sector in the Andorran economy has increased considerably, both in absolute terms and in proportion to GDP. In 2000, Andorra's public sector expenditure barely exceeded 400 million euros and, in 2019, it rose to more than one billion, an increase of 246 per cent. As a percentage of Andorran GDP, public spending rose from 26 per cent in 2000 to 36 per cent in 2019, an increase of 10 percentage points.

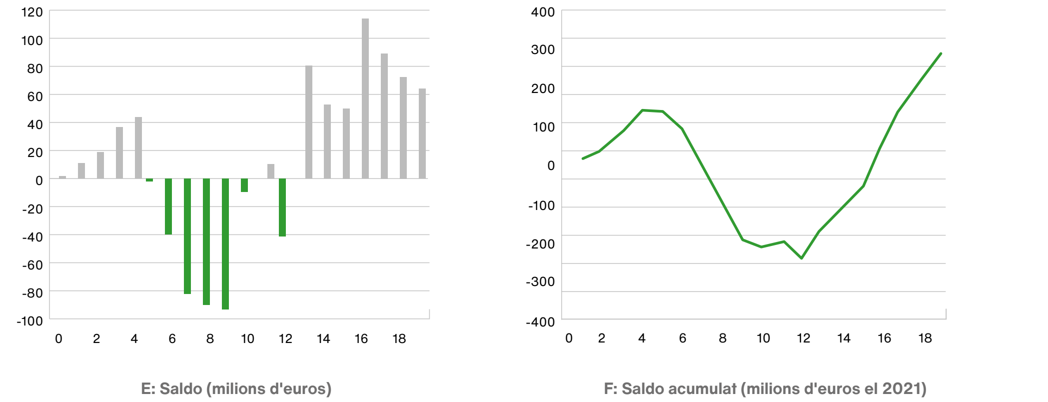
In terms of balances, Panels D and E allow us to identify three clearly distinguishable sub-periods. Between the years 2000 and 2004, we observe an

2. Les entitats de no mercat són les empreses parapúbliques andorranes, entre les quals destaquen Andorra Telecom i Forces Elèctriques d'Andorra (FEDA).

initial period in which the Andorran public administrations recorded growing surpluses. In 2005, the first deficit appeared which, with the exception of 2011, lasted until 2012, and from 2012 onwards, a new period of increasing surpluses began. This last period of surpluses coincides with the fiscal reform and the adoption of corporation tax in 2012, value added tax in 2013 and personal income tax in 2015.[3]

Figure 9: Revenue, expenditure and balances of consolidated public administrations

3. El saldo de les administracions públiques va esdevenir deficitari el 2020 (27,3 milions d'euros) y el 2021 (33,1milions) com a conseqüència de la pandèmia.



Source: Department of Statistics of Andorra. These data consolidate all Andorran public administrations: Government, Parishes, Non-Market Entities and CASS. These are the total settlements of revenue and expenditure without taking into account changes in financial assets and liabilities.

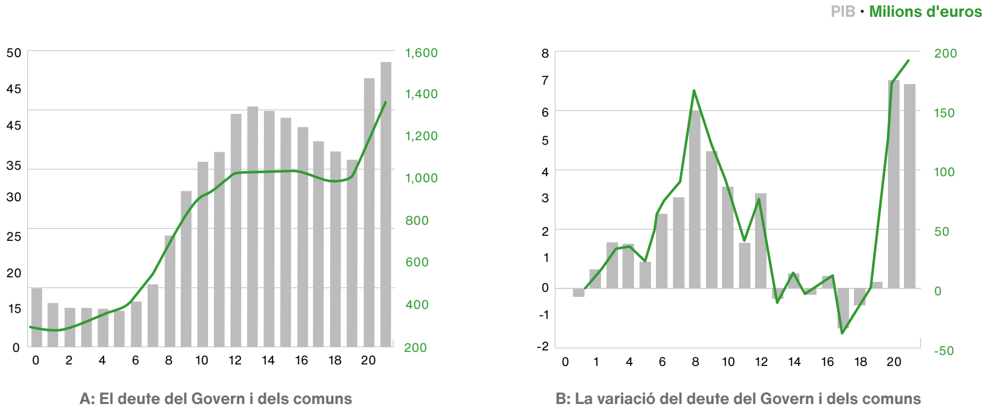
In Panel F, we have plotted the average accumulated balance in 2021 euros, obtained by adjusting the balances of each year with the evolution of the Consumer Price Index. As is to be expected, the accumulated balance follows the pattern of the annual balances: growing until 2004, decreasing until 2012, and then growing again until 2019. In 2019, the value of the adjusted balance amounted to 299 million euros, which by 2021 had been reduced to 238 million euros as a result of pandemic fiscal deficits.

Although the consolidated public administration data do not allow us to confirm this with certainty, we conjecture that most of this accumulated positive balance is due to the surplus in the pension system. The consensus among analysts is that, if Andorra's pensions are not reformed, these surpluses will become growing deficits in the near future, as has already happened in Spain and France. In Section ?, we briefly mentioned this problem and in the following section we will analyse the debt and expenditure of the Government and Parishes with a view to confirming this conjecture.

5.2. Government and Parishes

In addition to the consolidated public administration data we have addressed above, the Department of Statistics of Andorra publishes the series of gross debt issued by the Andorran Government and Parishes. In Panel A of Figure 10, we have plotted this series expressed in millions of euros and as a percentage of nominal GDP.

Figure 10: Debt and budget balance of the Government and Parishes



Source: Department of Statistics of Andorra and compiled by author(s).

As can be observed in the solid line of this chart, the debt of the Andorran Government and Parishes—which coincides with Andorra's gross debt—expressed in millions of euros, has grown almost continuously between the years 2000 and 2019, although at very different rates. In 2000, Andorra's gross debt was 278 million euros, in 2019, it had multiplied by a factor of 3.6 to 998 million euros, and 2021, it had grown a further 37 per cent to 1.367 billion euros.

