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How to measure the effectiveness of return?

Problem definition and alternative definitions of the return and readmission rates

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Abstract

The report addresses the issue of how to measure return effectiveness, which is considered as one dimension of the wider concept of return performance. The commonly used indicators at EU level are the return and readmission rates. While these are useful synthetic indicators, they present several limitations. The first part of the report analyses these limitations and proposed potential ways forward. The second part provides alternative definitions of the return and readmission rates and provides recommendations on how to integrate these with the existing indicators.

Executive summary

Why return is important and how it can be assessed

Return is a policy tool used to address the problem of illegally staying third-country nationals (TCNs).[1] The illegal stay of a TCN on the territory of a Member State (MS) is a lose-lose-lose outcome for the TCN, the MS, and the third country (TC). The TCN is subject to precarious conditions, prone to exploitation and unable to benefit from the rights that normally go along with a residency status. The MS does not control for a group of vulnerable and marginalised individuals on its territory, does not raise revenues from their work, struggles to protect legally resident workers from unfair competition on the labour market and ends up providing basic support for illegally staying TCNs. The TC sees its citizens in precarious conditions and unable to freely moved in and out the country, thus not maximising the benefits of emigration.

A functioning return system is an essential component of a well-managed and credible migration policy. To address the problem of irregularly staying TCNs, while "Member States may at any moment decide to grant [them] an autonomous residence permit",[2] doing so is often perceived as an incentive to irregular migration; on the contrary, an effective return system should discourage irregular migration. As the New Pact on Migration and Asylum states, "EU migration rules can be credible only if those who do not have the right to stay in the EU are effectively returned".[3]

Return is a multi-actor process, involving three actors: the TCNs who may consent or oppose to their return; the TCs that may accept or refuse the readmission of TCNs; and the MSs that may offer return and reintegration packages or carry out forced returns. The first step of the return process happens when the MS's authorities identify an illegal stay and issue an order to leave (OTL). After the issuance of the OTL, and provided that the TC accepts the entry of the TCN on its territory, there are three possibilities: the person returns voluntary, the person is forcibly returned, or the person voluntary returns benefitting from return and reintegration assistance.

When assessing the performance of MSs and TCs in return and readmission, return effectiveness is only one of the relevant dimensions. These include: the achievement of the objective of returning the persons with no right to stay in the MSs (return effectiveness); the compliance with human rights and with the principle of *non-refoulement* in carrying out return; the human and financial resources employed to achieve the objectives (return efficiency); and the long-term impact of return and reintegration prospects (return sustainability).

Why measuring return effectiveness is important

This report focuses on the dimension of return effectiveness and on the way to measure it. Vis-à-vis the policy objective of returning illegally staying TNCs, with an effective return rate of 30% in 2019 **the current return effectiveness in the EU is overall low.** The New Pact on Migration and Asylum recognises that "the effectiveness of return today varies from MS to MS, depending to a large extent on national rules and capacities, as well as on relations with particular third countries".[4]

To better analyse return effectiveness and understand where problems lie, the first step is measurement. When it comes to give a quantitative assessment of the return effectiveness, the New Pact on Migration and Asylum notes that "currently, only about a third of people ordered to return from MSs actually leave".[5] This proportion, often referred to as the *return rate*, measures return effectiveness as the share of TCNs who leave a MS after receiving an OTL (numerator) over the number of TCNs receiving OTLs from the MS (denominator). The number of TCNs may refer either to a single nationality (return rate for a specific MS-TC pair) or to the totality of nationalities represented in the specific MS (return rate of the MS). The measure of the effectiveness can be also seen from the perspective of TCs and, assuming that TCNs returned to their country of nationality, can be calculated as the share of nationals from that TC who leave the EU after receiving an OTL

[1] 'Return' is also the term used to describe when a TCN spontaneously leave the Member State, with no specific obligation issued by the authorities and regardless of the legality of the previous stay. This phenomenon, however, is outside the scope of the present report, which is restricted to the return of illegally staying third-country nationals under the obligation to leave.
[2] As per Article 5(4) of Directive 2008/115/EC (the Return Directive).
[3] European Commission (2020), Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions on a New Pact on Migration and Asylum, COM(2020) 609 final.
[4] Ibidem.
[5] Ibidem.

from all MSs (numerator) over the total number of nationals from that TC receiving OTLs from all MSs (denominator). This specific ratio is conventionally referred to as *readmission rate*.

Which the limitations of the return and readmission rates are

Despite being a commonly used and easily understandable measure, however, the return and readmission rates present some limitations. Two groups of limitations can be identified: those concerning how good and reliable the indicators used as the numerator and the denominator are (i and ii), and those concerning the ability of the formula to provide comparable results across MSs and TCs (iii and iv).

i. **OTLs are not always enforceable and no disaggregation is available to distinguish the enforceable from the non-enforceable ones**. This affects the denominator of the ratio and it is especially evident when appeals to the return and asylum decisions have a suspensive effect on the return procedure. Moreover, OTL may be revoked or may expire and to what extent this is reflected in the Eurostat data, collected on a yearly basis, is not clear. A systematic approach to map to what extent asylum and return procedures at national level affect the enforceability of an OTL is missing.

ii. **The number of persons retuned cannot be systematically monitored.** This is because some voluntary returns of persons who are under the obligation to leave go unreported, or get reported depending on the different systems in place at the MSs' level to identify spontaneous departures. This is especially when TCNs leave without support from the authorities. This limitation will be addressed with the deployment of the Entry-Exist System,[6] but, for the time being, it makes the number of people returned a potential underestimation. Another limitation concerns the country of destination, which MSs are not obliged to report. This will be addressed when the new Statistics Regulation enters into force, but, for the time being, the readmission rate relies on an unverifiable assumption – that returnees return to their country of nationality.

iii. **The formula of the return and readmission rate is based only on the number of persons ordered to leave and leaving, while it disregards other factors that may relevant to assess the effectiveness of return**. The most important of these factors is the nationality of the person. It is recognised that return rates vary to a great extent by nationality. MSs have very different nationality compositions among the population to return: some may have a larger share of nationalities for which return is easier (or more difficult). This may be due to the presence (or the absence) of bilateral or multilateral agreements, better cooperation, geographical proximity, specific migration routes taken. Regardless of the efforts made to make return more effective, this uneven nationality composition places some MSs in a more advantaged (or disadvantaged) position compared to others. Symmetrically, MSs differ by their return practices and the uneven distribution of nationalities across them may place TCs in a more or less advantageous position in readmission. In the return and readmission rate formulas, this is not accounted for. On the contrary, the formulas introduce an implicit bias whereby the most represented nationalities in the MS weigh more than the others in the calculation of the return rate. The same is true of the MSs issuing more OTLs in the calculation of the readmission rate.

   Besides the nationalities of people to return and their distribution across MSs, other relevant factors may have a hidden impact on return effectiveness: the number of OTLs that authorities have to execute, the number of nationalities – and hence TCs – authorities have to deal with, the number of OTLs per nationality, and the previous migration history of persons to return. This is true also for the readmission side.

iv. **Finally, return effectiveness is affected by elements that can be hardly captured in a one-incognita formula**. These are the different national legal systems and the behaviour of the counterpart.

To improve the measurement of return effectiveness, several strategies can be adopted: first, to map and analyse return processes and relative data collection practices at EU and national level, as well as bilateral cooperation; second, to provide tools that enable to comprehensively and simultaneously monitor multiple factors, besides the number of returnees and of OTLs; third, to use more refined return formula(s) sensitive to the nationality issue described in point iii. above. The report develops this third strategy.

[6] Regulation (EU) 2017/2226 of the European Parliament and of the Council of 30 November 2017 establishing an Entry/Exit System (EES) to register entry and exit data and refusal of entry data of third-country nationals crossing the external borders of the Member States and determining the conditions for access to the EES for law enforcement purposes, and amending the Convention implementing the Schengen Agreement and Regulations (EC) No 767/2008 and (EU) No 1077/2011.

How the formula of the return and readmission rates can be refined...

The report provides **alternative definitions of the return and readmission rate based on formulas that are more sensitive to the nationality composition of returnees and to the distribution of returnees across MSs**. The alternative definitions tend to mimic the simplicity of the traditional return and readmission rate formulas and do not present significant mathematical complexity. However, they introduce additional analytical angles for a more comprehensive assessment of return and readmission effectiveness. These alternative definitions are called the *average* and *equally weighted* return and readmission rates, and the *average difference* and *benchmark* return and readmission rates.

...to reduce the implicit effect of the nationality of the returnees and of the Member States issuing OTLs...

In particular, **the average and the equally weighted return and readmission rates tell us to what extent a MS is advantaged or penalised by the nationality composition of the population to return; and the nationality by its distribution across MSs**. They are defined as follows:

	Return rate	Readmission rate
Average	It is the average of the return rates for all nationalities represented in the MS. It aims at eliminating the 'weighting effect' of the population to return, whereby the return rates of nationalities receiving larger numbers of OTLs weigh more. In the average return rate all nationalities concur to the definition of the return rate to the same extent. This is also the case for nationalities with very small number of OTLs.	It is the average of the return rates for all MSs issuing orders to lave to a specific nationality. It aims at eliminating the 'weighting effect' whereby the return rates of MSs issuing larger numbers of OTLs weigh more. In the average readmission rate all MSs concur to the definition of the readmission rate to the same extent. This is also the case for MSs issuing very small number of OTLs.
Equally weighted	It follows quite closely the definition of the traditional return rate, but instead of giving different weights to the return rates of nationalities depending on the number of OTLs they received in the MS, it does so based on the OTLs received at EU level. The weight for each nationality is therefore the same across MSs, whenever at least one person from that nationality receives an OTL and regardless of the OTLs issued in the MS.	It follows quite closely the definition of the traditional readmission rate but instead of giving different weights to the return rates of MS depending on the number of OTLs they issued to persons from a nationality, it does so based on share of the OTLs issued by each MS over the EU total. The weight for each MS is therefore the same across nationalities, whenever at least one OTL is issued to people from that nationality from a MS.

These alternative definitions do not completely overcome the different nationality composition of returnees across MSs, as some nationalities may not be present in some MSs, and there is no weight that could possibly be assigned to them. However, taking this into account, the comparison between the average and the equally weighted return rates on the one hand, and the traditional return rate on the other hand tells whether the MS is advantaged (or penalised) by the nationality composition because.

As the two alternative definitions introduced here tend to minimise the effect of the nationality composition, **if the traditional return rate is higher (lower) than either of them it means that the MS is advantaged (disadvantaged) by the nationality composition of returnees**. This can be because it issues larger number of OTLs to nationalities for which it registers high (low) RR (*average RR*); or it registers high (low) return rates for nationalities which are more represented at national than at the EU level among the population to return (*equally weighted RR*).

The same is valid for the comparison between the traditional readmission rate on the one hand and the average and equally weighted readmission rates on the other hand. These tend to minimise the effect of the distribution of the OTLs issued by MSs to a specific nationality.

...and minimise bias in benchmarking

Other two alternative definitions are **the average difference and the benchmark return and readmission rates. They tell us to what extent the MS and the TC are more or less effective in return compared to a reference point**. They are defined as follows:

	Return rate	Readmission rate
Average difference	It is calculated by comparing, for each nationality represented in the MS, the return rate in the MS with the return rate at EU level. Negative (positive) values indicate that the MS is less (more) effective in returning persons from a specific nationality than the EU. All these differences are then averaged. The average difference return rate hence measures the return effectiveness in a relative way by comparison with a reference value. This can be the EU (as here) or potentially any other value. The final assessment is an average and is therefore subject to compensation effects.	It is calculated by comparing, for each MS issuing OTLs to persons from the nationality, the return rate of the MS for all nationalities (calculated in the traditional way) and the overall return rate for the nationality under investigation. Negative (positive) values indicate that people from that nationality return less (more) effectively than people from other nationalities. All these differences are then averaged. The average difference readmission rate measures the readmission effectiveness in a relative way by comparison with a reference value. This can be the traditional return rate in the MS (as here) or any other selected value. The final assessment is an average and is therefore subject to compensation effects.
Benchmark	It measures the return effectiveness of a fictional entity (a benchmark) that has the same nationality composition as the MS under investigation, but has the return rates registered at the EU level for each nationality. This return rate is then used as an optimal benchmark and the distance between this benchmark and the traditional return rate is calculated.	It measures the readmission effectiveness of a fictional entity (a benchmark) that has the same distribution of OTLs across MSs as the nationality under investigation, but has the return rates registered in each MS (traditional return rate). This readmission rate is then used as an optimal benchmark and the distance between this benchmark and the traditional readmission rate is calculated.

These alternative definitions do not completely overcome the different nationality composition of returnees across MSs, as the reference points chosen – the EU and a fictional EU for the return rates – are also characterised by an uneven distributions of nationalities across MSs. In other words, the return rate defined at EU level weighs more the return rates of the MSs issuing more OTLs. However, they allow to compare the MSs against a similar reference point.

Positive and negative values tell us whether the MS returns more or less effectively than the reference point. In particular, they tell us whether the MS underperforms or overperforms the EU on the average of all nationalities present among the returnees (*average difference return rate*); or in the fictional case where the EU had the same nationality composition registered in the MS (*benchmark return rate*). The same is valid for the alternatives measures of the readmission rate.

However, further research needs to be done

Although the alternative measures present some improvements, **they should not be interpreted as a solution to perfectly measuring return effectiveness**. More refined data collection and further analysis at the national and bilateral level as well as tools providing an overview on relevant indicators complemented by qualitative information are needed.

In particular, the report puts forward the **following recommendations for further research**:

- Map and in depth analyse return and asylum practices at the national level, to clarify i) to what extent the numerator and denominator of the return and readmission rate formulas reflect the population they are supposed to measure, and ii) to potentially support an improved data collection mechanism;
- Map and in-depth analyse MSs' legal systems and bilateral agreements and practices in place to better frame the comparison between MSs and TCs;
- Use alternative measures as tools to monitor the degree of convergence across MSs and TCs; and to benchmark and define 'target' performances.

However, as return remains a priority on the migration policy agenda and in the cooperation with third countries, it is important that understandable measures that give a better sense of the complexity of return effectiveness are available. The analysis and alternative measures presented in this report **contribute to improving the comparability and benchmarking power of the return and readmission rates** and pave the way for further research.

1 Introduction

The return of third-country nationals (TCN) who do not have the right to reside in the EU is one of the cornerstones of the EU migration policy. Return is by definition a bilateral process as it involves the Member State (MS) from where the person returns and the third country (TC) to which s/he returns. The former has to declare that the person needs to return and put in place a mechanism for making sure return happens, the latter has to accept the return of the TCN as its own citizen or on other grounds. But how well do MSs and TCs perform in return?

Measuring the performance of TCs and MSs is important to answer to this question. Specifically, measuring helps understand how MSs and TCs fare in return and readmission as well as identify progress over time, compare countries and their level of cooperation, and analyse the factors leading to good or bad results. The performance of MSs and TCs in return develops around several dimensions, including return effectiveness, return efficiency or cost-effectiveness, sustainability of return and human rights compliance.

This report focuses specifically on the dimension of return effectiveness, which here refers to the capacity to actually return persons who do not have the right to legally reside in the MS. But how best to measure return effectiveness?

The indicators commonly used to measure return effectiveness are the *return rate (RR) and the readmission rate (RdR)*. The RR is calculated as the share of TCNs returning to TCs, over the total number of migrants who are ordered to leave the MS. It can be defined for a single nationality (RR for the pair MS-TC), or the totality of TCNs in the MS (RR for the MS). In a specular way, the RdR for a TC is calculated as the share of nationals from that country who return to a TC, over the total number of nationals from that country who are ordered to leave the EU (RdR for the TC).

But to what extent are the RR and RdR fit for purpose? To what extent do they capture well MSs' and TCs' capacity to return?

This report addresses these questions, building on the analysis of the main *quantitative* information available to measure return. In particular, the objectives of the report are: i) to assess to what extent the RR and RdR are suitable indicators for describing return effectiveness and to identify their main limitations; and ii) to present alternative definitions of the RR and RdR that address some of the identified limitations.

Section 2 presents the problem definition. It defines the RR and RdR, and discusses what their limitations are. Some limitations concern the accuracy of the two indicators on which the RR and RdR are based; others the formula used to calculate the RR and the RdR. On the one side, the formula does not take into account the different characteristics of the population to return, which are important when comparing countries. On the other side, there are some important factors that being hardly measurable are not included in the formula. The Section concludes with the identification of potential ways forwards to address the identified limitations.

Section 3 proposes alterative definitions of the RR and RdR. It addresses one of the limitations identified in the previous section. Specifically, the formula of the RR does not account for the different composition in terms of nationality of the population to return, so that, for extreme example, it is not possible to distinguish MSs issuing OTLs to nationalities that are particularly difficult to return, from MSs issuing OTLs to nationalities that return more easily. Similarly, the formula of the RdR does not account for the different MSs from which a nationality receives OTLs, so that it cannot distinguish between a nationality receiving OTLs from MSs that can return TCNs very smoothly, from a nationality whose OTLs come from MSs with more difficulties in implementing return. To address this issue, the Section proposes four alternative definitions of the RR and RdR: the average, the average difference, the equally weighted and the benchmark RR and RdR. These are described first in a theoretical manner, with mathematical formulas and examples on fictional MSs and nationalities. Secondly, they are applied to EU MSs and to the top 30 nationalities for OTLs in the period 2010-2019.

Section 4 concludes with a reflection on how to make sure the different definitions of the RR and RdR are used to provide a more comprehensive view on MSs' and TCs' return effectiveness.

2 Problem definition

2.1 Return effectiveness

TCNs residing in EU MSs may leave the country in which they reside in several ways. Some of them may decide to move to a TC while still holding a regular document in the MS; others may move as soon as their period of regular stay terminates; others decide to (or are ordered to) leave the country thus ending their irregular status. **The focus of this report is on** the latter group: **the return of irregularly staying TCNs with no – or no longer – right to reside in the MS**.

In this context, **return is defined as "the process of a third-country national going back - whether in voluntary compliance with an obligation to return, or enforced**"[7] to the country of origin, transit or any other TC. There are three relevant actors in this process: MSs, that start and implement the return procedures; the TCNs, who cooperate or fail to do so in their return; and TCs, that cooperate or fail to do so in identifying their nationals and/or accepting the return of TCNs to their territory. When this process is analysed focusing on the TC, it is called **readmission**.

The return of irregularly staying TCNs is an important feature for a credible migration policy, as it signals that the migration law is enforced and discourages migrants from irregularly entering the EU. The main piece of legislation of the EU return policy is the Return Directive. This stipulates that MSs have the obligation to either issue a return decision (otherwise more generally called *order to leave* - OTL)[8] to TCNs staying illegally on the territory of the MS,[9] or grant an autonomous residence permit or an authorisation to stay.[10] If ordered to leave, TCNs have the obligation to leave the territory of the MSs. This can be done voluntarily, or forcibly after the period for voluntary departure expires (if such a period is granted). IE and DK are not bound by the Directive,[11] while it applies to NO, IS, CH and LI in the context of their participation in the Schengen *acquis*.

Return effectiveness is one dimension to describe MSs' and TCs' performance in return. It defines the extent to which return decisions are enforced in MSs or for specific nationalities, or, in other words, the extent to which MSs or TCs make sure that those with no right to reside do return. Other dimensions are human rights compliance, sustainability of return and reintegration, and efficiency of return.[12] While acknowledging their importance, this report focuses on the only dimension of return effectiveness.

At the EU level, it is acknowledged that **more can be done to make return more effective**,[13] and to address the variety of challenges that MSs may face. MSs may have in place ineffective national practices in implementing the EU legal framework, and/or may face operational capacity issues; TCNs may fail to cooperate in the return procedures, for instance by refusing to be identified or by absconding; and TCs may fail to cooperate, for instance by refusing to issue or recognise travel documents.[14]

The EU has taken several initiatives to make return more effective. Currently a proposal for the recast of the Return Directive[15] is under discussion, although its basic architecture remains unchanged. Moreover, at EU level, there are guidelines and recommendations on return[16] as well as forums where MSs exchange information and review good practices.[17] However, **a systematic analysis of return effectiveness as well as of the indicators used to measure it is missing**. The objective of this report is to analyse to what extent

[7] Directive 2008/115/EC of the European Parliament and of the Council of 16 December 2008 on common standards and procedures in Member States for returning illegally staying third-country (henceforth called Return Directive), Article 3(3).

[8] OTL is a more general term than return decision, which is defined in the narrower scope of the Return Directive. The EMN Glossary defines obligations to leave as return decisions.

[9] Return Directive, Article 6(1).

[10] Return Directive, Article 6(4).

[11] The UK was not bound either.

[12] OECD (2020), What are the possible policy responses to future irregular migration?, Migration Policy Debates, N.22, January 2020.

[13] European Commission (2017), On a more effective return policy in the EU. A renewed action plan, COM(2017) 200 final; European Commission (2018), Proposal for a Directive on common standards and procedures in Member States for returning illegally staying third-country nationals (recast), COM(2018) 634 final; European Commission (2019), Progress report on the Implementation of the European Agenda on Migration, COM(2019) 481 final.

[14] European Commission (2018), Proposal for a Directive on common standards and procedures in Member States for returning illegally staying third-country nationals (recast), COM(2018) 634 final.

[15] Proposal for a Directive of the European Parliament and of the Council on common standards and procedures in Member States for returning illegally staying third-country nationals (recast), COM(2018) 634 final.

[16] European Commission (2017), Return Handbook; European Commission (2017), Recommendation on making returns more effective when implementing the Directive 2008/115/EC, 2017/432; Council of the European Union (2016), Non-binding common standards for Assisted Voluntary Return (and Reintegration) Programmes implemented by Member States.

[17] E.g. the EMN Return Expert Group (REG), the European Reintegration Network (ERIN), the European Integrated Return Management Initiative (EURINT), the Irregular Migration Management Application (IRMA).

the return and readmission rates, which are the most commonly used indicator, are good indicators to measure return effectiveness. By doing this, it makes a first preparatory step in the direction of a more scientific, systematic and comparative analysis of return effectiveness.

2.2 The return and readmission rates as indicators of return effectiveness

2.2.1 Definition of the return and readmission rates

Eurostat collects statistics on the enforcement of immigration legislation. Specifically, MSs provide to Eurostat statistics on the number of TCNs *ordered to leave* (OTLs) and the total number of TCNs *returned following an order to leave* (RETs). They also provide the disaggregation of the number of persons returned to a *third country only* and, by subtraction form the total, the number of persons returned to another MS. This can happen when the third-country national staying illegally in a MS holds "a valid residence permit or other authorisation offering a right to stay" to another MS.[18] The number of persons returned to a TC is provided on a voluntary basis, but presents a very large coverage. On a voluntary basis, Eurostat also collects data on type of return, type of assistance received, type of agreement procedures as well as destination country. These data, however, have smaller coverage (for an overview on available data, see Annex 1).

OTLs and RETs to a TC (henceforth only RET) **are used to measure the MSs' and TCs' return effectiveness**. Measuring the effectiveness of return in a comparable way across countries and over time is important to allow the identification of progress and elements associated with high or low return effectiveness, thus contributing to the identification of good practices as well as potential weaknesses in the return system.

The most commonly used indicator to measure return effectiveness is the *return rate* (RR).[19] This has the benefits of being a single number used to compare MSs as well as to set targets. The European Commission, for instance, in 2018 set the goal of reaching 70% RR by 2020.[20] The RR is calculated as the share of persons who, having received an OTL, returned to a TC, over the total number of persons receiving an OTL over the same period of time – generally a year. The RR can be defined for a MS and a specific nationality, or for the MS in general. In the latter case, it measures the MSs' capacity to translate the OTLs that they issue into actual returns.

The RdR is the analogous indicator used when focusing on the role of the TC only vis-à-vis the totality of EU MSs, and measures to what extent OTLs given to a certain nationality from EU MSs are translated into returns. Building on the assumption that returnees return to their country of nationality,[21] the RdR can be used as a proxy to measure TCs' cooperation in the process of return. Box 1 reports the specific formulas for the RR and RdR. Low RRs are considered indicators of scarce effectiveness of MSs in returning TCNs and low RdR of scarce effectiveness of TCs in accepting returnees.

Box 1 – RR and RdR formulas

Defined at the MS-level, the formula of the RR is:

$RR_{MS_i,t} = \frac{RET_{MS_i,t}}{OTL_{MS_i,t}}$ whereby MS_i is the MS under consideration, and both *RET* and *OTL* are relative to all nationalities of OTLs issued in MS_i, during a period of time *t*.

Defined at the level of an individual nationality, the formula of the RdR is:

[18] Return Directive, Article 6(2).

[19] Several policy documents make reference to it. See for example the European Commission (2019), Progress report on the Implementation of the European Agenda on Migration (COM(2019) 481 final): "According to data reported to Eurostat, 478,155 persons illegally staying in the EU were ordered to leave in 2018, and 170,380 were effectively returned to a third country. This resulted in a return rate of 36% for 2018, a slight reduction from 2017 (return rate of 37%). Some countries whose nationals receive a substantial number of return decisions have very low return rates, such as 1.7 % for Mali and 2.8% for Guinea"; or European Commission (2018), Proposal on common standards and procedures in Member States for returning illegally staying third-country nationals (recast) "Despite these efforts, there has been little progress in increasing the effectiveness of returns. On the contrary, a decrease in the return rate throughout the EU was observed from 45.8% in 2016 to merely 36.6% in 2017".

[20] European Commission (2018), Managing Migration: possible areas of advancement at the June European Council, available at https://ec.europa.eu/commission/sites/beta-political/files/euco-migration-advancement-june-2018_en.pdf.

[21] This is the case in the 90% of TCNs ordered to leave and returned to a TC in the period 2014-2019 (the only one for which data is available), and for the 17 MS for which data is available (AT, BE, BG, HR, EE, FR, HU, IE, IT, LV, LU, MT, PL, PT, SK, SI, SE). Notable expectations are HR and HU, where respectively 35 and 31% of TCNs return to the countries of citizenship, the rest returning to another third country or a transit country.

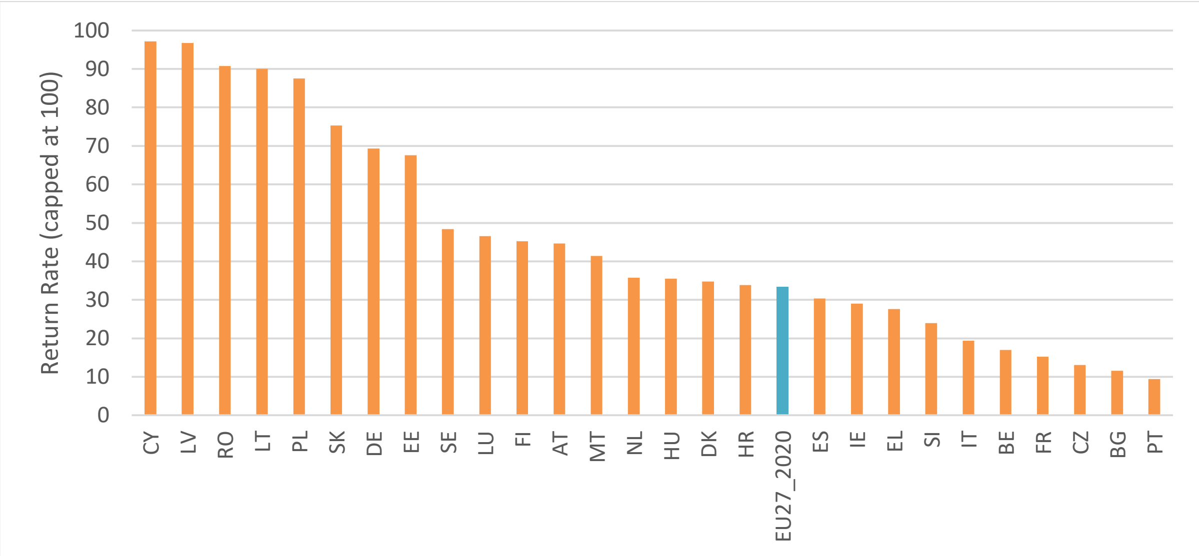
$RdR_{n_j,t} = \frac{RET_{n_j,EU,t}}{OTL_{n_j,EU,t}}$ whereby n_j is one of the nationalities represented within the OTLs issued by all MSs, during a period of time t.

2.2.2 Variability of the return and readmission rate

2.2.2.1 Variability across MS and nationalities

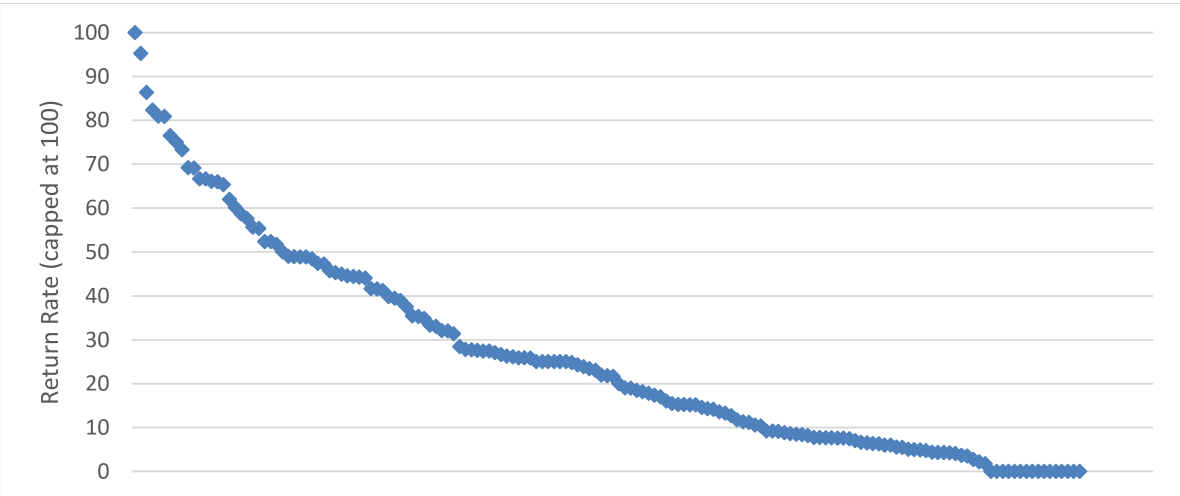
Figure 1 shows the RR across MSs. This is calculated on the ten-year cumulated period 2010-2019, as MSs may issue an OTL in one year and the return may happen in the following year(s) (see Annex 2 for a discussion on this). The **RR varies to a great extent across MSs**, from more than 90% of CY, LV, RO and LT, to less than 20% of IT, BE, FR, CZ, BG and PT.

Figure 1 – RR for 27 MSs and the aggregate EU 27 for the cumulated period 2010-2019



Similarly, the **RdR presents significant variations**, as shown in Figure 2, where the dots represent the RdR for all nationalities present among the population receiving OTLs in EU27 during the nine-year reference period.

Figure 2 - RdR for all nationalities (each one represented by a dot) in the EU for the cumulated period 2010-2019.



2.2.2.2 Variability within MS and nationalities

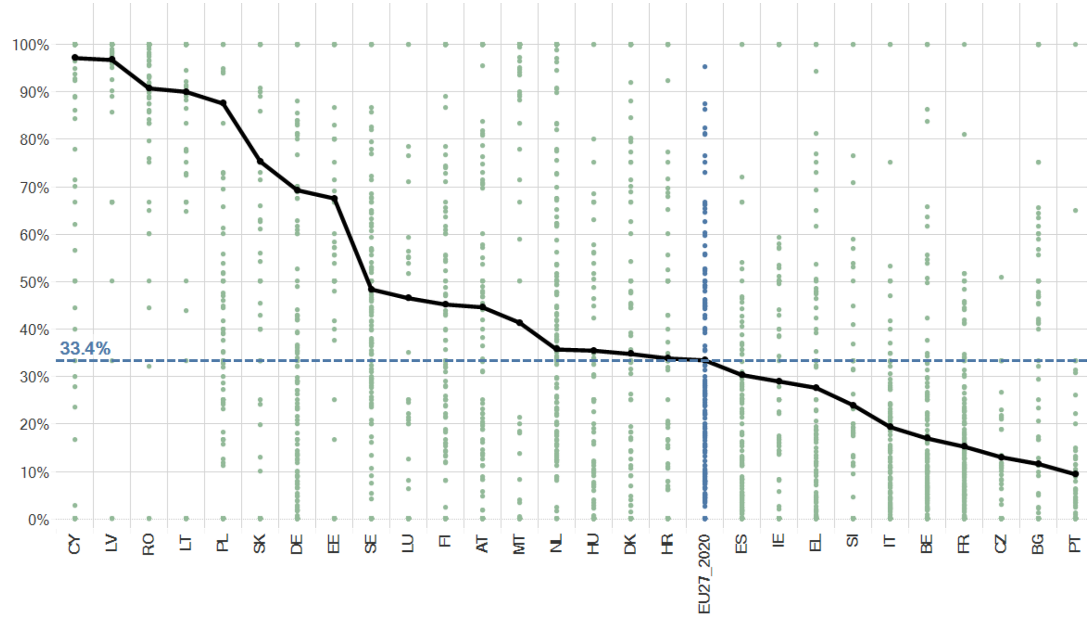
Besides variation between MSs and nationalities, **there is also significant variation among the nationalities present in each MS as well as for each specific nationality across MSs. Such**

differences cannot be appreciated when looking at the single indicator of the RR or RdR, while they do tend to impact the final result.

Figure 3 shows the distribution of the RR by nationality in each MS (and the aggregate EU27). Nationalities are represented by green dots (blue for EU27) and arranged by their RR, from the lowest (bottom) to the highest (top). The black dot represents the overall RR for each MS (in descending order).

Overall, MSs show great variability or dispersion of the RR for all the nationalities receiving OTLs. In RO, for instance, the RRs for the individual nationalities tend to be clustered around the RR for the country, which is higher than the RR for EU27 (i.e. 34%). In the NL, on the contrary, the RRs for individual nationalities are much more dispersed and the RR registered for the MS is similar to the RR for the EU. Finally, in MT, the RRs by nationality are more distant from the RR for the country, and tend to be polarised towards either far higher or far lower values.

Figure 3 - Distribution of RRs for all nationalities (dots) in each MS (the EU27 aggregate) for the cumulated period 2010-2019.

