



3 November 2015

Briefing Note

PORTUGAL'S DEMOGRAPHIC CRISIS

WILLIAM STERNBERG



1. INTRODUCTION

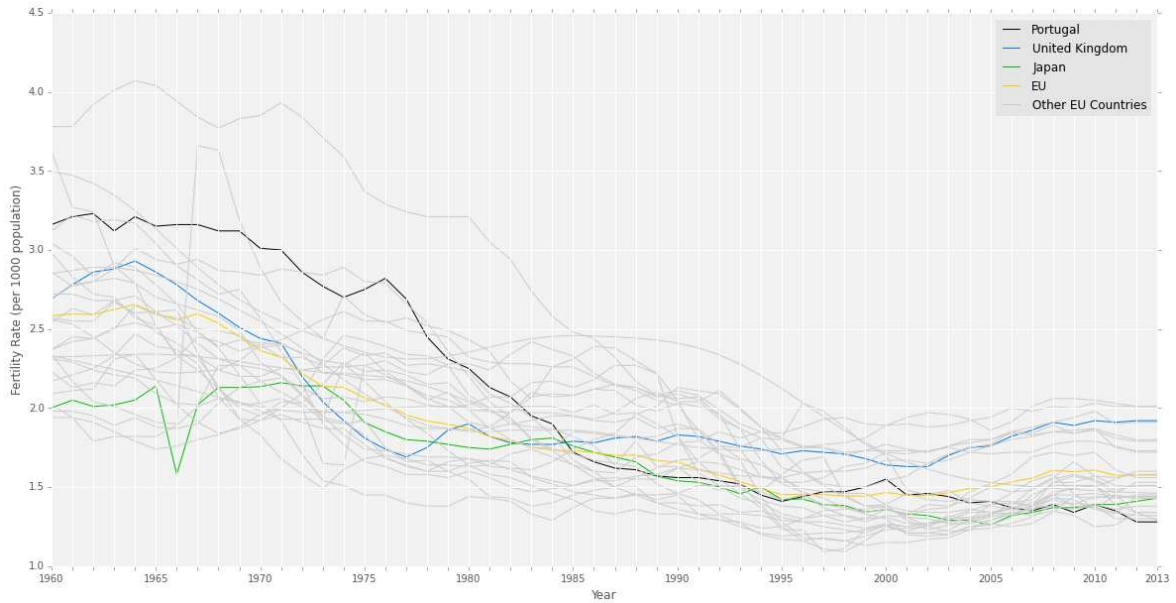
In recent years EU members have experienced many of the same demographic trends; a declining fertility rate, an aging population and slowing rates of population growth. However, certainly amongst the western European countries, Portugal stands out. Its rate of population growth has dropped very quickly in recent years and it currently has one of the fastest declining populations in Europe. It is vital to highlight that if the trends of the past twenty or so years continue, Portugal in the next 10-15 years will face major problems caused by the combined effects of a falling birth-rate, a declining labour force, an aging population and emigration of both skilled and unskilled workers. With legislative elections in October 2015, it is the responsibility of the new government to attempt to formulate policies that will prevent a possible future decline in international competitiveness.

Note: Unless specified otherwise, all data is from The World Bank and all graphs (in this section only) are produced using Python (Pandas). Other EU countries refers to all EU countries where data is available (apart from the UK and Portugal which are given separately). Japan is a country traditionally referred to in discussion of aging and declining populations so is included for reference where data is available.