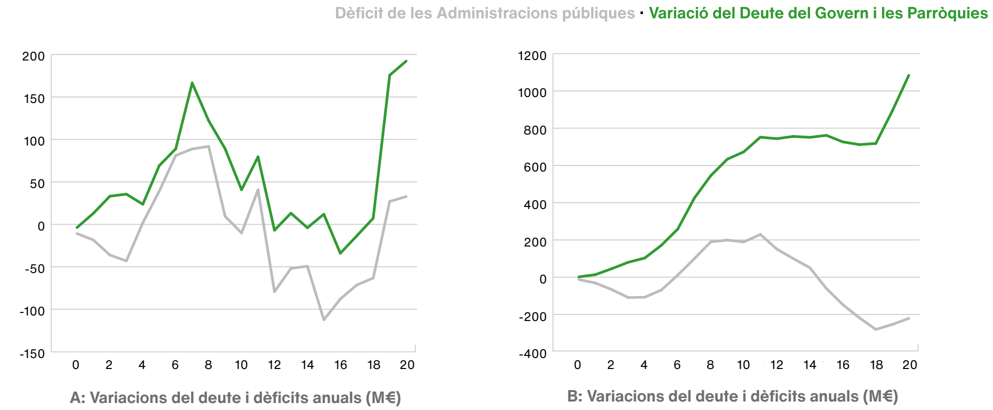
There are three clearly distinct periods in this evolution. Between 2000 and 2012, the government and parish debt grows at an accelerated rate while Andorra improved its welfare benefits. In 2012, with the start of the fiscal reforms, government and parish debt stabilises at around one billion euros and in 2020 and 2021, debt soars due to the expenditure related to the pandemic.

The pink columns in Panel A of Figure 10 plot the value of Andorra's gross debt expressed as a percentage of GDP. The behaviour of this series is similar to the one discussed just above: in the rising phase, debt increases from 18 per cent of GDP in 2000 to 42.5 per cent in 2013. From that year onwards, it starts to fall until reaching 35.3 per cent of GDP in 2019. Finally, in 2020 and 2021, the debt-GDP ratio rises again to 48.6 per cent at the end of 2021.

In Panel B of Figure 10, we have plotted the changes in debt in two consecutive years, expressed in millions of euros and as a percentage of GDP. This variable is an approximation of the consolidated debt of the Government and Parishes of Andorra. This panel allows us to further refine the analysis of the previous section. The Andorran Government and Parishes recorded growing

deficits between 2001 and 2008, decreasing to surpluses between 2008 and 2017, mainly as a consequence of the introduction of new tax structures, and soaring in 2020 and 2021, as a consequence of the pandemic.

Figure 11: Comparative debt deficits and debt variations



Source: Department of Statistics of Andorra.

Finally, in Figure 11, we compare the deficits of the consolidated public administrations—which includes the Non-Market Entities and the CASS—with the changes in the government and parish debt—which excludes them. In Panel A, we plot the annual deficits and debt changes and in Panel B, we plot the accumulated deficits and accumulated debt changes.

The annual data depicted in Panel A of Figure 11 show that in all years between 2001 and 2021, the changes in government and parish debt were greater than the deficits of the consolidated public administrations. This means that the surpluses of the CASS and non-market entities offset a significant portion of the Government and Parish deficits.

Panel B allows us to quantify these accumulated differences. Between 2000 and 2019, the Andorran Government and Parishes accumulated 719 million euros in debt, and the CASS and Non-Market Entities accumulated 287 million in surplus. However, between 2012 and 2016, the accumulated debt of the Government and Parishes stabilised at around 750 million euros and decreased by around 40 million euros between 2017 and 2019. In 2020 and 2021, the accumulated deficits of the consolidated public administrations were around 50 million euros and those of the Government and Parishes were almost 380 million.

Firstly, our analysis of these Andorran public sector data shows that in order to assess the sustainability of this sector, we must look at the data on the Government and Parishes. This is because the surpluses of the Non-Market Entities are small and immaterial, and because the surpluses of the CASS and assets of the pension reserve fund will be essential to meeting the foreseeable deficits that the pension system will record from 2024, as we mention in the following section.

Secondly, it cannot be denied that Andorran public debt has grown substantially between 2000 and 2012, in part due to the improvement in Andorran state welfare benefits. Yet, it is also true that, between 2012 (start of fiscal reforms) and 2019, the outstanding gross public debt of the Government and Parishes stabilised at around one billion euros, equivalent to 35 per cent of GDP in that year. The increase in debt in 2020 and 2021 are due to COVID-19 and should be considered transitory. For example, the International Monetary Fund (IMF), in its 2022 Article IV Consultation, expects the recovery of the Andorran economy to be intense and immediate and that outstanding gross public debt will reduce in the coming years to 36.2 per cent of GDP in 2027.

Leaving aside the problem of pensions, we believe it is important to stress that if Andorra wants to continue to base its competitiveness on being one of the lowest taxed European states, it should limit the growth of its welfare state and avoid a repetition of the large budget deficits that the Government and Parishes recorded between 2000 and 2008, adjusting their expenditure to their revenue.

5.3. Social security

The analysis of Andorran social security requires specific treatment and is explicitly excluded from the objectives of this report. Its budget is managed by the Andorran Social Security Fund (CASS), a semi-public entity created in 1966 and controlled by the Government of Andorra.

Andorran social security is structured in two branches of protection: the general branch and the retirement branch. The general branch covers benefits for medical reimbursements, temporary disability, maternity, paternity, risks during pregnancy, disability, death and orphan's pensions. The retirement branch includes pensions for retirement and widows' and widowers' pensions.