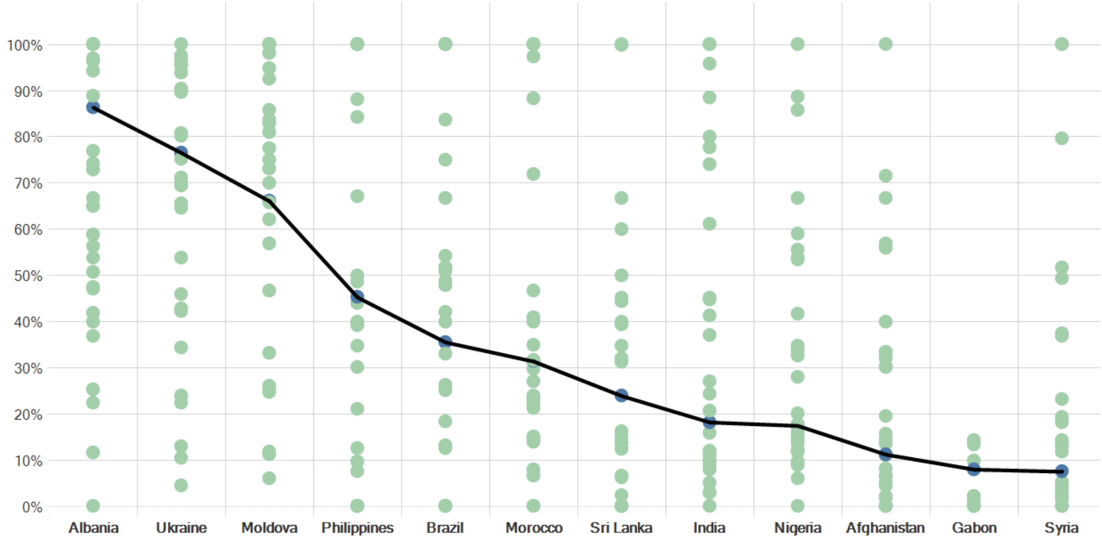


Very different RRs are registered also for the same nationality *across MSs*. Annex 2.4 shows in more details the distribution of the RRs within MS and nationalities.

Figure 4 shows the distribution of the RRs for twelve selected nationalities during the cumulated period 2010-2018. The green dots represent the RR in each MS, while the RR defined for the entire EU (RdR) is represented by a blue dot (descending order).

Different distributions emerge. Gabon is the country of nationality for which the RRs are the most clustered around the overall value defined for the country. This means that all MSs register similar RRs for citizens from Gabon, and these RRs are low, around 10%. Citizens from Afghanistan, on the contrary, registered a more disperse RR across MSs: while 2/3 of MSs have a RR clustered around the RdR for the nationality, 1/3 of MSs has more dispersed values. Finally, Albania shows larger dispersion, with high RdR but RRs for individual MSs ranging from 100 to 0.

Figure 4 - Distribution of RR values for the MSs (including EU27) that during the cumulated period 2010-2019 issued OTLs (dots) to nationals from twelve selected TCs.



2.3 Limitations of the definition of the return and readmission rates

Despite being widely used, there are some limitations that cast doubts on the extent to which the RR and RdR are suitable indicators to measure return effectiveness. Two macro-limitations are:

i) The RR and the RdR are defined on the number of persons who return and the number of persons who should return. However, the indicators used – RET and OTL – do no precisely measure the population they are supposed to measure. This is due to different national practices in issuing and enforcing OTLs, as well as in monitoring returns. This is discussed in Section 2.3.1.

ii) Even if OTL and RET (the numerator and denominator in the formulas defining the RR and the RdR) were good indicators, the formulas do not allow to measure return effectiveness and compare countries in their full complexity. This is because the formulas do not account for some important factors. This is discussed in Section 2.3.2.

2.3.1 Limitations concerning RET and OTL as indicators

2.3.1.1 OTL and the population to return

MSs have different practices in place on when an OTL is issued, for instance in relation to the asylum procedure. Moreover, due to legal guarantees associated to both the asylum and the return procedure, there are several cases in which an OTL is not immediately enforceable and is suspended or revoked (Box 2).

Box 2 – Different practices in issuing OTLs.

<u>The extent to which OTLs are systematically issued varies</u>. For instance, some MSs do not issue an OTL when the whereabouts of the person are unknown or an identity document is missing. This leads to an underestimation of the population to return. Moreover, since the return of undocumented or absconded persons can be considered particularly difficult to enforce, not issuing an OTL to these groups is likely to make the RR higher than what it would otherwise be.

<u>When OTLs are issued, there are differences as to when they become enforceable.</u> The return decision may be issued after a rejection of the first instance asylum application. This may be challenged, with repercussions on the enforceability of return. In some countries and for some cases, return decisions are enforceable pending the outcome of the first level appeal, as the appeal does not have a suspensive effect. In others, the appeal has a suspensive effect and the return decisions become enforceable only after the negative result of the appeal. Moreover, subsequent levels of appeals do not have a suspensive effect in some countries, making the decision enforceable; while in others, the decision becomes enforceable only after all remedies have been exhausted.

Like asylum decisions, also return decisions may be challenged, in most MSs in the form of appeals. The challenge may bring an automatic suspension to the enforceability of a return decision, and in some MSs, this is the ordinary outcome in case of a challenge. Return decisions may also be revoked, if for instance the appeal is won or if the person is granted another form of permit.

<u>The duration of the validity of the OTL varies.</u> Return decisions with a more limited duration may expire by the time all legal remedies are exhausted. If the same person still needs to be returned, another OTL may be issued, possibly affecting the statistics, as the same person would be double-counted.

<u>Differences emerge also when OTLs are not enforceable</u>. In some cases, after the return decision has been issued, authorities may formally acknowledge that the person cannot be returned. This may be because his/her situation has changed, or the situation in the country would make a return no longer lawful, or because the return is practically impossible (failure to identify the person or to agree with the TC). When this type of situation arises, in line with the return acquis MS have different practices in place: the return decision may be revoked, suspended or an authorization to stay be issued.

The different practices listed above affect the extent to which the number of OTLs captures the population to return. Such differences, however, are not accounted in Eurostat data.

Different validity statuses may be in principle associated to a given OTL. An OTL may be *immediately enforceable*, or its enforceability may be *suspended*, due for instance to an appeal. It may also be *expired*, if a time period has passed so to make it no longer valid. Moreover, if it has been suspended, the OTL may be *resumed* or *withdrawn*, for instance in case the appeal decision is respectively negative or positive. These practices differ by MS and, within each MS, by typology of cases.

Figure 5 provides a preliminary conceptual mapping of the theoretical possibilities available to issue and enforce an OTL, within the return process and in relation to the asylum process (in the grey box). The box in the top-right corner of the figure shows the colour legend associated to the status of an OTL, depending on its validity. If it is valid, an OTL may be freshly issued, resumed if previously suspended, suspended or enforceable. If it is not valid, it may be because it has been revoked or has been never issued.

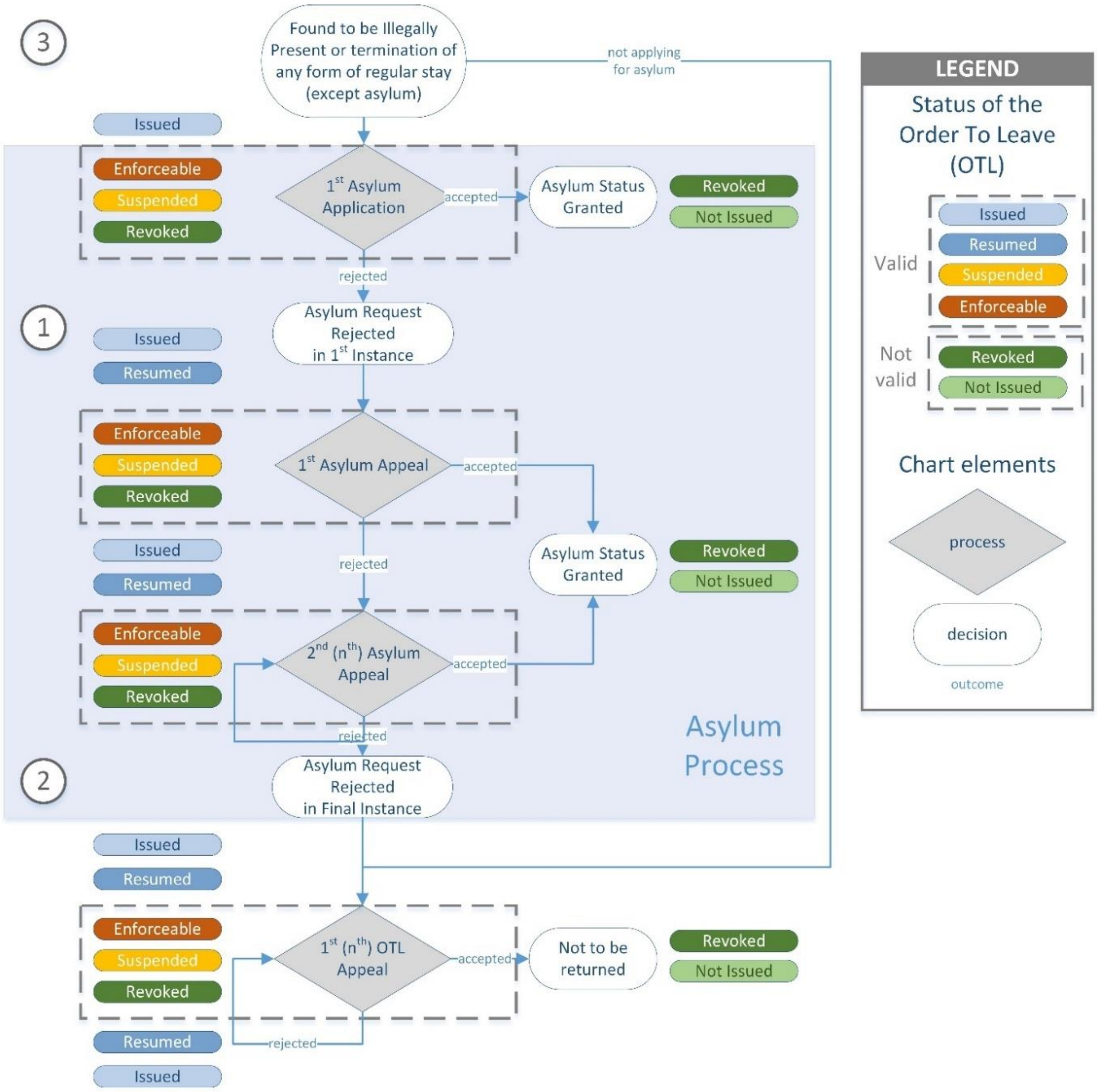
The numbers indicate the three cases in which an OTL can be issued. It can be issued to rejected asylum seekers in first instance (case 1), or in final instance (case 2), or to persons found to be illegally present or whose regular stay is terminated (case 3). This is indicated by the 'issued' label, which means that the OTL may be issued. If the OTL has been issued and appealed, it may be immediately enforceable or it may be suspended or revoked. The OTL may also be resumed if it was suspended, or a new one may be issued if previously revoked.

Specifically, persons in case 3 are those issued an OTL due to their irregular status. They may decide to apply for asylum. The OTL may then be immediately enforceable, suspended, or revoked until the first instance decision is taken. If the application is successful and the asylum status is granted, the OTL may be revoked, while if it was not issued before, no OTL will be ever issued. If the application is rejected, then, the path would converge to the path of case 1. Persons in case 3 may also refrain from applying for asylum and challenge the return decision. In this case, their path would converge to the path of case 2.

Persons in case 1 are those whose asylum request is rejected in first instance. They may be issued an OTL, or the OTL may be resumed if it was already issued. In case they appeal the first instance asylum decision, the OTL may be nonetheless immediately enforceable, or it may be suspended until further decision, or even revoked. If the appeal is accepted and the asylum is granted, the OTL may be revoked if previously issued; otherwise, it will no longer be issued. On the contrary, if the appeal is rejected, the OTL may be resumed or, if never issued or if previously revoked, a new OTL may be issued. This process is repeated until the final asylum decision is taken.

Persons in case 2 are those that have already received an OTL (typically having previously been in case 1 or 3) and file a legal challenge against it. While waiting for the decision to the appeal, the OTL may be immediately enforceable, or it may be suspended or revoked. If the appeal is successful, the OTL is revoked or won't be any longer issued if it was already revoked. If the appeal is rejected, a new OTL may be issued if the previous one was revoked, or the old OTL may be resumed if previously suspended. This process is repeated until the final appeal.

Figure 5 - Conceptual flow diagram of return decisions' enforceability in relation to the asylum and return process.



Comparative overviews of different practices affecting the statuses of OTLs are not available. Moreover, statistical data collected by Eurostat do not contain information on the enforceability of an OTL. Consequently, **the OTL indicator may measure different statuses in each MS**, raising a first concern about the use of the RR for comparing MSs, as only when OTLs are enforceable it makes sense to expect the person to return. The proposed recast Return Directive provides for some improvement towards greater harmonisation in the systematic issuing of OTLs and in OTLs suspension. However, this would happen only after the Directive is possibly adopted and transposed into the national legislation, as well as the administrative procedures are adapted.

Moreover, whereas Eurostat Guidelines clarify that OTLs and RETs refer to persons rather than procedures, they also acknowledge that **in some countries there may have been double-counting issues**, which may affect comparability.[22] This issue, however, is reported to be addressed, although with the entry into force of the new Migration Statistics Regulation it will remain up to MSs to ensure statistics do not present double counting.[23]

[22] Eurostat annex (updated as of 2015) on *General compliance with definitions from EIL technical guidelines* report double counting may affect data from BE (OTL, 2008-2012), UK (2008-2009), AT, CY, GR, LU, PL, FI (no more specific information available), available at https://ec.europa.eu/eurostat/cache/metadata/Annexes/migr_eil_esms_an1.pdf. Eurostat annex on EIL data completeness report double counting issues only for BE and AT, available at https://ec.europa.eu/eurostat/cache/metadata/Annexes/migr_eil_esms_an2.pdf.
[23] Communication with DG HOME.

2.3.1.2 RET and the number of actual returns

Not only OTL present some limitations, but also RET. A person who has received an OTL may return to a TC in three possible ways: by voluntary departure, by assisted voluntary return, or by forced return. When authorities or third parties are involved in the return, as it is typically the case for assisted voluntary return and forced return, monitoring the actual return of the person is relatively easy. This is more difficult for voluntary departure as **not all MSs have in place systems to verify that the person has left the territory during the period of voluntary departure**,[24] hence RET is an underestimation of those who actually returned. This will change in the future, with the full deployment of the Entry-Exist System,[25] which will more accurately monitor voluntary returns from MS.

Moreover, **data on the country to which the person has returned are not available**. While this can be derived from the returnee's citizenship when the person has returned to her citizenship country, this is not the case when the person has returned to a TC different from her country of citizenship (generally a transit country). Distinguishing the two cases is possible only to a limited extent due to data limitation (Annex 1). Normally the nationality of the returnees is taken as a proxy for the TC the person returns to. However, this data gap represents a significant limitation to the use of the RR calculated by using the returnees' nationality as a measure to TCs' effectiveness to return. The new Regulation on statistics on migration and international protection addresses this limitation by making compulsory for MSs to report also the country of destination as of 2021.[26]

2.3.2 Comparability limitations of the RR and RdR formulas

Limitations concern not only the numerator (RET) and denominator (OTL), but also the RR and RdR formulas. These are a ratio (expressing a share) defined by two factors. This simplicity makes them easy to understand and to use. However, it also masks the complexity of underlying factors, especially when taken in isolation. The population to return has other relevant characteristic – other than the total number of OTLs – that are important to understand return effectiveness. These are not taken into account in the formula, generating issues of comparability.

2.3.2.1 Nationality composition and distribution across MSs

Two of the most important characteristics of the population to return are the nationality of the returnees as well the MS from which the returnee receives OTLs. They are important respectively for the RR and the RdR.

2.3.2.1.1 MSs

The nationality composition of the population to return varies across MSs. The formula of the RR does not distinguish the nationalities of returnees, and considers the *totality* of RETs over the *totality* of OTLs in a MS (Box 3, upper formula). However, in not doing so, **the formula introduces an implicit bias towards more represented nationalities**. This is because the weight given to the RR for each nationality varies depending on the number of OTLs issued to TCNs from that nationality. Following the simple manipulation of the formulation for RR, as displayed in Box 3, it can be demonstrated that for the given MS, the RR is equal to the sum of the RR for each nationality n_j (with j = 1 to N_i) times the share of OTLs issued to that nationality (number of OTLs issued to that nationality over the total number of OTLs issued in the MS) during the reference period (Box 3, bottom formula). As a consequence, the RRs for overrepresented nationalities are multiplied by a larger factor and drive the overall RR for the MS.

[24] EMN (2016), The Return of Rejected Asylum Seekers; Challenges and Good Practices; Synthesis Report: AT, BE, DE, EE, ES, FI, FR, HE, LT, LU, MT, SE, SI, SK have in place systems to verify that the person has left. These include: obligation to declare the departure at the border crossing point site (FR, ES, HR, LT), or to submit a crossing border certification (DE, MT, SE, SI); records of the departure on the aliens register (FI, LT); entry-exit registration system (EE); use of the national Schengen border control information tracking (SK); bilateral agreements with neighbouring countries to intensify the collection of border crossing information (LV); pre-departure checks and controls at the registered home address (BE).

[25] Regulation (EU) 2017/2226 of the European Parliament and of the Council of 30 November 2017 establishing an Entry/Exit System (EES) to register entry and exit data and refusal of entry data of third-country nationals crossing the external borders of the Member States and determining the conditions for access to the EES for law enforcement purposes, and amending the Convention implementing the Schengen Agreement and Regulations (EC) No 767/2008 and (EU) No 1077/2011.

[26] Regulation (EU) 2020/851 of the European Parliament and of the Council of 18 June 2020 amending Regulation (EC) No 862/2007 on Community statistics on migration and international protection; Article 1(6)(a)(b). Statistics will distinguish 'country of citizenship', 'other third countries' and 'another country from EU and EFTA'.

Box 3 – RR highlighting the weighing factor.

$$RR_{MS_i} = \frac{\sum_{j=1}^{n_i} RET_{MS_i,n_J}}{\sum_{j=1}^{n_1} OTL_{MS_i,n_j}}$$

$$RR_{MS_i} = \sum_{j=1}^{n_i} \frac{RET_{MS_i,n_j}}{\sum_{j=1}^{n_1} OTL_{MS_i,n_j}}$$

$$RR_{MS_i} = \sum_{j=1}^{N_i} \frac{RET_{MS_i,n_j}}{OTL_{MS_i,n_j}} \frac{OTL_{MS_i,n_j}}{\sum_{j=1}^{n_1} OTL_{MS_i,n_j}}$$

$$RR_{MS_i} = \sum_{j=1}^{N_i} RR_{MS_i,n_j} \frac{OTL_{MS_i,n_j}}{OTL_{MS_i}}$$

where: $OTL_{MS_i} = \sum_{j=1}^{n_1} OTL_{MS_i,n_j}$

This is a problem as the most represented nationalities differ by MS and, as shown in Section 2.2.2.1, the RR varies to a very great extent across nationalities. It may be easier for a MS to implement return for some nationalities, due for instance to stronger cooperation (either at EU or national level) with the countries of origin or transit. Similarly, it may be more difficult to return other nationalities, due for instance to the conditions in the country of origin, as some countries may not be considered safe (in their totality or in some areas) and thus return cannot be enforced without breaching the principle of *non-refoulement*. Box 4 shows an example of how MSs' different composition of nationalities to return affects the RR.

Box 4 – Example of how the composition of population to return affects the RR.

In the period 2010-2018, IT and PL had very different RRs, i.e. 19% and 87%. This is supposed to indicate that PL is much more effective than IT in returning people with no right to stay in the country.

These people however have very different profiles in IT and PL. First, in PL, there are fewer nationalities receiving OTLs than in IT, i.e. 81 vs. 119. Second, the OTLs issued by PL are much less dispersed than those issued by Italy: in PL, the first 70% of its OTLs are issued to one nationality only, i.e. Ukrainians; in IT, to nine nationalities – Moroccans (20% of OTLs), Tunisians (15%), Albanians (8%), Nigerians (6%), Egyptians (6%), Senegalese (5%), Algerians (4%), Chinese (3%) and Bangladeshis (3%).

Being the most numerous, the RRs for these nationalities drive the RR of the two countries. The RR for Ukrainians in PL is high (94%), but so is in the EU (77%), where Ukrainians are among the top nationalities for RR. On the contrary, the RR of the nine nationalities in IT is on average low (19%) but so is at EU level (on average 29%).

This means that most OTLs in PL are issued to a nationality that seems to be in general easy to return, while in IT to nationalities that are in general more difficult to return. This is not acknowledged when comparing the two countries' RRs only, showing that using the RR may led to very partial conclusions.

2.3.2.1.2 Nationalities

Similarly, the formula of the RdR for nationalities does not distinguish by MSs that issued the OTL, and it considers the *totality* of RETs over the *totality* of OTLs issued to people from a nationality (Box 5, upper formula). However, performing similar transformations as in Box 3, it can be demonstrated that the **RdR introduces an implicit bias towards MSs issuing more OTLs to people from that nationality**. This is because the weight given to the RR for each MS varies depending on the number of OTLs issued by that MS. In particular, for the given nationalities, the RdR is equal to the sum of the RR for each MS MS_j (with j = 1 to N_i) times the share of OTLs issued by that MS (number of OTLs issued by each MS over the total number of OTLs issued to the nationality) during the reference period (Box 5, bottom formula). As a consequence, the RRs for MSs where the nationalities are overrepresented are multiplied by a larger factor and drive the overall RR.

Box 5 – RdR highlighting the weighing factor.

$$RdR_{n_i} = \frac{\sum_{j=1}^{n_i} RET_{n_i MS_j}}{\sum_{j=1}^{n_1} OTL_{n_i, MS_j}}$$

$$RdR_{n_i} = \sum_{j=1}^{N_i} RR_{n_i, MS_j} \frac{OTL_{n_i, MS_j}}{OTL_{n_i}}$$

This is a problem as the MSs issuing most OTLs vary by nationality, and as shown in Section 2.2.2.1, the RR varies by MS to a great extent. For a nationality, it may be easier to return from some MSs due to bilateral cooperation agreements, legal practices in the MS (e.g. the TC may be considered safe by some MS only), or, in general, a more effective return system in that MS, including incentives to voluntary return.

2.3.2.2 Other characteristics of the population to return

2.3.2.2.1 MSs

Other characteristics of the population to return in each MS also have to be considered, as they may affect the RR (see Annex 3 for additional analysis):

i) **Number of nationalities to which OTLs are issued** – When the number of nationalities receiving OTLs in a MS is larger, return may be in general more difficult, because the MS would have more TC counterparts to deal with (Expectation 4 in Annex 3).
ii) **Number of OTLs issued overall** – Return may be easier when the size of the overall population to return is smaller (i.e. the number of OTLs is small), as it would be easier to manage and more efforts could be focused on each case (Expectation 3 in Annex 3). On the contrary, a very small population to return may generate some difficulties due to logistics and lack of cooperation.
iii) **Number of OTLs issued to each nationality** – Similarly to the previous point, it may be more difficult to return nationalities with larger numbers of persons to return (OTLs) (Expectation 1 in Annex 3). In addition to the reasons above, TCs may be more inclined to cooperate when the numbers are small and the impact of return and reintegration on the TCs more limited. On the contrary, it may be easier to return large number of people, because the logistics would be easier and there might be consolidated cooperation with TCs, exactly as a consequence of large numbers.
iv) **Previous migration history of people to return** – Some previous migration statuses of the people to return may make return easier. Different groups of TCNs could receive OTLs: apprehended irregular migrants, rejected asylum seekers, or persons whose documents had expired. It may be for instance easier to return rejected asylum seekers or persons with expired documents than apprehended irregular migrants with no previous track record. This is because the identity of the former may have been already established, while this is not the case for the latter (Expectations 2, 5, 6 in Annex 3).

Box 6 – Examples of how the number of OTL may affect the interpretation of the RR.

Let's consider two MSs, MS_1 and MS_2, with RRs of respectively 100% and 99% over the same period. These RRs seemingly tell us that MS_1 is more effective in return than MS_2. However, if MS_1 has 1 OTL and 1 RET whereas MS_2 has 1000 OTLs and 990 RETs, it would be less straightforward to interpret a higher RR as an indicator of more effectiveness.

Let's now consider that the same two MSs have both RRs equal to 0%. One could say that they both have the lowest possible return effectiveness. Yet, knowing that MS_1 has 1 OTL and 0 RET whereas MS_2 has 1000 OTL and 0 RET would help put considerations on effectiveness into context.

Analogous considerations can be made when the same value of RR for MS_1 and MS_2 comes from very different values of OTL and RET. For instance, MS_1 and MS_2 have both 30% RR, but MS_1 has 9 OTLs and 3 RETs whereas MS_2 has 1500 OTLs and 500 RETs. Knowing this, stating that MS_1 and MS_2 have the same return effectiveness does not give the full picture.

We tested these expectations via correlation. For the time being, we found only limited evidence (Annex 3), but these relationships will need to be explored in more details. For instance, we found that there is a weak negative correlation between the number of nationalities to return in a MS and the RR of the MS (point i) above), suggesting that the larger the number of nationalities receiving OTLs, the lower the RR of the MS is. We also found a very weak negative correlation between the total number of OTLs issued by a MS and the RR for the

MS (point ii) above), suggesting that as the overall number of OTLs increases, return becomes more difficult, and the RR decreases.

2.3.2.2.2 Nationalities

Similarly, nationalities (and by proxy TCs) have different characteristics across MS that may affect their RdR (see Annex 3 for additional analysis):

i) **Number of MSs which issued OTLs**,

ii) **Number of OTLs received overall**,

iii) **Number of OTLs received by each MS**,

iv) **Previous migration history of people to return**.

The same expectations formulated for MS can be formulated for nationalities with a reversed perspective (Annex 3), and these elements may affect the RdR.

Testing these expectations via correlation, only limited relationship has been found (Annex 3) and more investigation will be needed. For instance, there is a very weak negative correlation between the share of rejected asylum seekers among those receiving OTLs from a nationality and the RdR for that nationality. This suggests that as the share of rejected asylum seekers among those receiving an OTL grows, the lower the RdR gets – although to a very limited extent.

2.3.2.3 Other relevant factors hardly measurable

There are other factors that affect the comparability of the RR and RdR and that, unlike those described in Section 2.3.2, are hardly measurable. These are different legal systems and the behaviour of the counterpart.

National legal systems differ for instance in defining the legal remedies available and in defining when an OTL becomes enforceable vis-à-vis these legal remedies (Box 7). Legal systems define the context in which return happens, and should not be confused with factors that may make return more or less effective (e.g. administrative capacity, efficiency of the judiciary, etc.).

Box 7 – Example of how different national legal systems affect the interpretation of the RR.

MS_1 and MS_2 issue *n* OTLs to *n* persons in a year. In MS_1, *n/2* persons appeal the return decision leading to its suspension; in MS_2 *n/4* persons appeal, but the national legal system does not provide for suspension in case of appeal, hence making the return decisions immediately enforceable.

Comparing the RRs for both countries is misleading, as half of the persons to return from MS_1 cannot be returned, and the reason is not low return effectiveness, but the very compliance with the national legal system.

If more information were available on OTLs' enforceability (as described in Section 2.3.1.1), the RR could be calculated taking into consideration only the enforceable OTLs (i.e. respectively *n/2* and *n*), so that the RR would be RET/enforceable OTLs. This would then be complemented by the number of yet to be enforceable return decisions (i.e. respectively n/2 and 0) and the number of enforced return decisions that may actually be reversed (i.e. respectively *0* and *n/4*).

Return is a bilateral process and, as such, **the behaviour of the counterpart** – that is the TC for MS, and the MS for nationalities – affects the capacity to return and hence return effectiveness. At the moment, it **is not possible to quantify the return effectiveness of the counterpart** and to include this variable in the formulas of the RR and RdR. Therefore, it is not possible to know whether obstacles to return lie on the side of the MS or of the TC. For instance, it is not possible to know whether the RdR of a nationality (and by proxy a TC) is low because the TC is not willing to cooperate with the EU; or because it cooperates more with some MSs and less with others and happens to have returnees from MSs with which it cooperates less; because it would like to cooperate but faces obstacles (e.g. political, legal, technical, administrative) on its end, or on the end of some MSs which issue OTLs.

Analysing the bilateral dimension of return is important to shed light on these micro dynamics underpinning the RR and the RdR. The presence of bilateral agreements between individual MSs and TCs is for instance an element to further investigate, as this may have an impact on return and the RR. At the EU level, the RdRs are higher when the EU has signed a return and readmission agreement with the TC.[27] However, also within this group of TCs there is large variation: for the entire period 2010-2018, the RdRs range from 10% of Cabo Verde, to 91% of Albania, passing through 27% of Pakistan and 43% for Armenia. In fact, purely based on the data, it is not possible to say whether return and readmission agreements are effective in increasing the RdR or whether they work with countries with which the EU has already strong cooperation, including on return, which are also more likely to conclude return agreements. This will need to be further investigated. Moreover, at national level, MSs have several other more or less formalised agreements with TCs which may affect return and the RR and RdR and will need to be further analysed.

2.3.3 Summary of the main issues and potential ways forward

Table 1 summarises the issues identified in previous sections, the reasons behind, and potential way forwards.

Table 1 – Issues and potential solutions.

Macro-limitations	**Reasons**	**Limitations**	**Potential ways forward**
RET and OTL are poor indicators	Poor data collection and diversity of practices at EU or national level	i. Information gaps on when an OTL is issued in the context of the return and asylum process	Map and analyse return processes and relative data collection at national and EU (Eurostat) level
		ii. Information gaps on different statuses associated to an OTL in relation to its enforceability	
		iii. Information gaps on whether the returnees have returned and to which country	
The formulas of the RR and RdR present some comparability issues	The formulas do not take into account important characteristics	iv. The national composition of the population to return is not taken into account in the formula of the RR for MS v. Conversely, the MS distribution of the nationality is not taken into account in the formula of the RdR for that nationality	Provide more refined formula(s) for the RR and RdR
		vi. Other relevant characteristics of the population to return are not taken into account in the formula of the RR for MS (number of nationalities, number of OTL, and previous migration history) vii. Other relevant characteristics of the population to return are not taken into account in the formula of the RdR (number of MSs, number of OTLs, and previous migration history)	Provide dashboard-like tools to simultaneously analyse multiple aspects of return at the same time
	Relevant factors are hardly measurable	viii. Different legal systems in the MS affect the enforceability of OTLs, hence the RR, without necessarily being informative about return effectiveness	Map and analyse return processes and relative data collection at national and EU (Eurostat) level, as well as at the bilateral level
		ix. The behaviour of the counterpart is difficult to take into account	

Section 3 focuses specifically on sub-limitations iv-v. In particular, it proposes alternative definitions for the RR and RdR that take into account the national composition of the population to return across MS (RR), and the distribution across MS of different nationalities to return (RdR).

[27] When there is a return and readmission agreements between the EU and the TC of nationality, the mean RR is 51%; while where there are no such agreements the mean RR is 30%. This calculation is based on the RR capped at 100 defined for the period 2010-2018. Return and readmission agreements have been signed with 15 countries (plus Hong Kong and Macao) and are available here: https://ec.europa.eu/home-affairs/what-we-do/policies/irregular-migration-return-policy/return-readmission_en

3 Alternative definitions of the RR and RdR

This section proposes alternative definitions of the RR and RdR, first from a theoretical perspective, with the help of fictional examples (Section 3.1) and then applied to MSs and nationalities (Section 3.2). These alternative definitions take into account the national composition of the population to return in each MS for which the RR is calculated (Section 3.1.1 and 3.2.1), as well as the distribution of people to return across MSs for the nationality for which the RR is calculated (Section 3.1.2 and 3.2.2). They are compared with the RR and RdR as defined in Box 1, henceforth called traditional RR and RdR.

3.1 Theoretical formulation

There are two elements of the definition of the RR and RdR that can be manipulated:

- the **mathematical formulation**, which in the traditional RR and RdR is a ratio between RETs and OTLs,
- the **population on which the calculation is performed**, which in the traditional RR and RdR is the population receiving OTLs in their different national composition or distribution across MSs.

In addition, there is the **comparative indicator used to measure return effectiveness**, which in the traditional RR or RdR is the RR or RdR of a country itself, compared with the one of another country (or the EU as a whole).

3.1.1 MSs

3.1.1.1 Average RR

The average RR manipulates the population on which the operation is performed, i.e. *composition of nationalities* across MSs. In particular, if a MS has a population composed of N nationalities of people to return (each with a different number of OTLs), **the average RR** ($\overline{RR}_{MS_i}$) **measures the return effectiveness as if, in each MS, each nationality n were issued 1/N number of OTLs, having thus the same weight in the calculation of the RR for the MS**. The formula is described in Box 8.

Box 8 – Average RR formula for MSs.

$$\overline{RR}_{MS_i} = \frac{1}{N_i}\sum_{j=1}^{N_i} RR_{MS_i,n_j}$$

Consider MS_1 and MS_2, both having 3 nationalities n (N=3), with different numbers of OTLs issued to each nationality. In both cases, one nationality received half OTLs (n1 in MS_1 and n3 in MS_2), while the remaining OTLs are split between the two other nationalities.

Table 2 – OTL and RET of MS_1 and MS_2.

	MS_1		**MS_2**	
	OTL	***RET***	***OTL***	***RET***
n1	50	25	25	13
n2	25	25	25	25
n3	25	5	50	10
TOT	100	55	100	48

The RR for each nationality is the same in both MSs, hence generating the expectation that also the overall effectiveness in return would be the same. However, according to the traditional definition of the RR (RR_{MS_i}) which is calculated as the ratio between the *total* number of OTL over the *total* number of RET, MS_1 turns out to have a higher RR. Being the traditional RR driven by the nationality that receives the largest number of OTLs in the MS, and being other things equal, the RRs of n1 and n3 - the most represented nationalities respectively in MS_1 and MS_2 – drive the overall traditional RRs of the two MSs. Since n1 has a higher RR than n3, then the RR of MS_1 is higher than the RR of MS_2. The traditional RR suggests that MS_1 is more effective than MS_2, but in fact its higher RR is only due to its national composition rather than more effectiveness on individual nationalities.

The average RR ($\overline{RR}_{MS_i}$) describes a different picture. It gives the same weight to each nationality across MSs (i.e. 1/N), as if MS_1 and MS_2 had the same composition in terms of nationalities of OTLs (i.e. as if each nationality had 1/N of OTLs). The resulting overall average RR is thus the same.

Table 3 – RRs of MS_1 and MS_2.

	MS_1	**MS_2**
RR_{n1}	50%	50%
RR_{n2}	100%	100%
RR_{n3}	20%	20%
Traditional RR_{MS}	55%	48%
Average RR_{MS}	57%	57%

The formula of the average RR makes the population to return similar across MSs as it assigns to each nationality a weight equal to 1/N. This replaces the weight that in the traditional RR is equal to the share of OTLs of a given nationality in the MS (Section 2.3.2.1.1, Box 3). **The difference between the average and the traditional RR shows the extent to which the RR is affected by the nationality composition among OTLs**. In the example, the difference is positive for both MSs, meaning that in both cases the nationalities with a higher-than-average RR have a larger number of OTLs than those with a RR smaller than the average. However, the difference is larger in MS_2 than in MS_1, meaning that nationalities with higher RR are more represented in MS_1 than in MS_2.