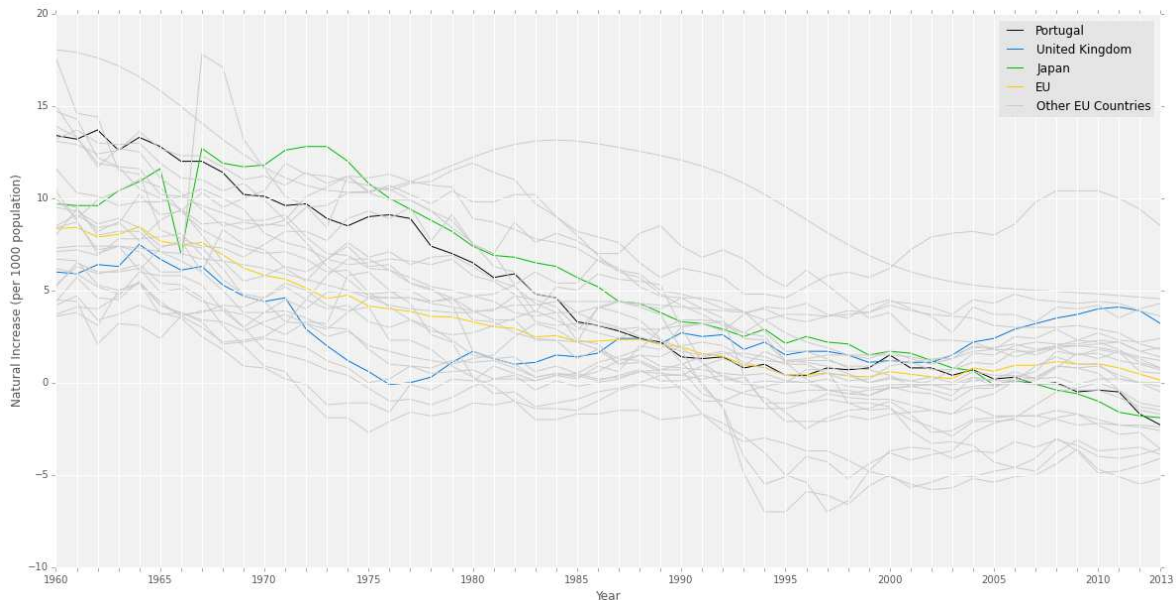


2. CURRENT TRENDS

2.1 Portugal has one of the lowest fertility rates in the world.

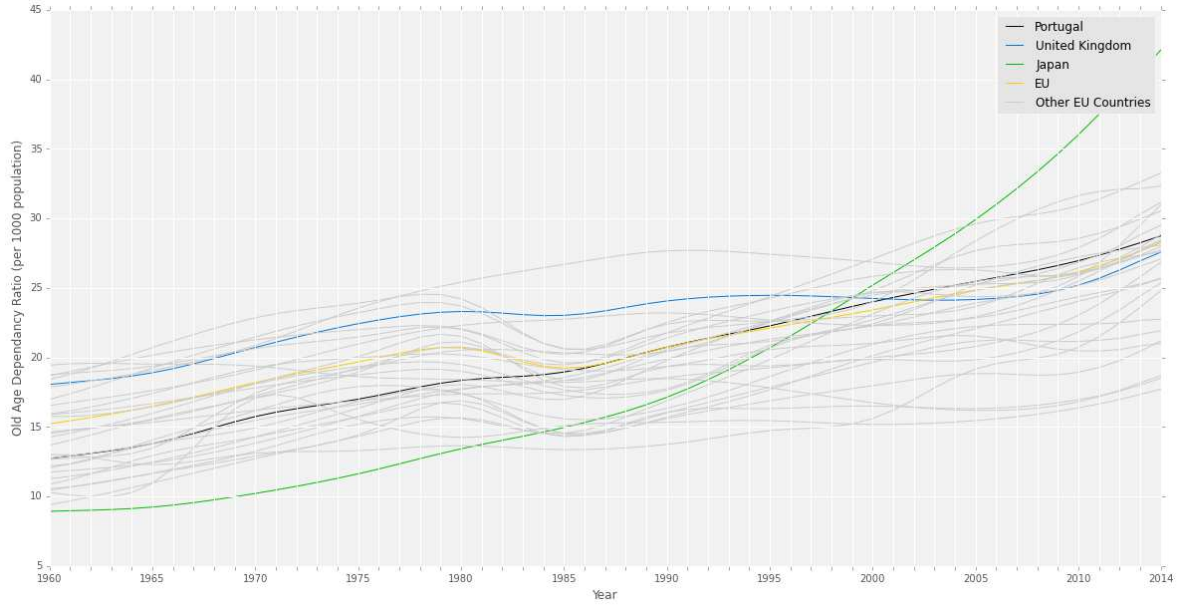


2.2 Portugal has a declining rate of natural increase which is now negative. In this situation, natural increase is defined as the difference between the Crude Birth Rate per 1000 population and the Crude Death Rate per 1000 population.

