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Technical Report: User Guide to Scenarios

Deliverable 10.3



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Cover photo: [iStockphoto.com/Guenter Guni](https://www.istockphoto.com/GuenterGuni).

1 Introduction

This document serves as the user guide to QuantMig Migration Scenarios Explorer, a web tool developed in collaboration with Geodata and accessible at the QuantMig webpage (http://quantmig.eu/data_and_estimates/scenarios_explorer/). The web tool makes the outputs of the QuantMig-Mic population projection simulations for 31 European countries accessible in a user-friendly and visually attractive manner. QuantMig Migration Scenarios Explorer is a dynamic tool which allows users to visualise the demographic and labour force composition of populations of 31 EU+ countries¹ from 2020 to 2060. Scenarios selected for the web tool are a subset of 29 scenarios produced by the project. The web tool features the Baseline scenario, which serves as a benchmark, and 14 high-migration events scenarios which simulate Short high-migration events and Persistent high-migration events from seven world regions into the EU+ countries. Selected scenarios model high-migration events corresponding to the twice-in-a-century frequency of occurrence and illustrate well the diversity of demographic futures in EU+ countries. They show more pronounced demographic and labour force impacts than the 14 scenarios of migration events with once-in-a-decade frequency of occurrence which are not implemented in the model and serve as sensitivity analysis. For more detail on scenario-making and the implementation of scenarios into the microsimulation model see Marois et al. (2023). The main results from all 29 simulated scenarios, including scenarios not included in the QuantMig Migration Scenario Explorer, are summarised in Potančoková et al. (2023a), and also accessible as an open dataset from the Zenodo repository as of August 2023 (Potančoková et al. 2023b).

In addition to country-specific results, the web tool includes summaries for EU27, EU+ (total of all simulated countries) and non-EU27 countries (United Kingdom, Iceland, Norway and Switzerland) simulated in the model to facilitate the use of the outputs by the users interested to see results for EU27 or other aggregates. Web tool also goes beyond the raw model outputs by giving the user an access to indicators derived from raw model output data and presented at pages 4 and 5.

The design and some functionalities of QuantMig Migration Scenarios Explorer are inspired by the Wittgenstein Centre's Human Capital Data Explorer (Wittgenstein Centre for Demography and Global Human Capital 2018)² but adapted to the specific needs of QuantMig.

The QuantMig Migration Scenarios Explorer web tool has 5 pages: Page1-Introduction and brief description of the tool, Page2-Immigration flows, Page3-Population pyramids, Page4-Indicators, Page5-Maps. This document serves as a user guide to Pages 2 to 5 of the tool. The user guide showcases functionalities and provides specific examples. The following sections of this document are embedded in the first page of the web tool to be directly accessible by the user. Sections below are explaining how to produce customised charts and download results for each page with data visualisations.

¹ The 27 European Union countries (EU27 as of 2020), the United Kingdom, Iceland, Norway and Switzerland.

² Version 2, available at: <http://dataexplorer.wittgensteincentre.org/wcde-v2>

2 Page 2: Immigration flows

This page is useful to visualise the different immigration flows before exploring the results of QuantMig migration scenarios. The scenarios differ in migration assumptions into the EU+ countries and you can investigate these differences in future migration dynamics using this page of the web tool. Please bear in mind that the scenarios are not predictions but what-if scenarios that simulate specific migration situations for the sake of the assessment of their demographic and labour force impacts.

Using this page, you can see the immigration flows into the EU+ in the Baseline, Short-high migration event and Persistent-high migration event scenarios from different origins outside EU+ for periods starting in 2020-24 and ending in 2055-2059. Demographers use assumptions to simulate future dynamics of European populations. **These immigration assumptions are not prediction of future migration. In the Baseline scenario, we assume continuation of the past trends** and you can see how this would look for immigration from specific world regions: East Asia, Latin America, North Africa, Other Europe, Sub-Saharan Africa, South and South-East Asia and West Asia. **In the high migration events scenarios, we simulate one high migration event from one specific world region** – imagining what would happen if a crisis would trigger a higher immigration to Europe, such as we have seen in the recent past from Syria or Ukraine. High migration events in these scenarios would increase immigration from one specific world region by a number of immigrants corresponding to the frequency of twice-in-a-century migration event (see Bijak (2023) for the details on statistical modelling of rare migration events used in this web tool. You can see this when you compare Baseline immigration flows and migration flows from the same region in another scenario.

Short-high migration event scenarios simulate a situation of higher immigration from a specific world region lasting for one calendar year during 2025-29.

Persistent-high migration event scenarios imagines that after the high migration event immigration from that world region remains elevated for a decade and during that decade gradually decreases.

Why do I see Baseline scenario by region of origin of immigrants?

In the model, there is only one Baseline scenario, but to facilitate comparisons between the scenarios, the selection options in the “**Immigration flows scenario show**” Baseline + region combinations. This is because Short-high migration event and Persistent-high migration event scenarios alternate immigration from one single region of origin. Immigration from all other world regions remains the same as in the Baseline scenario. To give an example: Persistent-high migration scenario from Latin America uses immigration flow from Latin America into a country/EU+ and immigration flows from all other world region are the same as in the Baseline scenario. If you wish to see total immigration flows from all rest of the world regions in the Baseline or any other scenario, go to the Indicators page and select Immigration from outside EU+.

How can I create a chart showing immigration assumptions?

1) Start with choosing a “**Destination country**” using a drop-down menu. In fact, you can also see immigration flows into the EU27 or a total for all 31 countries we simulated scenarios for:

Introduction **Immigration Flows** Pyramids Indicators Maps

Destination countries:

- Austria
- Hungary
- Iceland
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- Netherlands
- Norway
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- Spain**
- Sweden
- Switzerland
- UK+EFTA
- United Kingdom

- Baseline from Latin America ⓘ
- Baseline from Other Europe ⓘ
- Baseline from Sub-Saharan Africa ⓘ
- Persistent-high migration event from East Asia ⓘ
- Persistent-high migration event from North Africa ⓘ
- Persistent-high migration event from South and South-East Asia ⓘ
- Persistent-high migration event from West Asia ⓘ
- Short-high migration event from Latin America ⓘ
- Short-high migration event from Other Europe ⓘ
- Short-high migration event from Sub-Saharan Africa ⓘ

2) Then choose, immigration flows from the world region(s) and scenarios you are interested by ticking options in “**Immigration flows scenarios**”. To understand the logic of the scenarios we recommend by first selecting all three scenarios for the same world region – this way you will see the Baseline scenario flows to which you can compare how much higher is immigration projected in the Short-high and Persistent-high migration scenario for that region.

Immigration Flows Pyramids Indicators Maps

Destination countries:

Spain

Immigration flows scenario:

- Baseline from East Asia ⓘ
- Baseline from North Africa ⓘ
- Baseline from South and South-East Asia ⓘ
- Baseline from West Asia ⓘ
- Persistent-high migration event from Latin America ⓘ
- Persistent-high migration event from other Europe ⓘ
- Persistent-high migration event from Sub-Saharan Africa ⓘ
- Short-high migration event from East Asia ⓘ
- Short-high migration event from North Africa ⓘ
- Short-high migration event from South and South-East Asia ⓘ
- Short-high migration event from West Asia ⓘ

- Baseline from Latin America ⓘ
- Baseline from other Europe ⓘ
- Baseline from Sub-Saharan Africa ⓘ
- Persistent-high migration event from East Asia ⓘ
- Persistent-high migration event from North Africa ⓘ
- Persistent-high migration event from South and South-East Asia ⓘ
- Persistent-high migration event from West Asia ⓘ
- Short-high migration event from Latin America ⓘ
- Short-high migration event from other Europe ⓘ
- Short-high migration event from Sub-Saharan Africa ⓘ

Select All **Invert Selection** **Unselect All**

Generate Chart **Reset Chart Zoom**

3) To better understand the differences between the scenarios you can mouse over the “i” symbol to see the scenario description and the underlying narrative before you make your selection.