While the average RR allows to appreciate the effects of the different nationality composition, **it cannot fully overcome the comparability problem associated with it. This is because the population of nationalities receiving OTLs differ by MSs, and in particular, i) not all MSs have the same number of nationalities N within the population to return, ii) nor all nationalities n are represented in all MSs**. If a nationality does not appear among those receiving OTLs in some MSs, we do not know how to comparatively assess its RR in the MS(s) where it is present, as we do not know how other MSs would have been effective in returning people from that nationality.

As an example of i), consider MS_3 and MS_4, which have the same composition as respectively MS_1 and MS_2 with the only exception that MS_4 has a fourth nationality n4 with a RR equal to 0% (N_{MS3}=3, N_{MS4}=4). As a result, MS_4 has a smaller traditional as well average RR than MS_3. However, it is not possible to assess whether the higher RR of MS_3 means that it is more effective in returning those who have received OTLs, or has a more favourable nationality composition among the population to return. In fact, while, the RR for each nationality present in both MSs is the same, there are no elements to assess how MS_3 would have been effective in returning n4.

As an example of ii), MS_5 and MS_6 have the same number of nationalities N=2, but different nationalities, i.e. n1 and n2 in MS5, and n3 and n4 in MS6. Since the RR of n1 and n2 is higher than the RR of n3 and n4, the RR of MS_5 is also higher that the RR of MS_6. As above, however, it is not possible to know whether this is due to MS_5 being more effective or having nationalities who are easier to return.

Table 4 – OTL and RET of MS_3 and MS_4; MS_5 and MS_6.

	MS3		**MS4**		**MS5**		**MS6**	
	OTL	***RET***	***OTL***	***RET***	***OTL***	***RET***	***OTL***	***RET***
n1	50	25	25	13	50	25	0	0
n2	25	25	25	25	50	50	0	0
n3	25	5	25	5	0	0	50	10
n4	0	0	25	0	0	0	50	0
TOT	100	55	100	43	100	75	100	10

Table 5 – RRs of MS_3 and MS_4; MS_5 and MS_6.

	MS3	**MS4**	**MS5**	**MS6**
RR_{n1}	50%	50%	50%	-
RR_{n2}	100%	100%	100%	-
RR_{n3}	20%	20%	-	20%

RR_{n4}	-	0%	-	0%
Traditional RR_{MS}	55%	43%	75%	10%
Average RR_{MS}	57%	43%	75%	10%

3.1.1.2 Average difference between RR at MS and EU level

An alternative RR formulation manipulates not only the *composition of nationalities* within MSs, but also the *type of comparative indicator*. It consists in **calculating the average difference between the RR registered at MS and EU level, for each nationality receiving OTLs in the MS**. This means first calculating the difference between the RR at the level of MS and at the EU level for each nationality. If this is positive, the RR is higher in the MS rather than at the EU level; if negative, otherwise. Secondly, it means to calculate the average of these differences. The formula is described in Box 9.

Like in the average RR, also in the average difference RR (ΔRR_{MS_i}) **each nationality is given the same weight within the MS**, so that the population to return is similar across MSs. In this case, however, **the comparative indicator is** no longer the ratio, but the **difference between two RRs**, i.e. between the RR registered in the MS for a nationally ($RR_{MS,n1}$) and the RR registered at the EU level (RR_{EU}). The former factor changes by MS, the second remains constant, thus facilitating the comparison across MSs.

Box 9 – Average difference between RR at MS and EU level formula for MSs.

$$\Delta RR_{MS_i} = \frac{1}{N_i}\sum_{j=1}^{N_i}(RR_{MS_i,n_j} - RR_{EU,n_j})$$

The RR_{EU,n_j} (the ratio between all OTLs and all RETs in all MSs of a given nationality) works as a reference value to measure the return effectiveness of each MS, so that MSs are first compared to the reference value and then compared against each other. This formulation would work also with a reference value (or target) different from RR_{EU,n_j}, which would simply need to be replaced in the above formula.

In the example described in the previous section, MS_5 and MS_6 have two nationalities each, with respectively high and low RRs. The introduction of the EU level shows that the nationalities with high RR at MS level (n1 and n2 in MS_5) have high RRs also at the EU level, thus being in general “easy-to-return” nationalities. Similarly, the nationalities with low RR at the MS level (n3 and n4 in MS_6) have low RR also at the EU level, thus being in general “difficult-to-return” nationalities.

Table 6 – OTL and RET of MS_5, MS_6 and the EU.

	MS5		**MS6**		**EU**	
	OTL	*RET*	*OTL*	*RET*	*OTL*	*RET*
n1	50	25	0	0	10 000	9 000
n2	50	50	0	0	50 000	50 000
n3	0	0	50	10	30 000	300
n4	0	0	50	0	50 000	50
TOT	100	75	100	10	140 000	59 350

The uneven distribution of “easy-to-return” and “difficult-to-return” nationalities across MSs explains why the traditional and average RRs for MS_5 are higher than for MS_6. In these cases, the two MS are directly compared with each other, but the comparison is flawed by the fact that their populations are entirely different.

The third indicator (average difference between RR at MS and EU level) introduces another form of comparison, whereby the RRs for each nationality are first compared to RRs at the EU. In MS_5, hosting the “easy-to-return” nationalities, the RR of n1 is lower than the RR registered at EU level, and hence the difference between the two RRs is negative. The RR of n2 is equal to the one registered at EU level, and hence the difference is 0. In MS_6, hosting the “difficult-to-return” nationalities, the RR of n3 is higher than the one registered at EU level, while the RR of n4 is very similar. The difference for n3 is positive, while for n4 is negative but negligible. As a consequence, on average MS_6 has a RR higher than the one registered at the EU level, so nationality by nationality it is more effective than the EU average. This is not the case for MS_5, which, even though has “easy-to-return” nationalities, is in fact less effective than the average EU as indicated by the lower average difference RR.

Table 7 – RRs of MS_5, MS_6 and the EU.

		MS5	MS6	EU
n1	RR_{n1}	50%	-	90%
	RR_{MS-EU}	-40%	-	-
n2	RR_{n2}	100%	-	100%
	RR_{MS-EU}	0%	-	-
n3	RR_{n3}	-	20%	1%
	RR_{MS-EU}	-	19%	-
n4	RR_{n4}	-	0%	0.1%
	RR_{MS-EU}	-	-0.1%	-
RR	Traditional RR_{MS}	75%	10%	42%
	Average RR_{MS}	75%	10%	48%
	Average Δ RR_{MS-EU}	-20%	9.45%	-

3.1.1.3 Equally weighted RR

In the average and average difference RR, nationalities have all the same weight within one MS (i.e. 1/N). This manipulation was introduced to make the population to return similar, and hence more comparable, across MSs. As a result, nationalities represented to a very limited extent affect these RRs as much as nationalities represented to a much greater extent. This is very useful when comparing two MSs like MS_1 and MS_2, with the same composition in terms of kind and number of nationalities; but it may be less useful in other circumstances.

Consider for instance a situation in which some nationalities receive comparatively very large number of OTLs at EU level. **We might be interested in giving more relevance to the return effectiveness for those nationalities**, by making the composition of nationalities in MSs similar to the EU one. The equally weighted RR ($\widehat{RR}_{MS_i}$) manipulates the *population* at MS level, and expresses **the RR that MSs would have if they had a composition of nationalities similar to the EU one**. For each nationality the same weight across MSs is calculated as its share of OTLs at EU level (i.e. the number of OTLs issued to that nationality in the EU over total OTLs). Box 10 shows the formula.

Box 10 - Equally weighted RR formula for MSs.

$$\widehat{RR}_{MS_i} = \sum_{1}^{N_i} RR_{MS_i,n_j} \cdot \frac{OTL_{EU,n_j}}{OTL_{EU}}$$

In the example below, at EU level, the three nationalities receive different numbers of OTLs, which represent 30%, 33% and 37% of the total. These are differently distributed across MSs, being n1 and n2 overrepresented in MS_7 and MS_8 respectively.

Table 8 – OTL and RET of MS_7, MS_8 and the EU.

	MS7		MS8		EU	
	OTL	*RET*	*OTL*	*RET*	*OTL*	*RET*
n1	90	90	12	6	300	300
n2	5	2	80	20	330	66
n3	5	2	8	8	370	100
TOT	100	94	100	35	1 000	466

Both MSs have a nationality with very high RR, and other two nationalities with smaller RRs. The equally weighted RR gives different weights to nationalities depending on the share of OTLs at EU level, so that the RR for the most numerous nationalities at the EU is more important for the calculation of the RR also at MS level. As a consequence, in the example, the RR of n3 is multiplied by a higher number (and hence weights more) than the RR of n2 and n1. Since the RR of n3 is higher in MS_8 than in MS_7 (and the other differences lead to smaller modifications), also the equally weighted RR of MS_8 is higher.

Looking back at the formulations already discussed, it is worth to note that in MS_7 the nationality with the highest RR is also the most represented, while in MS_8 the nationality with the highest RR is the least represented. As a consequence, the traditional RR of MS_7 is higher than the traditional RR of MS_8. The average RRs are, on the contrary, very similar. This is because while the RRs by individual nationalities differ in the two MSs, on average these differences are evened out. This happens also for the average difference RRs.

Table 9 – RRs of MS_7, MS_8 and the EU.

	MS7	**MS8**	**EU**
RR_{n1}	100%	58%	100%
RR_{n2}	40%	25%	20%
RR_{n3}	40%	100%	27%
Traditional RR_{MS}	94%	35%	47%
Average RR_{MS}	60%	61%	49%
Average Δ $RR_{MS\text{-}EU}$	11%	12%	-
Equally weighted RR	58%	63%	47%

The equally weighted RR may be useful when MSs have similar nationality composition to the EU. However, it may be less useful when the composition of nationalities at MS level greatly differs from the EU one. This is because in a MS OTLs may be mostly issued to nationalities that, at the EU level, are not very relevant as receive only small shares of OTLs.

Consider for instance MS_9 and MS_{10} having two nationalities each. In MS_9, most OTLs are issued to a nationality that is also largely represented at the EU level (n1). In MS_{10}, OTLs are issued in equal numbers to nationalities that, at the EU level, are less represented (n2 and n3).

Table 10 – OTL and RET of MS_9, MS_{10} and the EU.

	MS9		**MS10**		**EU**	
	OTL	*RET*	*OTL*	*RET*	*OTL*	*RET*
n1	90	90	0	0	600	370
n2	10	2	40	30	230	66
n3	0	0	40	22	170	100
TOT	100	92	80	52	1 000	536

The equally weighed RR is much higher in MS_9 than in MS_{10}. This is due to the large multiplying effect of the nationality composition at EU level on the RR of n1, and the small multiplying effect on the RR of n2 and n3 in both MSs. On the contrary, the average and the average difference RRs are similar in the two MSs, meaning that differences by nationalities within MSs and compared to the EU are evened out.

Table 11 – RRs of MS_9, MS_{10} and the EU.

RR	**MS9**	**MS10**	**EU**
n1	100%	0%	62%
n2	20%	75%	29%
n3	0%	55%	59%
Traditional RR_{MS}	92%	65%	54%
Average RR_{MS}	60%	65%	50%
Average Δ $RR_{MS\text{-}EU}$	15%	14%	-
Equally weighted RR	65%	27%	54%

3.1.1.4 Benchmark RR

An alternative formulation of the RR **compares MSs** not with the EU, but **with a fictional entity representing a benchmark. This has the same nationality composition of the MS but RRs equal to the RRs registered at the EU level for a specific nationality**. The benchmark RR ($RR^*_{MS_i}$) is like the traditional RR in the sense that it is calculated on the *total* number of returned over *total* OTLs, but the numerator is an ideal number of people returned, i.e. the total number of people who would have returned if the MS had the same RR registered at the EU level for each nationality. The corresponding formula is described in Box 12.

The benchmark RR manipulates the *ratio operation*, as it applies to different national compositions an external RR, hence deriving the number of persons ideally returned from the MS by nationality. This manipulation is the opposite to the equally weighted RR: if there the population to return at national level was made similar to the population to return at the EU level; here the population at EU level is made equal to the population at national level.

Box 11 – Benchmark RR formula for MSs.

$$RR^*_{MS_i} = \frac{\sum_{j=1}^{N_i}(RR_{EU,n_j} \cdot OTL_{MS_i,n_j})}{\sum_{j=1}^{n_1} OTL_{MS_i,n_j}}$$

Moreover, when using the benchmark RR, we do not use it as comparative indicator in itself, but rather in relation to the traditional RR, so that the *comparative indicator is the difference* between the traditional and the benchmark RR. **If** this difference is negative, **the benchmark RR is higher than the traditional RR, meaning that the MS falls below its potential, defined by the RR registered at EU level**. If this difference is positive, otherwise. This takes into account the MS nationality composition, so that in defining the benchmark, the nationalities more represented at national level weight more.

In the example below, MS_{11} and MS_{12} have 3 nationalities to return. In MS_{11}, OTLs are mostly given to a nationality – n1 – which is the most represented at the EU level. On the contrary, n1 receives the smallest number of OTLs in MS_{12}.

Table 12 – OTL and RET of $MS_{11,}$ MS_{12} and the EU.

	MS11		**MS12**		**EU**	
	OTL	*RET*	*OTL*	*RET*	*OTL*	*RET*
n1	60	60	20	15	600	370
n2	20	4	40	30	230	200
n3	20	10	40	22	170	100
TOT	100	74	100	67	1 000	670

In the benchmark RR, the weight given to the RR of each nationality reflects each time the share of OTLs of each nationality in the MS. This means that if the EU had the same national composition of MS_{11} and MS_{12}, it would have a RR respectively of 66% and 73%. This is +7 percentage points and -6 percentage points compared to the traditional RR of MS_{11} and MS_{12}, meaning that MS_{11} is more effective than its benchmark and MS_{12} worse.

As for the other RRs: given the distribution of OTLs by nationality, the traditional RR for MS_{11} is higher than for MS_{12}. However, MS_{12} has a higher RR than MS_{11}, meaning that on average by nationality it is more effective in returning people. MS_{12} on average is slightly less effective than the EU, while MS_{11} much more so. The two MSs have a similar equally weighted RR, meaning that if they had nationality composition similar to the EU they would be similarly effective.

Table 13 – RRs of $MS_{11,}$ MS_{12} and the EU.

RR	**MS11**	**MS12**	**EU**
n1	100%	75%	62%
n2	20%	75%	87%
n3	50%	55%	59%
Traditional RR_{MS}	74%	67%	67%
Average RR_{MS}	57%	68%	69%
Average Δ RR_{MS-EU}	-12%	-1%	0%
Equally weighted RR	73%	72%	67%

Difference with the benchmark	7%	-6%	-

3.1.1.5 Summary

Table 14 summarises the nationality composition of OTLs in the MS, the operation performed, and the comparative indicator used to measure return effectiveness, for each definition of the RR. This break-down aims at making the formulas more intuitive, and describing with natural language the operations performed.

In the traditional RR, by definition, there is no manipulation on the **composition of nationalities**. The average RR, average difference RR, and the equally weighted RR make the composition of nationalities similar across MSs, by giving each nationality either the same weight *within* MSs (average and average difference RR), or the same weight *across* MSs (equally weighted RR). The benchmark RR does not alter the national composition of OTLs in MSs.

The RRs for each nationality are calculated as a **ratio** between the RETs (or, as in the case of the benchmark RR, between a hypothetical RET) and OTLs for each nationality in the MS. In making the country-level RR, these are weighted by a factor, that can describe the share of OTLs received by each nationality in the MS (traditional and benchmark RR), at EU level (equally weighted RR), or that can be 1/N, being N the number of nationalities in the MS (average RR and average difference RR).

Finally, for the traditional, the average and the equally weighted RR the **comparative indicator** used to measure the effectiveness of the MS is the RR itself. For the average difference RR, it is a difference in RRs. In these three cases, the comparative indicator tells us something on the return effectiveness of the MS. The benchmark RR does not describe the return effectiveness of the MS, but rather of a fictional EU which is compared to the MS. The comparative indicator measuring the MS's return effectiveness is therefore the difference between its RR and the RR of this fictional EU.

Table 14 – Alternative formulations of RRs for MS by composition of OTLs, mathematical operation and comparative indicator derived.

	Traditional RR
Composition of nationalities and mathematical operation	Each nationality in MS_1 receives a different share of the total number of OTLs. In the calculation of the RR, each nationality n in MS1 is assigned a weight, which is equal to the share of OTL it receives in MS1 ($OTL_{MS1,n1}/OTL_{MS1}$). The weight is different for each nationality within and across MSs.
Return effectiveness indicator	Absolute indicator: it measures the effectiveness of MS1.
	Average RR
Composition of nationalities and mathematical operation	In the calculation of the RR, each nationality n in MS1 is assigned a weight, which is equal to $1/N_1$, being N_1 the number of nationalities receiving OTLs in MS_1 This weight is the same for nationalities within the MS, but is different for nationalities across MS
Return effectiveness indicator	Absolute indicator: it measures the effectiveness of MS1.
	Average difference between RR at MS and EU level
Composition of nationalities and mathematical operation	In the calculation of the RR, the main focus is not the RR of individual nationalities, but the difference between the RR of the nationality at the level of the MS and at the EU level. Once the difference is calculated for all nationalities, each nationality n in MS1 is assigned a weight, which is equal to $1/N_1$, being N_1 the number of nationalities receiving OTLs in MS_1 This weight is the same for nationalities within the MS, but is different for nationalities across MS
Return effectiveness indicator	Comparative indicator: it measures the effectiveness of MS1 vis-à-vis the EU.

	Equally weighted RR
Composition of nationalities and mathematical operation	Each nationality in MS_1 receives a different share of the total number of OTLs. In the calculation of the RR, each nationality n in MS1 is assigned a weight, which is equal to the share of OTL it receives in the EU ($OTL_{EU,n1}/OTL_{EU}$). The weight is different for each nationality within MSs, but it is the same for a nationality across MSs (provided that the MS issues OTLs to that nationality.
Return effectiveness indicator	Absolute indicator: it measures the effectiveness of MS1.
	Benchmark RR
Composition of nationalities and mathematical operation	Each nationality in MS_1 receives a different share of the total number of OTLs The calculation of the RR is based on applying to each individual nationality in MS1 the RR that the nationality registers at the EU level. This means first calculating a fictional RET* $=RR_{EU,n1} \cdot OTL_{MS,n1}$ Secondly, it means calculating the RR of the MS based on RET*; RR=RET*/OTL When calculating the benchmark RR, each nationality n in MS1 is assigned a weight, which is equal to the share of OTL it receives in MS1($OTL_{MS1,n1}/OTL_{MS1}$). The weight is different for each nationality within and across MSs.
Return effectiveness indicator	Comparative indicator: The difference between the traditional and the benchmark RR for a MS measures the effectiveness of a MS vis-à-vis a fictional entity as effective as the EU.

The various definitions of the RR offer different perspectives on return effectiveness. They can be used simultaneously for a more comprehensive picture, or they may be selectively used as more appropriate to specific contexts. It is important to note that **no formulation is the best in absolute terms and they all present pros and cons**. Table 15 summaries the mathematical formula, the description, as well as the pros and cons of each definition.

Table 15 – Summary of RR alternative definitions for MSs.

RR definition	Formula	Description (D), Pros (P), Cons (C)
Traditional RR	$RR_{MS_i} = \frac{\sum_{j=1}^{N_i} RET_{MS_i,n_j}}{\sum_{j=1}^{N_1} OTL_{MS_i,n_j}}$	D: The ratio between the total number of TCNs returned from MS_i from all nationalities, over the total number of OTLs issued by MS_i to TCNs from all nationalities.
		P: Nationalities receiving a larger number of OTLs have a larger weight in the total RR than nationalities receiving a smaller number of OTLs.
		C: Different compositions of nationalities to return across MS are not taken into account. The fact that nationalities with large OTLs, driving the RR for each MS_i, vary by MS makes the RR less comparable across MS.
Average RR	$\overline{RR}_{MS_i} = \frac{1}{N_i} \sum_{j=1}^{N_i} RR_{MS_i,n_j}$	D: The average RR of all nationalities receiving at least an OTL in the MS_i, whereby each nationality receiving OTLs has the same weight for a given MS_i. It describes the RR as if MS_i issued the same number of OTLs to each nationality for which at least one OTL has been issued.
		P: Nationalities receiving a larger number of OTLs do not drive the RR, making it more comparable across MS. The difference between the average and the traditional RR shows the impact of the different

		composition in terms of nationalities of the persons to return from MS_i.
		C: Nationalities represented only to a limited extent have the same impact on the RR as nationalities represented to a large extent. Not all nationalities receiving OTLs in the EU are represented in each MS.
Average difference between RR at the MS level and RR at the EU level	$\Delta RR_{MS_i} = \frac{1}{N_i}\sum_{j=1}^{N_i}(RR_{MS_i,n_j} - RR_{EU,n_j})$	D: RR calculated as the average difference between the RR registered at MS_i and EU level, for each nationality receiving OTLs in MS_i.
		P: It allows to see whether, on average, MS_i is more or less effective than the EU, whereby all nationalities receiving OTLs weight the same.
		C: The RR at EU level is driven by the distribution of nationalities receiving OTLs across MS, so that the MS issuing most OTLs to a certain nationality drive the RR for that nationality at EU level; in other words, MSs with large OTLs issued to certain nationalities drive the RR at EU level. Differences by the same intensity but opposite signs between the RR at MS_i level and EU level for different nationalities cannot be appreciated, as their sum is 0. Nationalities represented to a small extent in MS_i have the same impact on the RR as nationalities represented to a large extent.
Equally weighted RR	$\widehat{RR}_{MS_i} = \sum_{1}^{N_i} RR_{MS_i,n_j} \cdot \frac{OTL_{EU,n_j}}{OTL_{EU}}$	D: RR that MS_i would have if each nationality receiving OTLs in the MS had the same weight as in EU (i.e. the share of OTLs issued to that nationality in the EU over total OTLs in the EU over the period 2010-2018).
		P: The RR approximates the same composition of nationalities across MS.
		C: Not all nationalities receiving OTLs in the EU are represented in each MS, so that the composition of nationalities across MS still presents some differences.
Benchmark RR	$RR^*_{MS_i} = \frac{\sum_{j=1}^{N_i}(RR_{EU,n_j} \cdot OTL_{MS_i,n_j})}{\sum_{j=1}^{n_1} OTL_{MS_i,n_j}}$	D: RR calculated as if the MS_i had, for each nationality, the same RR that the nationality registers at EU level in that year.
		P: Comparing the traditional RR with the benchmark RR allows to see if MS_i is more or less effective than the EU, as if the EU had the same composition of nationalities registered in MS_i.
		C: The RR at EU level is driven by the distribution of nationalities receiving OTLs across MS, so that the MS issuing most OTLs to a certain nationality drive the RR for that nationality at EU level; in other words, MSs with large OTLs issued to certain nationalities drive the RR at EU level.

3.1.2 Nationalities

The theoretical formulation of RdR defined for nationalities mirrors the RR for MS.

Annex 4.1 describes in details the theoretical formulation of the RdRs for nationality, closely following the example of the formulation of the RR for MS.

Table 16 summaries, for each alternative definition of the RdR, the distribution of OTLs across MSs, the operation performed, and the comparative indicator used to measure return effectiveness. In the first column, the elements manipulated in each alternative formulation are underlined.

In the traditional RdR, by definition, there is no manipulation of the **distribution of OTLs across MSs**. The average RdR, average difference RdR, and the equally weighted RdR make the distribution across MSs similar between nationalities, by giving each MS issuing OTLs either the same weight for a specific nationality (average and average difference RdR), or the same weight across nationalities (equally weighted RdR). The benchmark RdR does not alter the national composition of OTLs in MSs.

The RRs for each nationality-MS pair are calculated with a ratio **operation** between the RETs (or, as in the case of the benchmark RR, between a hypothetical RET) and OTLs. In making the nationality-level RdR, these are weighted by a factor, that can describe the share of OTLs received from each MS by the nationality (traditional and benchmark RdR), at EU level (equally weighted RdR), or that can be 1/N, being N the number of MSs issuing OTL to the nationality (average RdR and average difference RdR).

Finally, for the traditional, the average and the equally weighted RdR the **comparative indicator** used to measure the return effectiveness of the nationality is the RdR itself. For the average difference RR, it is a difference in RdRs. In these three cases, the comparative indicator tells us something on the return effectiveness of the nationality. The benchmark RdR does not describe the return effectiveness of the nationality as it is currently distributed across MS, but rather of the nationality in a fictional situation – N. N has the same distribution of people receiving OTLs across MSs as n1, but has a RR equals to the RR that the MSs register for all nationalities (traditional RR for the MS). The comparative indicator measuring the return effectiveness is therefore the difference between its RdR and the RdR of this fictional N.

Table 16 – Alternative formulations of RdRs for nationalities of OTLs, mathematical operation and comparative indicator derived.

	Traditional RdR
Distribution of nationalities across MS and mathematical operation	Each MS a different share of OTLs to nationality n_1. In the calculation of the RdR, each MS1 is assigned a weight, which is equal to the share of OTL it issues to n_1 ($OTL_{n1,\,MS1}/OTL_{n1}$). The weight is different for each MS within and across nationalities.
Return effectiveness indicator	Absolute indicator: it measures the effectiveness of the nationality.
	Average RdR
Distribution of nationalities across MS and mathematical operation	In the calculation of the RdR, each MS n in MS1 is assigned a weight, which is equal to $1/M_1$, being M_1 the number of MSs issuing OTLs to the nationality. This weight is the same for all MSs within the nationality, but is different for MSs across nationalities.
Return effectiveness indicator	Absolute indicator: it measures the effectiveness of the nationality.
	Average difference between RdR at MS and EU level
Distribution of nationalities across MS and mathematical operation	In the calculation of the RdR, the main focus is not the RR of individual MSs, but the difference, for each MS, between the RR of the nationality in that MS and the traditional RR of the MS. Once the difference is calculated for all MSs, each MS in n1 is assigned a weight, which is equal to $1/M_1$, being M_1 the number of MSs issuing OTLs to the nationality.

	This weight is the same for all MSs within the nationality, but is different for MSs across nationalities.
Return effectiveness indicator	Comparative indicator: it measures the effectiveness of a nationality vis-à-vis the other nationalities in each MS
	Equally weighted RdR
Distribution of nationalities across MS and mathematical operation	Each MS a different share of OTLs to nationality n_1. In the calculation of the RdR, each MS for a nationality is assigned a weight, which is equal to the share of the OTL it issues to that nationality ($OTL_{n1,MS1}/OTL_{n1}$). The weight is different for each MS within nationalities, but it is the same for a MS across nationalities (provided that the MS issues OTLs to that nationality).
Return effectiveness indicator	Absolute indicator: it measures the effectiveness of the nationality.
	Benchmark RdR
Distribution of nationalities across MS and mathematical operation	Each MS issues a different share of the total number of OTLs given to a nationality. The calculation of the RdR is based on applying to each nationality, for each individual MS, its traditional RR. This means first calculating a fictional $RET^*_{n1,MS1}=RR_{MS1}\cdot OTL_{n1,MS1}$ Secondly, it means calculating the RdR of the nationality based on RET*; RR=RET*/OTL In the calculation of the RR, each MS1 is assigned a weight, which is equal to the share of OTL it issues to n_1 ($OTL_{n1,MS1}/OTL_{n1}$). The weight is different for each MS within and across nationalities.
Return effectiveness indicator	Comparative indicator: The difference between the traditional and the benchmark RdR for a nationality measures the effectiveness of the nationality vis-à-vis a fictional nationality as effective as each MS is.

Like for MS, the various definitions of the RdR offer different perspectives on return effectiveness, each with its pros and cons. Table 17 summaries the mathematical formula, the description, as well as the pros and cons.

Table 17 – Summary of RdR alternative definitions for nationalities.

Variation on the readmission rate	**Formula**	**Description (D), Pros (P), Cons (C)**
Traditional RdR	$RdR_{n_i} = \frac{\sum_{j=1}^{M_i} RET_{n_i,MS_j}}{\sum_{j=1}^{M_i} OTL_{n_i,MS_j}}$	D: The ratio between the total number of persons of nationality n_i returned from all MS+, over the total number of OTLs issued to persons from nationality N_i from all MS.
		P: the MS issuing more OTL to persons of nationality n_i have a larger weight in the total RR than the MS issuing less OTL.
		C: It does not account for the different distributions of nationalities across MS, as MS issuing larger OTLs drive the return rate for each nationality N_i. This makes the RR less comparable across nationalities.
Average RdR	$\overline{RdR}_{n_i} = \frac{1}{M_i}\sum_{j=1}^{Mi} RR_{n_i,MS_j}$	D: average RR of all MS issuing OTL to persons of nationality n_i, whereby each MS issuing OTLs has the same weight for a given nationality. It describes the return rate as if the number of OTLs issued by each MS (where at least an OTL has been issued for nationality n_i) to persons of that nationality were the same.

		P: MS issuing more OTL do not drive the return rate and the difference between average and the traditional RdR shows the impact of the different distribution across MSs. This increases the comparability of the RdR across nationalities.
		C: MS issuing a small number of OTLs have the same impact on the RdR as MS issuing a large number of OTLs.
Average difference between the RdR for that nationality and RR at MS level	$\Delta RdR_{n_i} = \frac{1}{M_i}\sum_{j=1}^{M_i}(RR_{MS_j,n_i} - RR_{MS_j})$	D: RdR calculated as the average difference between the RR registered at the level of individual nationality n_i and the RR for MS_j, for each MS issuing at least an OTL to nationality n_i.
		P: It allows to see whether, on average, the nationality n_i has a higher or lower RR than the RR defined at the level of MS_j, whereby all MS issuing at least an OTL weigh the same.
		C: The RR at the level of MS_j is driven by the distribution of nationalities receiving OTLs in the MS, so that the nationalities to which most OTLs are issued drive the RR for that MS; in other words, nationalities with larger OTLs in MS_j drive the RR of MS_j. Differences by the same intensity but opposite signs between the RR in the MS and the RR for the specific nationality n_j in different MS cannot be appreciated, as their sum is 0. MS issuing a small number of OTLs have the same impact on the RdR as MS issuing a large number of OTLs.
Equally weighted RdR	$\widehat{RR}_{n_i} = \sum_{j=1}^{M_i} RR_{MS_j,n_i} \cdot \frac{OTL_{MS_j}}{OTL_{EU}}$	D: RdR that the nationality n_i would have if each MSs issuing OTLs had the same weight across nationalities (i.e. the share of OTL the MS issued over the total OTL in the EU27 over the period 2010-2019)
		P: the RdR approximates the same distribution across MS for all nationalities
		C: not all MS issued OTL to each nationality, so the distribution across MS for different nationalities is similar but not the same.
Benchmark RdR	$RR^*_{n_i} = \frac{\sum_{j=1}^{M_i}(RR_{MS_j} \cdot OTL_{n_i MS_j})}{\sum_{j=1}^{M_i} OTL_{n_i,MS_j}}$	D: RdR calculated as if, for each MS_j, the RR of the nationality n_i were the same RR that overall is registered at the level of each MS_j in a given year.
		P: Comparing this to the traditional RdR allows to see if the RdR for the nationality n_i was higher or lower, if nationality n_i had the same RR defined overall in each MS.
		C: The RR at the level of MS_j is driven by the distribution of nationalities receiving OTLs in the MSs, so that the nationalities to which most OTLs are issued drive the RR for that MS; in other words,

		nationalities with larger OTLs in MS_j drive the RR of MS_j.

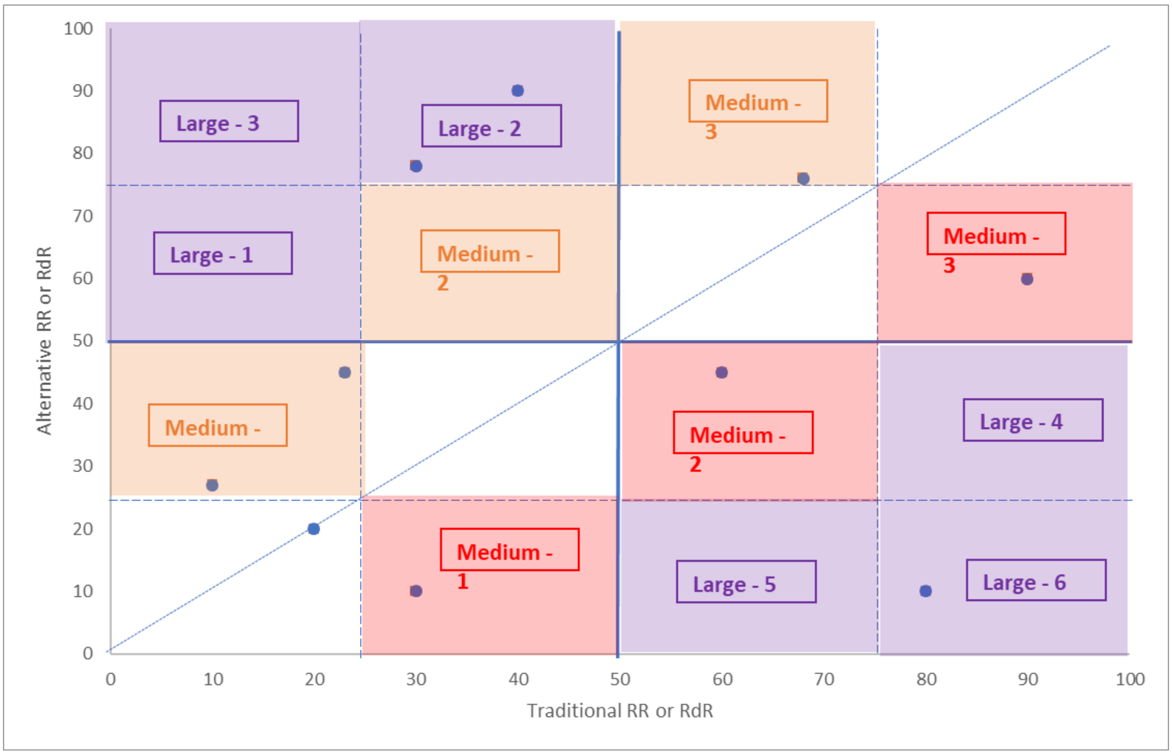
3.2 Empirical application

The alternative formulations – presented in their theoretical form in Section 3.1.1 – are now applied to real data, and specifically to the number of OTLs and the number of people returned in the period 2010-2019 in 27 EU MS (see Annex 2 for a description of the dataset).

The traditional and the alternative RRs and RdRs are presented first in a **quantitative manner**. Bar charts show the two RRs or RdR for each MS or nationality in the cumulated period 2010-2019 and highlight where the alternative RR or RdR introduces a particularly important change on the traditional RR or RdR, conventionally defined as a change by 50%.