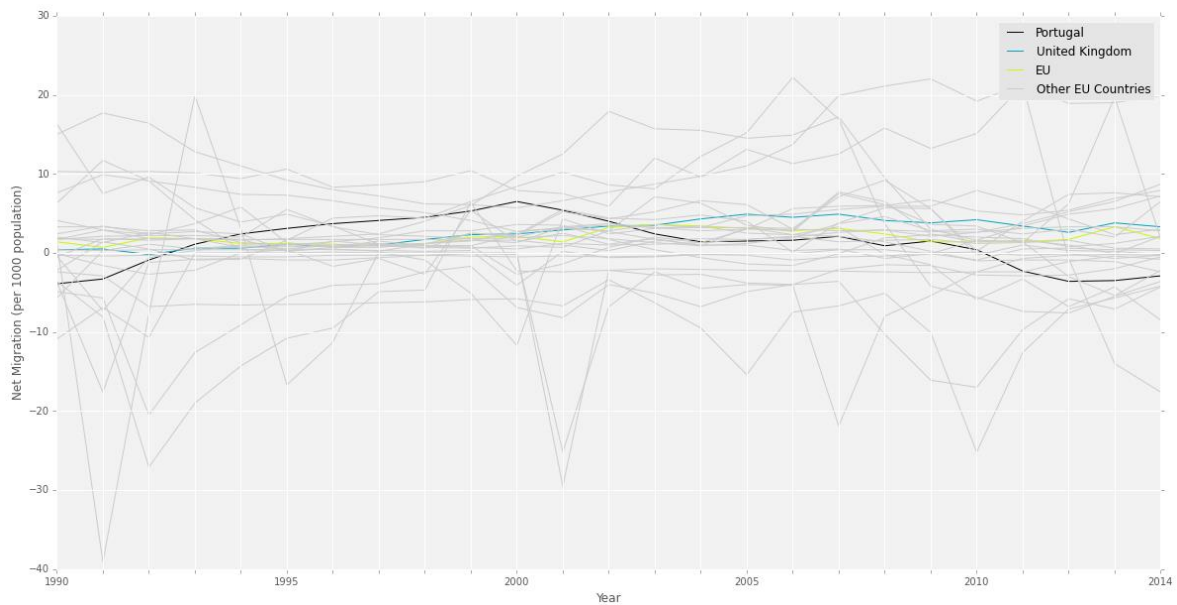




2.3 Portugal has a steadily increasing old-age dependency ratio: an aging population.

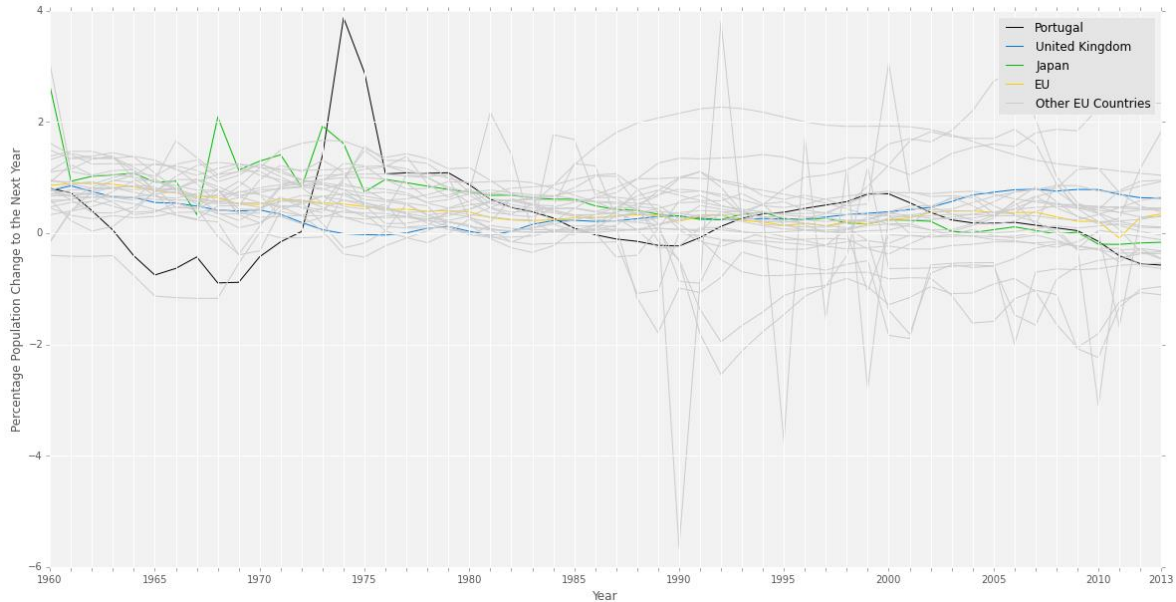


2.4 Net migration in Portugal has been decreasing since 2000 and is now negative (data is from Eurostat).