The screenshot shows the 'Immigration Flows' section of a web application. At the top, there are navigation tabs: 'Introduction', 'Immigration Flows' (selected), 'Pyramids', 'Indicators', and 'Maps'. Below the tabs, there is a 'Destination countries:' dropdown menu with 'Spain' selected. Underneath, the 'Immigration flows scenario:' section lists several options, each with an 'i' icon. A red arrow points to the 'i' icon of the first option, 'Baseline from East Asia'. A tooltip is displayed over the tooltip icon of the selected scenario, providing a detailed description of the migration event. At the bottom of the scenario list, there are three buttons: 'Select All', 'Invert Selection', and 'Unselect All'. Below these buttons is a 'Generate Chart' button.

Destination countries:
Spain

Immigration flows scenario:

- Baseline from East Asia *i*
- Baseline from North Africa *i*
- Baseline from South and South-East Asia *i*
- Baseline from West Asia *i*
- Persistent-high migration event from Latin America *i*
- Persistent-high migration event from Other Europe *i*
- Persistent-high migration event from Sub-Saharan Africa *i*
- Short-high migration event from East Asia *i*
- Short-high migration event from North Africa *i*
- Short-high migration event from South and South-East Asia *i*
- Short-high migration event from West Asia *i*

Tooltip:
The initial short-high migration event from Latin America - which corresponds to the frequency of occurrence twice-in-a-century - is followed by a gradually declining immigration from that region for another decade. After a decade immigration from Latin America continues as in the baseline scenario. The persistence in migration is envisaged because of the initial event's effect on establishment of migration networks, subsequent family reunifications and chain migration, as well as due to persistence of migration drivers stimulating emigration from the origin countries. Elevated migration flows thus take place between 2027 and 2036. Immigration from all other world regions follows the baseline scenario.

Buttons:
Select All Invert Selection Unselect All

Generate Chart

4) After selecting both above-mentioned parameters, you can generate the chart by pressing the command “**Generate Chart**” to produce the plot and a table including values. Note that the table is displayed at the bottom of the page.

The chart shows projected immigration flows from a region of origin into a destination country for 5-year periods. The starting year of each period is displayed on the X-axis, i.e. **2020 indicates total immigration flow for the period 2020-2024**, and so on. **Y-axis shows the number of immigrants, which is total immigration for all 5 years, not an annual average.**

Destination countries:

Spain

Immigration flows scenario:

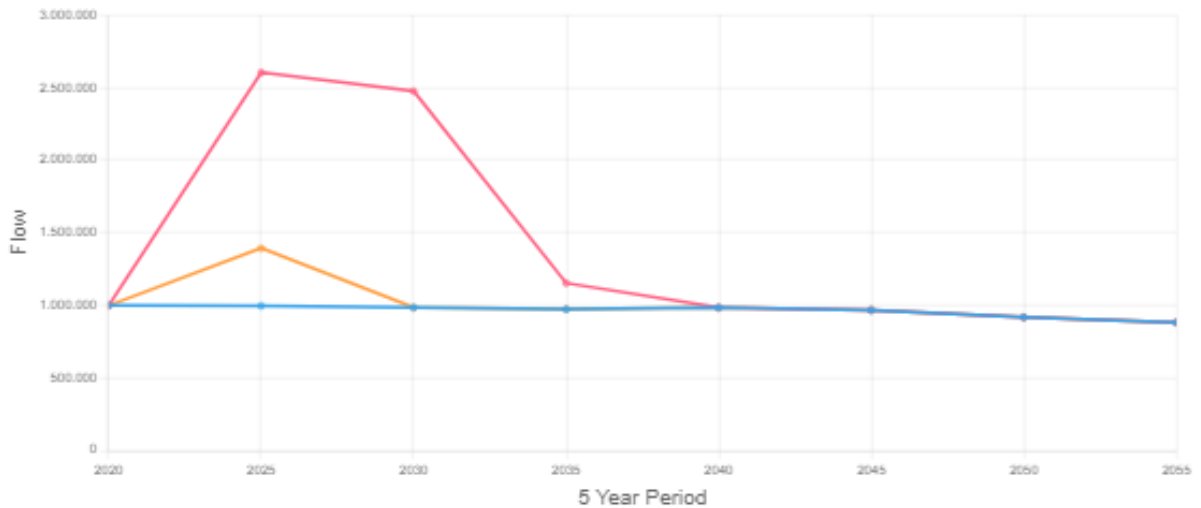
- Baseline from East Asia ⓘ
- Baseline from North Africa ⓘ
- Baseline from South and South-East Asia ⓘ
- Baseline from West Asia ⓘ
- Persistent-high migration event from Latin America ⓘ
- Persistent-high migration event from Other Europe ⓘ
- Persistent-high migration event from Sub-Saharan Africa ⓘ
- Short-high migration event from East Asia ⓘ
- Short-high migration event from North Africa ⓘ
- Short-high migration event from South and South-East Asia ⓘ
- Short-high migration event from West Asia ⓘ
- Baseline from Latin America ⓘ
- Baseline from Other Europe ⓘ
- Baseline from Sub-Saharan Africa ⓘ
- Persistent-high migration event from East Asia ⓘ
- Persistent-high migration event from North Africa ⓘ
- Persistent-high migration event from South and South-East Asia ⓘ
- Persistent-high migration event from West Asia ⓘ
- Short-high migration event from Latin America ⓘ
- Short-high migration event from Other Europe ⓘ
- Short-high migration event from Sub-Saharan Africa ⓘ

Select All Invert Selection Unselect All

Generate Chart Reset Chart Zoom

Immigration flows to Spain

— Baseline from Latin America — Short-high migration event from Latin America
 — Persistent-high migration event from Latin America



Download as CSV
 Download as PNG

Period	value	flow
2020 - 2025	998533	Baseline from Latin America
2025 - 2030	996923	Baseline from Latin America
2030 - 2035	984508	Baseline from Latin America

5) You can download the chart using “Download as PNG” and you can also save the underlying data displayed in the chart in CSV format by clicking “Download as CSV” option.

Introduction **Immigration Flows** Pyramids Indicators Maps

Destination countries:

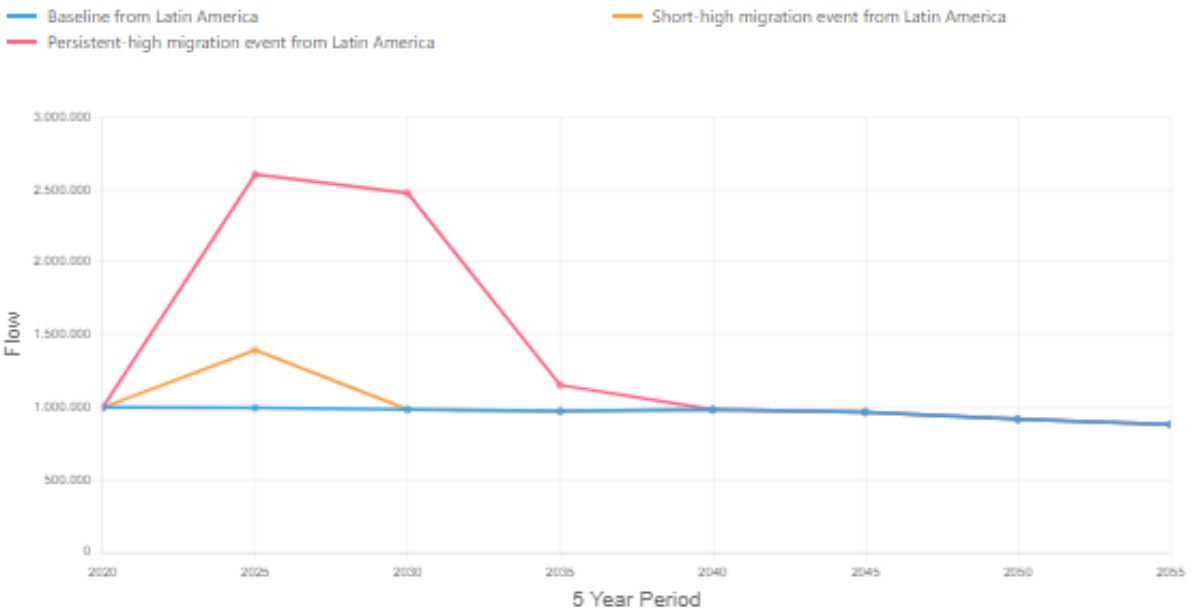
Immigration flows scenario:

- Baseline from East Asia
- Baseline from North Africa
- Baseline from South and South-East Asia
- Baseline from West Asia
- Persistent-high migration event from Latin America
- Persistent-high migration event from Other Europe
- Persistent-high migration event from Sub-Saharan Africa
- Short-high migration event from East Asia
- Short-high migration event from North Africa
- Short-high migration event from South and South-East Asia
- Short-high migration event from West Asia
- Baseline from Latin America
- Baseline from Other Europe
- Baseline from Sub-Saharan Africa
- Persistent-high migration event from East Asia
- Persistent-high migration event from North Africa
- Persistent-high migration event from South and South-East Asia
- Persistent-high migration event from West Asia
- Short-high migration event from Latin America
- Short-high migration event from Other Europe
- Short-high migration event from Sub-Saharan Africa

Select All Invert Selection Unselect All

Generate Chart Reset Chart Zoom

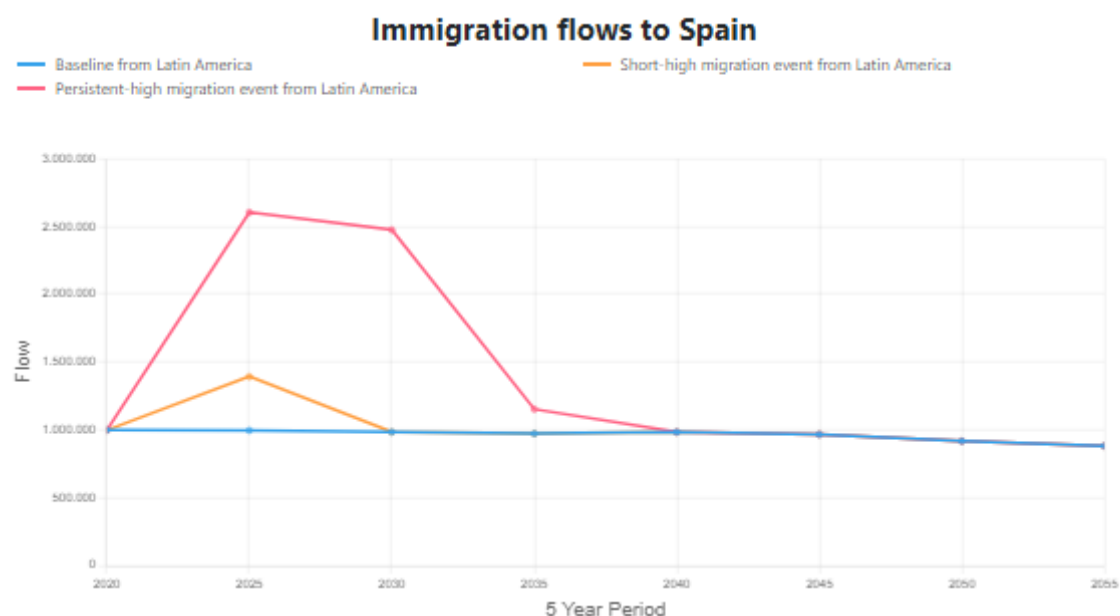
Immigration flows to Spain



- Download as CSV
- Download as PNG

Period	value	flow
2020 - 2025	998533	Baseline from Latin America
2025 - 2030	996923	Baseline from Latin America
2030 - 2035	984508	Baseline from Latin America

6) When the chart is generated, the description of the scenarios in the chart selection are displayed at the bottom of the page, below the table:



Download as CSV

Download as PNG

Period	value	flow
2020 - 2025	998533	Baseline from Latin America
2025 - 2030	996923	Baseline from Latin America
2030 - 2035	984508	Baseline from Latin America
2035 - 2040	972809	Baseline from Latin America
2040 - 2045	984515	Baseline from Latin America
2045 - 2050	967563	Baseline from Latin America
2050 - 2055	917230	Baseline from Latin America

Display Full Table

Immigration flows scenario information

Baseline flows

Immigration from the rest of the world regions into the EU+ continues with the same intensity as in the second decade of 21st century and immigrants from specific world regions will be attracted mainly towards those EU+ countries where compatriots from that given region have migrated to in the past and where the existing migration networks can support them. The actual immigration volumes from the world regions into EU+ countries are derived by applying the average emigration rate from a region A into the EU+ during 2011-2019 onto projected young population in each world region. We assume that the war against Ukraine will continue beyond 2023 and the combat will cease by 2025, resulting in return of 60% of the refugees back to Ukraine. Emigration of native-born, EU+born and persons born outside the EU+ varies with respect to the immigration scenario and is modelled through average emigration rates by country of residence and place of birth.

Persistent-high migration event from Latin America

The initial short-high migration event from Latin America - which corresponds to the frequency of occurrence twice-in-a-century - is followed by a gradually declining immigration from that region for another decade. After a decade immigration from Latin America continues as in the baseline scenario. The persistence in migration is envisaged because of the initial event's effect on establishment of migration networks, subsequent family reunifications and chain migration, as well as due to persistence of migration drivers stimulating emigration from the origin countries. Elevated migration flows thus take place between 2027 and 2036. Immigration from all other world regions follows the baseline scenario.

Short-high migration event from Latin America

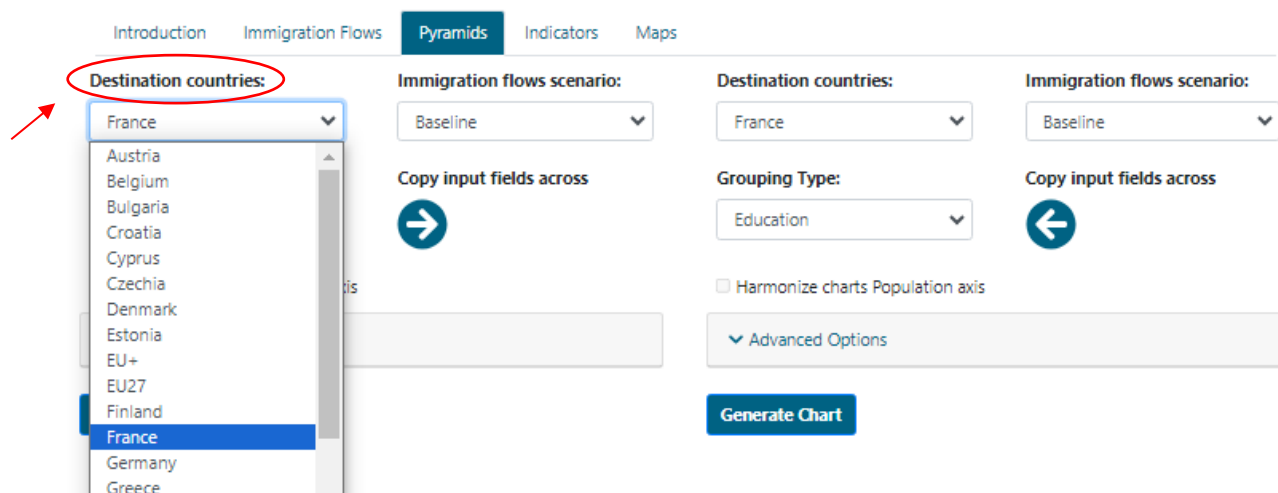
An immigration event from Latin America into the EU+ countries with the frequency of occurrence twice-in-a-century (taking the modelled immigration corresponding to 98th quantile of Pareto distribution, Bijak 2023), and this event takes place for one calendar year within the 5-year period 2025-2029. Immigration from all other world regions follows the baseline scenario. Before and after the extreme event immigration from Latin America returns to the levels of the baseline scenario. Such an event can be an outcome of humanitarian or natural disasters with temporary migration and high probabilities of return which can be resulting from a speedy policy reaction to the crisis that provoked high immigration.