Subsequently, they are presented in a **qualitative manner**. To facilitate the analysis, we associate RR and RdR with qualitative labels. Conventionally, we divide RRs and RdRs in classes defined as *very high*, *high*, *low* and *very low* those larger than 75%, 50% and lower than 50% and 25 % respectively. Conventionally, we define the impact of the nationality composition of the population to return, or of the MS distribution to be *medium* if there is a change in RR or RdR of maximum one class. As shown in Figure 6, which shows this happens in orange sub-quadrants when the change is for the better, and in red quadrant when the change is for the worse. In particular, in **orange sub-quadrants** when the RR or RdR in its traditional formulation changes from very low to low (1), low to high (2) and high to very high (3) in its alternative definition –; or in **red sub-quadrants** from very high into high (3), high into low (2) and low into very low (1). On the contrary, we consider the impact of the nationality composition of the population to return to be *large* when the RR changes by more than one class, as in **purple sub-quadrants**, from very low to high (1), low to very high (2), very low to very high (3); and from very high to low (4), high to very low (5), very high to very low (6). Dots, representing potential MSs or potential nationalities, lying below (above) the diagonal have a traditional RR or RdR higher (lower) than the alternative RR or RdR. The farther the dot is from the diagonal, the larger the difference between the two.

Figure 6 – Qualitative assessment of changes introduced by alternative RR or RdR definitions.



Finally, we analysed the traditional and alternative RRs and RdRs via correlations. Results are shown in Annex 4.2.

3.2.1 MSs

3.2.1.1 Average RR

Figure 7 shows the traditional RR (dots) vis-à-vis the average RR (bars) for all 27 EU MSs in the cumulated period 2010-2019. The MSs are organised by increasing value of the average RR. The four MSs where the average RR is higher than the traditional RR are on the right side of the chart; otherwise on the left one.

An **average RR lower than the traditional RR means** that nationalities with a high RR are overrepresented in the OTLs of the MS, and hence **that the MS is favoured by the nationality composition** among the population to return. This is the case for all MSs except BG, NL, MT and (to a negligible extent) DK. On the contrary, an **average RR higher than the traditional RR means** that nationalities with a low RR are overrepresented in the OTLs of the MS, and hence **that MS is penalised by the nationality composition** among the population to return.

In some countries, the impact of the nationality composition (difference between the two RRs) is large. These are MT and BG on the one hand, and SK, DE, PL, CZ on the other hand (dashed bars in the chart).

Figure 7 – Traditional RR and average RR for all MSs (+EU27) in the cumulated period 2010-2019. Dashed bars represent MSs where the relative difference between average and traditional RR is larger than 50% of the traditional RR.

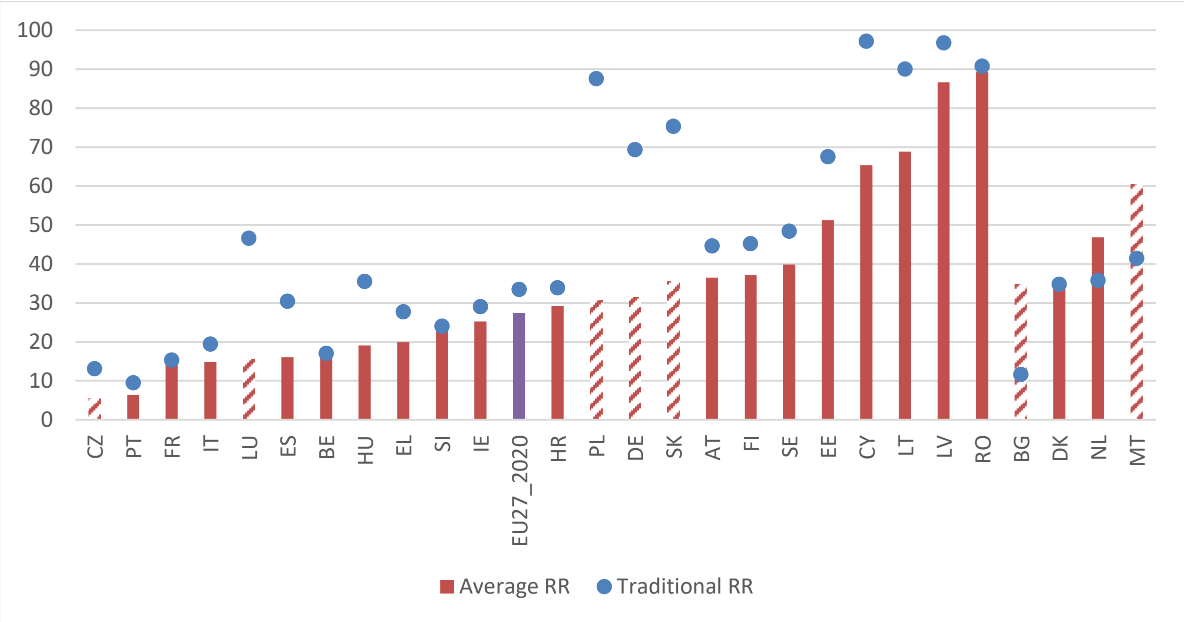
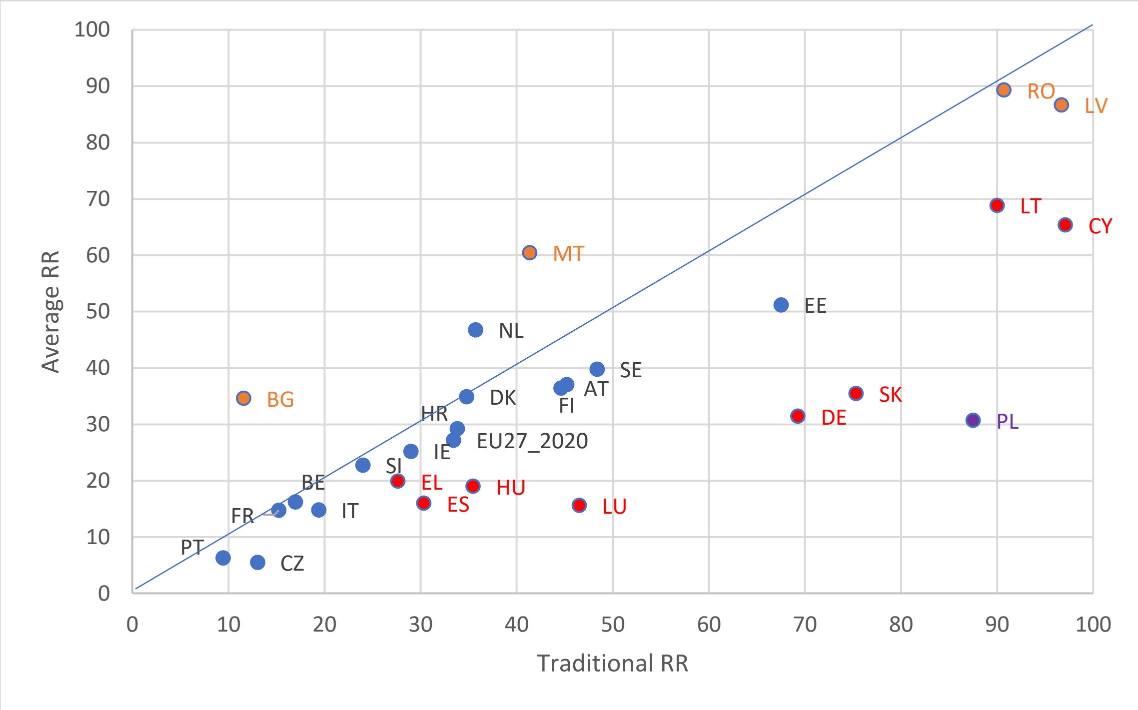


Figure 8 plots the traditional RR vis-à-vis the average RR against each other and we can analyse the **impact of the nationality composition** in the population to return. According to the above defined classification (see Figure 6), the impact is **medium** for the orange and red MSs, where the traditional RR is respectively of lower and higher intensity than the traditional RR. In particular, for BG (in orange) the traditional RR is very low (<25%) and the average RR is low (>25% and <50%) while for MT the traditional RR and the average RR are low and high respectively. On the contrary, for red MSs we have three cases: for LU, HU, ES and EL the traditional RR is low and the average RR is very low, for DE and SK traditional RR is high and the average RR low. Finally, for LT and CY the traditional RR is very high and the average RR is high.

The **impact of the nationality composition** in the population to return turns out to be **large** only for PL having the traditional RR and the average RR are very high and low respectively. In fact, PL, with 71% of OTLs issued to Ukrainians who register a RR of 94%, is an example of a MS where the nationality composition of people to return is very much skewed toward nationalities with high RR.

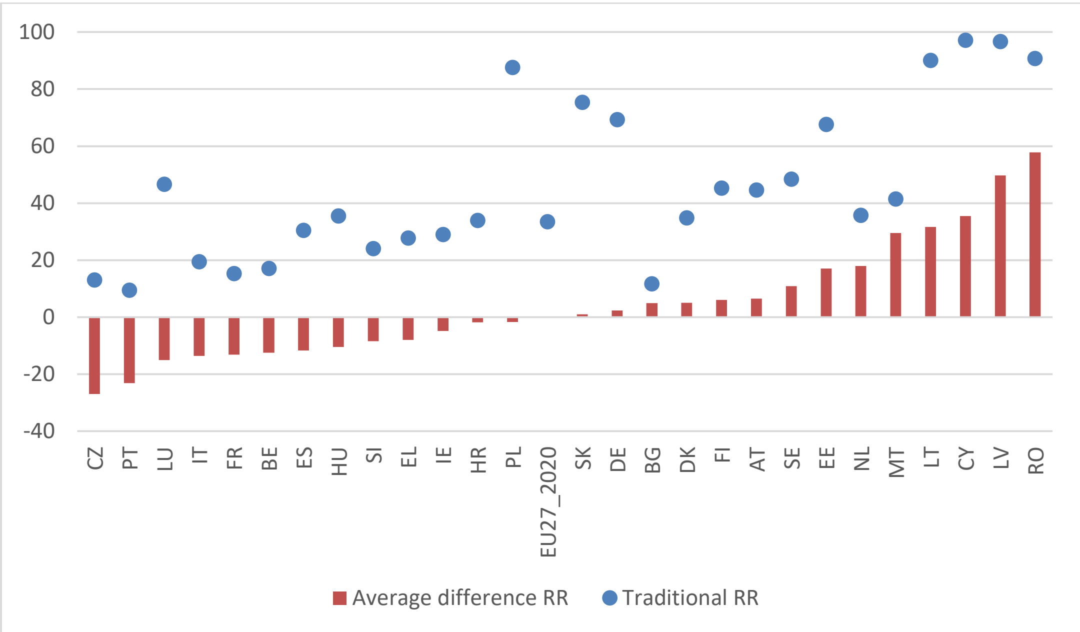
Figure 8 –Traditional and average RR for all MSs (+EU28) in the cumulated period 2010-2019 – scatterplot.



3.2.1.2 Average difference between national and EU RR

Figure 9 shows the traditional RR (dots) vis-à-vis the average difference RR (bars) for all 27 EU MSs in the cumulated period 2010-2019. The MSs are organised by increasing value of the average difference RR. MSs where the average difference RR is negative are on the left side of the chart. These are **under-effective** MSs, since, on average, the RR registered in the MS for each nationality that receives OTLs is lower than the RR than is registered at the EU for the same nationality. On the contrary, MSs where the difference is positive are on the right side, and are **over-effective**. In the case of the EU the average difference RR is by definition 0.

Figure 9 – Traditional and average difference RR for all MSs (+EU27) in the cumulated period 2010-2019.



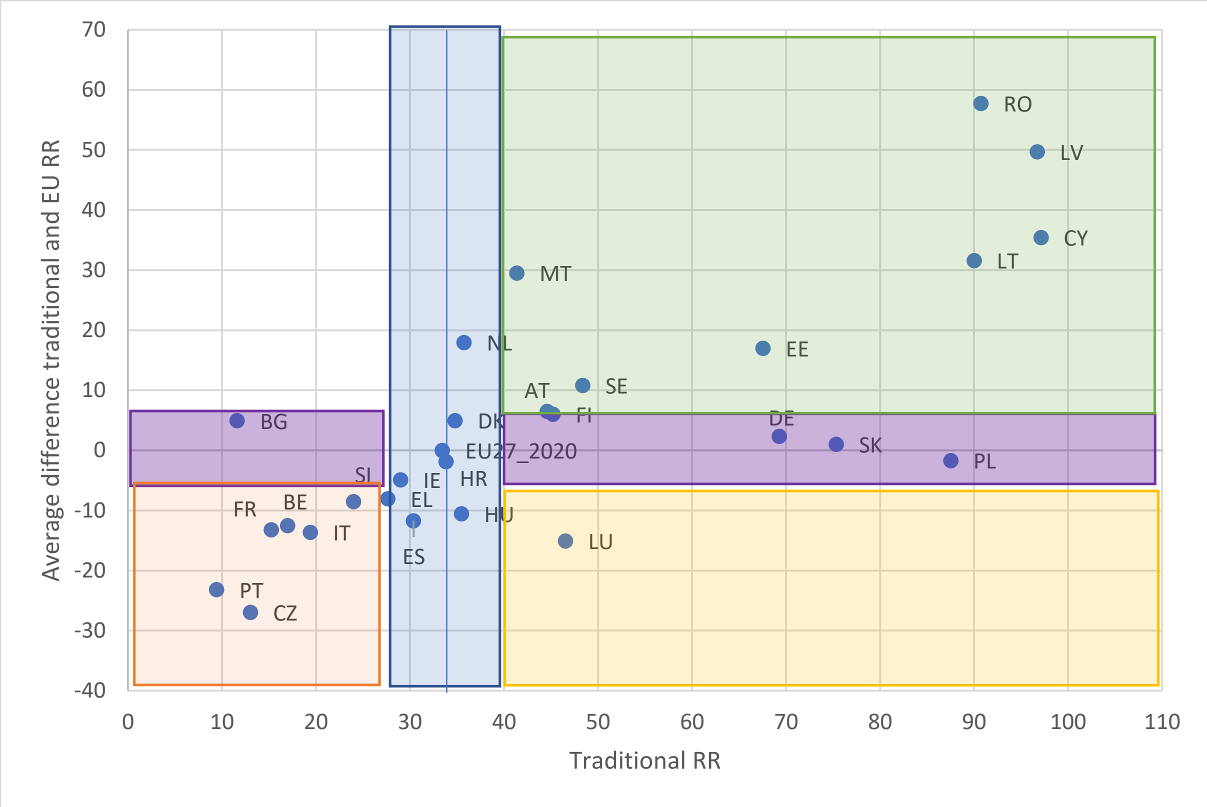
Even though a MS can have a higher traditional RR with respect to the EU, it may turn out to be under-effective when nationalities are compared one to one to the EU. This is for instance the case on the one hand of LU, with a traditional RR of 46%, which is higher than the EU one, but an average difference RR of -15%. On the other hand, NL has a traditional RR very close to the EU one, i.e. 36%, but on average its RR is +18%.

Figure 10 plots MS against their traditional RR (x-axis) and the average difference between the RR registered at the MS and EU level (y-axis). The vertical line *traditional RR*=RR_{EU27}=33% divides the plot in two parts: on the right, lie MSs with traditional RR higher than the EU one, the farther on the line the higher the RR; on the left those with traditional RR lower than the EU, the farther on the line the lower the RR. The horizontal line *average difference RR*=0 also divides the space into two parts: in the upper space, lie MSs with positive average difference, in the bottom part, those with negative average difference.

Five groups of MSs can be identified:

- In the green box, there is **a group of MSs with a traditional RR higher than the EU, as well as a positive average difference RR**. These countries are more effective than the EU both in relation to their nationality composition (traditional RR) and on the avenge RR by nationality (average difference RR). As shown in the previous section, LT, CY, LV, and RO have an average RR lower than their traditional RR, indicating that they had a favourable nationality composition. At that level of information, we did not know whether the high RR for these nationalities was a specific feature of these MS or a general feature at the EU level. The average difference RR adds another piece of information as a very high and positive average difference RR shows that these countries have on average a higher RR than the EU. MSs in this box can be considered **good examples**, as they amore more effective than the EU not only thanks to their national composition but also to their average effectiveness on individual nationalities.
- In the yellow box, there is **a group of MSs that**, like the previous group, **has a traditional RR higher than the EU one, but** unlike the previous group, **has a negative average difference RR**. This is the case only for LU, which although overall is more effective than the EU, on average is less effective. A lower average RR compared to the traditional RR – as shown in the previous section - already indicates that LU has a favourable nationality composition, as nationalities with high RR are overrepresented (these are particularly Balkan countries). In addition, the average difference RR shows that regardless of the number of OTLs given to a nationality, the RR is on average lower than the EU (this is the case also for Balkan countries on average). MSs in this box despite a favourable nationality composition determining a relatively high traditional RR are on average less effective than the EU.
- In the orange box, there is **a group of MSs with a traditional RR lower than the EU and a negative average difference RR**. These countries are less effective than the EU both overall, given their nationality composition, and on average, looking nationality by nationality. These are IT, BE, FR, SI, CZ, PT. They all had an average RR smaller than a traditional RR, and hence a favourable nationality composition, with nationalities with high RR overrepresented. However, despite being favoured from a nationality perspective, their return effectiveness is lower than the EU one, both overall and on average.
- In the purple boxes, there is **a group on MSs with average difference RR close to 0, hence average RR similar to the EU, and a traditional RR lower** (box on the right left side) **or higher than the EU RR** (box on the right side). While on average these MSs are as effective as the EU, their composition of the nationalities to return is such that the overall RR is lower (e.g. BG) or higher (e.g. DE, SK, PL) than the EU one. The higher or lower effectiveness in relation to the EU are hence entirely due to the nationality composition. The average RR already showed that for countries on the left side, the nationality composition featured an overrepresentation on nationalities with lower RR; while the opposite for countries on the right. These MS can thus be called **favoured or disfavoured cases**.
- In the blue box, finally, there **is a group of MSs with traditional RR similar to the EU one but with positive (top part) or negative (bottom part) average difference**. Those with a positive average difference, notably NL and DK, turn out to have a nationality composition that overrepresents difficult cases – as already highlighted by the average RR. Nonetheless, they are on average more effective than the EU. These can be considered **overachievers** that, despite more difficult conditions, are as effective as the EU. On the contrary, those with a negative average difference can be considered **underachievers**: they on average are less effective the EU, but having a more favourable composition of nationalities, as signalled by a traditional RR higher than the average, they reach the same overall RR as the EU.

Figure 10 - Traditional and average difference RR for all MSs (+EU27) in the cumulated period 2010-2019: scatterplot.



3.2.1.3 Equally weighted RR

Figure 11 shows the traditional RR (dots) vis-à-vis the equally weighted RR (bars) for all 27 EU MSs in the cumulated period 2010-2019. MSs are organised by increasing value of the equally weighted RR. The nine MSs where the equally weighted RR is higher than the traditional RR are on the right side of the chart; otherwise on the left side. In the case of the EU, the two RRs by definition coincide.

When the traditional and the equally weighted RR differ, it means that the share of each represented nationality among OTLs in the MS, is different from the corresponding one at EU level. The composition of nationalities at the EU level and the relative share is the result of the sum of OTLs in all MSs, and hence it is diversified and the number of nationalities is the largest possible. The difference in the relative share of nationalities between the MS and the EU is likely to be larger when only few nationalities are represented at MS level. This is supported by the negative correlation between the number of nationalities receiving OTLs in a MS in a given year and the difference between the traditional and equally weighted RR (correlation coefficient=-0.50, p-value: 0.000). This means that the larger the number of nationalities, the smaller the difference between the two RRs (hence the more similar they are); the smaller the number of nationalities, the larger the difference. Figure 12 plots these two values for the cumulated period 2010-2018 and a negative relationship is visible.

An equally weighted RR lower than the traditional RR indicates that, with a nationality composition similar to the EU, the MS would be less effective than it currently does, and the RR would be lower. Hence, the MS compared to the EU has a **favourable** composition of nationalities, as those with higher RR in the MS are more represented than at the EU level. As Figure 11 shows, this is the case for the majority of MSs, and to a particularly significant extent for CZ, LU, PL, SK, LT (dashed bars). On the contrary, an equally weighted RR higher than the traditional RR means that if the MS had the same nationality composition as the EU, it would be more effective than it currently does, hence it would have a higher RR. This is because the MS is **penalised** by the nationality composition as nationalities with low RR in the MS are overrepresented compared to the EU. The only MS where this happens to a significant extent is BG, where three nationalities (Afghanistan, Iraq, Syria) make up 80% of OTLs at the MS level (vis-à-vis 14% at EU level) and all register low or very low RR, both at the EU and at the MS level.

Figure 11 - Traditional and equally weighted RR for all MSs (+EU27) in the cumulated period 2010-2019. Dashed bars represent MSs where the relative difference between the traditional and the equally weighted RR is larger than 50% of the traditional RR.

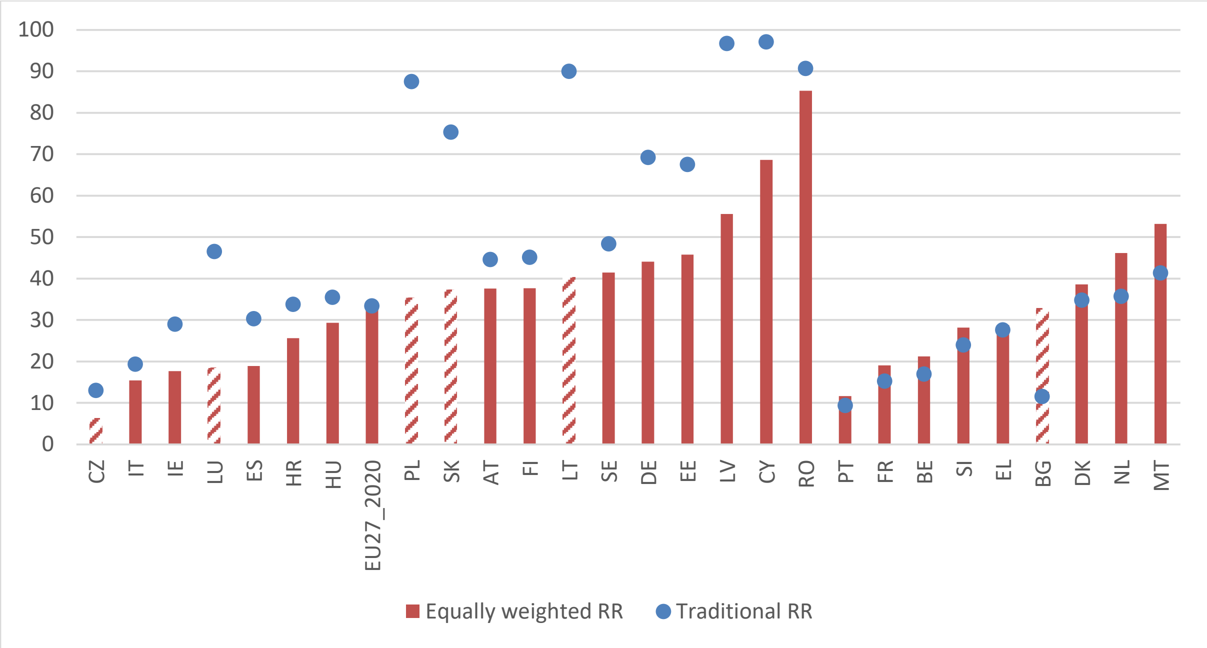


Figure 12 – Number of nationalities receiving OTLs in the MS and difference between the traditional and equally weighted RR (absolute value) for the cumulated period 2010-2019.

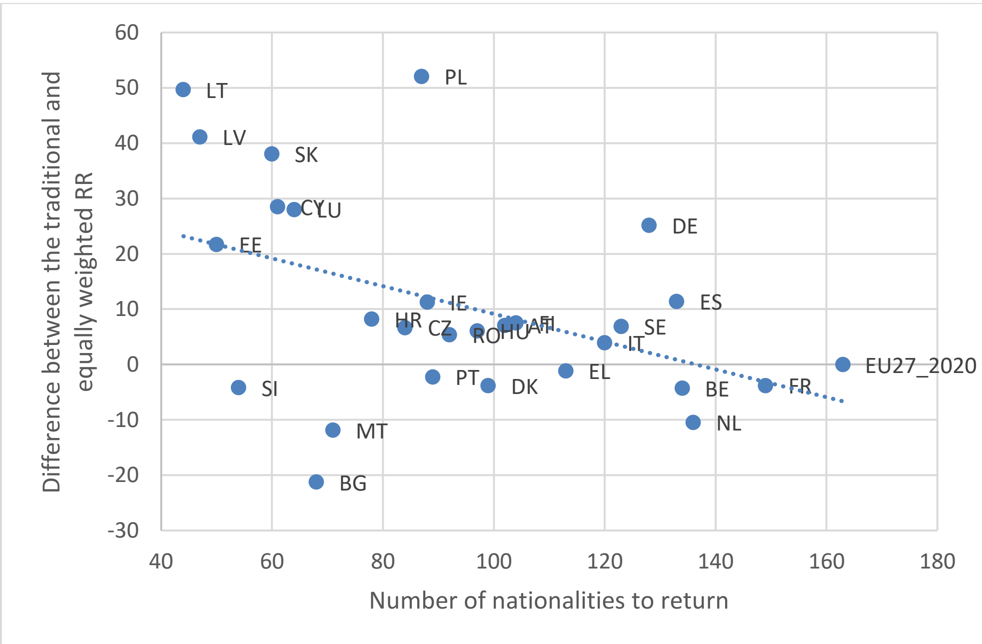
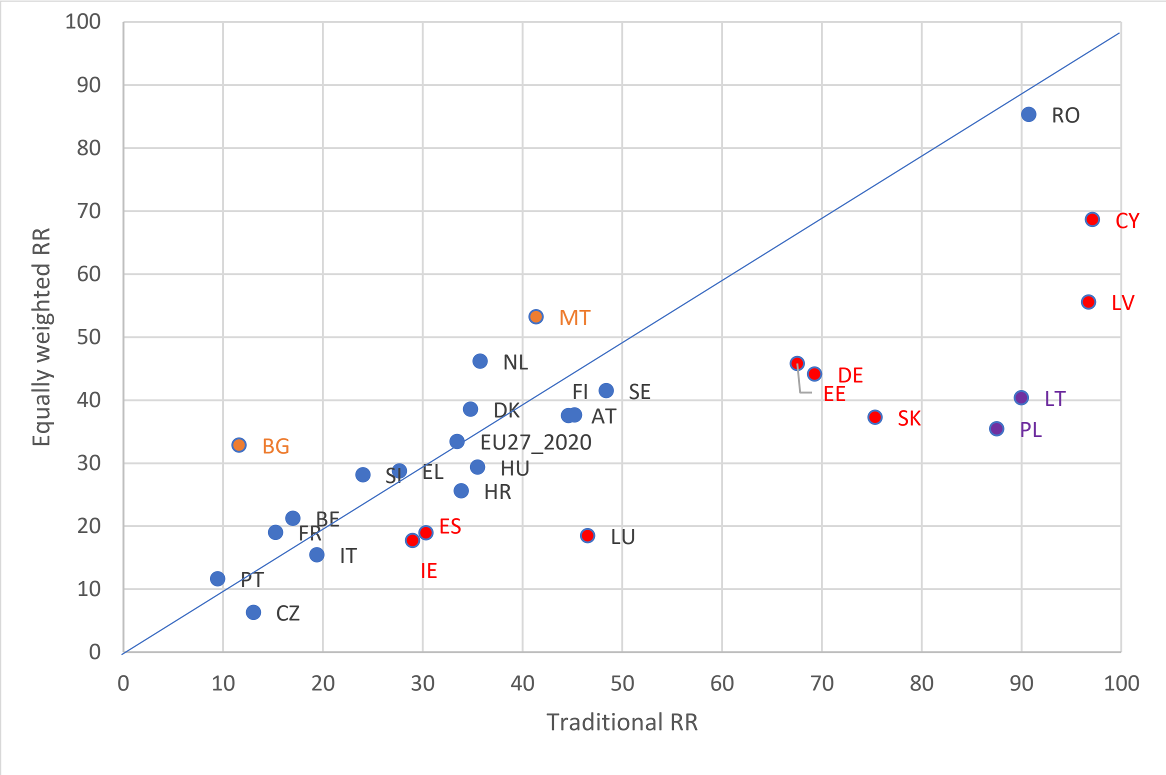


Figure 13 helps identity the cases in which the formula of the equally weighted RR shows that the nationality composition has a significant impact in qualitative terms. In particular, for MSs in orange and red, the impact is **medium**: for those in red (IE, ES, LU DE, EE, SK, CY, LV), the traditional RR is one class lower than the equally weighted RR; the opposite happens for those in orange (BG, MT).

For purple MSs (PL, LT), the impact is **larger**: the RR which is high or very high when calculated with the traditional formula, becomes low when calculated with the formula that approximates the population to return to the one at the EU level.

Figure 13 - Traditional return rate and equally weighted return rate for all MSs (+EU27) in the cumulated period 2010-2019: scatterplot.



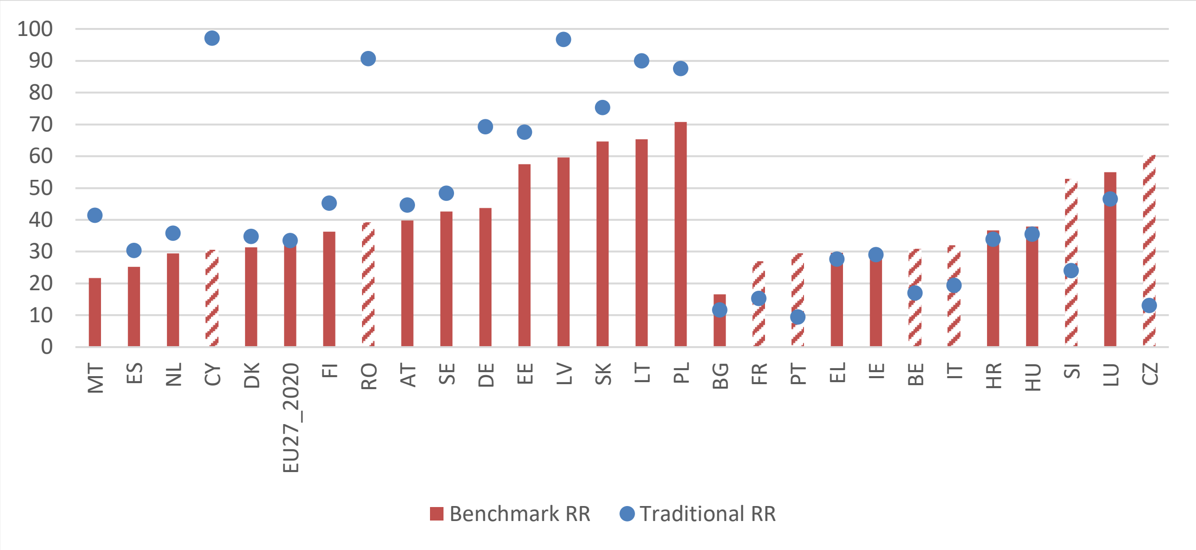
3.2.1.4 Benchmark RR

Figure 14 shows the traditional RR (dots) vis-à-vis the benchmark RR (bars) for all 27 EU MSs in the cumulated period 2010-2019. MSs are organised by increasing value of the benchmark RR. The 12 MSs where the benchmark RR is higher than the traditional RR are on the right side of the chart; otherwise on the left side. In the case of the EU, the two RRs by definition coincide.

A benchmark RR lower than the traditional RR indicates that if the EU had the same national composition of the MS, it would be less effective than the MS. Hence, the MS is more effective than this hypothetical EU and can thus be considered an **overperformer**. This is the case to a particularly large extent for CY and RO. This is because the RR for the nationalities most present at the MS level (and hence that drive the traditional RR the most) is much higher at national than at EU level. In CY, for instance, more than 60% of OTLs are issued to 6 nationalities (Vietnam, Sri Lanka, Philippines, India, Bangladesh, Pakistan) that account for only 10% of OTLs at EU level. For those, CY has on average a RR equal to 96%, vis-à-vis a much lower RR at the EU level (28%).

On the contrary, a benchmark RR higher than the traditional RR indicates that the EU would be more effective if it had the national composition of the MS, and hence the MS would be less effective, and can thus be considered an **underperformer**. This is because for the most represented nationalities at national level, the RR registered at the EU is higher than those registered at the MS level. The MS where the benchmark RR is significantly lower than the traditional RR are BE, FR, PT, BE, IT, SI and CZ. In particular, in CZ more than 60% of OTLs are issued to citizens of three countries – Ukraine, Vietnam and Moldova, which on the contrary in the EU are issued 7% of total OTLs. For them, the RR registered at national level is by far lower that the RR registered at the EU level (on average 19% vs 62%).

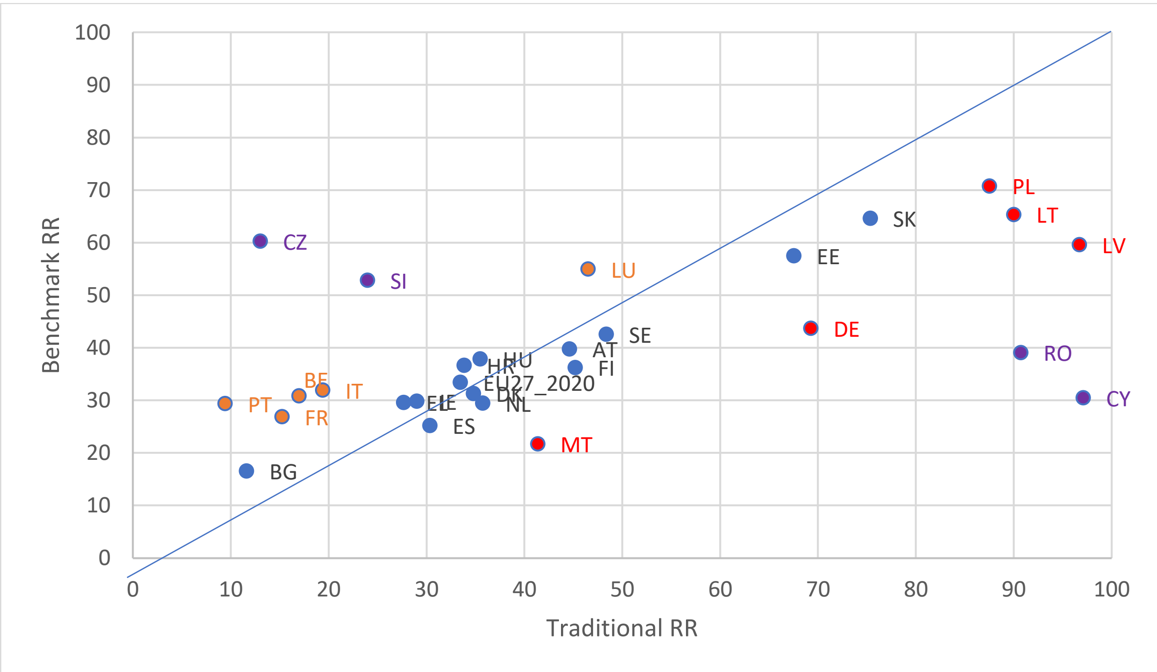
Figure 14 – Traditional and benchmark RR for all MSs (+EU27) in the cumulated period 2010-2019. Dashed bars represent MSs where the relative difference between the traditional and the benchmark RR is larger than 50% of the traditional RR.