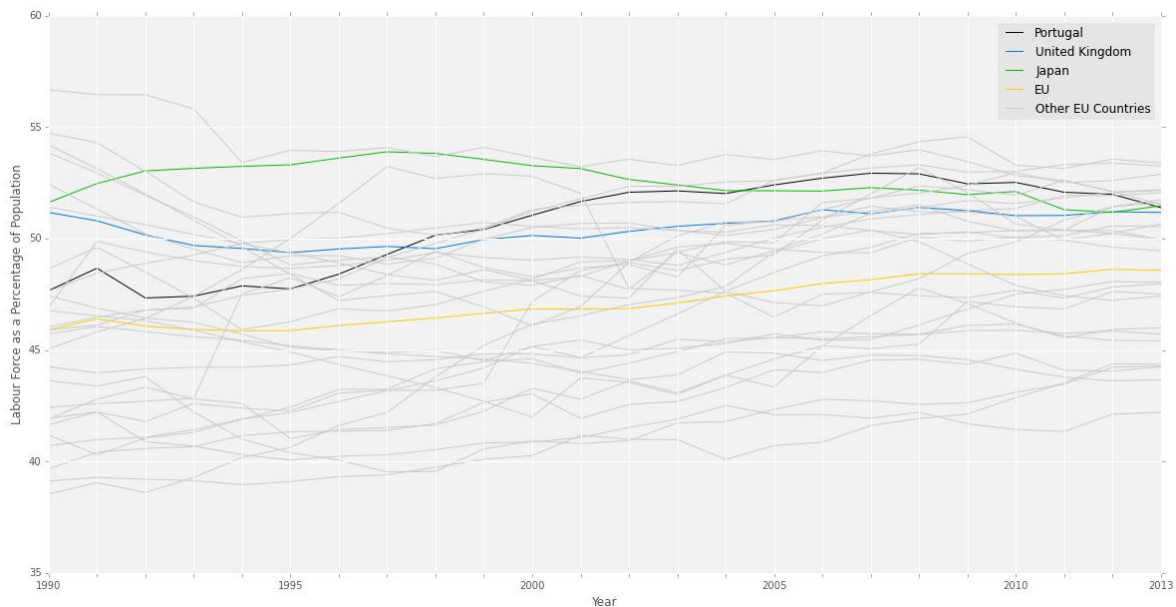




2.5 The population has started to decline. Here the percentage population change at 1960 means percentage change in population from the year 1960 to 1961. Negative values mean the population is declining.