The main difficulty facing Andorra's social security system in the coming years is the sustainability of its pension system. The CASS is studying possible reforms to pensions and the International Monetary Fund (IMF) published a report on the sustainability of Andorran pensions in June 2022. According to the executive summary of this report, "Reforming the Andorran pension system is a key priority to ensure its sustainability and reduce contingent liabilities. In the absence of reform, the Andorran social security system will accumulate deficits starting in 2024, rising to about 9 percent of GDP per year by 2040. Our simulations indicate that the reform must adjust the three key parameters of the system: the contribution rate, the factor for converting pensionable rights into pensions, and the retirement age".

The conclusions of the IMF report could not be clearer. We are aware that the CASS is studying pension reform and we share the concern about the sustainability of pensions, which is a problem that affects the vast majority of state pension systems in Europe.

5.4. Public revenue

While not a tax haven, Andorra is one of the countries with the lowest tax rates in Europe. In Table ?, we compare the tax rates in Andorra with those in Spain, France and with the European average. As can be seen in this table, the differences are substantial.

In 2022, Andorra's value added tax rate—known as the general indirect tax (IGI) in Andorra—was 4.5 per cent, 17 percentage points lower than the maximum Spanish rate. The highest marginal personal income tax rate in Andorra was 10 per cent, while in France it was 45 per cent and in Spain 47 per cent. Corporation tax and social security contributions are also substantially lower in Andorra than in France and Spain.

4. Vegeu https://www.imf.org/en/Publications/CR/Issues/2022/06/16/Principality-of-Andorra-Selected-Issues-519706).

Table 3: Tax rates in Andorra: international comparisons (2022)

	Andorra		Espanya		França	
IGI (2022) / IVA / TVA	4.5 - 1- 0%		21 - 10 - 5 - 4 - 0%		22 - 10 - 5,5 - 2.1%	
IRPF (2022)	0-24 K€	0%	0-12.5 K€	19%	0-10.2 K€	0%
	24 - 40 K€	5%	12.5-20.2 K€	24%	10.2-26.1 K€	11%
	+40 K€	10%	20.2-35.2 K€	30%	26.1-74.5 K€	30%
			35.2-60 K€	37%	74.5-160.3 K€	41%
			60-240 K€	45%	+160.3 K€	45%
			+240 K€	47%		
Impost de societats (2022)	10%		25%		25%	
Cotitzacions socials	16%		28%		37%	
Salari mínim (2022)	1,158 €		1,000 €		1,678 €	

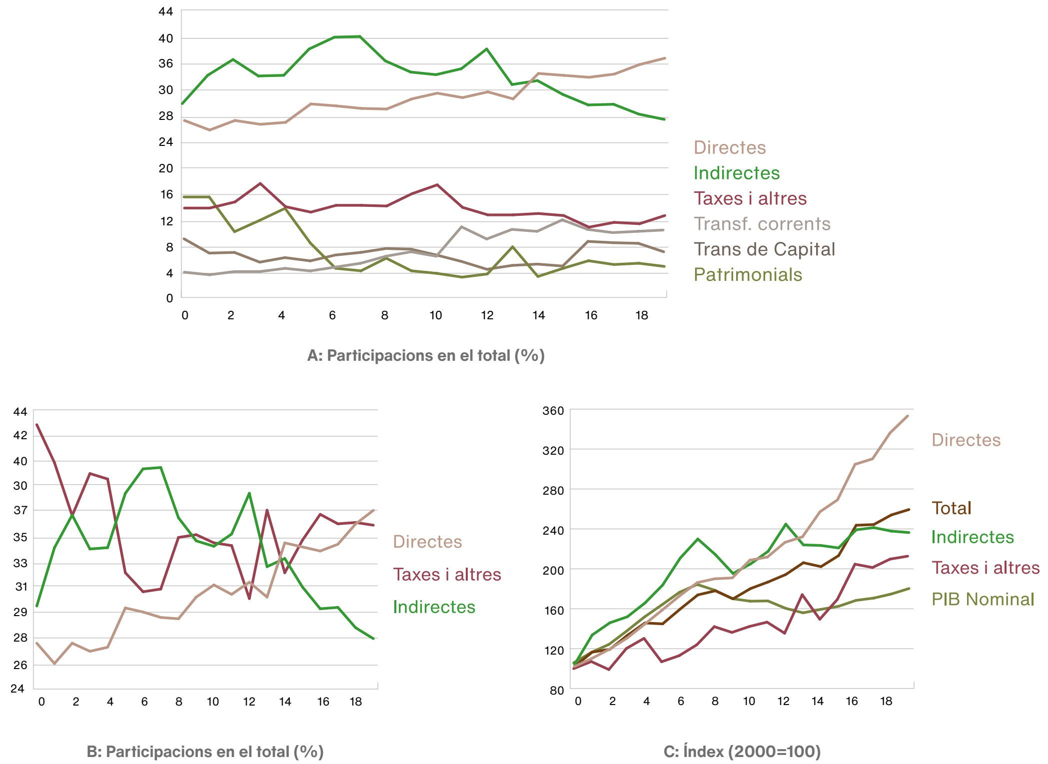
Source: Compiled by author(s). Social security contributions are from Andorra Advisors (https://www.andorra-advisors.com/impuestos-andorra/).

Therefore, from a taxation perspective, Andorra is an attractive country for individuals and companies. We find it surprising that, despite such favourable taxation, Andorra has not attracted more companies. Its mountainous location in southern Europe has probably been one of the factors limiting Andorra's economic appeal. But there may be other reasons. Douglas, the capital of the Isle of Man, is 436 kilometres from London, and Andorra is just 191 kilometres from Barcelona. Moreover, Andorra can be reached by car from Barcelona, whereas to reach Douglas cars need to be loaded on to a ferry.