The use of the benchmark RR has a significant qualitative impact for the MS in the coloured dots in Figure 15. A higher benchmark RR vis-à-vis traditional RR means that that MS could be more effective better if it only had, for the most represented nationalities, a RR as high as registered at EU level. This is the case for the two groups of orange MSs, moving from very low to low RR and from high to very high RR. More importantly, there is a group of purple MSs moving from low or very low into high or very high RR. Here, given the national composition of the MSs, the room for improvement is the highest.

On the contrary, in other MSs the benchmark RR is lower than the traditional RR, meaning that the MS is more effective than what the EU would be. These are the red MSs where the MSs have low RR and the EU would have very low RR; and red MS where the MS have very high RR, vis-à-vis a high EU RR. Purple MSs, where the EU would have low RR if it had the same national composition of the MS, which on the contrary have high or very high RR are also present Here, given the national composition of the MSs, the potential for improvement is the lowest.

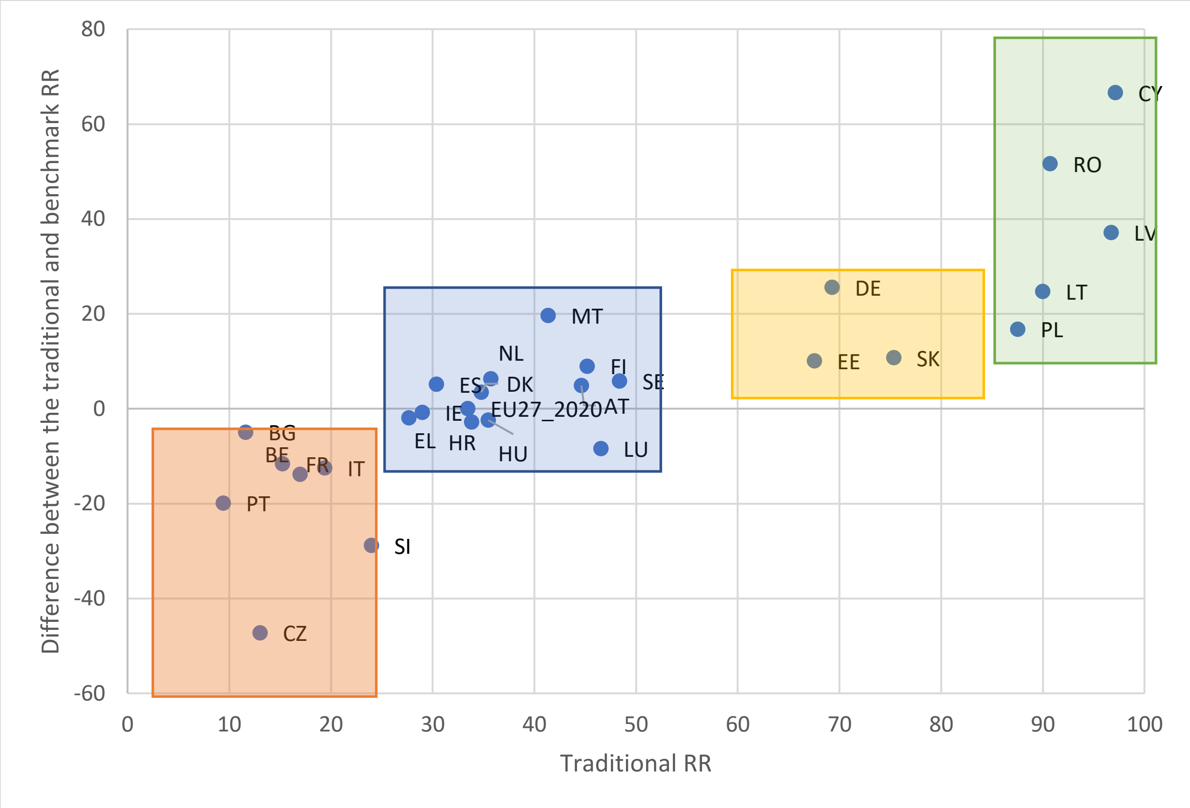
Figure 15 – Traditional and benchmark RR for all MSs (+EU27) in the cumulated period 2010-2019: scatterplot.



Focusing on the difference between the traditional and the benchmark RR, Figure 16 identifies four groups of countries:

- In the orange box, there are those with very low (<25%) traditional RR and falling from slightly to greatly below their potential (i.e. higher benchmark RR);
- In the blue box, there are those with low RR (<50%) and falling generally slightly or moderately below or above their potential, as indicated by their benchmark RR;
- In the yellow box, there are those with high RR (<75%) and effectiveness moderately better than the benchmark;
- In the green box, there are those with very high RR (>75%) and effectiveness from moderately to greatly better than the benchmark.

Figure 16 - Difference between traditional and benchmark RR and traditional RR, for the cumulated period 2010-2019.



3.2.1.5 Summary

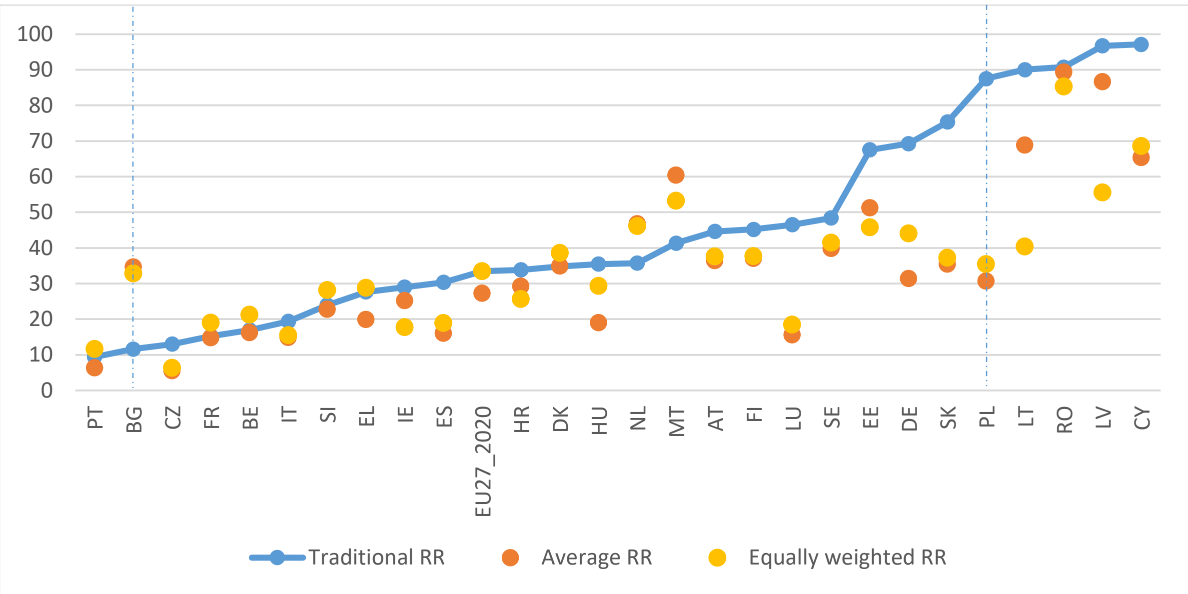
The comparison between the alternative definitions of RRs and the traditional definition informs about different aspects of the return effectiveness of a MS. The traditional RR tells us about the return effectiveness given the nationality composition of the population to return, which differs across MS.

Compared to the traditional RR, the average and the equally weighted RRs tell us to what extent the MS is advantaged or penalised by the nationality composition of the population to return. In particular, the MS is advantaged (penalised) by the nationality composition because either i) it issues larger number of OTLs to nationalities for which it registers high (low) RR (*average RR*) or ii) it registers high (low) RR for nationalities which are more represented at national than at the EU level among the population to return (*equally weighted RR*).

Figure 17 shows the traditional, the average and the equally weighted RR for all MS. BG, for instance, has a very low traditional RR, but higher average and equally weighted RR. This means that on average BG has a higher RR (average RR) (higher than the EU one), but it is penalised by the composition of OTLs which are issued in larger numbers to nationalities with low RR. Moreover, BG registers low RR for nationalities that are less represented in the EU, and hence, if the OTLs were given to nationalities in the same proportion as they are given at EU level, its RR would be higher. BG is therefore penalised by its nationality composition.

On the contrary, PL has a very high traditional RR, but on average its RR is like the EU one. This is because it issues many OTLs to nationalities with high RR. Similarly, if the nationality composition were similar to the one registered at the EU level, it would have a lower RR. PL is therefore favoured by its nationality composition.

Figure 17 –Traditional, average and equally weighted RRs for MS for all MSs (+EU27) in the cumulated period 2010-2019.



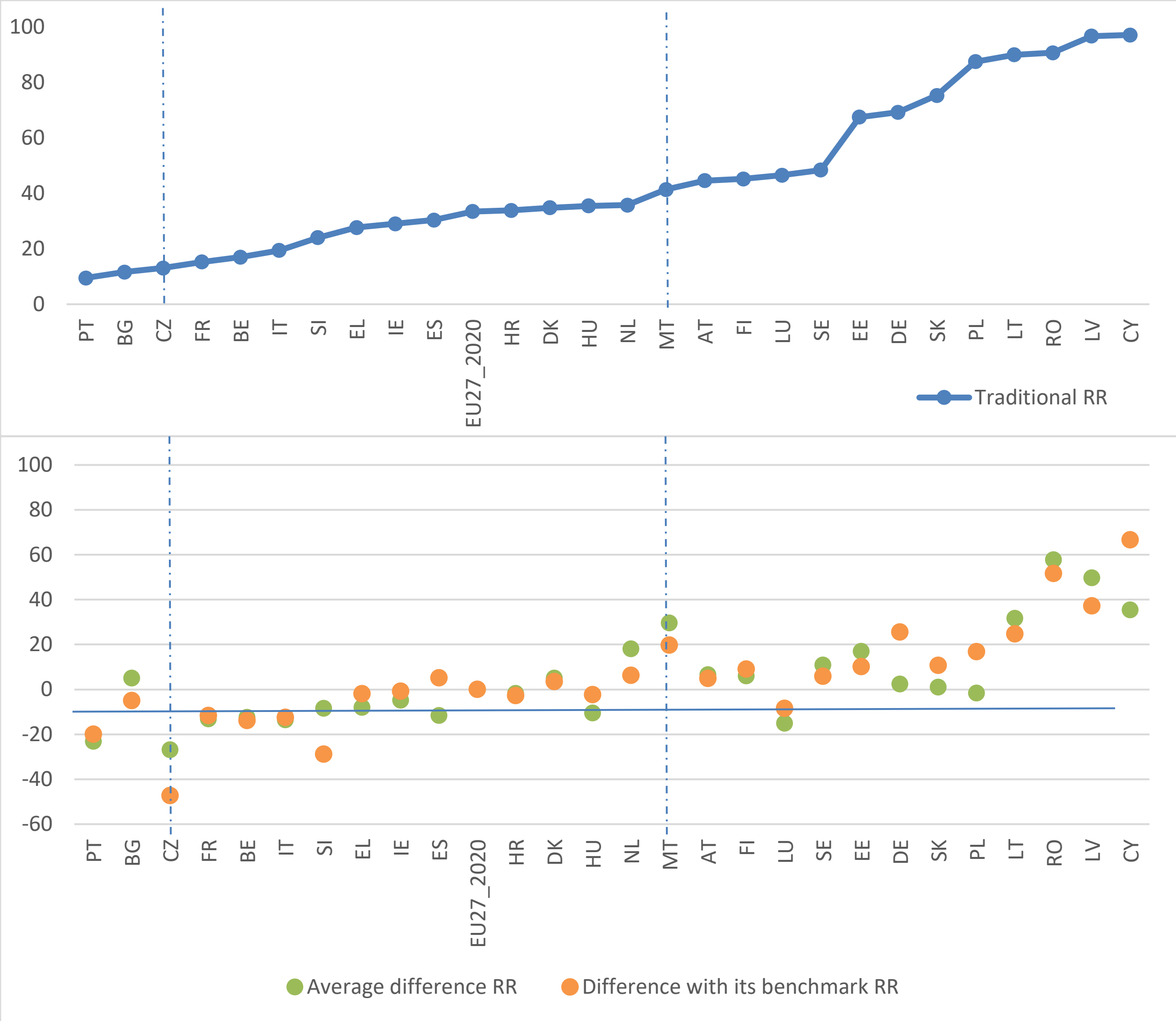
The average difference and the benchmark RRs tell us to what extent the MS is more of less effective than the EU. The RRs defined at the EU level represent the RR the MS could have for each nationality. The average difference tells us whether in fact the MS is more of less effective the EU on the average of all nationalities present among the returns. The difference between the traditional and the benchmark RR tells us whether the MS is more or less effective than the EU, as if the EU had the same nationality composition registered in the MS.

Figure 18 shows the traditional RR vis-à-vis the average difference with the EU RR and the difference between the traditional and the benchmark RR. In general, the dot falling below (above) the 0 line means that the MS is underperforming (overperforming) comparing to what it could do. In particular, CZ has a very low traditional RR and at the same time registers on average a RR lower that the EU one. Moreover, CZ has a lower RR than the fictional EU with its nationality composition. Overall, CZ is less effective compared to its potential.

On the contrary, MT has a low traditional RR but on average it registers a higher RR than the EU one. Moreover, its RR is also higher than the one of a fictional EU with its nationality composition. Overall, MT is more effective than its potential.

Table 34 in the Annex summarises the RRs for all MS in the period 2010-2019.

Figure 18 – Average difference RR and difference between the traditional and its benchmark RR (left axis) and traditional RR (right axis) for MS for all MSs (+EU27) in the cumulated period 2010-2019.

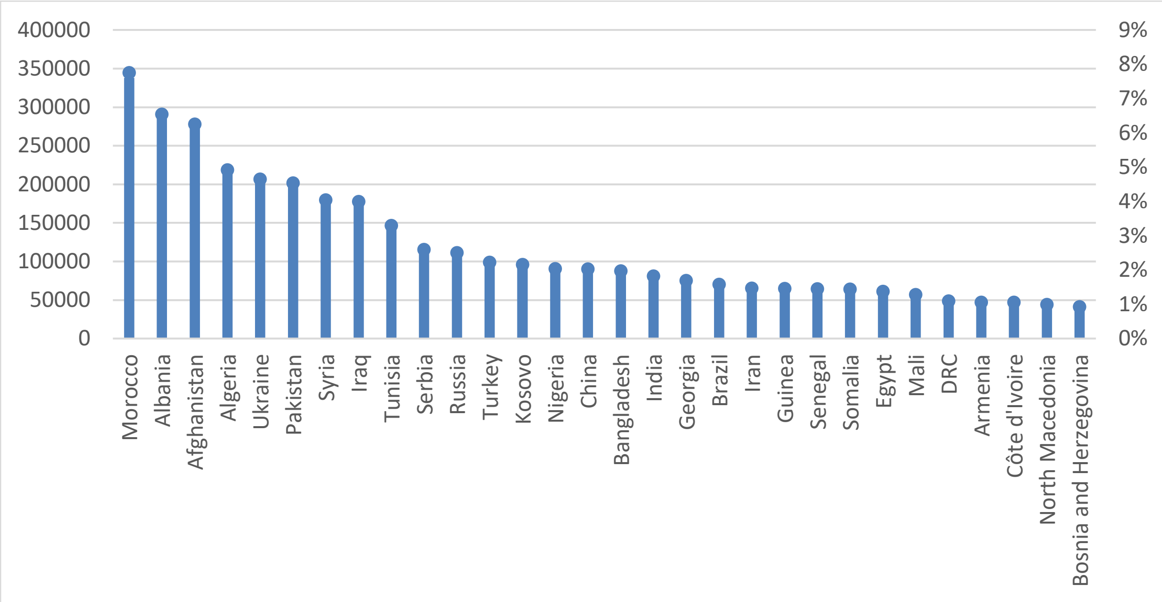


3.2.2 Nationalities

The nationalities analysed in this section are the top 30 nationalities for number of OTLs issued in the EU in the period 2010-2019 (Figure 19). This selection is wide enough to ensure variety of nationalities and representativeness as they make up 80% of total OTLs issued, while being manageable for graphic representation.

As nationalities and MS have a symmetric role in return, we use the same wording used for MSs, even if not entirely appropriate (e.g. return effectiveness of a nationality).

Figure 19 – Number of OTLs issued to the top 30 nationalities in the EU in the period 2010-2019, in absolute numbers and as a share.



3.2.2.1 Average RdR

Figure 20 shows the traditional RdR (dots) vis-à-vis the average RdR (bars) for the top 30 nationalities in the cumulated period 2010-2019. The nationalities are organised by increasing value of the average RdR. Those where the average RdR is higher than the traditional RdR are on the right side of the chart; otherwise on the left side.

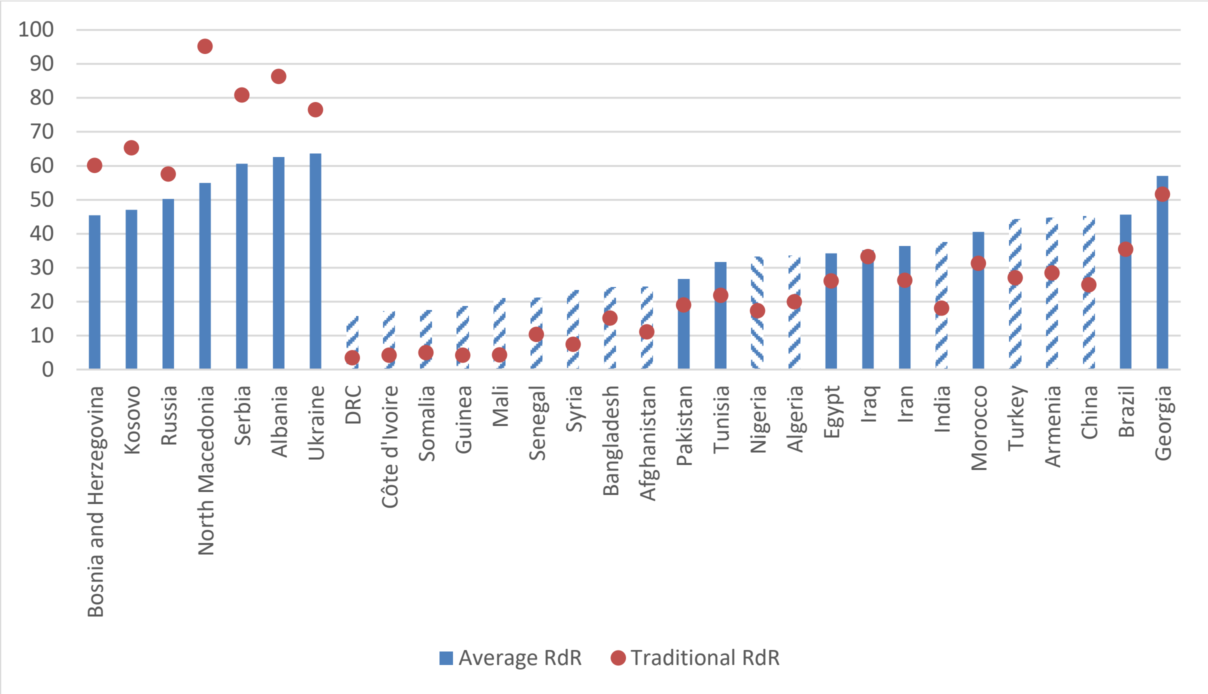
An **average RdR lower than the traditional RdR** means that MSs with a high RdR are overrepresented in the OTLs issued to that nationality, and hence that the **nationality is advantaged by its MS distribution**. This is the case for Bosnia and Herzegovina, Kosovo, Russia, North Macedonia, Serbia, Albania and Ukraine. On the contrary, an **average RdR higher than the traditional RdR** means that MSs with low RRs issue a comparative larger number of OTLs than those with high RRs, hence being **penalised by the distribution across MSs of persons receiving OTLs**.

For several nationalities, the difference between the average and traditional RdR is particularly significant. These are the nationalities with a dashed bar in the chart, where the average RdR is lower than the traditional RdR by more than 50% of the latter.

Chinese nationals, for instance, have a traditional RdR lower that the average RdR as they receive more than 70% of OTLs from MSs with a low RR for Chinese nationals (FR: 20%, NL: 24%, IT: 8%, and ES: 8%), and comparative a lower number of OTLs from MSs which return more than 80% of Chinese nationals receiving OTLs (DE and AT, together issuing 6% of OTLs). MSs with low RR for Chinese nationals tend to have also low RR in general (FR: 15%, NL: 36%, IT: 19%, ES: 30%).

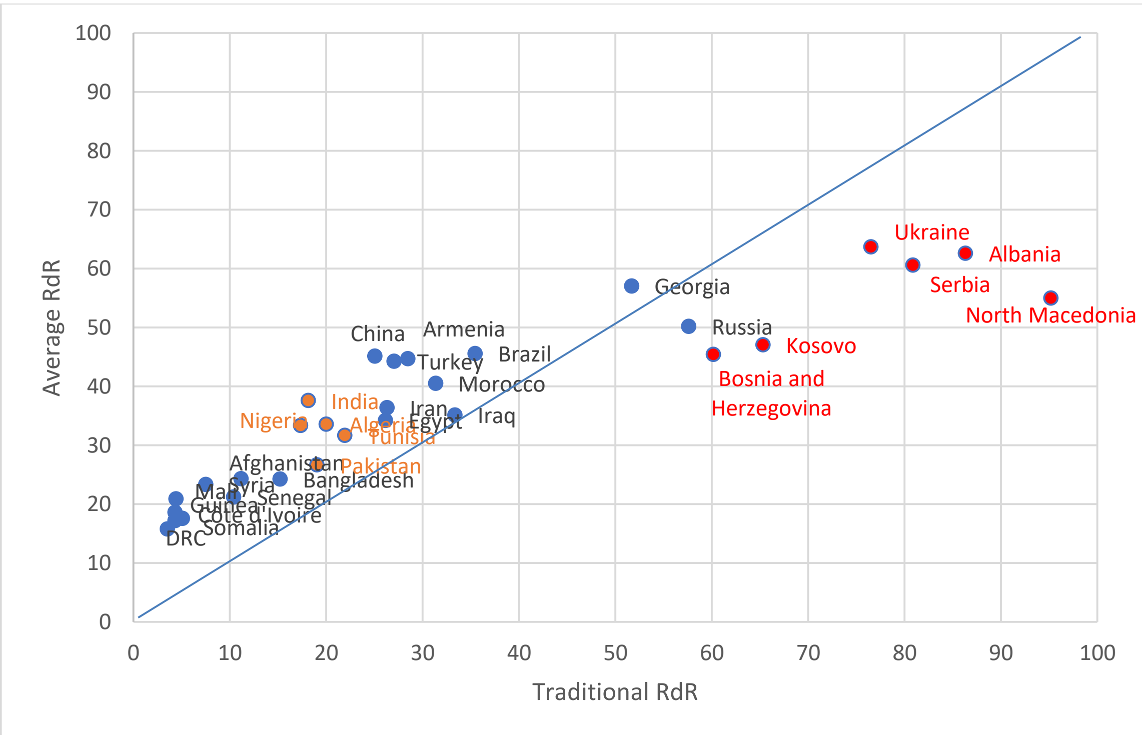
On the contrary, nationals from North Macedonia register a traditional RdR higher than the average, as receive almost half OTLs (49%) from MSs with a high RR for North Macedonians (DE: 100%, SE: 83%), while the RRs for North Macedonians from 10 MS issuing one third of OTLs are lower than 50%.

Figure 20 – Traditional RdR and average RdR for the top 30 nationalities for OTLs in the cumulated period 2010-2019. Dashed bars represent nationalities where the relative difference between average and traditional RdR is larger than 50% of the traditional RdR.



Similarly, Figure 21 plots the traditional vis-à-vis the average RdR. The **impact of the MS distribution** is **medium** for the group of orange nationalities, with traditional RdR very low (<25%) and average RdR low (>25% and <50%) and two groups of red nationalities with traditional RdR very high (>75%) and average RdR high (>50% and <75%) or traditional RdR high (>50% and <75%) and average RdR low (>25% and <50%).

Figure 21 –Traditional and average RdR for the top 30 nationalities in the cumulated period 2010-2019 – scatterplot.



3.2.2.2 Average difference between national and MS RdR

Figure 22 shows the traditional RdR (dots) vis-à-vis the average difference RdR (bars) for the top 30 nationalities for OTLs in the cumulated period 2010-2019. Nationalities are organised by increasing value of the average difference RdR. Those where the average difference RR is negative are on the left side of the chart; those where it is positive are on the right side.

A **negative average difference RdR means that**, on average, the RR registered for the nationality in each MS that issues OTLs is lower than the RR that is registered in the MS for all nationalities (traditional RR of the MS). The **nationality** can be considered to **have on average RdR below its potential and thus to be under-effective**. On the contrary, **a positive average difference means** than on average the nationality has a higher RR that the MS's one. The **nationality** can be said to **have on average a RdR above its potential, and thus to be over-effective**. For example, Armenian nationals have a traditional RdR of 28%, and on average their RdR is similar to the RR registered in the MS for all nationalities (traditional RR of the MS). On the contrary, Egyptian nationals have a traditional RdR of 26%, but on average their RR is 12 percentage points lower than the one registered for all nationalities.

Figure 22 – Traditional and average difference RdR for the top 30 nationalities in the cumulated period 2010-2019.

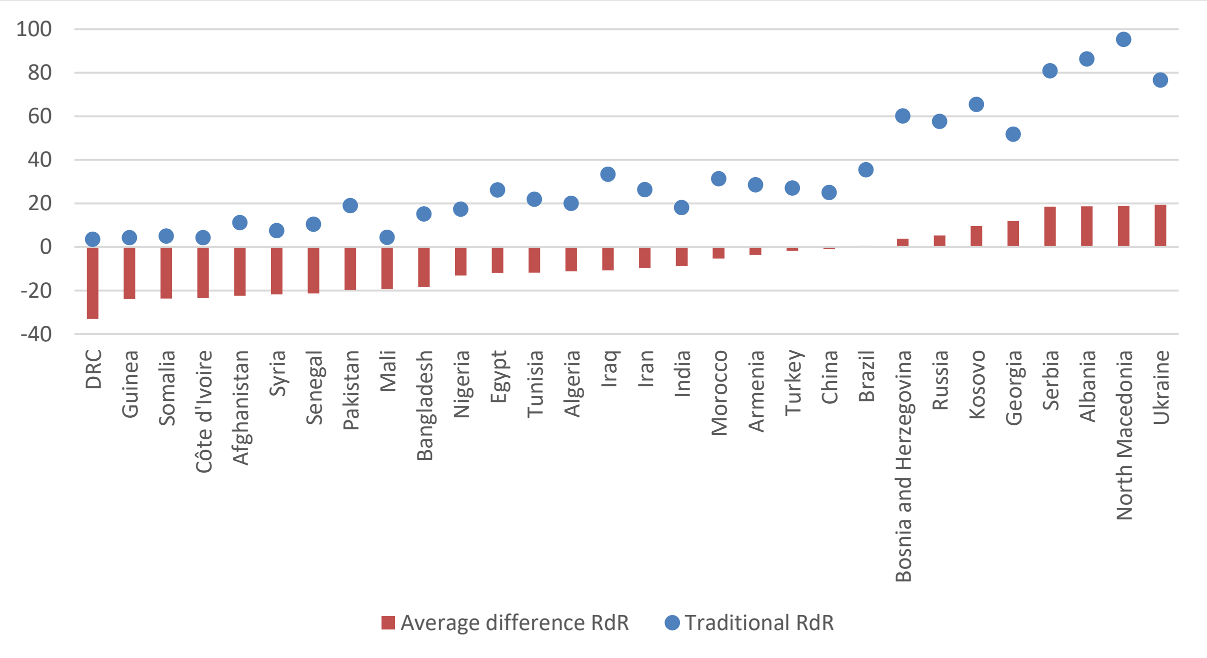


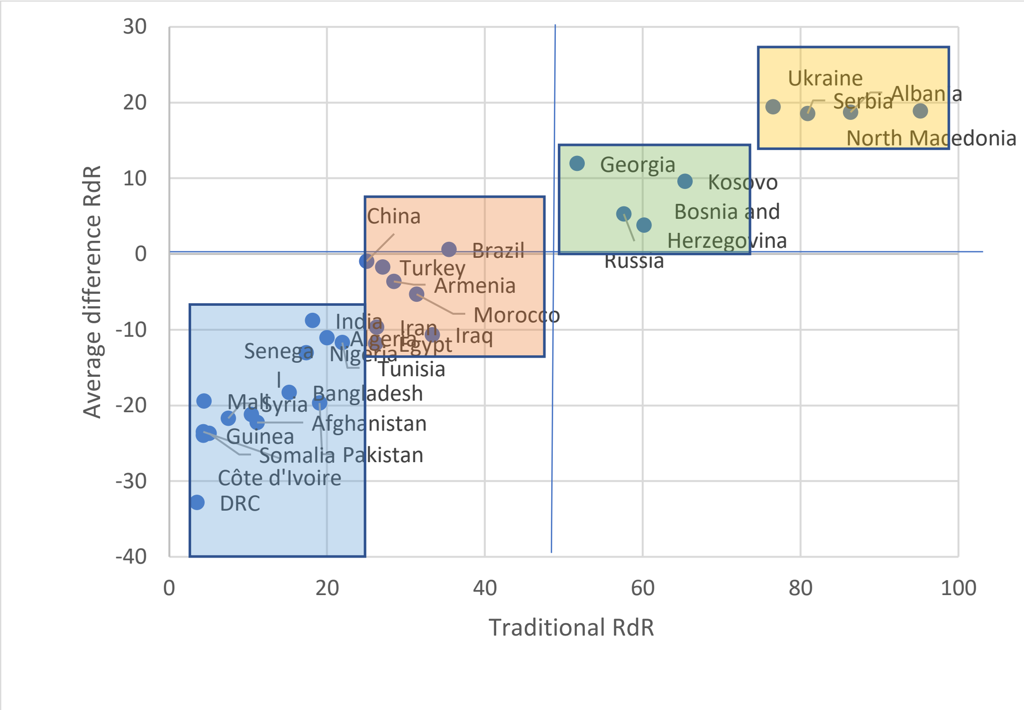
Figure 23 plots nationalities against their traditional RdR (x-axis) and the average difference between the RR registered for the nationality and the traditional RR of MSs (y-axis).

Four groups of nationalities can be identified:

- The **first two** groups are on the right-hand side of the chart. In the yellow box, there is a group of nationality with a very high traditional RdR (>75%), and that on average register a RR much higher than the traditional RR for MS. These are Balkan and Ukrainian nationals. In the green box, there is a group of nationalities that has a high traditional RdR (>50%, <75%) and that on average register a RR moderately higher than the traditional RR of individual MSs. These are some Balkan nationalities and Russia and Georgia. Both groups **are over-effective**: they return at a very high rate, and their RR is also on average higher than the rate of return for other nationalities in each MS.
- The **second two groups are on the left-hand side of the chart**. In the orange box, there is a group of nationalities with a low traditional RdR and that on average register a RR similar or moderately lower than the traditional RR for MSs. These are nationals from Egypt, Iraq, Iran Morocco, Armenia, Turkey, China and Brazil. In the blue box, there is a group of nationalities with very low traditional RdR (<25%) and with a RR on average lower than the traditional RR for each MS. These are some Sub-Saharan countries and some Asian countries. Both groups **are under-**

effective and have the largest potential for improvement, if MSs reached a RR for these nationalities similar to the one registered overall.

Figure 23 - Traditional and average difference RdR top 30 nationalities in the cumulated period 2010-2019: scatterplot.



3.2.2.3 Equally weighted RdR

Figure 24 shows the traditional RdR (dots) vis-à-vis the equally weighted RdR (bars) for the top 30 nationalities for OTLs in the cumulated period 2010-2019. Nationalities are organised by increasing value of the equally weighted RR. Those where the equally weighted RdR is higher than the traditional RdR are on the right side of the chart; otherwise on the left side.

When the traditional and the equally weighted RdR differ, it means that the distribution across MSs of OTLs issued to a specific nationality is different from distribution across MSs of the total number of OTLs issued in the EU.

An equally weighted RdR lower than the traditional RdR indicates that, with a MS distribution similar to the one of all nationalities, the RdR for the nationality would be lower than it currently is. Hence, the **nationality has a MS distribution favouring MSs with higher RR**. On the contrary, **an equally weighted RdR higher than the traditional RdR means** that if the nationality had the same distribution across EU MSs as the total number of returnees, it would have a higher RR. This is because the MSs with low RR are overrepresented in the number of OTLs and hence the nationality is **penalised by its distribution across MS**.

The nationalities for which the new definition of the RdR alter the RdR to a significant extent (+/-50%) are the dashed ones and register all a very low RdR with both definitions. Balkan nationalities also register important differences, indicating that they tend to be concentrated in MSs with which they have high RRs.

Figure 24 - Traditional and equally weighted RdR for the top nationalities in the cumulated period 2010-2019. Dashed bars represent nationalities where the relative difference between the traditional and the equally weighted readmission rate is larger than 50% of the traditional RdR.