3 Page 3: Population pyramids

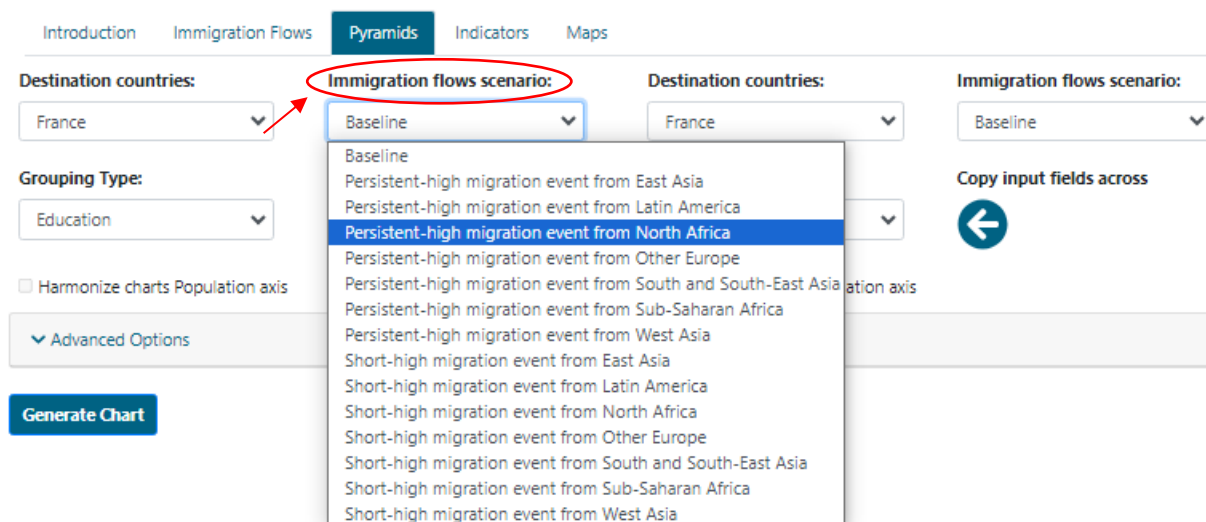
Here you can create population pyramids showing population diversity by place of birth, educational attainment and labour force status according to different QuantMig migration scenarios.

How can I create pyramids showing characteristics of population in different migration scenarios?

1) In the first dropdown menu, “**Destination country**” you can select the EU+ country where you want to visualise results. Results are also available for EU+, EU27 and UK+EFTA states as a whole.



2) In the second dropdown menu, “**Immigration flows scenario**”, you are allow to select the scenario for which you wish to visualise results.



3) In the third dropdown menu, “**Grouping type**”, select the dimension you wish to see as the main variable in the pyramid:

- Education: Below secondary (completed lower secondary education of lower attainment: ISCED 1-2), Secondary (completed upper secondary education, ISCED 3), Post-secondary (university and non-university higher education, ISCED4-8)
- Labour status: Active (active in the labour force, include employed and job-seekers) and Inactive

(not participating in the labour force)

- Region of Birth: East Asia, Latin America, North Africa, Other Europe, Sub-Saharan Africa, South and South-East Asia, West Asia, North America and Oceania).

You can display or hide a legend of the categories corresponding to the selected variable using the command “**Display legend**” tick box, above the graph.

If you want to produce a pyramid for the total population including only one of these dimensions, as described in this point, go directly to point 5 and generate the chart. However, **if you want to produce a pyramid for specific groups**, check point 4.

Introduction Immigration Flows **Pyramids** Indicators Maps

Destination countries: France

Immigration flows scenario: Baseline

Destination countries: France

Immigration flows scenario: Baseline

Grouping Type: Education

Copy input fields across →

Grouping Type: Education

Copy input fields across ←

Harmonize charts Population axis

Advanced Options

Generate Chart

Generate Chart

4) You can add another dimension to the chart using “**Advanced options**”. After selecting the main variable in the “Grouping Type”, you can filter results shown in the pyramid according to the categories of the other two dimensions. For instance, if you had selected education as the main variable, you can use categories within the other two variables to filter by one or more specific groups of “Region of birth” (e.g., the native-born or the population born in East Asia) or “Labour status”.

Immigration Flows **Pyramids** Indicators Maps

Destination countries: France

Immigration flows scenario: Baseline

Destination countries: France

Immigration flows scenario: Baseline

Grouping Type: Education

Copy input fields across →

Grouping Type: Education

Copy input fields across ←

Harmonize charts Population axis

Advanced Options

Select Region of Birth:

East Asia Latin America

North Africa North America+Oceania

other Europe South and South-East Asia

Sub-Saharan Africa West Asia

Native-born EU+

Select All Invert Selection Unselect All

Select Labour status:

Inactive Active

Generate Chart

Reset Chart Zoom

Advanced Options

Select Region of Birth:

East Asia Latin America

North Africa North America+Oceania

other Europe South and South-East Asia

Sub-Saharan Africa West Asia

Native-born EU+

Select All Invert Selection Unselect All

Select Labour status:

Inactive Active

Generate Chart

Reset Chart Zoom

Let's illustrate the functioning of "Advanced options" with three examples:

A. How can I visualise the labour market status of the population born in North Africa?

In this case, after selecting labour market status as "Grouping variable", you deselect all the options, except North Africa within Region of birth in "Advanced options".

The screenshot displays the 'Pyramids' configuration interface. It is divided into two main panels. The left panel is configured for a population pyramid with the following settings: Destination countries: France; Immigration flows scenario: Baseline; Grouping Type: Labour status; Copy input fields across: (right arrow icon); Harmonize charts Population axis: unchecked. The 'Advanced Options' section is expanded, showing 'Select Region of Birth' with 'North Africa' selected and 'Select Education' with 'Below secondary', 'Post-secondary', and 'Secondary' selected. The right panel is configured for a different scenario: Destination countries: Austria; Immigration flows scenario: Baseline; Grouping Type: None; Copy input fields across: (left arrow icon); Harmonize charts Population axis: unchecked. A 'Generate Chart' button is located at the bottom of the left panel.

- B. Now, let's go a step further and produce a population pyramid with the same parameters as in example 1 above but only showing labour force status of North Africans with post-secondary education.** You should use the above-mentioned "Grouping variable" and filter of Region of birth, but you need to deselect the categories below secondary education and secondary education in "Advanced options" within the variable Education, see the snapshot below.

If you want to see the labour force status of all post-secondary educated Africans in your country and scenario of choice, you select both regions of birth – North Africa and Sub-Saharan Africa.

Introduction Immigration Flows **Pyramids** Indicators Maps

Destination countries: France **Immigration flows scenario:** Baseline **Destination countries:** Austria **Immigration flows scenario:** Baseline

Grouping Type: Labour status **Copy input fields across:** → **Grouping Type:** None **Copy input fields across:** ←

Harmonize charts Population axis

Advanced Options

Select Region of Birth:

East Asia Latin America
 North Africa North America+Oceania
 other Europe South and South-East Asia
 Sub-Saharan Africa West Asia
 Native-born EU+

Select All Invert Selection Unselect All

Select Education:

Below secondary Post-secondary Secondary

Generate Chart

- C. **How can I see educational composition of immigrants born outside the EU+ who are active in the labour force?** To produce this population pyramid, select Education as “Grouping variable”. Then, in “Advanced options”, deselect the active population within Labour status and deselect the native-born (population born in the country of residence) and EU+ (individuals born in EU+ countries-EU27, UK, Switzerland, Island and Norway, excluding the native-born) and keep all other origins, since the population shown in the plot will be the aggregation of all groups selected in “Advanced options” (i.e., all regions of birth outside EU+-East Asia, Latin America, North Africa, etc).

Introduction Immigration Flows **Pyramids** Indicators Maps

Destination countries: France **Immigration flows scenario:** Baseline **Destination countries:** Austria **Immigration flows scenario:** Baseline

Grouping Type: Education **Copy input fields across:** → **Grouping Type:** None **Copy input fields across:** ←

Harmonize charts Population axis

Advanced Options

Select Region of Birth:

East Asia Latin America
 North Africa North America+Oceania
 other Europe South and South-East Asia
 Sub-Saharan Africa West Asia
 Native-born EU+

Select All Invert Selection Unselect All

Select Labour status:

Inactive Active

Generate Chart

5) After selecting the parameters of interest, press the command “**Generate Chart**” to produce the chart and a table including values.