2.6 Labour force (as percentage of population) has started to decrease.



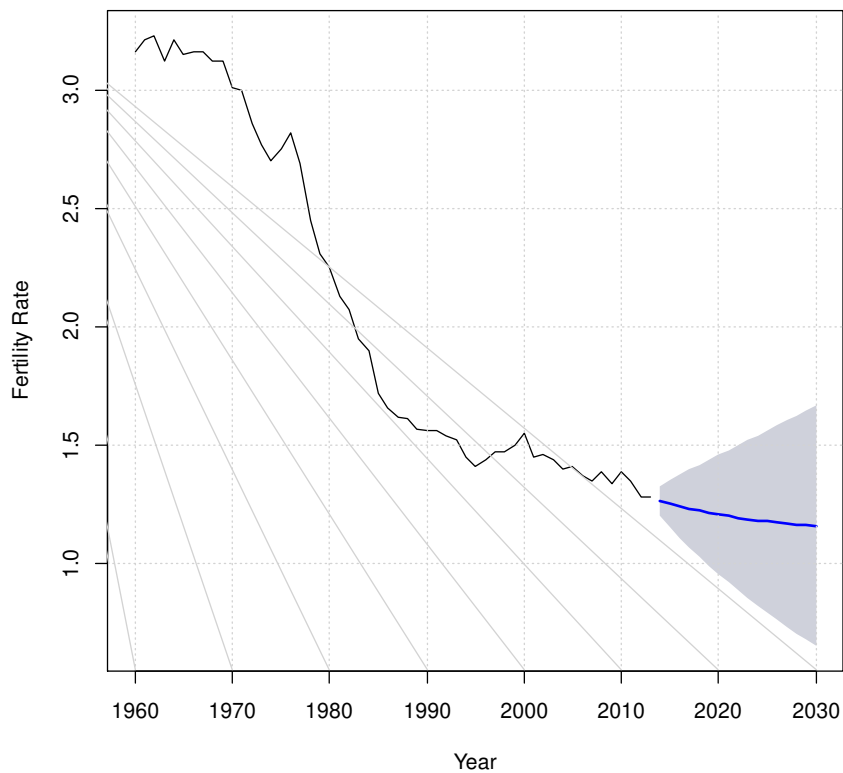
In many of these above plots you may notice that Portugal often does not have the most extreme demographic values amongst the EU members. But stability is important: often the extremes are caused by temporary fluctuations which stabilise over time. The reason Portugal is particularly worrying is its current values are not fluctuations but part of a stable trend.



3. PORTUGAL 2030 FORECASTS

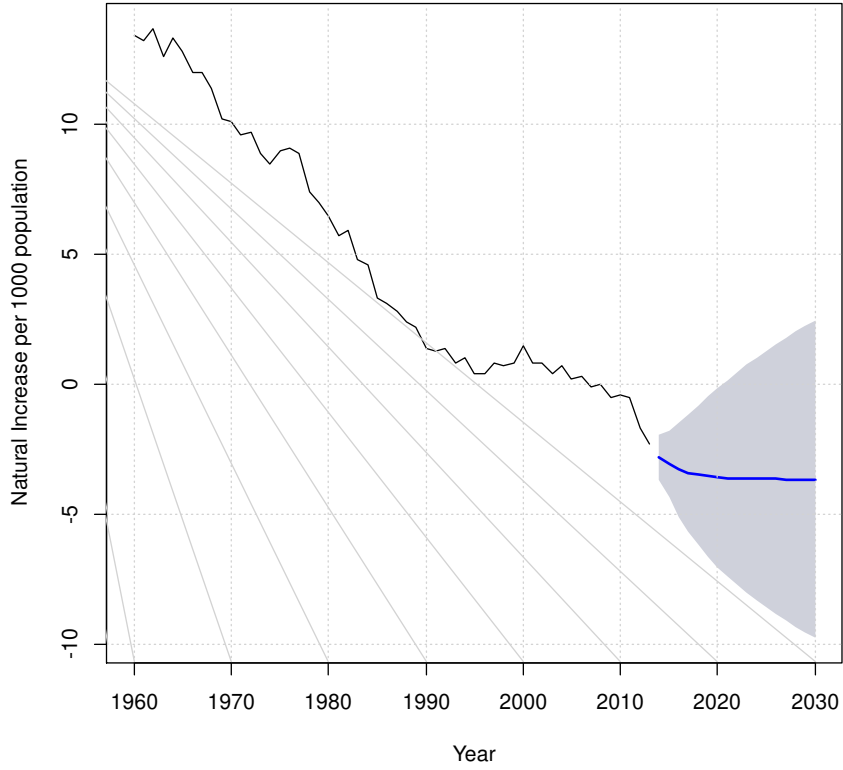
The aim of this section is to capture any trends in these demographic quantities and to present some initial estimates of future data. For the forecasts R was used to create both Auto-Regressive Integrated Moving Average models (ARIMA) and Exponential Smoothing models (ES). Then standard model diagnostics are done (residual and auto-correlation function checks as well as ensuring suitable error distributions). Having chosen (if suitable) both an ARIMA and ES model we perform some cross validation to pick our final model. In each of these graphs the blue line refers to the forecast and the grey shaded areas represent the 90% confidence intervals. In each of these models we are assuming that there we be no additional external factors i.e. that current trends will continue. The data comes from The World Bank unless specified otherwise.