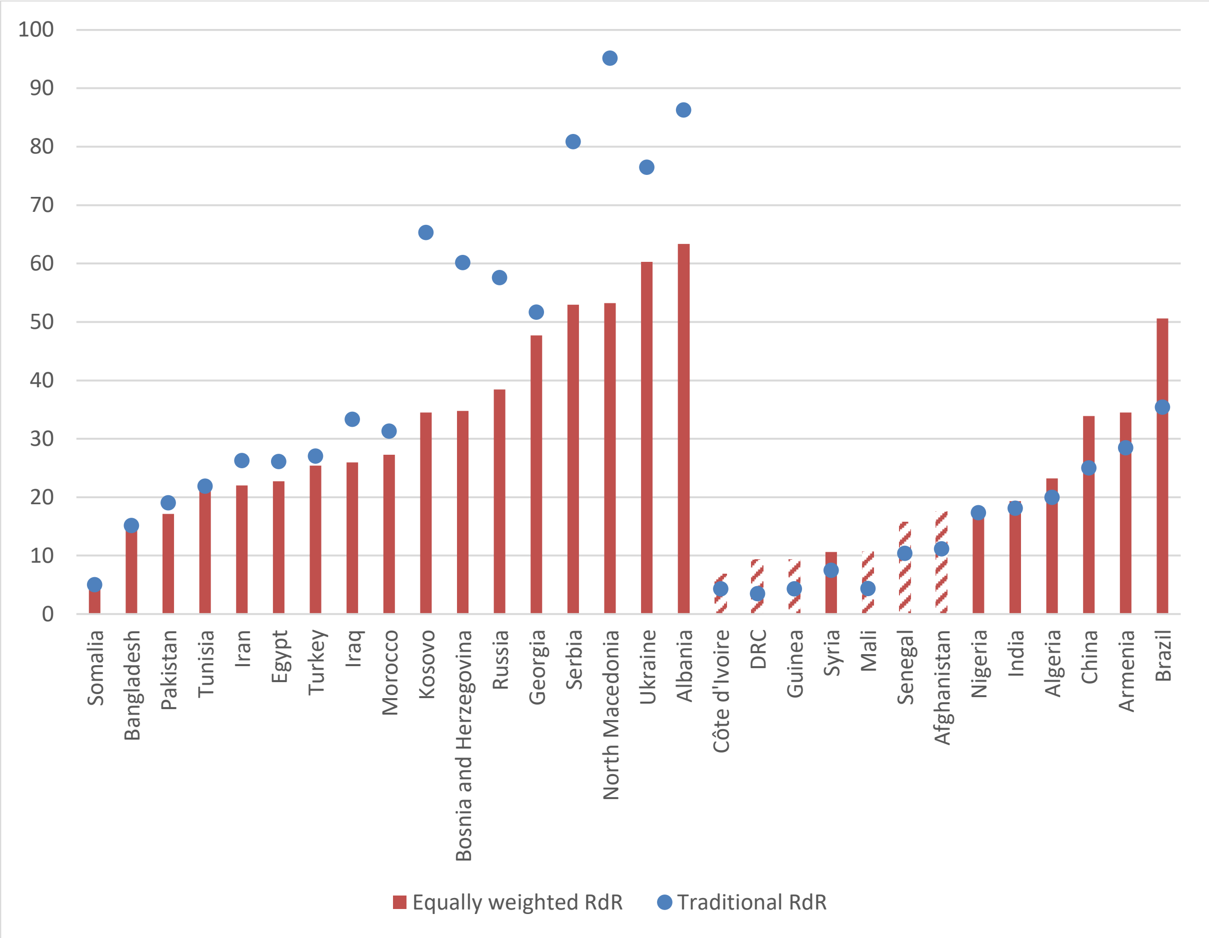
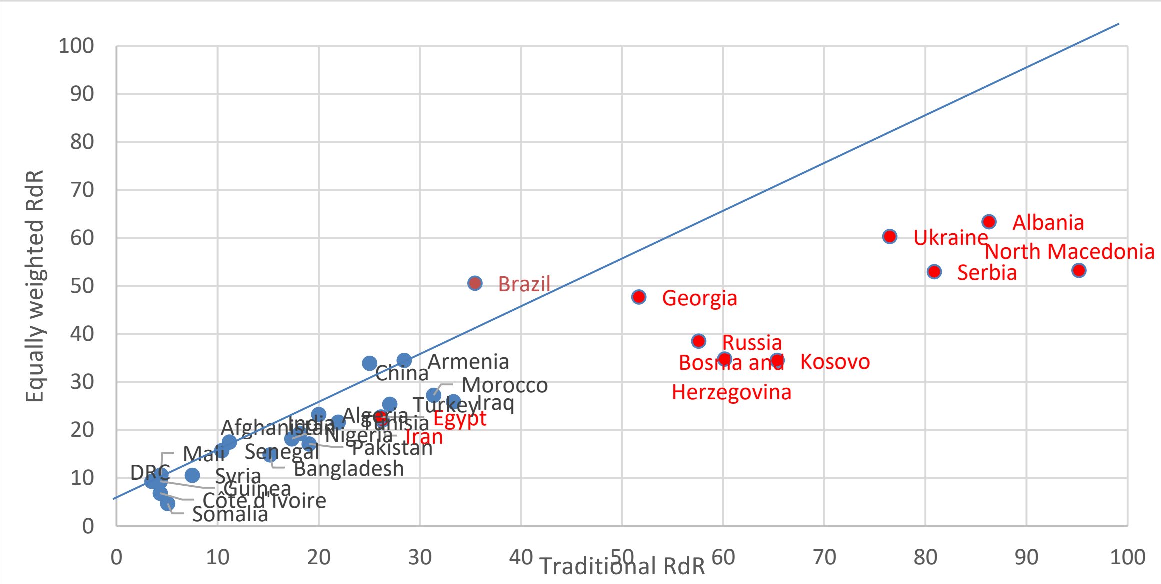


Figure 25 helps identify the cases in which the formula of the equally weighted RdR shows that the MS distribution has a significant qualitative impact. In particular, for the red nationalities, the **impact is medium** and three groups of MSs can be identified: for the first, the traditional RdR is low, while the equally weighted RdR very low; for the second group, the traditional RdR is high, while the equally weighted RdR is low. Finally, for the third group the traditional RdR is very high, while the equally weighted RdR is high.

Figure 25 - Traditional and equally weighted RdR for top 30 nationalities in the cumulated period 2010-2019: scatterplot.



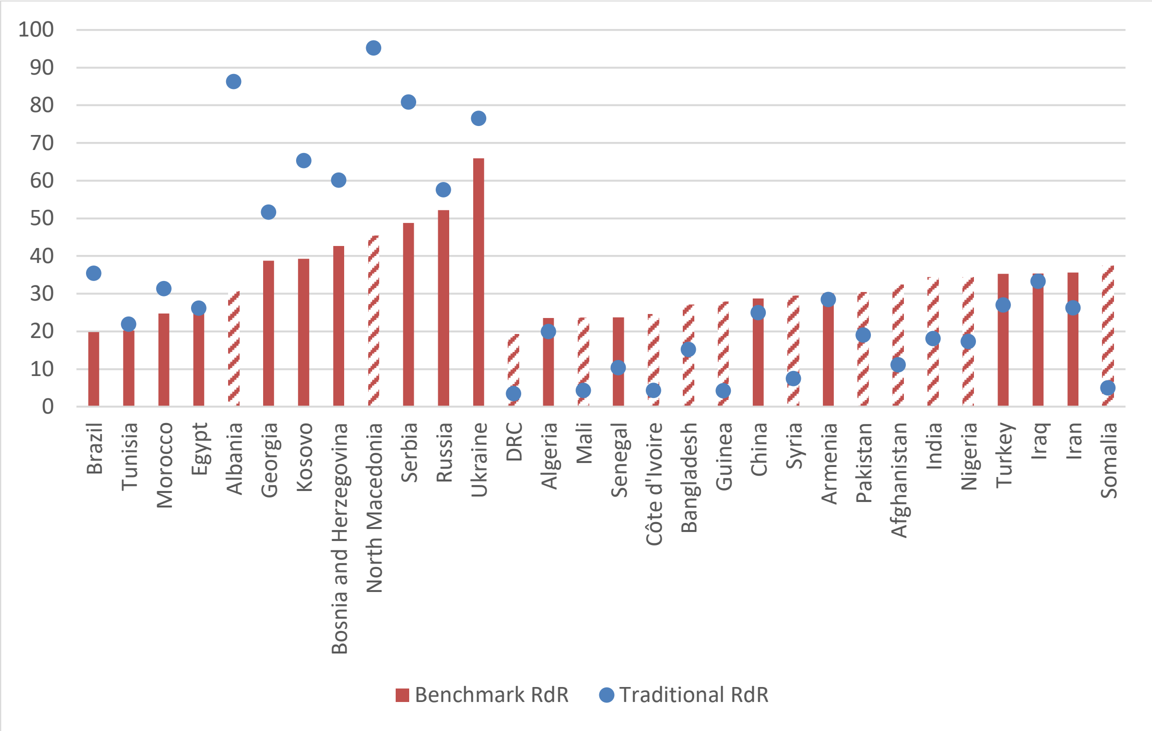
3.2.2.4 Benchmark RdR

Figure 26 shows the traditional RdR (dots) vis-à-vis the benchmark RdR (bars) for the top 30 nationalities in the cumulated period 2010-2019. Nationalities are organised by increasing value of the benchmark RR. Nationalities where the benchmark RdR is higher than the traditional RdR are on the right side of the chart; otherwise on the left side.

The benchmark RdR indicates the RdR that the nationality would have if it were in the hypothetical situation of having, in each MS, the RR registered for all nationalities in that MS (traditional RR for the MS). **A benchmark RdR lower than the traditional RdR** indicates that in this hypothetical situation the nationality would have had a lower RdR. For Albanian nationals, for instance, half of OTLs (49%) are issued by Greece, which registers a very high RR for Albanians (94%), but has a low traditional RR (28%). This drives the benchmark RdR down. Nationalities in this group can be said to **be effective above their potential (overperform)**, because the MSs from which they return register a lower RdR when considering the total number of OTLs.

On the contrary, a **benchmark RdR higher than the traditional RdR** indicates that the nationality in the hypothetical situation would have a higher RdR than the one it has in the current situation. This is because the MSs issuing the larger numbers of OTLs have a higher traditional RR than the one they register for the specific nationality. Somalian nationals, for instance, receive 59% of OTLs from three MSs (EL, NL, DE). These register a very low RR for Somalians (respectively 1%, 12% and 2%), but a higher traditional RR (respectively 28%, 36%, 69%), which drives the benchmark RdR up. Nationalities in this group can be said to **be effective below their potential (underperform)**, because the MSs from which they return register higher RRs when considering the total number of OTLs.

Figure 26 – Traditional and benchmark RdR for all top nationalities in the cumulated period 2010-2019. Dashed bars represent nationalities where the relative difference between the traditional and the benchmark RdR is larger than 50% of the traditional RdR.

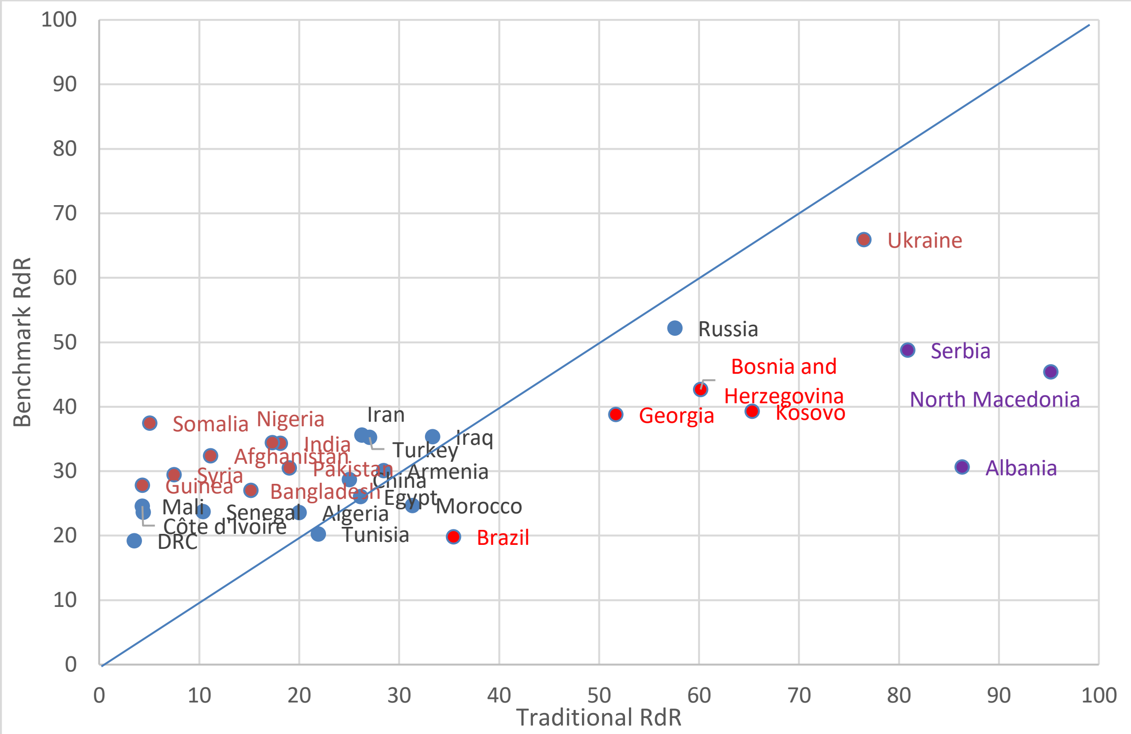


The use of the benchmark RdR has a significant qualitative impact for coloured nationalities in Figure 27. A higher benchmark RdR vis-à-vis traditional RdR means that the return for the nationality could be more effective if it only had, for the most represented MSs among those issuing OTLs, a RR as high as the one registered at the MS level. This is the case for the red nationalities which could move from very low to low RdR, thus showing a **medium impact of the nationality composition on the RdR**.

On the contrary, for other nationalities the benchmark RdR is lower than the traditional RdR, meaning that the nationality has a higher return effectiveness than what it would do in the hypothetical situation. There are three groups here: 1) Brazil, which has a low RdR and would have a very low one; 2) Georgia, Bosnia and Kosovo, that would pass from high to low, and 3) Ukraine that would have very high RdR, vis-à-vis a high one in a hypothetical situation.

A **larger impact** is registered for the bottom purple nationalities, which would have low RdR if they had the same RR of the MS. Here, given the MS distribution, the potential for improvement is the lowest.

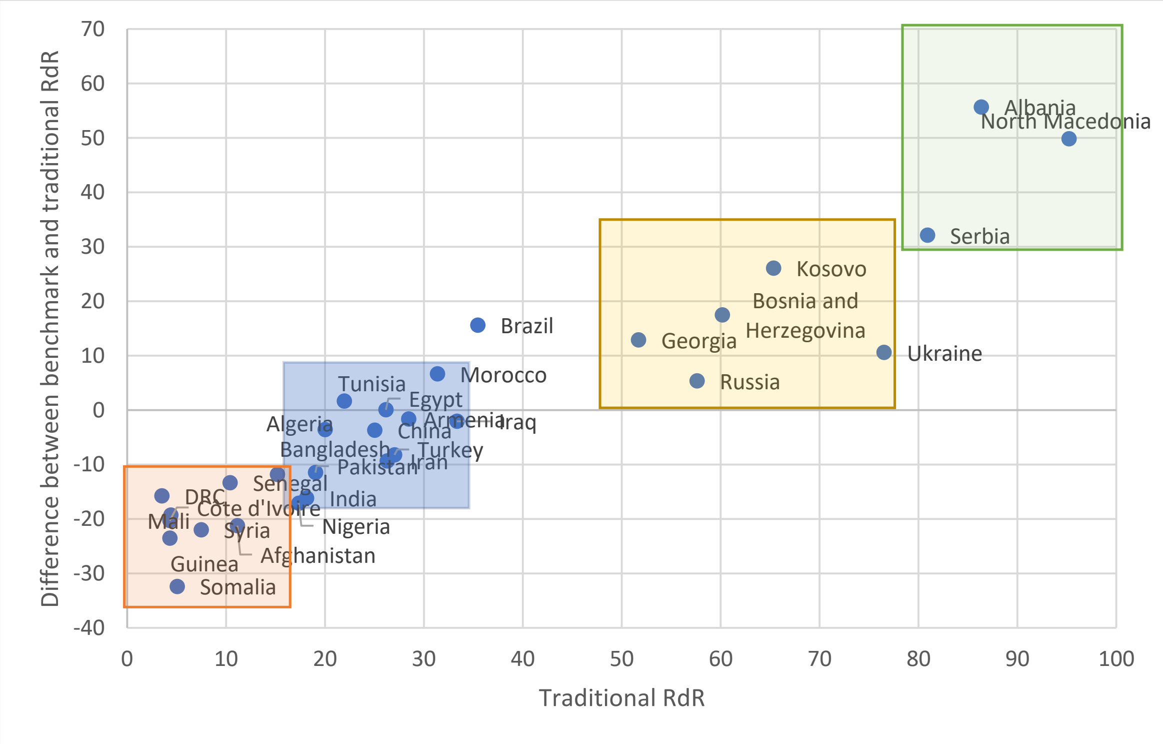
Figure 27 – Traditional and benchmark RdR for top 30 nationalities in the cumulated period 2010-2019: scatterplot.



Focusing on the difference between the traditional and the benchmark RdR, Figure 28 identifies **four groups of nationalities**:

- In the orange box, there are those with very low (<25%) traditional RdR and falling below their potential (i.e. higher benchmark RdR);
- In the blue box, there are those with low RdR (<50%) and falling slightly below or above their potential, as indicated by their benchmark RdR;
- In the yellow box, there are those with high RdR (<75%) and performance moderately performing better than their potential;
- In the green box, there are those with very high RdR (>75%) and performance from moderately to greatly better than the benchmark.

Figure 28 - Difference in percentage points between traditional and benchmark RdR and traditional RdR for the top 30 nationalities, for the cumulated period 2010-2019.



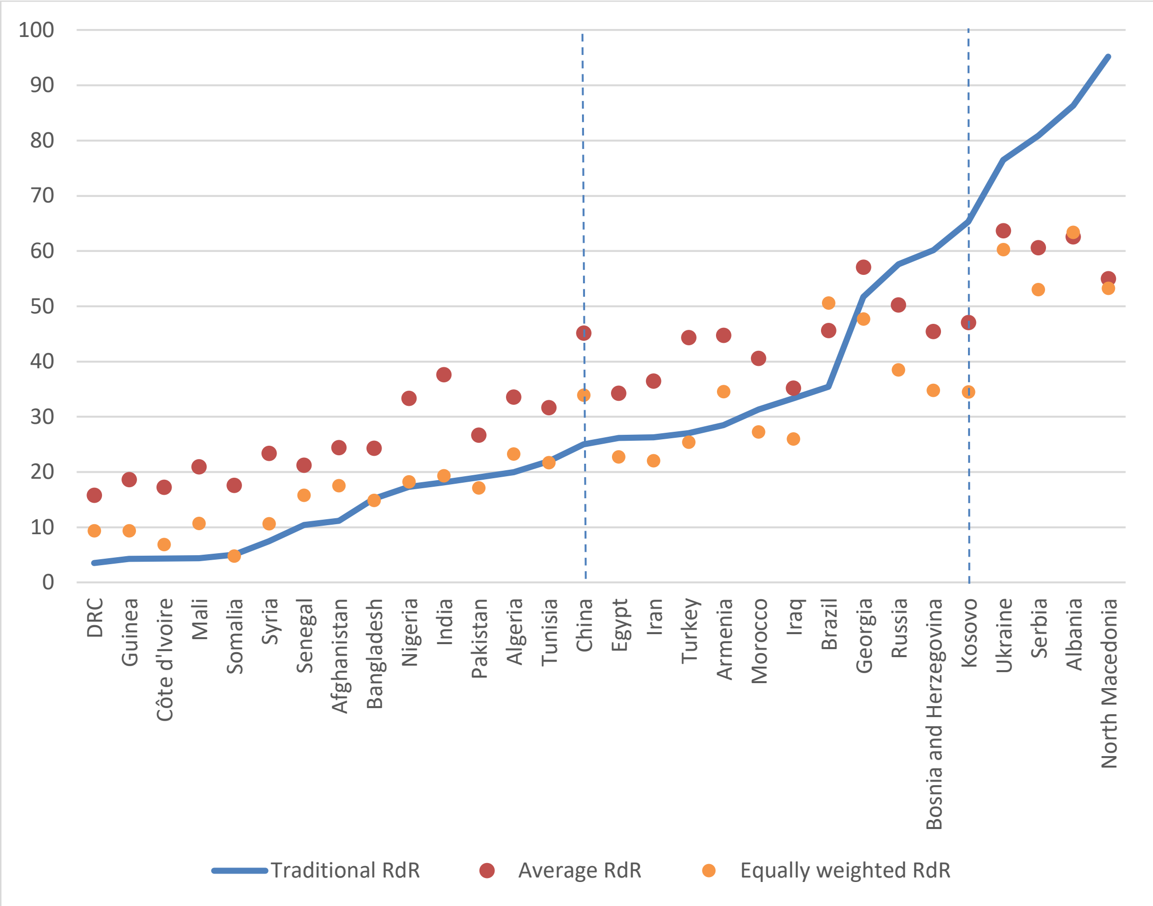
3.2.2.5 *Summary*

Compared to the traditional RdR, the average and the equally weighted RdRs tell us to what extent the nationality is advantaged or penalised by the MS distribution of its returnees. In particular, the nationality is advantaged (penalised) by the MS distribution because either i) it receives a larger number of OTLs from MSs for which it registers high (low) RR (*average RdR*) or ii) it registers high (low) RR for MSs which tend to issue more OTLs to this nationality compared to others, thus being these MSs more represented among those issuing OTLs to this nationality than to those issuing OTLs to the totality of TCNs (*equally weighted RdR*).

Figure 29 shows the traditional, the average and the equally weighted RdR for all nationalities. Chinese nationals, for instance, have a low traditional RdR, but higher average and equally weighted RdR. This means that on average Chinese nationals have a RR higher than the RR the MSs register for all their returnees. Yet, they are penalised by the distribution of OTLs which are issued in larger number by MSs registering low RR for Chinese nationals. Moreover, Chinese nationals registers low RR for MSs that in proportion issue less OTLs at EU level for all nationalities than they issue to Chinese nationals, and hence, if the OTLs issued by MSs to Chinese nationals were in the same proportion as the OTLs they issue at EU level to all nationalities, the RdR would be higher. Chinese nationals are therefore penalised by their distribution.

On the contrary, Kosovan nationals have a very high traditional RdR, but on average their RdR is low. This is because they receive many OTLs from MSs which register high RR for Kosovan nationals. Similarly, if the distribution of OTLs across MSs were similar to the one registered at the EU level for all nationalities, Kosovan nationals would have a lower RdR. They are therefore favoured by the distribution of the OTLs they receive across MSs.

Figure 29 – Traditional, average and equally weighted RdRs for MS for the top 30 nationalities for number of OTLS in the cumulated period 2010-2019.



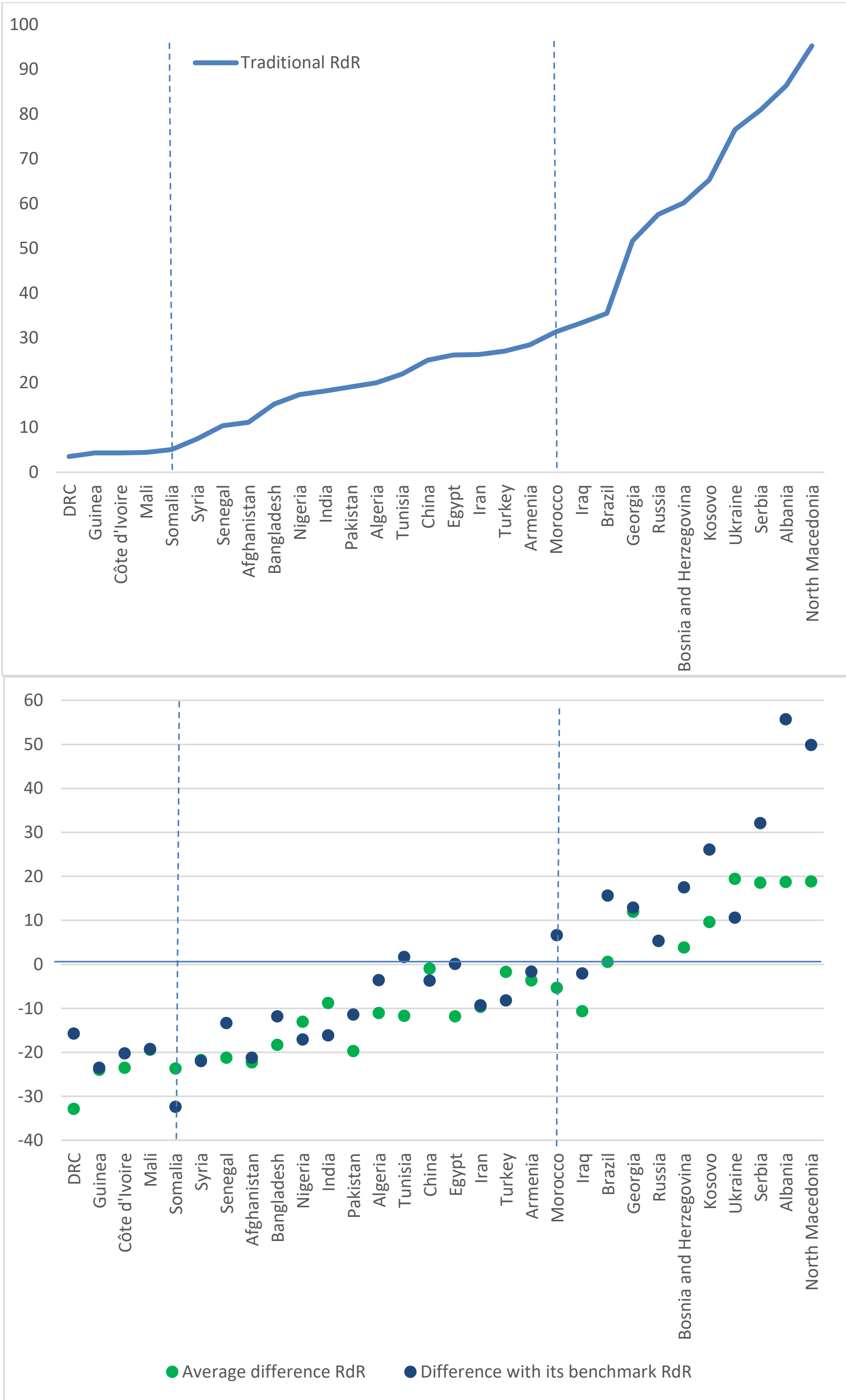
The average difference and the benchmark RdRs tell us to what extent the nationality performs better or worse than its potential. For a given nationality, this is defined, in each MS, as the traditional RR of the MS. The average difference tells us whether in fact the nationality underperforms or overperforms the others on the average of all MSs issuing OTLs. The difference between the traditional and the benchmark RdR tells us whether the nationality underperforms or overperforms, as if the nationality had the same nationality composition registered in the MS.

Figure 30 shows the traditional RdR vis-à-vis the average difference RdR and the difference between the traditional and the benchmark RdR. In general, the dot falling below (above) the 0-line means that the nationality is underperforming (overperforming) comparing to what it could do. In particular, Somalian nationals have a very low RdR and at the same time register on average a RR lower that the MS one. Moreover, they have a lower RdR than the one they would register in the fictional situation in which, in each MS, they had the same RR registered there. Overall, Somalian nationals underperform compared to their potential.

On the contrary, Moroccan nationals have a low RdR and on average register a lower RR than the MS one. In this sense, Moroccans seem to perform below their potential. However, the RdR is higher than the one scored in the hypothetical situation in which Moroccan citizens registered, in each MS, the RRs that the MS has for all nationality. In this sense, Moroccan nationals perform over their potential.

Table 35 in the Annex summarises the RdRs for the top 30 nationalities in the period 2010-2019.

Figure 30 – Average difference RdR and difference between the traditional and its benchmark RdR (left axis) and traditional RdR (right axis) for the top 30 nationalities in the cumulated period 2010-2019.



4 Conclusions

The RR and the RdR have been traditionally used to measure the return effectiveness of MSs and nationalities (and by proxy TCs). A single number serves comparative purposes over time and across countries. However, it presents several limitations, as developed in Section 2 of the report.

A first group of limitations concern the **reliability in measuring the two statistical indicators that make up the RR and RdR (RET and OTL)**, and in particular **to what extent they correctly capture the real dimension of the population that has to leave the country and the population that has consequently left**. The main related issues are: (1) voluntary returns are difficult to monitor (and hence to be reflected in the RET); (2) OTLs do not distinguish between enforceable and not-enforceable OTLs (e.g. due to the asylum process, or appeals to the return decisions, or else in compliance with the *non-refoulement* principle). The first issue is expected to disappear with the full implementation of the Entry and Exit System (Regulation (EU) 2017/2226) and SIS II Return (Regulation (EU) 2018/1860), which will allow to monitor also voluntary returns. The second issue is expected to stay if no action is taken, impairing the capacity to measure return.

<u>Problem 1</u> – Reliability issues of RET and OTL in correctly measuring the number of people who have to leave the country and the number of people that have consequently left.

Recommendation 1 - *Mapping and analysing in depth practices related to return and asylum at the national level to clarify to what extent RETs and OTLs reflect the population they are supposed to measure.*

Recommendation 2 - *Mapping and analysing in depth practices related to return and asylum at the national level to support an improved data collection mechanism. This may also include the identification of additional statistical indicators to collect.*

A second group of limitations concerns **the formulas of the RR and RdR**. These **do not properly account for various elements characterising the population of returnees, notably the composition in terms of nationalities and distribution across MSs. These may importantly affect the return effectiveness of MSs and TCs**. Since the nationality composition greatly varies across MSs, this generates serious comparability issues. Moreover, there are other characteristics related to the specific legal system of the MSs or to the existence of bilateral agreements that the RR and RdR formulas can hardly measure.

<u>Problem 2</u> – Reliability issues in the current definition of RR and RdR to properly account for various elements characterising return effectiveness

Recommendation 3 - *Mapping and in-depth analysing each MS's legal system and bilateral agreements and practices in place to frame correctly comparability issues across MSs and nationalities.*

Alternative definitions of the RR and RdR have been identified and used to account specifically for the composition of OTLs in terms of nationality in different MSs, and for the distribution of OTLs across MSs for a given nationality. They are showed and thoroughly discussed in Section 3 of this report. The four proposed alternative definitions of the RR are summarised in the following:

- <u>The average RR</u> – It calculates the RR of a MS as the average of the RRs for all nationalities represented in the MS. It aims at eliminating the 'weighting effect' due to the number of OTLs, namely the fact that in the traditional RR also the size of the population to return (OTL) determines the RR value. In the average RR, however, all nationalities, including the ones with very low OTLs – and consequently much less significant from a statistical point of view – count the same.
- The <u>average difference RR</u> – It calculates the RR by comparing, for each nationality represented in the MS, the RR in the MS with the RR at EU level. All the differences are then averaged. In this way, it measures the return effectiveness in a relative way by comparison with a reference value. The main limitation is that uneven return effectiveness may compensate and make difficult a real assessment of the effectiveness. In addition, the selected reference may not be the most appropriate even though a different one may be chosen with no need to change the definition.
- The <u>equally weighted RR</u> – It follows quite closely the definition of the traditional RR but instead of considering the share of OTLs for each nationality over the total OTLs in the MS, it uses for all MSs the share of OTLs each nationality receives at the EU level. The uneven and variable weighting effect depending on how big the share of OTL of each nationality in each MS is, is now reduced. However, the

nationality composition for some MSs may greatly differ from the EU one and consequently comparability issues still persist.

- The benchmark RR – It aims again to measure effectiveness by comparison with a fictional entity, having the same nationalities composition as the MS and the RR for each nationality as the EU. In this way it can be estimated how far the MS effectiveness is from the optimal one, identified with the one of the fictional entity. However, since MSs have, inevitably, different weights in the definition of such fictional entity, comparability issues may still arise.

The alternative definitions of the RdR follow the same logic.

Problem 3 – On the basis of the statistical indicators currently available, the definition of RR and RdR can be improved to better measure the return effectiveness

Recommendation 4 – Alternative definitions of the RR (Average RR and Average difference RR) allow for a better comparability of effectiveness among MSs. They minimize the dominant effect of most represented nationalities and reduce bias in comparing to an EU average behaviour. They are monitoring tools instrumental to any policy aiming at ensuring 'convergent' practices in all MSs. In a similar way, alternative RdR definitions can be used.

Recommendation 5 – Alternative definitions of the RR (equally weighted RR and benchmark RR) allow to better factor in various elements having a positive/negative role in determining the effectiveness as well as to minimise bias in benchmarking. They are monitoring tools instrumental to any policy aiming at meeting defined 'target' performances. In a similar way, alternative RdR definitions can be used.

All these alternative definitions highlight different aspects of the return effectiveness and may respond to different policy needs, providing useful inputs to policy makers and practitioners.

However, **none of these alternative definitions can, alone, comprehensively represent the full picture or is free from limitations**. Measuring in a reliable way the effectiveness of return is a problem encompassing many elements of complexity of different nature both at the technical and at the policy level. They include limitations on available statistical data, limited reliability of available indicators, limited knowledge and analysis of any relevant policy, practice and legal system at national level (at MS, TC and bilateral level). Consequently, some necessary additional actions should include: 1) the definition of an improved procedure to collect all the relevant data to ensure an effective assessment of the effectiveness and resolve some inconsistencies or ambiguities in collected data and identify additional datasets that may be useful to collect, 2) conduct a systematic analysis to understand the role/impact of the national systems, as mentioned above.

The analysis conducted here showed many challenges in looking for a better but still concise way of measuring return effectiveness. At the same time, many indicators – however imperfect – exist and there are many different ways of combining them. On the basis of the currently available data, these indicators can be collectively used and visualised on a specialized and flexible dashboard. This tool would allow in-depth analysis at national as well as EU level, and could help better monitor the situation and provide useful and timely suggestions on how to make return more effective for policy makers and practitioners alike.

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- Eurostat annex on EIL data completeness report double counting issues only for BE and AT, available at https://ec.europa.eu/eurostat/cache/metadata/Annexes/migr_eil_esms_an2.pdf.

Legislation

- Regulation (EU) 2020/851 of the European Parliament and of the Council of 18 June 2020 amending Regulation (EC) No 862/2007 on Community statistics on migration and international protection.
- European Commission (2018), Proposal for a Directive on common standards and procedures in Member States for returning illegally staying third-country nationals (recast), COM(2018) 634 final.
- Regulation (EU) 2017/2226 of the European Parliament and of the Council of 30 November 2017 establishing an Entry/Exit System (EES) to register entry and exit data and refusal of entry data of third-country nationals crossing the external borders of the Member States and determining the conditions for access to the EES for law enforcement purposes, and amending the Convention implementing the Schengen Agreement and Regulations (EC) No 767/2008 and (EU) No 1077/2011.
- Directive 2008/115/EC of the European Parliament and of the Council of 16 December 2008 on common standards and procedures in Member States for returning illegally staying third.