Immigration Flows **Pyramids** Indicators Maps

Destination countries: France

Immigration flows scenario: Baseline

Grouping Type: Education

Copy input fields across →

Harmonize charts Population axis

Advanced Options

Select Region of Birth:

- East Asia
- North Africa
- other Europe
- Sub-Saharan Africa
- Native-born
- Latin America
- North America+Oceania
- South and South-East Asia
- West Asia
- EU+

Select Labour status:

Inactive Active

Generate Chart **Reset Chart Zoom**

Population pyramid for France, with Baseline Immigration flows

Display Legend

Year: 2020 2025 2030 2035 2040 2045 2050 2055 2060

Download as CSV
Download as PNG

year	sex	age	education	value
2020	M	100+	Below secondary	0
2020	M	100+	Secondary	0

Destination countries: France

Immigration flows scenario: Baseline

Grouping Type: Education

Copy input fields across ←

Harmonize charts Population axis

Advanced Options

Select Region of Birth:

- East Asia
- North Africa
- other Europe
- Sub-Saharan Africa
- Native-born
- Latin America
- North America+Oceania
- South and South-East Asia
- West Asia
- EU+

Select Labour status:

Inactive Active

Generate Chart **Reset Chart Zoom**

Population pyramid for France, with Baseline Immigration flows

Display Legend

Year: 2020 2025 2030 2035 2040 2045 2050 2055 2060

Download as CSV
Download as PNG

year	sex	age	education	value
2020	M	100+	Below secondary	0
2020	M	100+	Secondary	0

6) Using the command “Copy input to fields across” you copy and paste your selections between both population pyramids (right and left).

The image displays two identical control panels for generating population pyramids for France, with the 'Copy input fields across' button highlighted on the left panel. The panels include dropdown menus for 'Destination countries' (France) and 'Immigration flows scenario' (Baseline), a 'Grouping Type' dropdown (Education), and an 'Advanced Options' section with checkboxes for 'Region of Birth' and 'Labour status'. Below the controls are two population pyramids for the year 2040, showing age groups on the y-axis and population counts on the x-axis. The left pyramid shows a population range of 398544 to 398458, and the right one shows 398403 to 398507. Both pyramids are symmetrical around the center, with the largest population in the 45-49 age group.

7) To see change over time, use the slider “Year”.

Immigration Flows
Pyramids
Indicators
Maps

Destination countries:
France

Immigration flows scenario:
Baseline

Grouping Type:
Education

Copy input fields across

Harmonize charts Population axis

Advanced Options

Select Region of Birth:

East Asia Latin America
 North Africa North America+Oceania
 other Europe South and South-East Asia
 Sub-Saharan Africa West Asia
 Native-born EU+

Select Labour status:

Inactive Active

[Select All](#) [Invert Selection](#) [Unselect All](#)

[Generate Chart](#) [Reset Chart Zoom](#)

Destination countries:
France

Immigration flows scenario:
Baseline

Grouping Type:
Education

Copy input fields across

Harmonize charts Population axis

Advanced Options

Select Region of Birth:

East Asia Latin America
 North Africa North America+Oceania
 other Europe South and South-East Asia
 Sub-Saharan Africa West Asia
 Native-born EU+

Select Labour status:

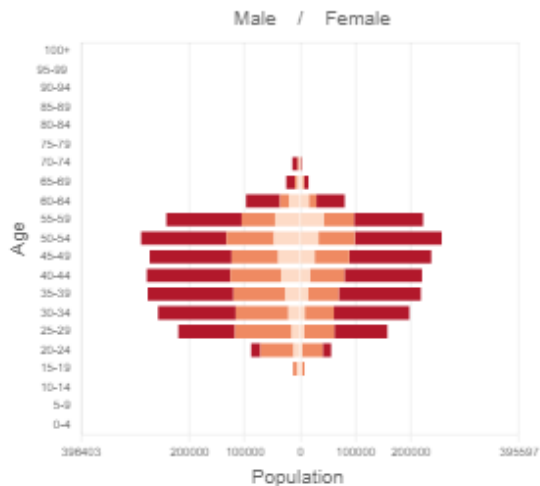
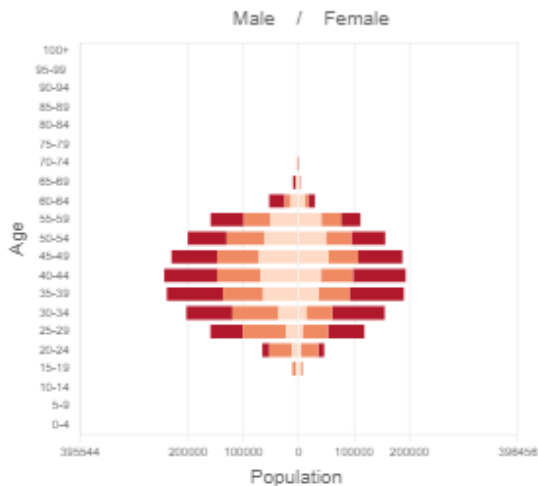
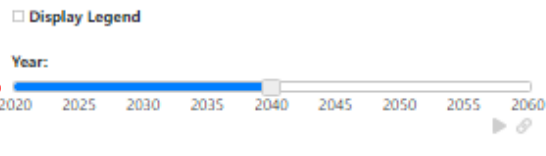
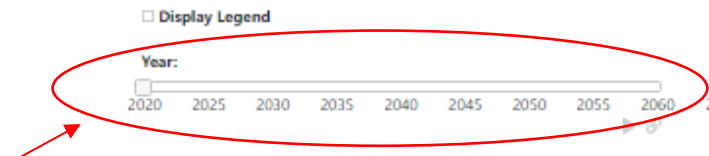
Inactive Active

[Select All](#) [Invert Selection](#) [Unselect All](#)

[Generate Chart](#) [Reset Chart Zoom](#)

Population pyramid for France, with Baseline Immigration flows

Population pyramid for France, with Baseline Immigration flows



[Download as CSV](#)
[Download as PNG](#)

[Download as CSV](#)
[Download as PNG](#)

8) You can download the data you selected for the chart in CSV format. You can also save the chart you created as PNG file using the commands “Download as CSV” and “Download as PNG” respectively.

Immigration Flows
Pyramids
Indicators
Maps

Destination countries:
France

Immigration flows scenario:
Baseline

Grouping Type:
Education

Copy input fields across

Harmonize charts Population axis

Advanced Options

Select Region of Birth:

- East Asia
- North Africa
- other Europe
- Sub-Saharan Africa
- Native-born
- Latin America
- North America+Oceania
- South and South-East Asia
- West Asia
- EU+

Select All Invert Selection Unselect All

Select Labour status:

Inactive Active

Generate Chart Reset Chart Zoom

Destination countries:
France

Immigration flows scenario:
Baseline

Grouping Type:
Education

Copy input fields across

Harmonize charts Population axis

Advanced Options

Select Region of Birth:

- East Asia
- North Africa
- other Europe
- Sub-Saharan Africa
- Native-born
- Latin America
- North America+Oceania
- South and South-East Asia
- West Asia
- EU+

Select All Invert Selection Unselect All

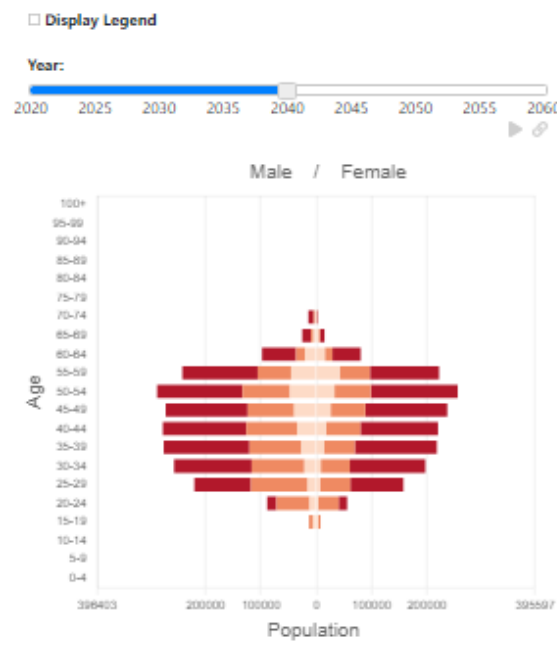
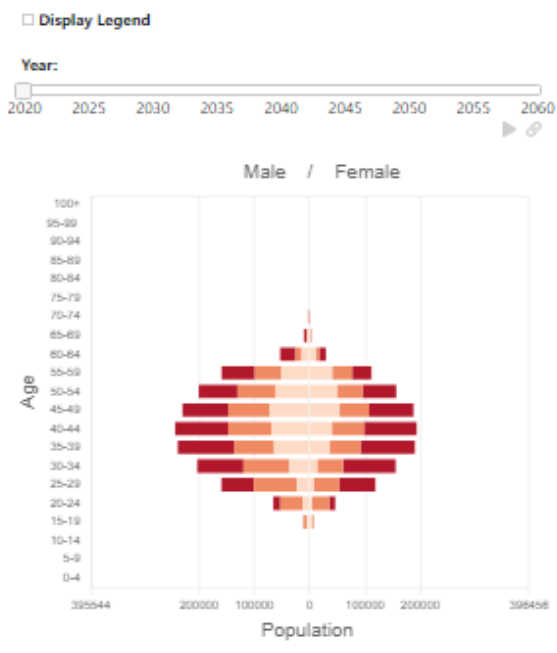
Select Labour status:

Inactive Active

Generate Chart Reset Chart Zoom

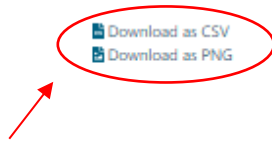
Population pyramid for France, with Baseline Immigration flows

Population pyramid for France, with Baseline Immigration flows



Download as CSV
Download as PNG

Download as CSV
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4 Page 4: Indicators

This page displays temporal change in analytical indicators visualised in line charts. To showcase demographic impacts of QuantMig migration scenarios you can explore indicators representing the demographic composition, population diversity, labour force, education and gender gap in different countries, scenarios and for total population, foreign-born (includes population born outside the EU+ and population born in another EU+ country than the selected Destination country) and population born outside the EU+.

1) In the first dropdown menu, **“Place of birth”** you can select the population group for which you want to show indicators (Total, Foreign-born or Born outside EU+).

The screenshot displays two side-by-side panels for configuring indicators and migration scenarios. In the left panel, the 'Place of birth' dropdown menu is open, showing options: 'Total', 'Foreign-born', and 'Born outside EU+'. The 'Indicator' dropdown is set to 'Population'. Below these are 'Copy input fields across' buttons with right and left arrows. The 'Immigration flows scenario' section includes a list of migration events with checkboxes, such as 'Baseline' (checked), 'Persistent-high migration event from East Asia', 'Persistent-high migration event from Latin America', 'Persistent-high migration event from North Africa' (checked), 'Persistent-high migration event from Other Europe' (checked), and various 'Short-high migration event' options. At the bottom are buttons for 'Select All', 'Invert Selection', 'Unselect All', 'Generate Chart', and 'Reset Chart Zoom'.

The right panel has 'Place of birth' set to 'Total' and 'Indicator' set to 'Population'. The 'Destination countries' dropdown is set to 'Austria'. It also features 'Copy input fields across' buttons and an 'Immigration flows scenario' section with a similar list of migration events, where only 'Baseline' is checked. At the bottom is a 'Generate Chart' button.

2) The dropdown menu “Indicator” contains all the indicators that can be displayed in the chart, grouped by types: Population Composition, Labour Force, Education, Gender and Migration.

Place of birth: Total

Indicator: Population

Place of birth: Total

Indicator: Population

Destination countries: Austria

Immigration flows scenario:

- Baseline
- Persistent-high migration event from
- Persistent-high migration event from
- Persistent-high migration event from
- Persistent-high migration event from
- Persistent-high migration event from
- Persistent-high migration event from
- Persistent-high migration event from
- Persistent-high migration event from
- Short-high migration event from East
- Short-high migration event from Latin
- Short-high migration event from Nor
- Short-high migration event from Oth
- Short-high migration event from Sou
- Short-high migration event from Sub
- Short-high migration event from West Asia

Select All Invert Selection Unselect All

Select All Invert Selection Unselect All

3) In the Destination countries drop down menu, you can also select EU+, if you wish to see results for the total of all 31 simulated countries, or EU27 or UK+EFTA(UK, Iceland, Norway and Switzerland).

Place of birth: Total

Indicator: Population

Place of birth: Total

Indicator: Population

Destination countries: Austria

Immigration flows scenario:

- Baseline
- Persistent-high migration event from East Asia
- Persistent-high migration event from Latin America
- Persistent-high migration event from North Africa
- Persistent-high migration event from North Africa
- Persistent-high migration event from Other Europe
- Persistent-high migration event from Other Europe
- Persistent-high migration event from South and South-East Asia
- Persistent-high migration event from South and South-East Asia
- Persistent-high migration event from Sub-Saharan Africa
- Persistent-high migration event from Sub-Saharan Africa
- Persistent-high migration event from West Asia
- Persistent-high migration event from West Asia
- Short-high migration event from East Asia
- Short-high migration event from Latin America
- Short-high migration event from Latin America
- Short-high migration event from North Africa
- Short-high migration event from North Africa
- Short-high migration event from Other Europe
- Short-high migration event from Other Europe
- Short-high migration event from South and South-East Asia
- Short-high migration event from South and South-East Asia
- Short-high migration event from South and South-East Asia
- Short-high migration event from Sub-Saharan Africa
- Short-high migration event from Sub-Saharan Africa
- Short-high migration event from West Asia
- Short-high migration event from West Asia

Select All Invert Selection Unselect All

Generate Chart Reset Chart Zoom

Generate Chart

4) Using “**Immigration flows scenarios**” you select for which you want to visualise the indicator. The selection adds lines into the chart. You can add or remove as many scenarios as you want in your chart. You can also use “**Select all scenarios**”, “**Invert selection**” or “**Unselect all**” buttons.

The screenshot displays the 'Indicators' panel with two identical configuration sections. The left section has a red circle around the 'Immigration flows scenario:' label and a red arrow pointing to it. The right section has a blue circle around the 'Copy input fields across' button. Both sections show dropdown menus for 'Place of birth' (Total) and 'Indicator' (Population), a 'Destination countries' dropdown (Austria), and a list of 16 migration scenarios with checkboxes. The left list has several scenarios checked, while the right list has only 'Baseline' checked. Below each list are buttons for 'Select All', 'Invert Selection', and 'Unselect All', and at the bottom are 'Generate Chart' and 'Reset Chart Zoom' buttons.

A legend can be displayed or hidden using the command “**Display legend**”, located above the chart once you have generated it.

5) Using the command “**Copy input to fields across**” you copy and paste the parameters into the chart in the panel on the right side.

The screenshot displays the 'Indicators' panel with two identical configuration sections. The left section has a red circle around the 'Copy input fields across' button and a red arrow pointing to it. The right section's 'Copy input fields across' button is circled in blue. The configuration options and scenario lists are identical to the previous screenshot.

6) Press the command “Generate Chart” to produce the chart and a table including values.

Introduction
Immigration Flows
Pyramids
Indicators
Maps

Place of birth:
Total

Indicator:
Population

Destination countries:
Austria

Copy input fields across
➔

Immigration flows scenario:

- Baseline
- Persistent-high migration event from East Asia
- Persistent-high migration event from Latin America
- Persistent-high migration event from North Africa
- Persistent-high migration event from Other Europe
- Persistent-high migration event from South and South-East Asia
- Persistent-high migration event from Sub-Saharan Africa
- Persistent-high migration event from West Asia
- Short-high migration event from East Asia
- Short-high migration event from Latin America
- Short-high migration event from North Africa
- Short-high migration event from Other Europe
- Short-high migration event from South and South-East Asia
- Short-high migration event from Sub-Saharan Africa
- Short-high migration event from West Asia

Generate Chart

Place of birth:
Total

Indicator:
Population

Destination countries:
Austria

Copy input fields across
➔

Immigration flows scenario:

- Baseline
- Persistent-high migration event from East Asia
- Persistent-high migration event from Latin America
- Persistent-high migration event from North Africa
- Persistent-high migration event from Other Europe
- Persistent-high migration event from South and South-East Asia
- Persistent-high migration event from Sub-Saharan Africa
- Persistent-high migration event from West Asia
- Short-high migration event from East Asia
- Short-high migration event from Latin America
- Short-high migration event from North Africa
- Short-high migration event from Other Europe
- Short-high migration event from South and South-East Asia
- Short-high migration event from Sub-Saharan Africa
- Short-high migration event from West Asia

Population, Total, Austria

Display Legend

- Baseline
- Persistent-high migration event from North Africa
- Persistent-high migration event from East Asia
- Persistent-high migration event from Other Europe

Year

year	value	flow
2020	9020890	Baseline

Population, Total, Austria

Display Legend

- Baseline
- Persistent-high migration event from North Africa
- Persistent-high migration event from East Asia
- Persistent-high migration event from Other Europe

Year

year	value	flow
2020	9020890	Baseline

7) You can save your chart using “Download as PNG” option below the chart. You can also download the data underlying your chart in CSV format using “Download as CSV” option.