In Panel A of Chart ?, we have plotted the composition of revenue of the Andorran public sector. Up to 2014, the Andorran public sector was financed mainly with indirect taxes. In 2014, for the first time in Andorra's recent history, direct taxes (personal income tax, corporation tax and social security contributions) generated more than indirect taxes. From that point on, the differences in revenue collection have been widening, reaching 10 percentage points of total revenue in 2019. Each of the remaining taxes (fees, property taxes and current and capital transfers) contribute substantially less to total revenue. In Panels B and C of Chart ?, we have grouped these taxes under the heading 'Fees and other'.

In these two panels, we can see that direct taxes collect the most and their share of the revenue has increased by about 10 per cent between 2000 and 2019. We also find that the share of indirect taxes has declined steadily since 2012 and that the share of fees and other taxes has been the most volatile until 2016 when it seems to have stabilised.

Figure 12: Public revenue in Andorra



Source: Department of Statistics of Andorra.

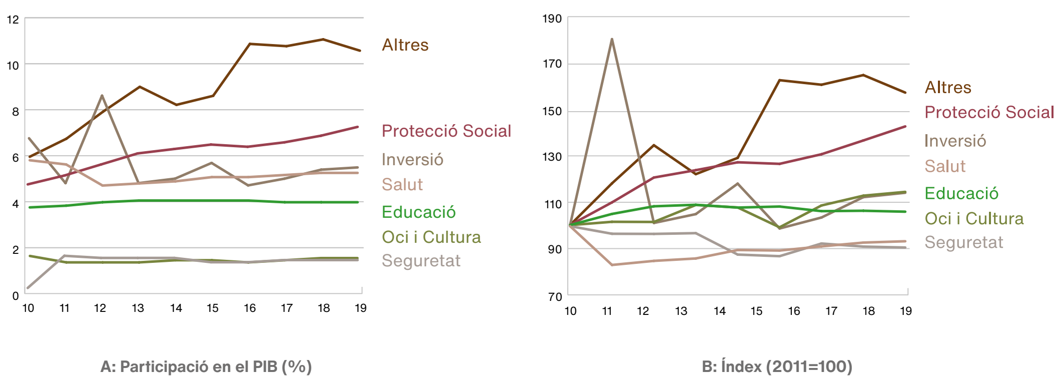
Finally, in Panel C of Chart ?, we have plotted an index illustrating the evolution of the collection of these three taxes, of total revenue and of Andorran nominal GDP between 2000 and 2019. The collection of all taxes has grown substantially more than nominal GDP. In this period, nominal GDP grew by 82 percentage points, revenue from fees and other taxes by 115 points, indirect taxes by 139 points, total revenue by 160 points, and direct taxes by 254 points.

These data confirm that the tax burden has increased by about 80 percentage points in Andorra between 2000 and 2019, when measured by subtracting the growth rate of nominal GDP from that of total revenue. Of course, such high rates of growth in the tax burden are difficult to sustain over time. Part of the growth in the tax burden can be explained by the growth in the Andorran welfare state, which aspires to resemble that of its European neighbours. But once Andorra has a welfare state on a par with its European neighbours, it would have to stabilise its tax burden in order not to lose one of its main attractors of foreign investment.

5.5. Public expenditure

In Chart ?, we have plotted the functional classification of Andorran public expenditure between 2010 and 2019. In Panel A of this chart, we have plotted the evolution of expenditure items as a percentage of GDP, and in Panel B, we have calculated a 2011-based index of the amounts of these items. In 2019, the Andorran public sector devoted 7.3 per cent of GDP to social protection, 5.5 per cent to public investment, 5.3 per cent to public healthcare, 4 per cent to education, 1.6 per cent to leisure and culture, 1.5 per cent to security, and 10.6 per cent to expenditures that are not included in these items, which the Department of Statistics does not identify, and which we have obtained residually from the total public expenditure.

Figure 13: Public expenditure in Andorra

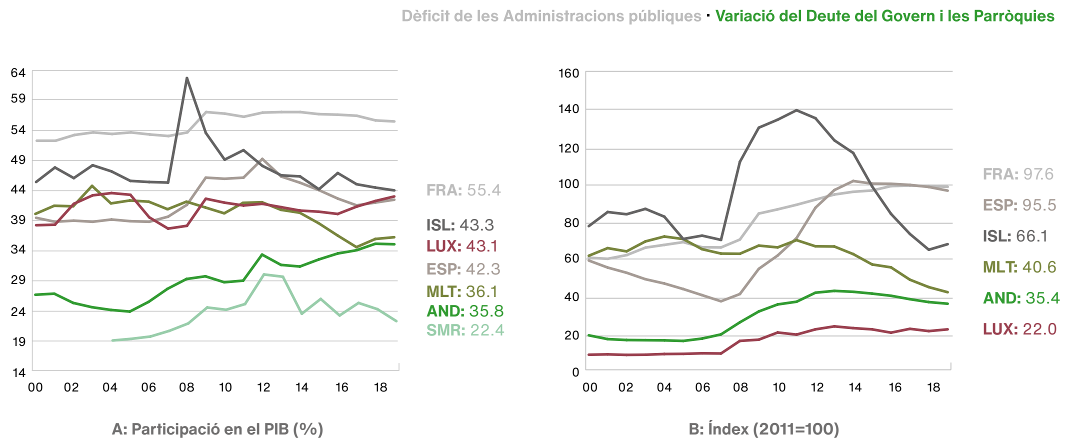


Source: Department of Statistics of Andorra.