Definitions and list of abbreviations

Term	Definition
Order To Leave (OTL) or Return Decision (when Council Directive 2008/115/EC – Return Directive is applicable)	An administrative or judicial decision or act, stating or declaring the stay of a third-country national to be illegal and imposing or stating an obligation to return. (Source: EMN Glossary)
Readmission	Act by a State accepting the re-entry of an individual (own national, third-country national or stateless person). (Source: EMN Glossary)
Return	The movement of a person going from a host country back to a country of origin, country of nationality or habitual residence usually after spending a significant period of time in the host country whether voluntary or forced, assisted or spontaneous. (Source: EMN Glossary)
Return performance	The extent to which Member States and Third Countries succeed in returning and readmitting third-country nationals issued an order to leave. Being return a process that involves the third-country national, the Member State issuing orders to leave and the third country readmitting the person, the return performance involves the behaviour of all three actors. Moreover, it can be assessed along several dimensions, including human rights compliance, return effectiveness (see below), return efficiency or cost-effectiveness, and sustainability of return and reintegration. (Source: own definition)
Return effectiveness	The capacity to actually return the persons who do not have the right to legally reside in the MS. It is only one dimension of the return performance and it is more focused on the number of people actually returned. (Source: own definition)
Return rate (RR)	The percentage traditionally used to measure return effectiveness. It is the share of persons who, having received an OTL, returned to a TC, over the total number of persons receiving an OTL over the same period of time – generally a year. It can be defined at for a MS and for a specific nationality (MS-TC pair), or for a MS for the totality of nationality. (Source: own definition)
Readmission rate (RdR)	The percentage traditionally used to measure return effectiveness when focusing on the third country/nationality. It is the share of persons from a specific nationality who, having received an OTL, returned to a TC, over the total number of people from the nationality receiving an OTL over the same period of time – generally a year. It is defined at the level of a specific nationality or third country, regardless of the MS issuing OTLs, (Source: own definition)
Returnee	A person going from a host country back to a country of origin, country of nationality or habitual residence usually after spending a significant period of time in the host country whether voluntary or forced, assisted or spontaneous. (Source: EMN Glossary)
Traditional RR/RdR	For a Member State MSi, the ratio between the total number of third-country nationals returned from MSi from all nationalities, over the total number of OTLs issued by MSi to TCNs from all nationalities.

	For a nationality ni, the ratio between the total number of persons of nationality ni returned from all MSs, over the total number of OTLs issued to persons from nationality Ni from all MSs. (Source: own definition)
Average RR/RdR	For a Member State MSi, the average RR of all nationalities receiving at least an OTL in the MSi, whereby each nationality receiving OTLs has the same weight for a given MSi. It describes the RR as if MSi issued the same number of OTLs to each nationality for which at least one OTL has been issued. For a nationality ni, the average RR of all MSs issuing OTLs to persons of nationality ni, whereby each MS issuing OTLs has the same weight for a given nationality. It describes the RdR as if the number of OTLs issued by each MS (where at least an OTL has been issued for nationality ni) to persons of that nationality were the same. (Source: own definition)
Average difference RR/RdR	For a Member State MSi, RR calculated as the average difference between the RR registered at MS_i and EU level, for each nationality receiving OTLs in MS_i. For a nationality ni, RdR calculated as the average difference between the RR registered at the level of individual nationality n_i and the RR for MS_j, for each MS issuing at least an OTL to nationality n_i.
Equally Weighted RR/RdR	For a Member State MSi, RR that MS_i would have if each nationality receiving OTLs in the MS had the same weight as in EU (i.e. the share of OTLs issued to that nationality in the EU over total OTLs in the EU over the period 2010-2018). For a nationality ni, RdR that the nationality ni would have if each MSs issuing OTLs had the same weight across nationalities (i.e. the share of OTL the MS issued over the total OTL in the EU27 over the period 2010-2019) (Source: own definition)
Benchmark RR/RdR	For a Member State MSi, RR calculated as if the MSi had, for each nationality, the same RR that the nationality registers at EU level in that year. For a nationality ni, RdR calculated as if, for each MSj, the RR of the nationality ni were the same RR that overall is registered at the level of each MSj in a given year. (Source: own definition)

Acronym/Abbreviation	Meaning
COM	Communication
EC	European Commission
EES	Entry/Exit System
EMN	European Migration Network
ERIN	European Reintegration Network
EU	European Union
EURINT	European Integrated Return Management Initiative
IRMA	Irregular Migration Management Application

MS	Member State
OECD	Organization for Economic Co-operation and Development
OTL	Order To Leave (see definitions)
REG	Return Expert Group
RET	Returnee after an order to leave is issued (see definitions)
RR	Return Rate (see definitions)
TC	Third-Country
TCN	Third-country national

Code	Country
AT	Austria
BE	Belgium
BG	Bulgaria
CH	Switzerland
CY	Cyprus
CZ	Czechia
DE	Germany
DK	Denmark
EE	Estonia
EL	Greece
ES	Spain
EU27/EU27_2020	European Union (2020 composition – 27 Member States)
FI	Finland
FR	France
HR	Croatia
HU	Hungary
IE	Ireland
IS	Island
IT	Italy
LI	Lichtenstein
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherlands
NO	Norway
PL	Poland
PT	Portugal
RO	Romania
SK	Slovakia
SI	Slovenia
SE	Sweden
UK	United Kingdom

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Annexes

Annex 1 **Overview of Eurostat data availability**

The following tables describe relevant Eurostat datasets on return, in terms of data availability and validity. Changes are expected with the entry into force of amended statistics Regulation (Regulation (EU) 2020/851) as of 2021.

Table 18 – Mapping of Eurostat statistics on return.

Dataset		Variables	Categories	Definitions
Third-country nationals ordered to leave - annual data (rounded) [migr_eiord][28]	Compulsory	Age	<14, 14-17, <18, 18-34, >35, unknown (only 2018), TOT	TCNs found to be illegally present who are subject to an administrative or judicial decision or act stating that their stay is illegal and imposing an obligation to leave the territory of the MS (see Art. 7.1 (a) of the Regulation). Note: Dublin transfers are excluded, each person is counted only once within the reference period, irrespective of the number of notices issued to the same persons.
		Citizenship	all	
		Reporting country	32 =EU28 +IS, LI, NO, CH	
		Sex	M/F/UNK (only 2018), TOT	
		Time	2008-2018	
Third-country nationals returned following an order to leave - annual data (rounded) [migr_eirtn][29]		Age	<14, 14-17, <18, 18-34, >35, unknown (only 2018 only some MS), TOT	***TOT_RET: Total number of persons returned*** TCNs who have in fact left the territory of the MS, following an administrative or judicial decision or act stating that their stay is illegal and imposing an obligation to leave the territory (see Art. 7.1 (b) of the Council Regulation (EC) no 862/2007). Note: It includes: forced returns, assisted voluntary returns, unassisted voluntary returns if reliably recorded; Dublin transfers are excluded. Persons who left the territory within the year may have been subject to an obligation to leave in a previous year. As such, the number of persons who actually left the territory may be greater than those who were subject to an obligation to leave in the same year. ***RET_THRD: Persons returned to a third country*** *(voluntary)* Nationals returned to a third country only. Provided on a voluntary basis by all MSs. Note: the difference between total number of persons returned and persons returned to TC represents the number of persons returned to MS. This may be the case when the TCN holds "a valid residence permit or other authorisation offering a right to stay issued by another MS" (under Directive 2008/115/EC Article 6(2)). The difference between total returns and returns to a TC in the period 2009-2018 is equal to 13% of total number of returns. This percentage did not registered substantial changes since 2009
		Citizenship	all	
		Reporting country	31 =EU28 +IS, LI, NO	
		Sex	M/F/TOT/UNK	
		Time	2008-2018	
Third-country nationals who have left the territory by	Voluntary	Citizenship	all	***VOLUNT: Voluntary return*** The TCN complies voluntarily with the obligation to return (i.e. no enforcement procedure had to be launched) and this departure is confirmed by the information from e.g. the border authority or the consulate authorities in the
		Reporting country	25 = 22 EU + IS, LI, NO	

[28] Quarterly data with the entry into force of amended statistics Regulation (Regulation (EU) 2020/851) as of 2021.
[29] Quarterly data with the entry into force of amended statistics Regulation (Regulation (EU) 2020/851) as of 2021.

type of return and citizenship [migr_eirt_vol]			22EU= BE, BG, CZ, DK, EE, IE, EL, ES, FR, HR, IT, LV, LU, HU, MT, AT, PL, PT, RO, SI, SK, SE Missing EU: DE, CY, LT, NL, FI, UK	country of origin or other authorities such as IOM or any other organisations implementing a program to assist migrants to return to a TC. Definition based on Art 3.8 Directive 115/2008/EC ***ENFORCE: enforced return*** The TCN is subject to the enforcement of the obligation to return (the enforcement procedure has been launched). Definition based on Art 3.5 and 3.8 Directive 115/2008/EC. ***OTH: other*** It can be reasonably presumed that the TCN returned based on some assumptions.
		Time	2011-2018	
Third-country nationals who have left the territory by type of assistance received and citizenship **[migr_eirt_ass]**		Citizenship	All	***ASSIST: Assisted return*** Situation in which the TCN was assisted to return. He/she is the beneficiary of a national or EU MS cooperative program to encourage return and to provide reintegration assistance. The TCN received (i) an in-kind assistance prior to departure (e.g. purchase of plane tickets) and/or (ii) in-cash allowances at the point of departure/upon arrival and/or (iii) an in-kind or in-cash reintegration assistance. Please note that beneficiaries of assisted return programs are mostly TCN who voluntarily return but some may also have been returned by force Definition based on Art 3.8 Directive 115/2008/EC and Asylum and Migration Glossary 2.0 **N_ASSIST: Non-assisted return** Non-Assisted Return refers to the situation in which the TCN is recorded with departure and he/she does not receive a support and assistance from the national authorities. **UNK: Unknown**
		Reporting country	19 = 18 EU + LI 18EU= BE, BG, EE, IE, EL, FR, HR, IT, LV, LU, HU, MT, AT, PL, PT, RO, SI, SK Missing EU: DE, CY, LT, NL, FI, UK, CZ, DK, ES, SE	
		Time	2011-2018	
Third-country nationals who have left the territory to a third country by type of agreement procedure and citizenship **[migr_eirt_agr]**		Citizenship	All (no aggregated by geographical region)	**Readmission agreement** refers to the situation where an international agreement exists between the reporting country and the country of return (of TCN returned) under which the readmission procedure is set out. **EURA= EU Readmission Agreement** **OTH_READM: Returned under other readmission agreement** **N_READM: Returned without existing a readmission agreement** **UNK: Unknown**
		Reporting country	17 = 16 EU + LI 16EU= BE, BG, EE, IE, EL, FR, HR, IT, LV, LU, HU, MT, AT, PL, PT, SI, SK Missing EU: DE, CY, LT, NL, FI, UK, CZ, DK, ES, RO, SE	
		time	2014-2018	
Third-country nationals who have left the territory to a		Citizenship	All (no aggregated by geographical region)	**CITIZ: Country of Citizenship** **TRANSIT: Transit country**
		Reporting country	19 = 18 EU + Liechtenstein	

third country by destination country and citizenship [migr_eirt_des][30]			18 EU= BE, BG, EE, IE, FR, HR, IT, LV, LU, HU, MT, AT, PL, PT, SI, SK, SE, UK Missing EU: DE, CY, LT, NL, FI, CZ, DK, ES, RO, EL	Transit country refers to the country that is considered intermediary destination of the TCN returned on the way to the country of Citizenship **OTH_THRD: Other third country**
		Time	2014-2018	

Source: Eurostat Enforcement of Immigration Legislation metadata, available at https://ec.europa.eu/eurostat/cache/metadata/en/migr_eil_esms.htm

Table 19 – Data availability and notes on validity for statistics for the period 2010-2018.

Countries (GEO) - EU 28	**Third-country nationals ordered to leave - annual data (rounded) [migr_eiord]**	**Third-country nationals returned following an order to leave - annual data (rounded) [migr_eirtn]**	**TCNs who have left the territory by type of return and citizenship [migr_eirt_vol]**	**TCNs who have left the territory by type of assistance received and citizenship [migr_eirt_ass]**	**TCNs who have left the territory to a third country by type of agreement procedure and citizenship [migr_eirt_agr]**	**TCNs who have left the territory to a third country by destination country and citizenship [migr_eirt_des]**
	Notes on validity for the period 2010- 2018		***Data availability for the period 2010-2018***			
BE	There may be double-counting for the period 2010-2012		2014-2017	2014-2017	2015-2017* only unknown cat	2014-2015
BG	-	-	2014-2018	2015-2018	2014-2018	2014-2018
CZ	-	-	2016-2018	No data	No data	No data
DK	Missing: 2010-2010	-	2014-2018	No data	No data	No data
DE			No data	No data	No data	No data
EE	Missing: <14[31]	Missing: <14	2014-2018	2015-2018	2018	2016-2018
IE	-	-	2015-2018	2015-2018	2015-2018	2015-2018
EL	There may be double-counting		2018	2018	2018	No data
ES	-	-	2014-2018	No data	No data	No data

[30] Obligatory with the entry into force of amended statistics Regulation (Regulation (EU) 2020/851) as of 2021, and according to the updated reporting guidelines, only “country of citizenship” and “other third country” would be distinguished from 2021.
[31] The metadata annex says: “Accompanied minors are not registered separately. Therefore, there may be missing some persons in age group less the 14 years.” The age started to be reported only in 2018 and still by few countries. Estonia, as other countries, did not report data by age (so a category <14 does not exist).

FR	-	-	2014-2018	2014-2018	2015-2018* only unknown cat	2014-2018
HR	Missing: 2010-2012	-	2014-2018	2014-2018	2014-2018	2014-2018
IT	n OTLs = n illegally present	-	2014-2018	2014-2018	2015-2017	2014-2017
CY	-		No data	No data	No data	No data
LV	Change from 2011 due to changes on national legislation[32]		2014-2018	2014-2018	2015-2018	2014-2018
LT	-	-	No data	No data	No data	No data
LU	Missing: 2011		2015-2018	2015-2018	2015-2018	2016-2018
HU	-	TCN from Kosovo registered in Serbia in 2012	2014-2018	2014-2018	2014-2018	2014-2018
MT	-		2014-2018	2015-2018	2015-2018	2015-2018
NL	-	-	No data	No data	No data	No data
AT	Missing: 2014	Returned to TC missing: 2014-2015	2017-2018	2017-2018	2017-2018* 2017: only unknown cat	2017-2018
PL	-	-	2015-2018	2011-2018	2017-2018	2015-2017
PT	-	Returned to TC missing: 2012	2014-2018	2014-2018	2014-2018	2014-2018
RO	-		2014-2018	2014-2018	No data	No data
SI	-	-	2014-2018	2014-2018	2014-2018* 2016-2018: only unknown cat	2014-2018
SK	-		2014-2018	2014-2018	2014-2018	2014-2018
FI	-		No data	No data	No data	No data
SE	-	-	2014-2018	No data	No data	2016-2017

Source: Eurostat Enforcement of Immigration Legislation metadata, available at https://ec.europa.eu/eurostat/cache/metadata/en/migr_eil_esms.htm

[32] Further description of changes in national legislation from Annex: "It is related to amendments in national legislation, which foreseen an obligation to issue return decision also to those third-country nationals who have breached the procedures for entry and residence in the Republic of Latvia or another Schengen Agreement Member State. Such breach was determined at the moment of his or her departure from the Republic of Latvia. Previously a fine was imposed to this group of third-country nationals, without issuing a return decision".

Annex 2 **Datasets description and data manipulation**

This section describes the original datasets and the data manipulation that has been carried out. The number of third-country nationals *ordered to leave* (OTLs) and the total number of third-country nationals *returned following an order to leave* (RETs) are the two basic elements to calculate the traditional and the alternative RRs are. These are not independent, as the second strictly depends on the first by definition.

Data for OTL and RET have been extracted with the following three dimensions:

1. time: annual data covering the period 2010 to 2019;
2. MS: country issuing the OTL or country from which the RET takes place;
3. nationality: citizenship of the TCN subject to OTL or RET.

Each of these three dimensions is commented in the following subsections, together with a description of the basic data-manipulation. Although additional dimensions, such as sex and age, were available in the original data from Eurostat, they have not been considered in this report.

Annex 2.1 Annual vs cumulated data

Generally, the RR is calculated on an annual basis. This approach presents evident limitations, mainly due to the fact that a period of time elapses between the issuing of an OTL, the implementation of the return procedure, and the recording of a RET. This is especially the case when the return (or the asylum, if relevant) decision is appealed. This means that it may be that a RET is recorded one year after the relative OTL was issued. This may lead to RR-values that exceed 100%, as well as to an extreme fluctuation of the indicator from one year to the other.

These fluctuations, while telling of the return procedure in one country, may be misleading when the RR is used to assess the capacity of a MS to return all TCNs that have received an OTL, or the capacity of a nationality (or by proxy TC) to return when receiving an OTL.

In order to avoid this effect, RRs are presented in the report as **calculated over the ten-year cumulated period 2010-2019**, rather than on an annual basis. In this sense, throughout this report the emphasis is given to the comparison of RR across MSs (or across nationalities), rather than to the time evolution of the RR for a given MS (or nationality). Therefore, an additional time dimension, namely '2010-2019' has been created by summing across the nine years the total number of issued OTL (as well as recorded RET) for each pair MS-nationality.

An additional reason why the cumulated approach has been adopted is that there are 4,816 pairs MS-nationality for each of the ten years. Less than half of those pairs leads to a defined RR (i.e. at least one OLT has been issued), as not all nationalities are present every year in all MS. The cumulated approach drastically reduces this proportion.

Finally, it is worth noticing that an approach based on a moving-window (longer than one year) could be adopted to observe in time the possible progresses in the effectiveness of the return procedure. In this respect, it would be also interesting to estimate the optimal length to be adopted for the moving-window. Obviously, whereas the moving-window approach allows reducing year-to-year fluctuations, as a side effect it also flattens the time trend of RR, making it harder to observe small improvements of the return effectiveness.

Annex 2.2 MSs and nationalities

There are 4,816 pairs MS-nationality per year. This number correspond to 27 MSs plus the EU27 aggregate and 172 different nationalities. Some persons do not have a specific nationality and are under the categories of 'Stateless', 'Unknown' and 'Non-recognized citizens', which account for 1% of OTLs in the EU27 in the period 2010-2019. While these categories are covered by the Eurostat original dataset, they have been filtered out for two main reasons: i) although an OTL may be issued to a person belonging to one of these three categories, the return procedure would be complicated by the missing nationality of this person. This would erroneously reduce the overall RR of a MS. ii) Moreover, the inclusion of these three categories would compromise the symmetry between the RR calculated from the MS and the nationality perspectives.

Annex 2.3 Ceiling of the RR and RdR to 100%

Following the definition of RET as persons who returned following an OTL, it is in principle impossible for a MS or nationality to have a larger number of returns than the number of OTLs issued. However, for some pair nationality-MS the RR exceeds 100. This is more visibly the case for small numbers, whereby 1 unit more affects the result of the ratio operation.

RR and RdR higher than 100% may be due to the year when the OTLs is issued, that may be different from the year in which the person returns, or to inaccurate data-recording, e.g. double counting. Using the cumulated procedure described in section Annex 2.1 reduces the number of cases when RR and RdR exceeds 100%, although these cases are still present due to data-backlog originated before 2010.

To avoid misleading values of RR and RdR exceeding 100%, a ceiling has been imposed to the values at the maximum acceptable number of 100%.

Annex 2.4 Statistical description of traditional RR

As previously mentioned, there are 4,816 possible MS-nationality pairs per year. Nevertheless, since not all of the 172 nationalities are always represented in the OTL issued by all MSs, missing OTL values leads to a lower number of valid RRs per year. The first and second columns of Table 20 shows the number of valid RRs and the share of valid RR over the total number of pairs respectively. The third and fourth columns show the mean and standard deviation of RR for each year and the cumulated period 2010-2019 (last row). The last three columns show the number of RR exceeding 100%, together with mean and standard deviation for the RR capped to 100%.

Table 20 – Statistical description of RR and RR capped to 100%.

	Number of valid RR	% of valid RR	mean RR	Std.Dev. RR	Number of RR >100	mean RR capp100	Std.Dev. RR capp100
2010	1,668	35%	35.3%	83.8	51	30.2%	34.4
2011	1,731	36%	42.0%	143.8	82	32.7%	36.0
2012	1,704	35%	46.5%	216.9	73	35.2%	36.3
2013	1,854	38%	41.4%	117.3	78	35.0%	36.5
2014	1,802	37%	38.7%	100.9	51	33.2%	36.6
2015	1,773	37%	34.7%	67.8	62	30.9%	36.3
2016	1,832	38%	35.6%	50.4	65	32.5%	36.5
2017	1,859	39%	36.6%	68.8	69	32.7%	36.8
2018	1,850	38%	36.7%	53.3	68	33.1%	36.7
2019	1,893	39%	37.4%	58.1	67	33.8%	36.5
2010-2019	2,638	55%	34.6%	47.8	80	31.9%	33.7

The traditional RR for each couple MS-year is shown in Table 21. EU27 and cumulated period 2010-2019 are added to rows and column respectively. Colours are associated to different five different ranges of RR: 0-20% red, 21-40% orange, 41-60% yellow, 61-80% light green and >81% dark green.

Table 21 – Yearly and cumulated RRs.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2010-2019
EU27..	32.0%	28.1%	30.6%	37.2%	31.1%	34.1%	45.4%	36.0%	32.2%	29.1%	33.4%
AT	49.4%	44.6%	41.4%	35.9%		0.0%	49.6%	64.7%	64.0%	49.0%	44.6%
BE	18.5%	14.9%	15.1%	14.8%	15.4%	18.2%	21.2%	18.6%	19.0%	18.0%	17.0%
BG	11.3%	25.0%	29.9%	19.6%	8.6%	2.6%	7.7%	48.9%	46.1%	47.3%	11.6%
CY	100.0%	100.0%	100.0%	93.3%	84.2%	81.0%	65.3%	40.4%	45.6%	34.2%	97.1%
CZ	31.4%	21.1%	17.8%	13.3%	12.5%	7.0%	10.2%	10.8%	20.9%	6.3%	13.0%
DE	59.6%	82.7%	64.2%	62.7%	48.8%	100.0%	100.0%	47.4%	56.3%	53.9%	69.3%
DK		22.5%	31.6%	52.4%	32.3%	26.7%	30.5%	34.8%	30.0%	39.1%	34.8%
EE	23.5%	77.0%	66.1%	71.1%	19.8%	6.4%	73.1%	90.3%	80.6%	89.7%	67.5%
EL	39.3%	12.0%	19.7%	59.3%	36.7%	13.8%	56.7%	39.7%	21.4%	12.2%	27.6%
ES	25.3%	27.9%	28.8%	49.4%	33.8%	36.8%	34.4%	37.4%	19.9%	30.5%	30.4%
FI	24.5%	54.6%	63.6%	64.1%	52.7%	61.6%	31.0%	49.6%	52.4%	40.8%	45.2%
FR	17.3%	16.0%	19.5%	15.6%	15.0%	15.3%	13.5%	15.0%	14.6%	12.6%	15.3%
HR				58.7%	69.3%	35.9%	36.4%	44.7%	34.0%	15.4%	33.8%
HU	40.0%	60.0%	62.9%	54.5%	58.5%	48.9%	7.1%	7.7%	10.0%	24.8%	35.5%
IE	53.1%	41.0%	34.7%	27.1%	33.7%	22.0%	16.7%	22.6%	20.6%	17.9%	29.0%
IT	10.5%	21.0%	25.1%	24.5%	20.9%	17.0%	17.6%	19.5%	20.7%	24.0%	19.4%
LT	91.4%	92.6%	96.0%	94.0%	86.4%	90.7%	88.8%	90.3%	86.1%	86.8%	90.0%
LU	44.8%		0.0%	60.6%	79.1%	100.0%	65.6%	50.0%	31.3%	24.8%	46.5%
LV	91.4%	99.0%	99.8%	99.8%	100.0%	87.2%	93.8%	95.1%	95.7%	96.9%	96.7%
MT	100.0%	7.9%	24.6%	17.7%	48.2%	76.8%	98.8%	97.8%	100.0%	95.8%	41.4%
NL	32.0%	32.1%	34.9%	24.6%	23.4%	44.8%	46.9%	39.8%	49.5%	43.5%	35.7%
PL	62.0%	89.5%	83.3%	90.7%	88.6%	93.6%	92.7%	89.3%	87.5%	88.3%	87.5%
PT	12.1%	12.6%	0.0%	20.5%	19.2%	10.7%	5.7%	5.2%	5.8%	7.6%	9.4%
RO	87.3%	93.8%	95.2%	100.0%	100.0%	100.0%	90.0%	91.6%	82.1%	71.2%	90.7%
SE	55.8%	58.0%	63.9%	62.7%	44.9%	54.3%	58.5%	33.8%	31.3%	31.0%	48.4%
SI	29.3%	24.6%	47.6%	65.1%	13.1%	13.5%	14.9%	8.4%	11.3%	6.9%	24.0%
SK	67.7%	79.8%	63.2%	67.0%	70.7%	61.8%	79.8%	73.3%	84.2%	83.0%	75.3%

Figure 31 shows the distribution of RR by nationality in each of the 27 MSs (plus the EU27 aggregate). Nationalities are represented by green dots (blue for EU27) and arranged by their RR, from the lowest (bottom) to the highest (top). MSs are sorted by decreasing value of the average RR. For each MS, the distribution of nationalities is divided into four groups (quartiles), each representing 25% of the total nationalities receiving OTLs in the MS: the box represents the second (lower part, in dark grey) and third (upper part, in light grey) groups and the line dividing the two parts of the box shows the median RR. The longer the box, the more varied the RR among those groups of nationalities in the MS. The bottom and top lines (namely 'whiskers', in orange) represent the first and fourth groups respectively. The longer the whiskers, the more varied the distribution of RR for those groups of nationalities in the MS. When whiskers are not visible, it means that the RR for the relevant quartile corresponds to one number only (typically 0 or 100). Dots outside the whiskers are outliers, i.e. nationalities with a very different RR from the rest of nationalities in the MS.[33]

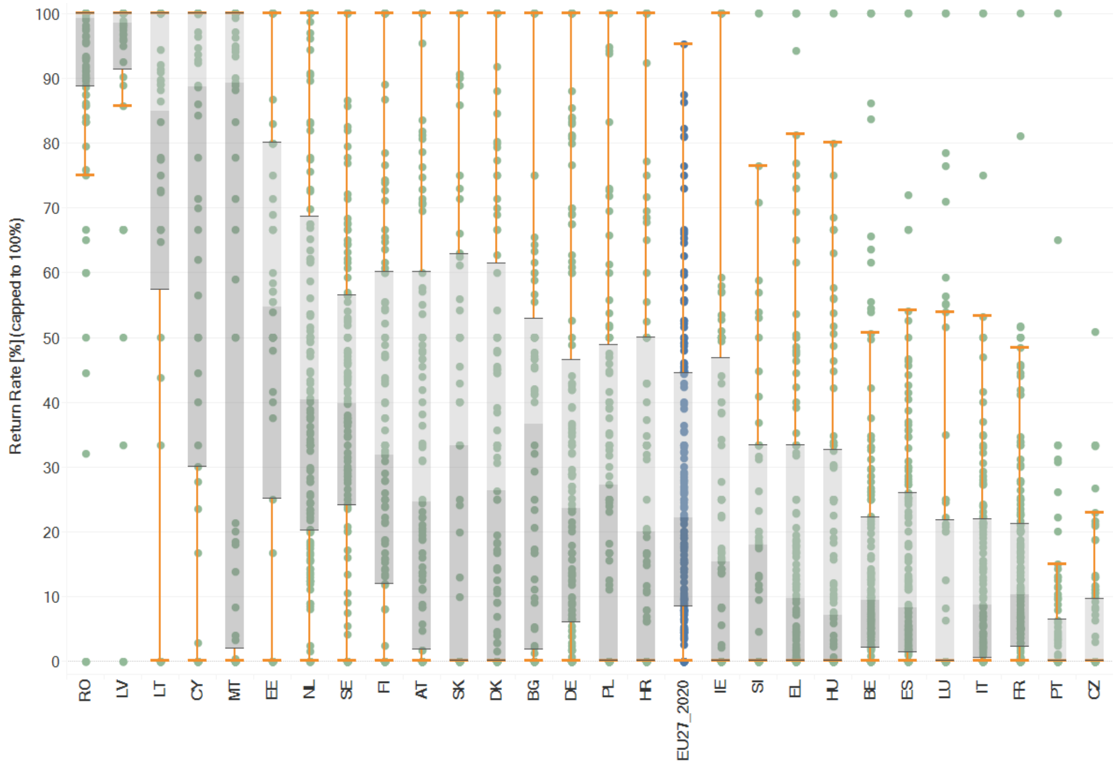
Overall MSs shows great variability or dispersion of the RR for all the nationalities receiving OTLs. There are very different values for the median (central line of the box) and also the type of distribution has quite different characteristics from MS to MS. In particular, RO and LV at the extreme left, as well as PT and CZ at the extreme right show a very short box, representing a little variability of the RR for nationalities within the two central quartiles. On the contrary, MT and CY show a very long box, which for MT ranges between 0% and 100%. Relatively short boxes, with RR by nationality clustered around the MS median RR, are associated to LT, SE, SI, El, HU, LU and, in particular, BE, ES, FR and IT.

As previously mentioned, MSs are sorted by decreasing value of their average RR. It is worth remarking that, by definition, outliers are accounted for when calculating the average RR, whereas they are excluded by the calculation of the median RR.

In Sweden, tenth MS from the left, the RR is clustered around the median value (42%) for about 50% of the nationalities (represented by the entire grey box), whereas the rest spans across 0 and 100%. Portugal (second MS from the right) shows a very different distribution, with RR clustered around a much lower median (0%) and a few nationalities standing out as outliers. Finally, there are several countries like France, showing a relatively short box, a very short lower whisker and a longer upper whisker.

[33] Outliers are defined as observations below (above) the first (third) quartile minus (plus) the interquartile range (i.t. the distance between the third and first quartile) times 1.5. Graphically, on a bell representing the probability density function of a normal distribution, outliers represent 7% of data: 3.5% in the left tail of the bell and 3.5% in the right tail. In our case, it means that outliers are nationalities with a RR very different from the RR defined for all other nationalities.

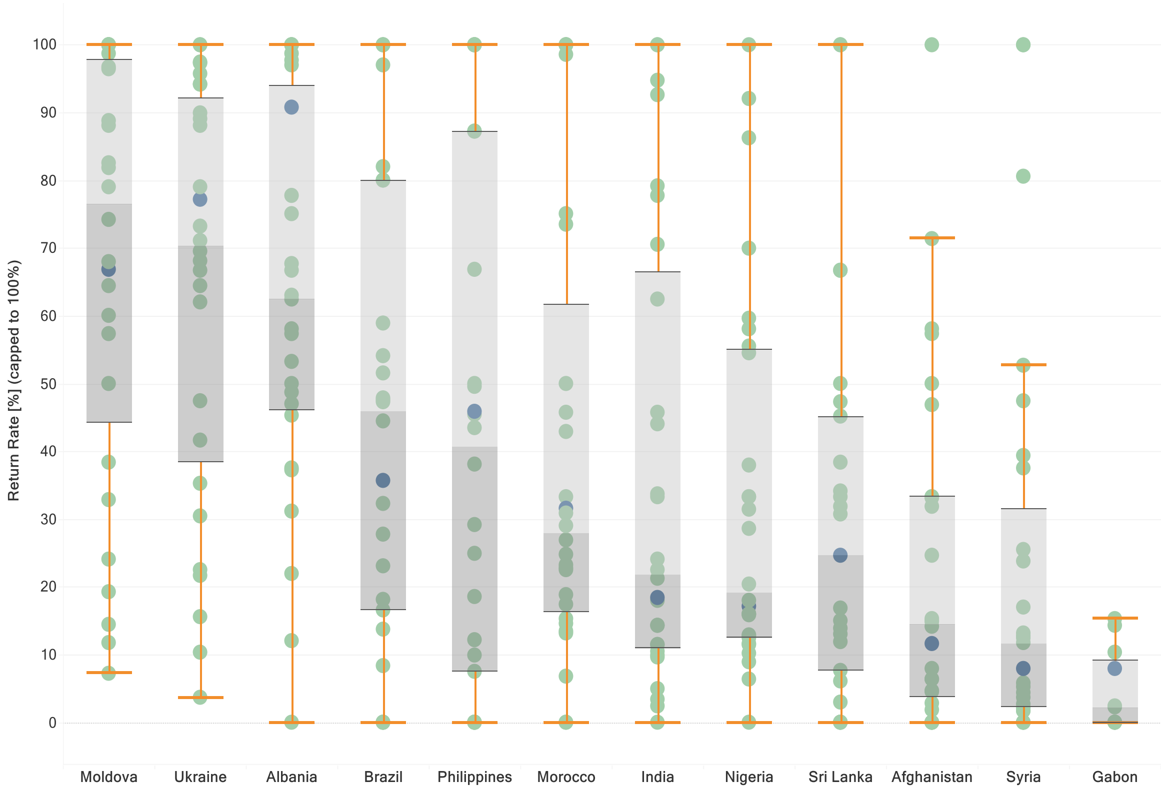
Figure 31 - Distribution of RR for all nationalities in each of the 27 MSs (plus the EU27 aggregate) for the cumulated period 2010-2018. MSs are sorted by decreasing average RR.



Considering the nationality perspective, **very different RRs are registered also for the same nationality *across MSs***. Figure 32 shows the distribution of the RRs in MSs (green dots) and EU27 aggregate (blue dot) for twelve selected nationalities, during the cumulated period 2010-2019. Nationalities are sorted by decreasing value of their average RR.

Moldova, Ukraine and Albania (first three nationalities from the left) show all a median RR higher than 50% (respectively 79%, 70% and 60%), but the distribution of the RR by MS is different: Albania for instance is the country with the largest span (between 0 and 100%), and the most dense clustering around the median. The Philippines (fifth nationality from the left) shows the greatest dispersion for the central quartiles (i.e. the longest box). Finally, Afghanistan, Syria and Gabon (last three nationalities on the right) show a low median RR (respectively 15%, 12% and 2%) as well as a relatively low dispersion in both the central quartiles (being the box of the two central quartiles high respectively 29, 29 and 12 percentage points) and the whiskers (respectively 71, 52 and 15).

Figure 32 – Distribution of RR for all MSs (plus EU27 aggregate) that during the period 2010-2018 have issued OTLs to nationals from twelve selected TC. The selections aimed at showing distributions of RR with different characteristics.



Annex 3 **Preliminary testing of expectations**

This section provides a preliminary test of some expectations expressed in Section 2.3.2.2 on the relationship between the RR and the composition of nationalities to return in a MS, or the distribution of nationalities across MSs. These are tested via correlations at the level of the nationality-MS pair and at the levels of MS and nationality individually. Box 12 lists the preliminary expectations to be tested.

Box 12 – Preliminary expectations.

- Expectation 1: the larger the number of OTLs issued to a nationality in a MS, the lower the RR for that nationality in that MS,
- Expectation 2: the larger the share of rejected asylum seekers among the population to return from a nationality in a MS, the lower the RR for that nationality in that MS,
- Expectation 3: the larger the number of OTLs in a MS, the lower the RR in that MS,
- Expectation 4: the larger the number of nationalities receiving OTLs in a MS, the lower the RR in that MS,
- Expectation 5: the larger the share of rejected asylum seekers among the population to return in a MS, the lower the RR in that MS,
- Expectation 6: the larger the share of apprehended irregular migrants among the population to return in a MS, the lower the RR in that MS,
- Expectation 7: the larger the number of OTLs for a nationality, the lower the RR for that nationality,
- Expectation 8: the larger the number of MSs issuing OTLs to a nationality, the lower the RR for that nationality,
- Expectation 9: the larger the share of rejected asylum seekers among the population to return for a nationality, the lower the RR for that nationality,

Annex 3.1 MS-Nationality pair

Expectation 1: OTLs and RR

There is no correlation between the number of OTLs issued to a specific nationality by a MS and the RR registered for that nationality in the MS (coefficient: 0.00, p-value: 0.82). This means that there is no evidence to say that the larger the group of persons to return from a nationality n from a MS, the higher (or lower) the RR of the nationality n.