Introduction
Immigration Flows
Pyramids
Indicators
Maps

Place of birth: Total

Indicator: Population

Destination countries: Austria

Copy input fields across →

Immigration flows scenario:

- Baseline
- Persistent-high migration event from East Asia
- Persistent-high migration event from Latin America
- Persistent-high migration event from North Africa
- Persistent-high migration event from Other Europe
- Persistent-high migration event from South and South-East Asia
- Persistent-high migration event from Sub-Saharan Africa
- Persistent-high migration event from West Asia
- Short-high migration event from East Asia
- Short-high migration event from Latin America
- Short-high migration event from North Africa
- Short-high migration event from Other Europe
- Short-high migration event from South and South-East Asia
- Short-high migration event from Sub-Saharan Africa
- Short-high migration event from West Asia

Select All Invert Selection Unselect All

Generate Chart Reset Chart Zoom

Population, Total, Austria

Display Legend

- Baseline
- Persistent-high migration event from North Africa
- Persistent-high migration event from East Asia
- Persistent-high migration event from Other Europe

Year

Download as CSV
Download as PNG

year	value	flow
2020	9020890	Baseline

Place of birth: Total

Indicator: Population

Destination countries: Austria

Copy input fields across ←

Immigration flows scenario:

- Baseline
- Persistent-high migration event from East Asia
- Persistent-high migration event from Latin America
- Persistent-high migration event from North Africa
- Persistent-high migration event from Other Europe
- Persistent-high migration event from South and South-East Asia
- Persistent-high migration event from Sub-Saharan Africa
- Persistent-high migration event from West Asia
- Short-high migration event from East Asia
- Short-high migration event from Latin America
- Short-high migration event from North Africa
- Short-high migration event from Other Europe
- Short-high migration event from South and South-East Asia
- Short-high migration event from Sub-Saharan Africa
- Short-high migration event from West Asia

Select All Invert Selection Unselect All

Generate Chart Reset Chart Zoom

Population, Total, Austria

Display Legend

- Baseline
- Persistent-high migration event from North Africa
- Persistent-high migration event from East Asia
- Persistent-high migration event from Other Europe

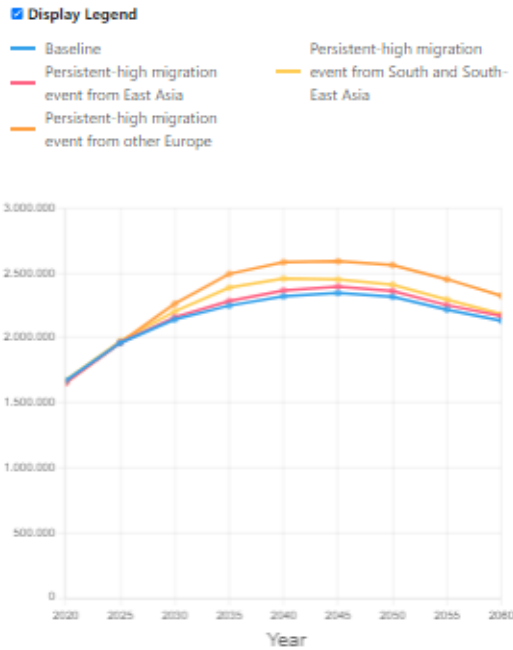
Year

Download as CSV
Download as PNG

year	value	flow
2020	9020890	Baseline

8) You can find definition of the indicators in the “Indicator information” at the bottom of the page.

Working age population (15-64), Foreign-born, Austria



[Download as CSV](#)
[Download as PNG](#)

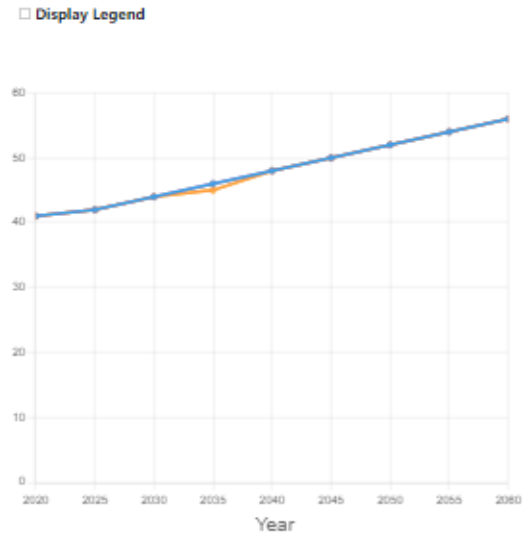
year	value	flow
2020	1673841	Baseline
2025	1963154	Baseline
2030	2143540	Baseline
2035	2249608	Baseline
2040	2320238	Baseline
2045	2347581	Baseline
2050	2316972	Baseline

[Display Full Table](#)

Indicator information

Working age population (15-64)
 Population from 15 to 64-year-old.

Mean age, Foreign-born, Denmark



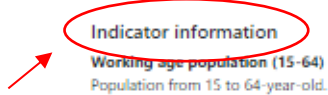
[Download as CSV](#)
[Download as PNG](#)

year	value	flow
2020	41	Baseline
2025	42	Baseline
2030	44	Baseline
2035	46	Baseline
2040	48	Baseline
2045	50	Baseline
2050	52	Baseline

[Display Full Table](#)

Indicator information

Mean age
 Average age of the population calculated as the arithmetic mean.



5 Page 5: Maps

This page shows maps of the same indicators as the Indicators page, representing the demographic composition, population diversity, labour force, education and gender gap.

1) Maps can be generated for total population, foreign-born (includes population born outside the EU+ and population born in another EU+ country than the selected Destination country) or population born outside the EU+. You select the population in the first dropdown menu, “**Place of birth**”:

The screenshot shows the 'Maps' tab selected in the navigation bar. The 'Place of birth' dropdown menu is open, showing three options: 'Total', 'Foreign-born', and 'Born outside EU+'. A red arrow points to the 'Place of birth' label. The 'Indicator' dropdown is set to '% foreign-born'. The 'Immigration flows scenario' dropdown is set to 'Persistent-high migratic'. There are 'Copy input fields across' buttons with right and left arrows. Two 'Generate Chart' buttons are visible at the bottom.

2) The dropdown menu “**Indicators**” contains all the indicators that can be displayed in the maps, grouped by types: Population Composition, Labour Force, Education, Gender and Migration.

The screenshot shows the 'Indicator' dropdown menu open, displaying a list of indicators grouped into 'Population composition' and 'Labour force'. The 'Indicator' dropdown is set to '% foreign-born'. A red arrow points to the 'Indicator' label. The 'Place of birth' dropdown is set to 'Total'. The 'Immigration flows scenario' dropdown is set to 'Baseline'. There is a 'Copy input fields across' button with a left arrow. A 'Generate Chart' button is visible. The European Union flag is shown in the bottom left corner.

3) Use the dropdown menu “**Immigration flows scenario**” to select the scenario for which you want to create the map.

Introduction Immigration Flows Pyramids Indicators **Maps**

Place of birth: Total Indicator: % foreign-born

Place of birth: Total Indicator: % foreign-born

Immigration flows scenario: Baseline Copy input fields across →

Immigration flows scenario: Persistent-high migratic Copy input fields across ←

Generate Chart

Baseline
 Persistent-high migration event from East Asia
 Persistent-high migration event from Latin America
 Persistent-high migration event from North Africa
 Persistent-high migration event from Other Europe
 Persistent-high migration event from South and South-East Asia
 Persistent-high migration event from Sub-Saharan Africa
 Persistent-high migration event from West Asia
 Short-high migration event from East Asia
 Short-high migration event from Latin America
 Short-high migration event from North Africa
 Short-high migration event from Other Europe
 Short-high migration event from South and South-East Asia
 Short-high migration event from Sub-Saharan Africa
 Short-high migration event from West Asia

...ing from the European Union's Horizon 2020 research and innovation programme under
 QuantMig: Quantifying Migration Scenarios for Better Policy. This document reflects
 research Executive Agency of the European Commission are not responsible for any use
 information it contains.