5. Hem elegit el 2011 per evitar el salt en la despesa pública en seguretat que, precisament, es va produir el 2011.

In the last eight years, the items that have grown by far the most have been other expenditure and social protection, which includes pensions and unemployment benefits and which grew by 44 per cent. Interestingly, the third fastest growing item was leisure and culture, with 15 per cent. Spending on education rose 6 per cent, while healthcare and security expenditure fell 7 per cent and 10 per cent respectively.

Figure 14: Public expenditure and public debt in the sample countries



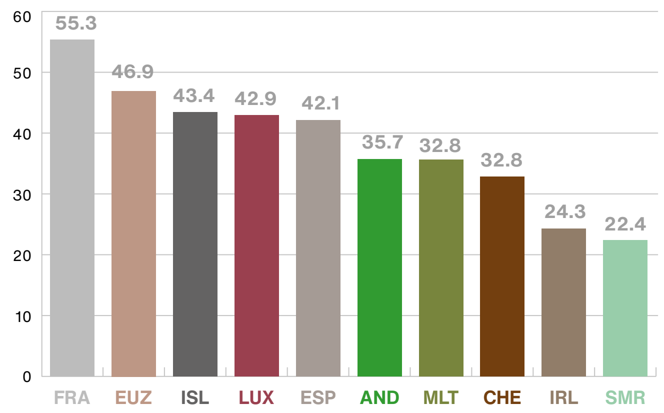
Source: IMF.

5.6. International comparisons

In Chart ?, we have plotted the series for public expenditure and public debt in the sample states for which we have data for between the years 2000 and 2019. Panel A of this chart shows the public expenditure data. Among this group of states, France stands out with public spending exceeding 50 per cent of its GDP. Iceland, Luxembourg and Spain follow, with public expenditures of more than 40 per cent of their GDPs. Next, in the lower middle part of the table, are Malta and Andorra, with public expenditure of around 36 per cent of their GDPs. Finally, in the lower part of the table, we see San Marino, with 22 per cent.

The Andorran figure has two readings. On the one hand, it establishes that, compared with other European states, the weight of the Andorran state on its economy remains relatively small and it has room to grow. Yet, on the other hand, this same figure shows that the weight of the Andorran state is already substantially greater than that of San Marino, which has the lowest public spending and, therefore, the lowest tax rates, and is the most attractive country for foreign investment among the sample countries.

Figure 15: Public administration expenditure in 2019 (% GDP)



Source: Eurostat and IMF

Since these two interpretations of public expenditure data are contradictory, in Chart ? we have extended the sample with data on public administration expenditure in 2019 for the Eurozone (47 per cent), Switzerland (33 per cent) and Ireland (24.3 per cent). This extended international comparison helps us to identify three possible futures for public spending and, therefore, taxes in Andorra. Andorran society could continue along its path of convergence towards the Eurozone average by increasing the weight of its public sector; it could stay as it currently is with the state share in its economy similar to those of Malta and Switzerland in 2019 (around 10 points lower than the Eurozone average); or it could reduce the weight of its public sector by around 10 percentage points, to emulate the growth strategies of Ireland and San Marino.

Lastly, In Panel B of Chart ?, we have plotted the evolution of public debt in the sample countries for which we have data for between the years 2000 and 2019. This chart highlights the increase in Iceland's public debt, which in 2011 reached 140 per cent of its GDP as a result of the financial crisis and the bailout of its banks. Also surprising is the speed of its subsequent reduction to 66 per cent of GDP in 2019, only eight years later.

The most indebted countries in the sample are France and Spain, with debts close to 100 per cent of their GDPs in 2019, and the least indebted countries are Luxembourg, Andorra and Malta, with debts in 2019 of 22, 35 and 40 per cent of their respective GDPs. In terms of public debt, Andorra's situation is also relatively comfortable. As we have mentioned above, the International Monetary Fund expects this situation of relative comfort to last for the next few years, despite the COVID-19 crisis.

The conclusion of this part of our analysis is that despite the considerable increase in the share of the public sector in the Andorran economy in recent decades, public finances in Andorra are reasonably balanced, perhaps with the sole exception of public pensions. If this situation were to continue over the next few years, we believe that the public sector should not be a limiting factor in the growth of Andorra's economy.

6. The external sector

Information on the Andorran external sector has been particularly difficult to find. The International Monetary Fund (IMF) database only contains complete data for the Andorran external sector from 2019, and information on the trade balance since 2017.

6.1. The balance of payments

In Chart ?, we have collated the Andorran balance of payments data published by the IMF in its Article IV Consultation for Andorra in 2022.

Table 4: Andorran balance of payments (% GDP).

	2017	2018	2019	2020	2021
Exportacions de béns i serveis	76.6	75.4	74.0	63.7	66.3
Importacions de béns i serveis	62.4	64.6	64.4	59.8	61.1
Balança comercial	14.2	10.9	9.6	4.0	5.3
Rendes primàries	-	-	9.7	12.0	12.0
Rendes secundàries	12.0	12.0	-1.3	-1.4	-1.4
Balança per compte corrent	-	-	18.0	14.6	15.9
Balança de capital	-	-	0.0	0.0	0.0
Balança financera	-	-	17.6	15.1	15.9
Errors i omissions	-	-	-0.4	0.4	0.0
Reserves internacionals brutes (M€)	-	-	-	41.9	138.1

Source: IMF, Andorra Article IV Consultation 2022. The increase in gross international reserves that occurred in 2021 was due to the allocation of Special Drawing Rights (SDRs) by the IMF in August of that year to all IMF member countries. Andorra was allocated SDR 79.1 million. Without this allocation of SDRs, Andorra's international reserves would have been 40.8 million euros. The exchange rate we have used for this calculation is that of 27 December 2021, 1.23 EUR/SDR.