3.1 Fertility rate:

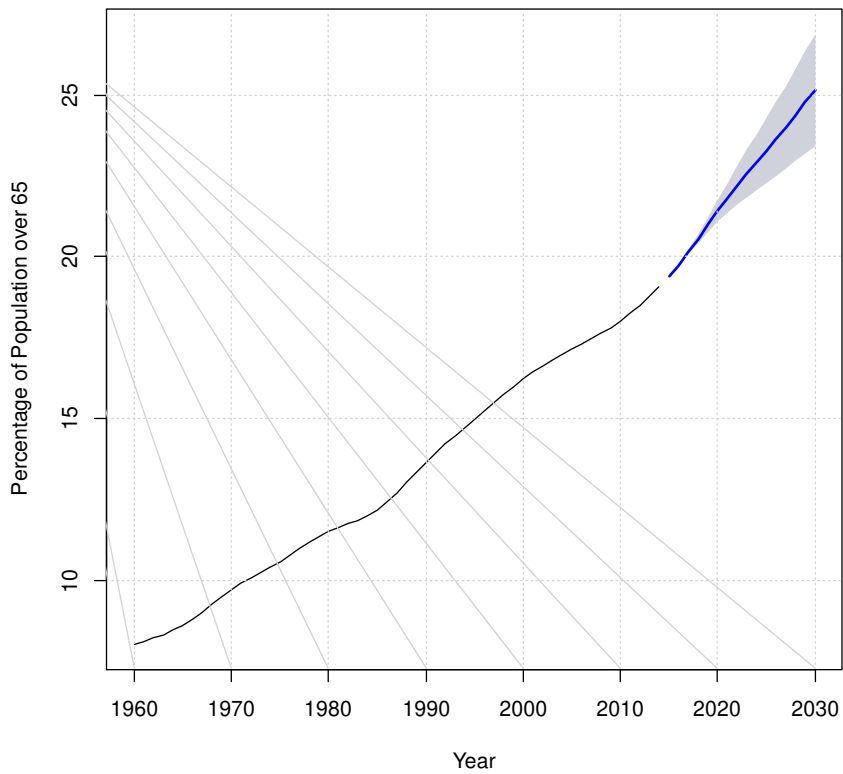




3.2 Natural Increase:

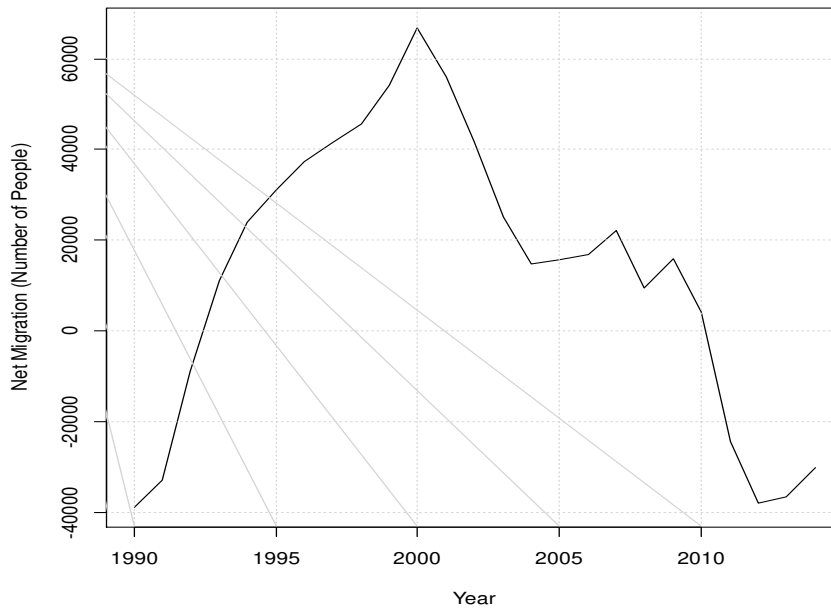


3.3 Percentage of Population over 65





3.4 Net Migration: This has continued to fall since 2000. However, there is not enough data for a meaningful time series fit – just looking at the net-migration data is it not clear whether this is ‘seasonal’ i.e. the data from 1990-2014 will repeat or now in a long term downward trend.



So we will use two of Portugal's National Institute of Statistics migration scenarios.¹ The first one has net migration slowly increasing (becoming less negative but never positive) and the second has net migration quickly increasing (soon becoming positive).