4) Then press the command **“Generate Chart”** to produce the map and a table including values (located below the map).

Immigration Flows Pyramids Indicators **Maps**

Place of birth: Total Indicator: % foreign-born

Place of birth: Total Indicator: % foreign-born

Immigration flows scenario: Baseline Copy input fields across →

Immigration flows scenario: Persistent-high migration Copy input fields across ←

Generate Chart **Generate Chart**

% foreign-born, Total **% foreign-born, Total**

Year: 2020 2025 2030 2035 2040 2045 2050 2055 2060

Year: 2020 2025 2030 2035 2040 2045 2050 2055 2060

Download as CSV Download as PNG

year	value	country
2020	12	Italy
2020	16	Malta
2020	5	Romania

year	value	country
2020	12	Italy
2020	15	Malta
2020	5	Romania

5) Clicking the command “Copy input to fields across” you copy and paste your selection from the left panel into the panel on the right.

Immigration Flows Pyramids Indicators **Maps**

Place of birth:
Total

Indicator:
% foreign-born

Immigration flows scenario:
Baseline

Copy input fields across →

Generate Chart

% foreign-born, Total

Year:
2020 2025 2030 2035 2040 2045 2050 2055 2060

Download as CSV
Download as PNG

year	value	country
2020	12	Italy
2020	16	Malta
2020	5	Romania

Place of birth:
Total

Indicator:
% foreign-born

Immigration flows scenario:
Persistent-high migration

← **Copy input fields across**

Generate Chart

% foreign-born, Total

Year:
2020 2025 2030 2035 2040 2045 2050 2055 2060

Download as CSV
Download as PNG

year	value	country
2020	12	Italy
2020	15	Malta
2020	5	Romania

6) Select the “Year” using the time bar above the chart.

Immigration Flows
Pyramids
Indicators
Maps

Place of birth:

Indicator:

Immigration flows scenario:

Copy input fields across

Generate Chart

Place of birth:

Indicator:

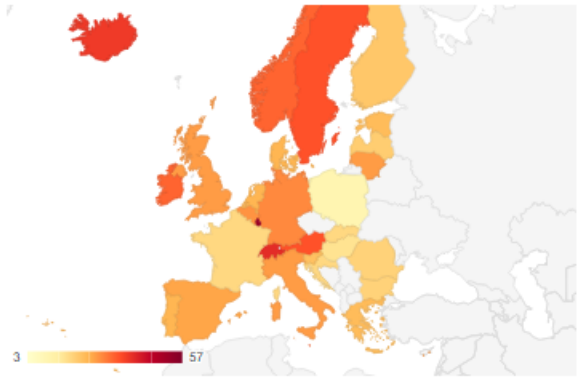
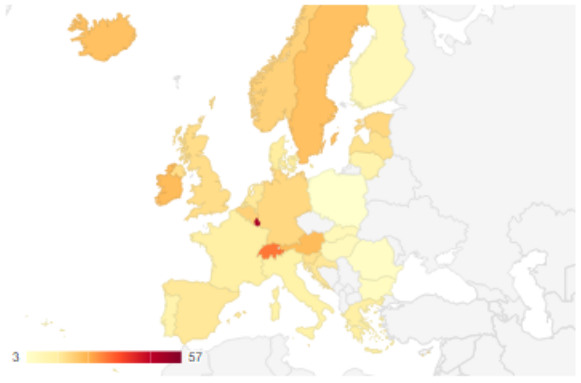
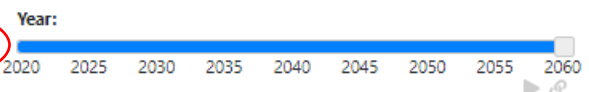
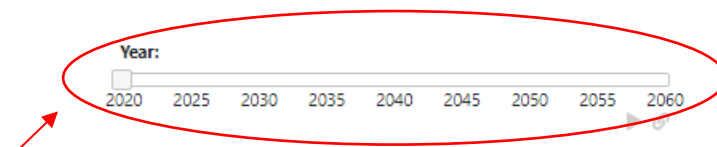
Immigration flows scenario:

Copy input fields across

Generate Chart

% foreign-born, Total

% foreign-born, Total



Download as CSV
 Download as PNG

Download as CSV
 Download as PNG

year	value	country
2020	12	Italy
2020	16	Malta
2020	5	Romania

year	value	country
2020	12	Italy
2020	15	Malta
2020	5	Romania

7) Download the data in CSV format and a PNG file including the maps using the commands “Download as CSV” and “Download as PNG”, respectively.

Immigration Flows Pyramids Indicators **Maps**

Place of birth:
Total

Indicator:
% foreign-born

Immigration flows scenario:
Baseline

Copy input fields across
➔

Generate Chart

% foreign-born, Total

Year:
2020 2025 2030 2035 2040 2045 2050 2055 2060

[Download as CSV](#)
[Download as PNG](#)

year	value	country
2020	12	Italy
2020	16	Malta
2020	5	Romania

Place of birth:
Total

Indicator:
% foreign-born

Immigration flows scenario:
Persistent-high migration

Copy input fields across
⬅

Generate Chart

% foreign-born, Total

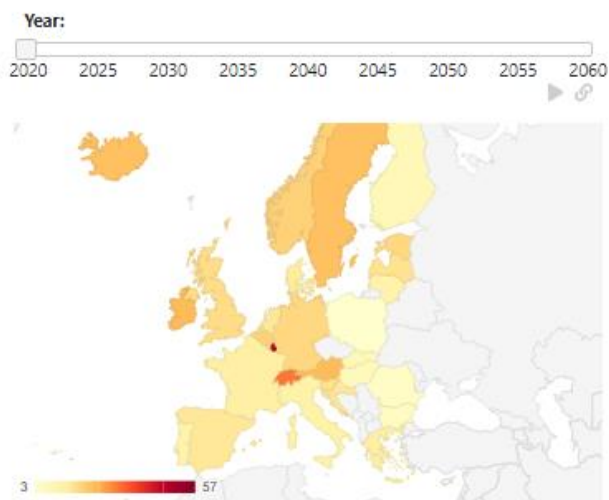
Year:
2020 2025 2030 2035 2040 2045 2050 2055 2060

[Download as CSV](#)
[Download as PNG](#)

year	value	country
2020	12	Italy
2020	15	Malta
2020	5	Romania

8) You can find “Indicator information” at the bottom of the page.

% foreign-born, Total



[Download as CSV](#)
[Download as PNG](#)

year	value	country
2020	12	Italy
2020	16	Malta
2020	5	Romania
2020	6	Bulgaria
2020	16	Latvia
2020	13	France
2020	15	Croatia

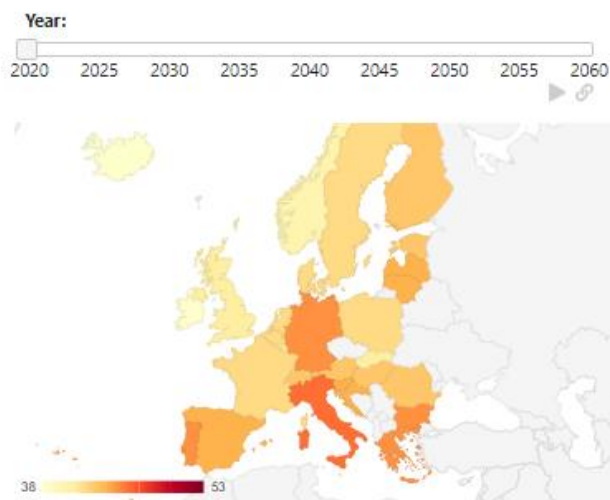
[Display Full Table](#)

Indicator information

% foreign-born

Percentage of inhabitants who were born abroad.

Mean age, Total



[Download as CSV](#)
[Download as PNG](#)

year	value	country
2020	46	Italy
2020	43	Malta
2020	43	Romania
2020	45	Bulgaria
2020	44	Latvia
2020	42	France
2020	44	Croatia

[Display Full Table](#)

Indicator information

Mean age

Average age of the population calculated as the arithmetic mean.

References

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