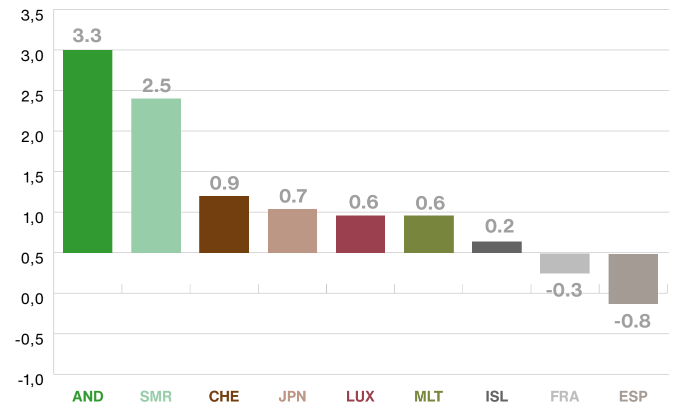
These data establish that the financial position of the Andorran external sector is very healthy. In 2017, 2018 and 2019, Andorra recorded a trade surplus of more than 10 per cent of its GDP and, despite pandemic restrictions in 2020 and 2021, the trade surplus remained at around 5 per cent. Current account surpluses were even greater. In 2019, it reached 18 per cent of GDP, and 2020

and 2021, 15 and 16 per cent respectively. As we will see below, these surpluses have enabled Andorran households and businesses to accumulate external financial assets and given Andorra one of the healthiest net international investment positions of all European economies.

6.2. Net international investment position

In Chart ?, we have plotted the net international investment position (NIIP) of the sample countries for which we have data, and we have supplemented this information with the data for this variable from Switzerland (CHE) and Japan (JPN) because these are two states with a particularly positive NIIP.

Figure 16: Net international investment position in 2019



Source: IMF (https://data.imf.org/regular.aspx?key=62805744)

In 2018, with a positive NIIP equivalent to 3.3 per cent of its GDP, Andorra had the best NIIP of all countries in this group. This is particularly relevant because it establishes that, from the point of view of its international balance sheet, the Andorran economy has significant reserves of international assets that allow it to look to the future without excessive concern.

7. Competitiveness

From a microeconomic point of view, competitiveness is the ability of companies to maintain or increase their profits and market shares in a dynamic and changing environment. From a macroeconomic perspective, competitiveness is the ease of absence or legal obstacles encountered when doing business in a given country.

Until 2020, the World Bank produced a competitiveness indicator that scored the costs of starting a business, obtaining construction permits, obtaining electricity supply contracts, registration costs, costs of obtaining credit, protection for minority shareholders, taxation, costs associated with international trade, legal certainty and insolvency regulation. Unfortunately, Andorra was not included in its database.

Generally speaking, competitiveness is more of a microeconomic than a macroeconomic matter. A detailed study of the dynamics of the creation and breakdown of enterprises, their profitability, their growth and their grouping by sector is beyond the scope of this study. Fortunately, however, the evolution of the sectoral composition of GDP affords us a general overview that means we can broadly assess the competitiveness of Andorran companies.

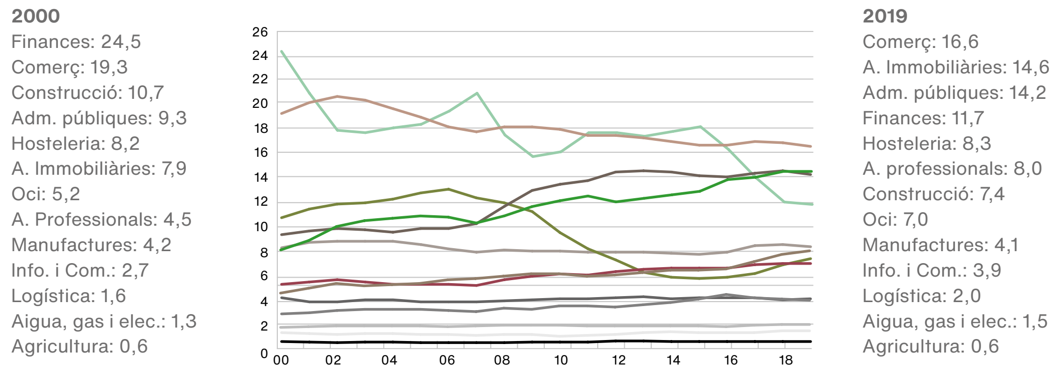
The Department of Statistics of Andorra offers us quite detailed information on the evolution of economic activity, grouping Andorran companies into 13 sectors. The primary sector includes enterprises engaged in agriculture, forestry and fishing. Industrial enterprises are grouped into three sub-sectors: construction, manufacturing, and water, gas and electricity. Services enterprises are grouped into nine sub-sectors: real estate activities; professional, scientific, technical and administrative activities; public administration, defence, education, healthcare and social work activities; arts, entertainment and leisure and activities of households and extraterritorial entities; wholesale and retail trade and vehicle repair; finance and insurance; hotels and catering; information and communications; and transportation and storage logistics activities.

In Chart ?, we have plotted the share of these sub-sectors in Andorran GDP in the period between 2000 and 2019, and in Chart ?, we have plotted the changes in the share of these sub-sectors that have occurred between these years.

7.1. Andorra is a country of services

If we group the sub-sectors mentioned in the previous section by branches of activity, we can see that Andorra is, by a large margin, a services country. The share of its industry is less than 15 per cent of GDP, and the share of its primary sector in GDP is minimal.

Figure 17: Shares of sectors in GDP (%).



Source: Department of Statistics of Andorra

More specifically, in 2000, agriculture contributed 0.6 per cent of Andorran GDP, and in 2019, this percentage had not changed. In the year 2000, industry contributed 16.2 per cent of Andorran GDP, and this percentage had fallen by 2.6 percentage points to 13.6 in 2019. This decrease is almost entirely due to the fall in the GDP share of construction, which went from 10.7 to 7.4 per cent.