Year	Scenario 1 – Net Migration (Number of People)	Scenario 2– Net Migration (Number of People)
2015	-29473	-12556
2016	-28205	-8567
2017	-27171	-5304
2018	-26292	-2549
2019	-25535	-160
2020	-24864	1945
2021	-24267	3832
2022	-23722	5535

¹https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine__indicadores&indOcorrCod=0007830&contexto=bd&selTab=tab2



2023	-23230	7093
2024	-22776	8522
2025	-22357	9849
2026	-21961	11083
2027	-21595	12237
2028	-21250	13321
2029	-20926	14345
2030	-20619	15312

3.5 Labour force as a percentage of the population: since 1990 it has stayed within an approximately 5% band and with an aging population and emigration of the working population we would expect labour force as a percentage of the population to fall slightly. Our assumption is that we do not expect Labour force as a percentage of the population to change drastically between 2015 and 2030; so forecast estimate will be the average of 1990-2014: 50.64%. Our Lower Bound will be the minimum since 1990: 47.34%. Upper Bound the maximum since 1990: 52.94%.

3.6 Population Change: This will be estimate from changes in natural increase and net-migration. Testing this method on previous data does not lead to large differences.

4. SUMMARY:

	2014 <i>Latest Data from World Bank. This may be from 2013 if no more data is available)</i>	2030 Forecast	Lower Bound 2030	Upper Bound 2030
Fertility Rate	1.28	1.15895	0.652145	1.665754
Rate of Natural Increase	-2.3	-3.64832	-9.75376	2.457111984
Percentage of Population over 65	19.06003	25.1675	23.43119	26.90382
Labour Force as a Percentage of Population	51.39313	50.63938	47.33671	52.93562



Scenario 1: Net Migration slowly increases but does not become positive.

	2014 <i>(Latest Data from World Bank. This may be from 2013 if no more data is available)</i>	2030 Forecast	Lower Bound 2030	Upper Bound 2030
Population	10,397,393	9,449,614	8,844,888	10,092,203
Labour Force Size	5,374,331	4,785,226	4,186,879	5,342,370

Scenario 2: Net Migration quickly increases becoming positive in a couple of years.

	2014 <i>(Latest Data from World Bank. This may be from 2013 if no more data is available)</i>	2030 Forecast	Lower Bound 2030	Upper Bound 2030
Population	10,397,393	9,896,967	9,277,718	10,554,667
Labour Force Size	5,374,331	5,011,763	4,391,767	5,587,178

5. WHY IS THIS A PROBLEM?

- 5.1 This is evidence of an aging population which will need to be supported.
- 5.2 This suggests that the labour force size will decrease; leading to the question of how can Portugal keep its international competitiveness as it labour force potentially decreases by over 600,000 in the next 15 years.

6. WHAT CAN BE DONE?

It makes sense to focus on three main areas: increasing fertility rate, reducing emigration of skilled workers and increasing immigration to keep the labour force size (at least) constant. Aging populations and fertility rates are quite well studied already so this section will focus solely on giving initial suggestions on how to increase the future size of the labour force.

If we look at the following table produced by Observatório da Emigração (OEm),² we can see that the majority of (OECD) emigrants are in the 25-64 age band. This suggests that most

² http://www.observatorioemigracao.pt/np4/?newsId=4093&fileName=OEm_Factbook__2014.pdf



emigrants are leaving to find jobs. We can also see that a large percentage (around 40%) have medium (secondary level) or high (tertiary level) educational attainment.

Table 1.7 Stock of Portuguese-born emigrants in OECD countries by age group and educational attainment, 2000/2001 and 2010/11

Indicator	2001		2011	
	Thousands	%	Thousands	%
Total	1,193	100.0	1,474	100.0
Age group				
15-24	82	6.9	93	6.3
25-64	991	83.1	1,163	78.9
65+	120	10.0	218	14.8
Educational attainment				
Low	799	69.3	895	61.8
Medium	276	24.0	394	27.2
High	78	6.8	160	11.0
Unknown	40	..	26	..

Source Table by OEm, data from OECD, Database on Immigrants in OECD Countries, DIOC 2000-2001 and DIOC 2010-2011.