The rest of Andorra's activity—around 85 per cent according to the Andorran Department of Statistics and around 80 per cent according to the World Bank—is in services. The share of services had grown 3.2 percentage points between 2000 and 2019 at the expense of the industrial sectors.

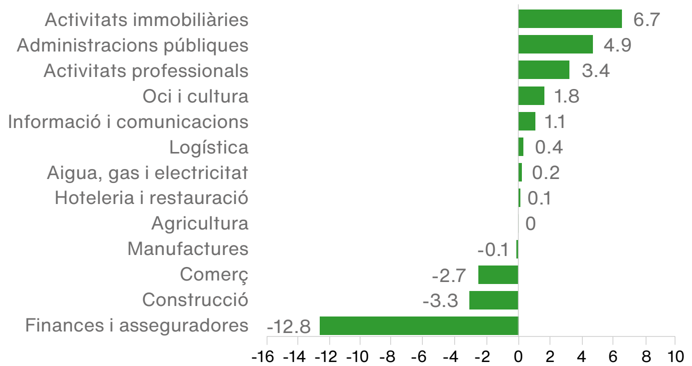
Therefore, Andorra is a country that has all but abandoned its agricultural and livestock farming past, whose industry is relatively small and dominated by the construction sector and whose most competitive sector is services.

7.2. Finance loses and real estate gains

If we compare the evolution of the sub-sectors, we see that in the year 2000, Andorra was specialised in finance (24.5 per cent) and commerce (19.3 per cent). These were followed by construction (10.7 per cent), public administration (9.3 per cent), hotel and catering (8.2 per cent) and real estate activities (7.9 per cent). The remaining sub-sectors were smaller and their GDP share was less than 5.5. per cent.

Twenty years on, in 2019, the composition of Andorran GDP had changed considerably. Finance had lost 12.8 percentage points of its share of GDP and was no longer so dominant. The weight of construction and commerce had also decreased, by 3.3 and 2.7 percentage points respectively. In contrast, real estate activities, public administration and professional activities had increased their share by 6.7, 4.9 and 3.4 percentage points respectively.

Figure 18: Change in sector share of GDP between 2019 and 2000.



Source: Department of Statistics of Andorra

In 2019, Andorra was no longer a banking-dominated country, but a country where economic activity was more diversified. Commerce, real estate activities and public administration were the largest sub-sectors that year, but the GDP shares of all of them were less than 17 per cent.

The loss of weight of Andorran banking has the advantage of reducing the concentration of Andorran GDP in a single sector and Andorra's exposure to financial crises. Yet, it has the drawback of forcing Andorra to seek new ways to create value in other activities. The end of banking secrecy, which likely affected this result, improves Andorra's international reputation and removes it from the lists of tax havens, but obliges it to look for other activities to take the place previously occupied by banking.

For its part, the reduction in the weight of commerce, affected by online sales and increase in indirect taxation, casts doubt over the future of a sector that has traditionally played a fundamental role in the growth of the Andorran economy. This decline in commerce underscores the need to transform the Andorran economy.

The increase in the weight of real estate activities is more difficult to interpret because its sustainability over time is questionable, particularly in the context of Andorra's declining population. The increase may be due to Andorra's specialisation in attracting tourists, digital nomads and other migrants, or it could be the result of increased real estate speculation.

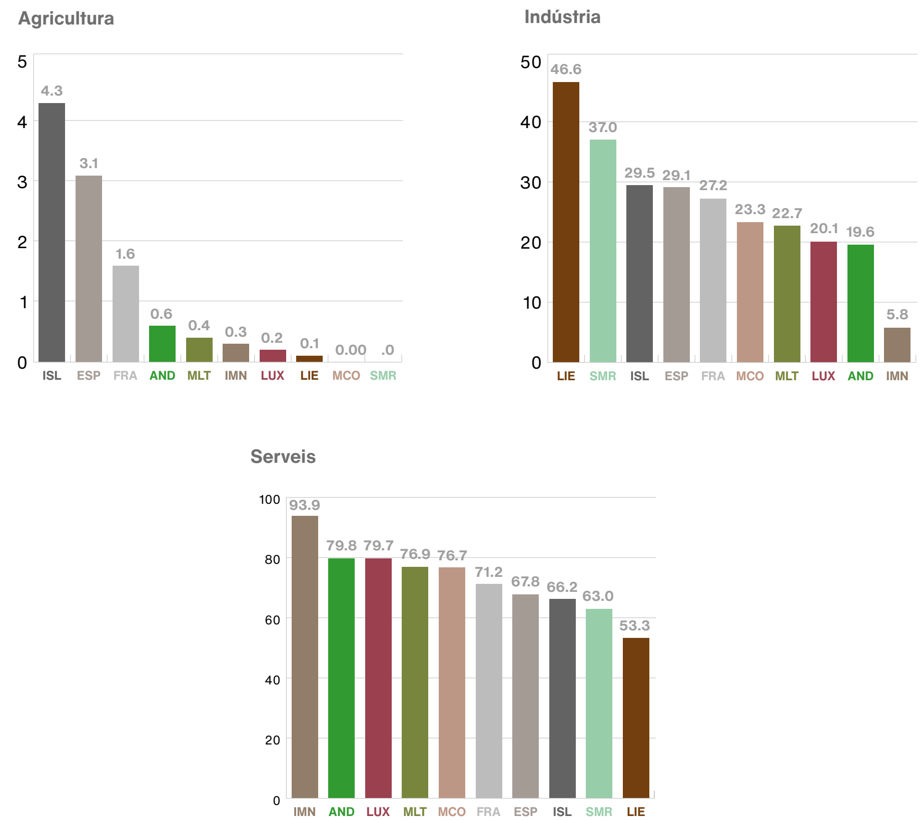
The rise in professional activities (up 3.4 percentage points of GDP between 2000 and 2019) leads us to believe that Andorra could strengthen its GDP composition by becoming a digital hub for start-ups and digital nomads. In addition to seeking a favourable environment for their professional activities and businesses, these players are interested in winter sports and the mountains.