To be clear Portuguese-born emigrants means emigrants who were born in Portugal and not those born with Portuguese Citizenship in a country other than Portugal (See OEm Emigration Factbook Glossary).³ According to OEm estimates and collected data, in 2014 there were around 2 million Portuguese-born emigrants. Around 1.5m are represented by the above table but this data is from 2011 and recognising that the emigration rate has increased since then, the table can be seen as a fairly good representation of all Portuguese-born emigrants.

So any solution for increasing the labour force (or certainly preventing it from decreasing further) needs to be based on attracting migrants and encouraging emigrants to return.

7. INCREASING NET-MIGRATION:

7.1 Scholarship Program: The Portuguese Government could end university tuition fees for non-EU international students. EU students currently face a fee of just over €1000 but non-EU can potentially face much higher fees. The focus here should be on attracting students from former Portuguese colonies especially Brazil many of whom may well want to study abroad but also in their native language: Portugal has a real advantage here. There is also the option of providing maintenance grants to suitable international students. The aim is to provide international students with careers advice and grant them a work visa on completion of their studies to encourage them to enter the Portuguese labour force. The

³ http://www.observatorioemigracao.pt/np4/?newsId=4093&fileName=OEm_Factbook__2014.pdf



main problem of course is cost with no guarantee of benefits and the fact that many Portuguese universities are not that internationally attractive.

7.2 Tax incentives for skilled immigrants or returning emigrants to help match salaries earned abroad. Or more generally lower taxes for everyone. Ideally this should be focused on income tax which is extremely high compared to other EU countries; for example, Portugal has a 45% tax on income above €40,000 (around £30,000). But even indirect taxes like VAT (standard VAT is 23%⁴) could well be reduced. However, these are all the result of Portugal having only exited its international bailouts in 2014 and continuing austerity measures. These high taxes will likely decrease over time but with the European Commission keeping watch⁵ over Portugal this will not happen quickly. That said introducing a different (lower) rate of tax for international (non-EU) migrants could make Portugal a very attractive place to live or work whilst keeping tax revenues at a suitable level for debt repayments.

It soon becomes clear that the problem is not increasing the pool of potential migrants but a lack of suitable jobs. If more jobs are available then people will come.

8. INCREASING THE NUMBER OF JOBS:

With a relatively small workforce one area which could lead to reduced emigration and an increasing labour force size is working on the creation of small businesses and encouraging entrepreneurship and innovation.

8.1 Extension of the golden visa program. Currently, investors can gain a residency permits for suitable investments; for example, acquisition of property over €500,000 or the creation of at least 30 jobs. The level of investment could be reduced to the level of say acquisition of property over €250,000 or the creation of 5 (long-term) jobs.

8.2 Creation of a Portuguese Business Bank (based on the British Business Bank or the U.S. Small Business Administration), which will provide low-interest Loans, grants, advice and financial services to small businesses.

8.3 Reduction or elimination of corporation tax on small businesses as well as simplifying the tax system: Portugal is currently 64th in the world on the ease of paying taxes (by the World Bank Group).⁶

8.4 Introduce government subsidised professional training programs and apprenticeship programs to increasing employability of workers especially those with lower education

⁴ <http://www.vatlive.com/vat-rates/european-vat-rates/eu-vat-rates/>

⁵ http://ec.europa.eu/economy_finance/publications/eeip/pdf/ip006_en.pdf

⁶ <http://www.doingbusiness.org/data/exploretopics/paying-taxes>



attainment: according to OEDC only 38% of people in Portugal aged 25-64 have completed secondary education.⁷

The aim should be to encourage current Portuguese residents as well as residents of former Portuguese colonies in particular Brazil to come to Portugal to set up or expand small businesses as well as providing them with the tools and the knowledge to do so.

9. CONCLUSION

Unfortunately, the Portuguese Government is faced with the challenging combination of trying to reduce emigration, encouraging the growth of businesses in Portugal and a very limited budget. That said, reducing the barriers for immigration of non-EU workers as well as small government investments in people and businesses should be the stimulus needed to revitalise the economy leading to a stable labour force, long term economic growth and an internationally competitive market.

Follow CPS:



Forward to a friend

DISCLAIMER: The views set out in the 'Briefing Note' are those of the individual author only and should not be taken to represent a corporate view of the Centre for Policy Studies

⁷ <http://www.oecdbetterlifeindex.org/topics/education/>