Finally, the growth in the share of Andorra's public administrations in GDP is more concerning because it forces the country to maintain sufficient taxation to finance these services. If this growth does not stabilise, it could end up weighing on the growth of the Andorran economy.

7.3. International comparisons

In Chart ?, we have plotted the shares in GDP of agriculture, industry and services in the sample countries and we compare them to the shares of the Andorran sectors.

Figure 19: Shares in GDP in 2019 (%).



Source: Source: World Bank. The data for SMR are from the International Monetary Fund.

Among the small European states, only Iceland has a larger primary sector than that of Andorra, although the differences between Andorra and the other European countries are very small. Of the countries with the greatest industry weight, Liechtenstein and San Marino stand out, with 47 per cent and 37 per cent, respectively. The Isle of Man has surprised us with 94 per cent of GDP devoted to services.

Since the early 20th century, Liechtenstein has been an industrialised economy. It has an extensive network of export-oriented SMEs in high-tech goods in the food, dental, pharmaceutical and chemical sectors. Liechtenstein spends 5.6 per cent of its GDP on R&D, and its industrial sector employs 38 per cent of its workforce.

San Marino is the other country in the sample whose industrial sector contributes over 35 per cent of its GDP. San Marino produces textiles, electronics, ceramics, cement and wine, and is also known for its furniture and stamp and coin collections.

In terms of the tertiary sector, the Isle of Man stands out with a remarkable 94 per cent of its GDP devoted to services. According to the Department of Statistics of the Isle of Man, its main sectors are online gaming and insurance, with each representing 17 per cent of GDP, followed by the ICT sector and banking, which each contribute 9 per cent of GDP. If we group these sectors together, we see that the financial sector generates 26 per cent of the Isle of Man's GDP and the ICT sector, in the broad sense, contributes another 26 per cent.

Andorra could look to these three countries. One option could be to set a strategic objective to strengthen its industrial sector by finding a large industrial company to establish itself in its territory. Another option could be to bolster its services sector by becoming a hub for start-ups and digital nomads. Either of these options could supplement commerce and the real estate sector, which are currently the dominant sectors in the Andorran economy, and whose futures are in question, as we have mentioned above.

8. Conclusions

The main difficulty we have encountered in preparing this macroeconomic analysis of the Andorran economy has been the lack of data. Therefore, the first conclusion of this study is that Andorra should devote more resources to its Department of Statistics in order to improve its macroeconomic information and to make it available to researchers, business owners and the general public. We found the public sector accounts to be particularly opaque and incomplete.

What stands out most in the comparison of Andorra with the small European states in the sample is that Andorra's population growth between 1970 and 2010 has been much higher than that of the other states. On the other hand, in 2008, Andorra reached its highest number of births and, in 2010, there was a significant drop in immigration. As a result of these changes, the Andorran population has declined by approximately 9 per cent between 2009 and 2019 (see Chart ?).

Despite the large growth in its population, between 1970 and 2019, Andorra's GDP growth has been disappointing. This performance and the evolution of its population have meant that Andorra's GDP *per capita* has grown less than in other states in the sample (see Chart ?). To avoid a repeat of this situation in the future, Andorra requires policies that encourage growth in its productivity and it must design its birth rate and immigration policies with special care to ensure they are consistent with its macroeconomic objectives.

Public expenditure and public debt have increased considerably in Andorra between 2010 and 2019 (see Chart ?). However, between 2013, and 2019, since the implementation of indirect tax, Andorra has managed to stabilise the outstanding balance of the public debt of its Government and Parishes. If Andorra can keep its public accounts balanced in the future, its public sector should not drag on the growth of its economy.

Between 2017 and 2021, Andorra recorded large surpluses in its trade and current account balances. Moreover, Andorra has an exceptional net international investment position that guarantees its international solvency (see Chart ?). These characteristics of its external sector allow Andorra to face the future of its economy with confidence.

Our comparative analysis of the evolution of the Andorran economy leaves us with a bittersweet feeling. On the one hand, the evolution of Andorra's GDP *per capita* between 1970 and 2019 was disappointing. We could exaggerate a little and say that in terms of GDP *per capita*, Andorra has lost five decades, but in exchange for more than tripling its population. On the other hand, Andorra's external surpluses and exceptional net international investment position suggest that the Andorran external sector is balanced and show the way forwards.

Looking to the future, we believe Andorra is at a crossroads. Andorra has endowed itself with a welfare state comparable to that of its European neighbours and the performance of its external sector is difficult to improve. With the sole exception of its pension system, Andorra's public sector appears sustainable, even if taxation (both direct and indirect) is among the lowest in Europe. However, Andorra is faced with some important economic decisions that will shape its future.

Firstly, Andorra must define its economic relationship with the European Union. This relationship must be compatible with its growth strategy, and this strategy must be coherent with the evolution of its population and migration policies. Given that banking and international trade based on tax advantages are likely to continue to lose weight in Andorra's GDP in the future, Andorra will have to replace them with other activities, which should be of high added value. Tourism and real estate activities do not seem to us to be sufficient to guarantee the growth of Andorra's GDP *per capita*.

Following the example of other small European states, Andorra could try to attract a large corporation to reinforce its industrial sector. It could also become a technological hub that would attract tech start-ups, online activities (perhaps including activities related to virtual businesses and crypto-assets) and digital nomads.