Expectation 2: Rejected asylum seekers and RR

There is a very high positive correlation between the number of rejected asylum seekers from a specific nationality in a MS and the number of OTLs issued to that nationality in the MS (coefficient: 0.94, p-value: 0.00). This means that the more rejected asylum seekers the more OTLs are issued for a nationality. This is consistent with the practice of issuing OTLs to TCNs with no longer right to stay, as rejected asylum applicants are.

Assuming that all rejected asylum seekers received an OTL, it is possible to calculate the share of OTLs given to rejected asylum seekers. There is a very weak but negative correlation between the share of rejected asylum seekers over the OTL for each nationality in the MS and the RR registered for that nationality in the MS (coefficient: -0.03, p-value: 0.00). The strength of the correctional is not enough to suggest that, as the presence of rejected asylum seekers among the population to return increases, the return rate decreases. This may be due to specific vulnerabilities that make rejected asylum seekers more difficult to return and to the security situation in the country of origin.

Annex 3.2 MSs

Expectation 3: OTL and RR

There is a very weak negative correlation between the total number of OTLs issued by a MS and the RR registered at the level of that MS (coefficient: -0.17, p-value: 0.00). This suggests that as the overall number of OTLs increases, return becomes more difficult, and the RR decreases.

Expectation 4: Number of nationalities to return and RR

There is a weak negative correlation between the number of nationalities to return present in a MS and the RR (coefficient: -0.36, p-value: 0.00). This means that the larger the number of nationalities receiving OTLs from a MS, the lower the RR of the MS.

Expectation 5: Rejected asylum seekers and RR

There is a very strong positive correlation between the number of rejected asylum seekers and OTLs issued in the MS (coefficient: 0.95, p-value: 0.00). This means that the larger the number of rejected asylum seekers in a MS, the larger the number of OTLs issued by the MS. This is consistent with the practice of issuing OTLs to TCNs with no longer right to stay, as rejected asylum applicants are.

There is a very weak negative correlation between the share of rejected asylum seekers among the population receiving OTLs in a MS and the RR of the MS (coefficient: -0.09, p-value: 0.14), but this is not significant. This means that in the available data as the number of rejected asylum seekers grows larger, the lower the RR gets – although to a very moderate extent.

Annex 3.3 Nationalities

Expectation 7: OTL and RdR

There is a very weak correlation between the number of OTLs issued to a specific nationality and the RdR registered for that nationality (coefficient: 0.05, p-value: 0.00). The strength is not enough to suggest that the larger the number of persons to return from a specific nationality, the lower or higher the RdR for that nationality.

Expectation 8: Number of MS from which TCNs return and RdR

There is a very weak positive correlation between the number of MSs from which TCNs return and the RdR registered for those nationalities (coefficient: 0.20, p-value: 0.00). This seems to suggest that the larger the more diffuse the nationality is across MS, the higher its RdR.

Expectation 9: Rejected asylum seekers and RdR

There is a moderate positive correlation between the number of rejected asylum seekers and OTLs issued to a nationality (coefficient: 0.41, p-value: 0.00). This means that the larger the number of rejected asylum seekers from a nationality, the larger the number of OTLs issued to that nationality.

There is a very weak negative correlation between the share of rejected asylum seekers among those receiving OTLs from a nationality n and the RdR for that nationality (coefficient: -0.11, p-value: 0.00). This means that as the number of rejected asylum seekers grows larger, the lower the RdR gets – although to a very limited extent.

Annex 4 **Alternative definitions of the RdR**

This section describes the theoretical formulations of alternative definitions of the RdR. It mirrors the description of the RR for MS in Section 3.1.1.

This section also reports some additional analysis on the alternative definitions of the RR, and in particular on how the traditional and the alternative definition correlates.

Annex 4.1 Theoretical formulation for nationalities

Annex 4.1.1 **Average RdR**

The average RdR manipulates the *distribution of persons to return from the nationality under consideration* across MSs. In particular, if the persons to return from that nationality receive OTLs from M number of MSs, **the average RdR** ($\overline{RR}_{n_i}$) **measure return effectiveness as if, for each nationality, each MS issued 1/M number of OTLs, having thus the same weight in the calculation of the RdR for the nationality**. The formula is described in Box 13.

Box 13 – Average RdR formula for nationalities.

$$\overline{RdR}_{n_i} = \frac{1}{MS_i} \sum_{j=1}^{Mi} RR_{n_i,MS_j}$$

Consider n_1 and n_2, both receiving OTLs from 3 MSs (M=3), with different numbers of OTLs issued by each MSs. In both cases, one MS issue half OTLs (MS_1 for n1 and $MS_{3\ \text{for n2}}$), while the remaining OTLs are split among the two other nationalities.

Table 22 – OTL and RET of n_1 and n_2.

	n1		**n2**	
	OTL	*RET*	*OTL*	*RET*
MS1	50	25	25	13
MS2	25	25	25	25
MS3	25	5	50	10
TOT	100	55	100	48

The RR for the MSs is the same in both nationalities, hence generating the expectation that also the overall effectiveness in return would be the same. However, according to the traditional definition of the RdR (RdR_{n_i}) which is calculated as the ratio between the *total* number of OTL over the *total* number of RET, n_1 turns out to have a higher RR. This is because the traditional RdR is driven by the Ms that issue the largest number of OTLs to the nationality. Other things being equal, since MS1 and MS3 are the MS which issue most OTLs respectively to n_1 and n_2, and since MS1 has a higher RR than MS3, then the RdR of n_1 is higher than the RdR of n_2. The traditional RdR suggests that n_1 return more effectively than n_2, but in fact its higher RdR is only due to its distribution across MS rather than to more effective return.

The average RdR ($\overline{RdR}_{n_i}$) describes a different picture. It gives the same weight to each MSs (i.e. 1/M), as if n_1 and n_2 had the same distribution across MSs issuing OTLs (i.e. as if each MS issued 1/M OTLs). The resulting overall average RdR is thus the same.

Table 23 – RdRs of n_1 and n_2.

	n1	**n2**
RR_{MS1}	50%	50%
RR_{MS2}	100%	100%
RR_{n3}	20%	20%
Traditional RdR_n	55%	48%
Average RdR_n	57%	57%

The formula of the average RdR makes the distribution of the population to return similar across nationalities as it assigns to each MS a weight equal to 1/M. This replaces the weight that in the traditional RdR is equal to the share of OTLs issued by a given MS to the nationality (Section 2.3.2.1.2, Box 5). **The difference between the average and the traditional RdR shows the extent to which the RdR is affected by the distribution of the nationalities across MSs that issue OTLs**. In the example, the difference is positive for both nationalities, meaning that in both cases the MSs with a RR higher than the average issue a larger number of OTLs than those with a RR smaller than the average. However, the difference is larger for n_2 than for n_1, meaning that n1 receives more OTLs from MSs with higher RR than n_2.

While the average RdR allows to appreciate the effects of the different distribution across MS, **it cannot fully overcome the comparability problem associated with it. This is because not all nationalities receive OTLs from the same MSs, meaning that i) either M varies by nationality, or ii) the MSs which issue OTLs are entirely different across nationalities**.

As an example of i), consider n_3 and n_4, which have the same distribution as n_1 and n_2 respectively with the only exception that n_4 receives OTLs from a fourth MS, MS4 with a RR equal to 0% (M_{n3}=3, M_{n4}=4). As a result, n_4 has a smaller traditional as well average RdR than n_3. However, it is not possible to assess whether the higher RdR of n_3 means that return is more effective for that nationality, or has a more favourable distribution among MSs, as it receives OTLs from more return-effective MSs. In fact, while, the RR defined for each MSs issuing OTLs is the same, there are no elements to assess how MS_4 would be effective in returning n_3.

As an example of ii), n_5 and n_6 receive OTLs by the same number of MSs, M=2, but different MSs, i.e. MS_1 and MS_2 in n_5, and MS_3 and MS_4 in n_6. Since the RR of MS1 and MS2 is higher than the RR of MS3 and MS4, the RdR of n_5 is also higher that the RdR of n_6. As above, however, it is not possible to know whether this is due to the fact that n_5 return more effectively or receive OTLs from more return-effective MSs.

Table 24 – OTL and RET of n_3 and n_4; n_5 and n_6.

	n3		**n4**		**n5**		**n6**	
	OTL	*RET*	*OTL*	*RET*	*OTL*	*RET*	*OTL*	*RET*
MS1	50	25	25	13	50	25	0	0
MS2	25	25	25	25	50	50	0	0
MS3	25	5	25	5	0	0	50	10
MS4	0	0	25	0	0	0	50	0
TOT	100	55	100	43	100	75	100	10

Table 25 – RdRs of n_3 and n_4; n_5 and n_6.

	n3	**n4**	**n5**	**n6**
RR_{MS1}	50%	50%	50%	-
RR_{MS2}	100%	100%	100%	-
RR_{MS3}	20%	20%	-	20%
RR_{MS4}	-	0%	-	0%
Traditional RdR_n	55%	43%	75%	10%
Average RdR_n	57%	43%	75%	10%

Annex 4.1.2 **Average difference between RdR at nationality and MS level**

An alternative RdR formulation manipulates not only the *distribution of nationalities* across MSs, but also the *type of comparative indicator*. It consists in **calculating, for each MS issuing OTLs to the nationality, the average difference between the RR registered for that nationality and the traditional RR of the MS**. This means first calculating, for each MS, the difference between the RR registered for that nationality in the MS and the traditional RR in the MS. If this is positive, the RR for the nationality is higher than the RR registered overall in the MS, meaning that the nationality returns more effectively from that MS in comparison with other nationalities; if negative, otherwise. Secondly, it means to calculate the average of these differences. The formula is described in Box 14.

Like in the average RR, also in the average difference RdR (ΔRdR_{N_i}) each MS is given the same weight for each nationality, as if the population to return were similarly distributed across MSs. In this case, the comparison, however, is no longer performed by using a ratio, but a difference between two RRs, i.e. between the RR of nationality n in the MS ($RR_{n,MS}$) the traditional RR of the MS RR_{MS}. The former factor changes by nationality, the second remains constant, thus facilitating the comparison across nationalities.

Box 14 – Average difference between RR at MS and EU level formula for nationalities.

$$\Delta RdR_{N_i} = \frac{1}{MS_i}\sum_{j=1}^{MS_i}(RR_{MS_i,n_j} - RR_{MS_i})$$

The RdR_{MS_i} (the ratio between all OTLs and all RETs for all nationalities present in each MS) works as a reference value to measure the return effectiveness of each nationality, so that nationalities are first compared to the reference value and then compared against each other.

In the example described in the previous session, n_5 and n_6 are receive OTLs by two MSs each, with respectively high and low RRs. When looking at the return effectiveness of MSs not only in relation to n_5 and n_6, but for all nationalities (N), it becomes clear that MSs with high traditional RR (MS_1 and MS_2) have high RRs also for n_5, thus being in general effective MSs. Similarly, MSs with low traditional RR (MS_3 and MS_4) have low RR also for n_6, thus being in general ineffective MSs.

Table 26 – OTL and RET of n_5, n_6 and all nationalities N.

	n5		**n6**		**N**	
	OTL	*RET*	*OTL*	*RET*	*OTL*	*RET*
MS1	50	25	0	0	10 000	9 000
MS2	50	50	0	0	50 000	50 000
MS3	0	0	50	10	30 000	300
MS4	0	0	50	0	50 000	50
TOT	100	75	100	10	140 000	59 350

The uneven distribution of nationalities in more and less effective MSs explains why the traditional and average RdRs for n_5 is higher than for n_6. In these cases, the two nationalities are directly compared with each other, but the comparison is flawed by the fact that their distribution across MS is entirely different.

The third indicator (average difference between RR at nationality and MS level) introduces another form of comparison, whereby the RRs registered by each nationality in each MS are first compared to the RRs registered at the MS level overall (traditional RR). For n_5, receiving OTLs from more effective MSs, the RR in MS_1 is lower than MS_1' traditional RR, and hence the difference between the two RRs is negative. The RR in MS_2 is equal to its traditional RR, and hence the difference is 0. For n_6, receiving OTLs from less effective MSs, the RR in MS_3 is higher than MS_3' traditional RR, while the RR in MS_4 is very similar. The difference for MS3 is positive, and for MS4 negative but negligible. As a consequence, on average n_6 has a RR higher than the one registered at the EU level, so MS by MS it returns more effectively than other nationalities. This is not the case for n_5, which in fact has a lower average difference RR.

Table 27 – RdRs of n_5, n_6 and all nationalities N.

		n5	**n6**	**N**
MS1	**RR_{MS1}**	50%	-	90%
	RR_{MSn-MS}	-40%	-	-
MS2	**RR_{MS2}**	100%	-	100%
	RR_{MSn-MS}	0%	-	-
MS3	**RR_{MS3}**	-	20%	1%
	RR_{MSn-MS}	-	19%	-
MS4	**RR_{MS4}**	-	0%	0.10%
	RR_{MSn-MS}	-	-0.10%	-
RdR	**Traditional RdR_n**	75%	10%	42%
	Average RdR_n	75%	10%	48%
	Average Δ RdR_{MSn-MS}	-20%	9.45%	-

Annex 4.1.3 **Equally weighted RdR**

In the average and average difference RdR, MS have all the same weight for one nationality (i.e. 1/M). This manipulation was introduced to make the distribution of the population to return similar, and hence more comparable, across nationalities. As a result, MS issuing very small numbers of OTLs affect these RRs as much as MSs issuing large numbers. This is very useful when comparing two nationalities like n_1 and n_2, with the same distribution across MSs; but it may be less useful for other cases.

Consider for instance a situation in which some MSs issue comparatively very large number of OTLs overall. **We might be interested in giving more relevance to the return effectiveness for those MSs**, by making the distribution of nationalities across MSs similar to the one registered for all returnees (with no nationality distinction). The equally weighted RR ($\widehat{RR}_{n_i}$) manipulates the *distribution* of a nationality across MSs, and expresses **the RdR that nationality would have if it had a distribution across MS similar to the one of all returnees**. For each MS, the same weight across nationality is calculated as the share of OTLs issued overall (i.e. the number of OTLs issued by the MS to all returnees over total OTLs in the EU). Box 15 shows the formula.

Box 15 - Equally weighted RdR formula for nationalities.

$$\widehat{RdR}_{n_i} = \sum_{j=1}^{MS_i} RR_{MS_j,n_i} \cdot \frac{OTL_{MS_j}}{OTL_{EU}}$$

In the example below, the total number of returnees (N) is distributed in three MSs which issue different numbers of OTLs, representing 30%, 33% and 37% of the total. These are differently distributed across nationalities, being MS1 and MS2 overrepresented in OTLs issued to respectively n_7 and n_8.

Table 28 – OTL and RET of n_7, n_8 and N.

	n7		**n8**		**N**	
	OTL	***RET***	***OTL***	***RET***	***OTL***	***RET***
MS1	90	90	12	6	300	300
MS2	5	2	80	20	330	66
MS3	5	2	8	8	370	100
TOT	100	94	100	35	1 000	466

Both nationalities register a very high RR for one MS, and smaller RRs for the other two MS. The equally weighted RdR gives different weights to MSs depending on the share of OTLs they issue to N, so that the RR of the MS issuing more OTLs overall is more important for the calculation of the RR also at nationality level. As a consequence, in the example, the RR of MS3 is multiplied by a higher number (and hence weights more) than the RR of MS2 and MS1. Since the RR of MS3 is higher for n_8 than for n_7 (and the other differences lead to smaller modifications), also the equally weighted RdR of n_8 is higher.

Looking back at the definitions already discussed, it is worth to note that for n_7 the MS with the highest RR is also the most represented in the OTLs issued, while for n_8 the MS with the highest RR is the least represented. As a consequence, the traditional RdR of n_7 is higher than the traditional RdR of n_8. The average RdRs are, on the contrary, very similar. This is because while the RdRs by MSs differ for the two nationalities, on average these differences are evened out. This happens also for the average difference RRs.

Table 29 – RdRs of n_7, n_8 and N.

	n7	**n8**	**N**
RR_{MS1}	100%	58%	100%
RR_{MS2}	40%	25%	20%
RR_{MS3}	40%	100%	27%
Traditional RdR_n	94%	35%	47%
Average RdR_n	60%	61%	49%
Average Δ RdR_{n-N}	11%	12%	-
Equally weighted RdR	58%	63%	47%

The equally weighted RdR may be useful when nationalities have similar MSs distribution to the one registered for all returnees. However, it may be less useful when the distribution across MS greatly differs from the overall one. This is because for a nationality, OTLs may be mostly issued by a MS that, at the general level, is not very relevant as issues only small shares of OTLs.

Consider for instance n_9 and n_{10} receiving OTLs from two MSs. For n_9, most OTLs are issued by a MS that issue many OTLs overall (MS1). For n_{10}, OTLs are issued in equal numbers by MSs which, overall, issue smaller number of OTLs (MS2 and MS3).

Table 30 – OTL and RET of n_9, n_{10} and N.

	n9		n10		N	
	OTL	***RET***	***OTL***	***RET***	***OTL***	***RET***
MS1	90	90	0	0	600	370
MS2	10	2	40	30	230	66
MS3	0	0	40	22	170	100
TOT	100	92	80	52	1 000	536

The equally weighed RdR is much higher for n_9 than for n_{10}. This is due to the large multiplying effect of the overall OTLs distribution on the RR of MS1, and the small multiplying effect on the RR of MS2 and MS3 for both nationalities.

Table 31 – RRs of MS_9, MS_{10} and the EU.

RR	n9	n10	N
MS1	100%	0%	62%
MS2	20%	75%	29%
MS3	0%	55%	59%
Traditional RdR_n	92%	65%	54%
Average RdR_n	60%	65%	50%
Average Δ RdR_{n-N}	15%	14%	-
Equally weighted RdR	65%	27%	54%

Annex 4.1.4 **Benchmark RdR**

An alternative formulation of the RdR **compares nationalities with a fictional entity representing a benchmark. This has the same MS distribution of the nationality but RRs equal to the RRs registered at the MS level for all nationalities (the MS traditional RR)**. The benchmark RdR ($RdR^*_{n_i}$) is like the traditional RdR in the sense that it is calculated on the *total* number of returned over *total* OTLs, but the numerator is an ideal number of people returned, i.e. the total number of people who would have returned if the nationality had the same RR registered at the MS level overall. The corresponding formula is described in Box 16.

The benchmark RdR manipulates the *ratio operation*, as it applies to different MS distribution an external RR, hence deriving the number of persons ideally returned from the nationality by MS. This manipulation is the opposite to the equally weighted RdR: if there the distribution of the population to return across MS was made similar to the distribution of all nationalities; here the overall distribution of all nationalities is made equal to the one of a specific nationality.

Moreover, when using the benchmark RdR, we do not use it as comparative indicator in itself, but rather in relation to the traditional RdR, so that the *comparative indicator is the difference* between the traditional and the benchmark RdR. **If** this difference is negative, **the benchmark RdR is higher than the traditional RdR, meaning that the nationality falls below its potential, defined by the RdR registered at MS level**. If this difference is positive, otherwise. This takes into account the nationality composition across MSs, so that in defining the benchmark, the MSs more represented weight more.

Box 16 – Benchmark RdR formula for nationalities.

$$RdR^*_{n_i} = \frac{\sum_{j=1}^{M_i}(RR_{MS_j} \cdot OTL_{,n_i MS_j})}{\sum_{j=1}^{M_i} OTL_{n_i, MS_j}}$$

In the example below, n_{11} and n_{12} receive OTLs from 3 MSs. For n_{11}, OTLs are mostly given by a MS – MS1 – which issue the largest number of OTLs in general. On the contrary, MS1 issue the smallest number of OTLs to n_{12}.

Table 32 – OTL and RET of n_{11}, n_{12} and N.

	n11		**n12**		**N**	
	OTL	***RET***	***OTL***	***RET***	***OTL***	***RET***
MS1	60	60	20	15	600	370
MS2	20	4	40	30	230	200
MS3	20	10	40	22	170	100
TOT	100	74	100	67	1 000	670

In the benchmark RdR, the weight given to the RR of each MS reflects each time the share of OTLs by each MS for the nationality. This means that if all returnees had the same national distribution of n_{11} and n_{12}, they would have a RdR respectively of 66% and 73%. This is +7 percentage points and -6 percentage points compared to the traditional RdR of n_{11} and n_{12}, meaning that n_{11} has higher return effectiveness than its benchmark and n_{12} lower.

As for the other RdRs: given the distribution of OTLs across MS, the traditional RdR for n_{11} is higher than for n_{12}. However, n_{12} has a higher RdR than n_{11}, meaning that on average by MS it is more effective in returning. n_{12} on average is slightly less effective than the MS, while n_{11} much less effective. The two nationalities have a similar equally weighted RdR, meaning that if they had distribution similar to all nationalities they have similar return effectiveness.

Table 33 – RRs of MS_{11}, MS_{12} and the EU.

RR	**MS11**	**MS12**	**N**
n1	100%	75%	62%
n2	20%	75%	87%
n3	50%	55%	59%
Traditional RdR_n	74%	67%	67%
Average RdR_n	57%	68%	69%
Average Δ RdR_{n-N}	-12%	-1%	0%
Equally weighted RdR	73%	72%	67%
Difference with the benchmark RdR	7%	-6%	-

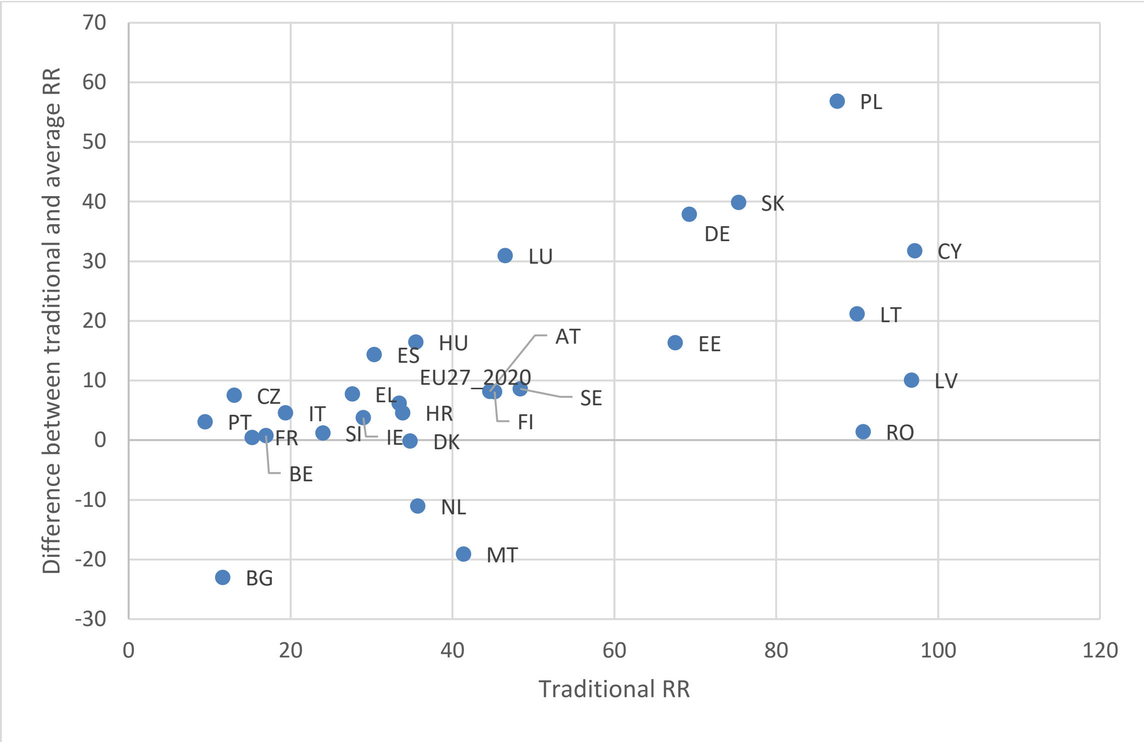
Annex 4.2 Empirical application

Annex 4.2.1 MS

On the relationship between the **traditional and the average RR**:

- There is a **strong positive correlation between the average and the traditional RR** (coefficient: 0.83, p-value: 0.00), meaning that the higher the traditional RR, the higher the average RR; or in other words, the more the MS is effective on the total of its OTLs, the more it is effective on the average of single nationalities.
- To a moderate extent (coefficient: 0.53, p-value: 0.00), **the larger the gap between the two RRs**, and hence between the effectiveness of the MS on individual nationalities and overall, **the higher the RR** (Figure 33). This seems to suggest that MSs with high RR tend to focus their efforts on the nationalities with larger OTLs, which have a higher RR compared to the other nationalities in the MS. This does not seem to be a general tendency, though, as there is no relationship between the number of OTLs issued to a nationality and the RR for that nationality (Annex 4.3, expectation 1).

Figure 33 - Traditional RR and difference between traditional and average RR in the cumulated period 2010-2019.

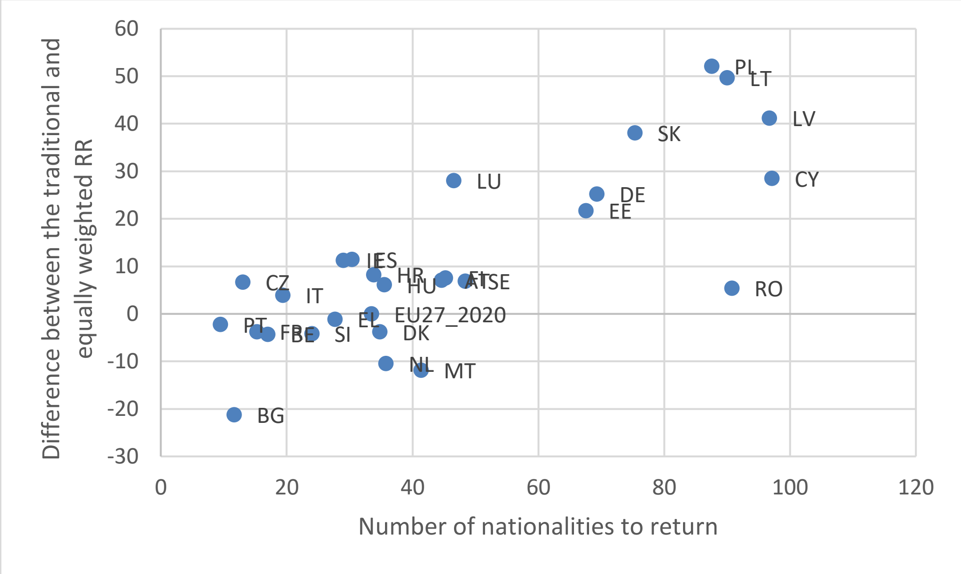


On the **average difference RR and the traditional RR**: there is a strong positive correlation (coefficient: 0.76, p-value: 0.00) between the, meaning that the more effective the MS is compared to the EU on the average of each nationality, the more it is effective overall.

The relationship between the **equally weighted and traditional RR** is positive, and specifically:

- There is a moderate positive correlation (coefficient: 0.58, p-value: 0.00) between the traditional RR and the equally weighted RR. This means that, to a moderate extent, as the traditional RR increases, so does the RR that MSs would have if they had the same nationality composition of the EU.
- There is a strong positive correlation (coefficient: 0.83, p-value: 0.00) between the traditional RR and the extent to which this differs from the equally weighted RR (Figure 34). The difference between the two RRs indicates that the population to return differs by nationality at the EU and MS level (which is especially the case when the number of nationalities in the MS is small). Therefore, the larger the difference in terms of nationalities among the population to return between the EU and the MS, the higher the RR at the national level. This resonates with the negative correlation identified in Annex 4.3 between the traditional RR and the number of nationalities – suggesting that the smaller the number of nationalities, the higher the RR.

Figure 34 – Traditional RR and difference between traditional and equally weighted RR in the cumulated period 2010-2019.



On the relationship between the **benchmark and traditional RR**: the correlation between the traditional RR and its difference with the benchmark RR is strong and positive (coefficient: 0.86, p-value: 0.00). This means that the greater (smaller) what the MS does compared to what it can do, the greater (smaller) the RR. There is also a moderate correlation (coefficient: 0.57, p-value: 0.00) between the benchmark and the traditional RR, meaning that the higher the MS is effective, the higher the EU would be effective if it had its composition to a moderate extent.

Table 34 report the RRs for all MS in the period 2010-2019.

Table 34 – Summary of all RRs for MS in the period 2010-2019.

MS	Traditional RR	Average RR	Average difference RR	Equally weighted RR	Benchmark RR	Difference with its benchmark RR
AT	44.61	36.44	6.48	37.56	39.76	4.85
BE	16.98	16.24	-12.49	21.26	30.82	-13.84
BG	11.61	34.62	4.94	32.84	16.56	-4.95
CY	97.13	65.37	35.43	68.62	30.50	66.63
CZ	13.03	5.52	-26.95	6.33	60.27	-47.24
DE	69.28	31.42	2.36	44.10	43.72	25.56
DK	34.78	34.92	4.98	38.57	31.31	3.47
EE	67.54	51.23	16.98	45.81	57.47	10.07
EL	27.65	19.91	-8.05	28.77	29.61	-1.96
ES	30.35	16.01	-11.70	18.91	25.21	5.14
EU27_2020	33.44	27.23	0.00	33.44	33.44	0.00
FI	45.20	37.09	6.02	37.66	36.24	8.96
FR	15.25	14.78	-13.21	19.03	26.86	-11.61
HR	33.84	29.26	-1.84	25.62	36.68	-2.84
HU	35.48	19.02	-10.52	29.37	37.89	-2.41
IE	28.99	25.24	-4.87	17.71	29.81	-0.82
IT	19.39	14.83	-13.65	15.46	31.91	-12.52
LT	90.01	68.84	31.60	40.34	65.33	24.68
LU	46.53	15.59	-15.07	18.49	54.94	-8.41
LV	96.72	86.66	49.68	55.56	59.58	37.14
MT	41.37	60.45	29.54	53.21	21.72	19.65

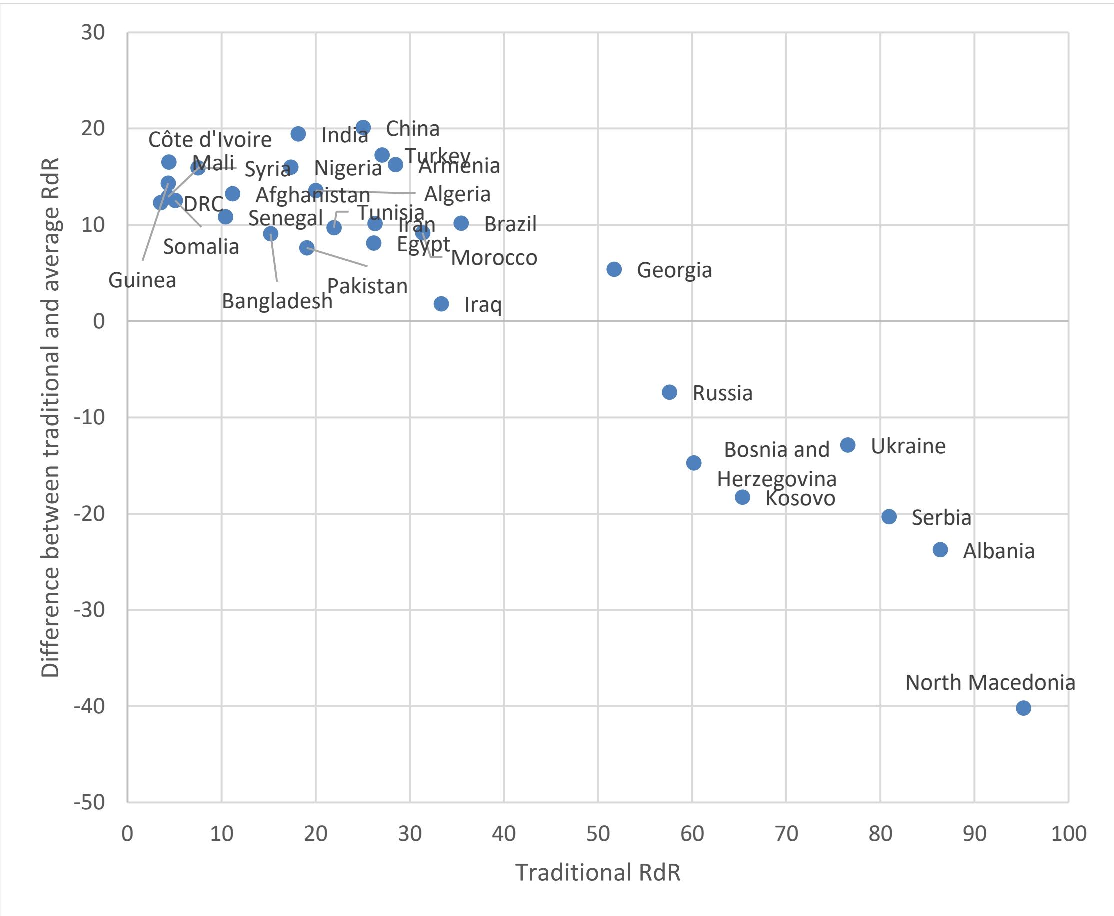
NL	35.73	46.78	17.98	46.15	29.44	6.29
PL	87.53	30.70	-1.69	35.45	70.77	16.76
PT	9.43	6.33	-23.19	11.67	29.35	-19.92
RO	90.73	89.30	57.76	85.31	39.09	51.64
SE	48.38	39.80	10.80	41.48	42.56	5.82
SI	23.99	22.80	-8.51	28.16	52.86	-28.87
SK	75.34	35.47	1.02	37.28	64.60	10.74

Annex 4.2.2 **Nationalities**

On the relationship between the **traditional and the average RdR**:

- There is a strong positive correlation between the average and the traditional RdR (coefficient: 0.80, p-value: 0.00), meaning that the higher the traditional RdR, the higher the average RdR; or in other words, the more the nationality has a high RdR in returning from EU27, the more it has a high RR on the average of individual MSs.
- To a moderate extent (coefficient: 0.46, p-value: 0.00), the larger the gap between the two RdRs, and hence between the effectiveness of the MS on individual nationalities and overall, the higher the RdR (Figure 35). This seems to suggest that nationalities with high RdR tend to return from MSs issuing larger OTLs, which have a higher RR compared to the other MS for that nationality. This does not seem to be a general tendency, though, as there is no relationship between the number of OTLs issued to a nationality and the RdR for that nationality (Annex 4.3, expectation 1).

Figure 35 - Traditional RdR and difference between average and traditional RdR in the cumulated period 2010-2019.

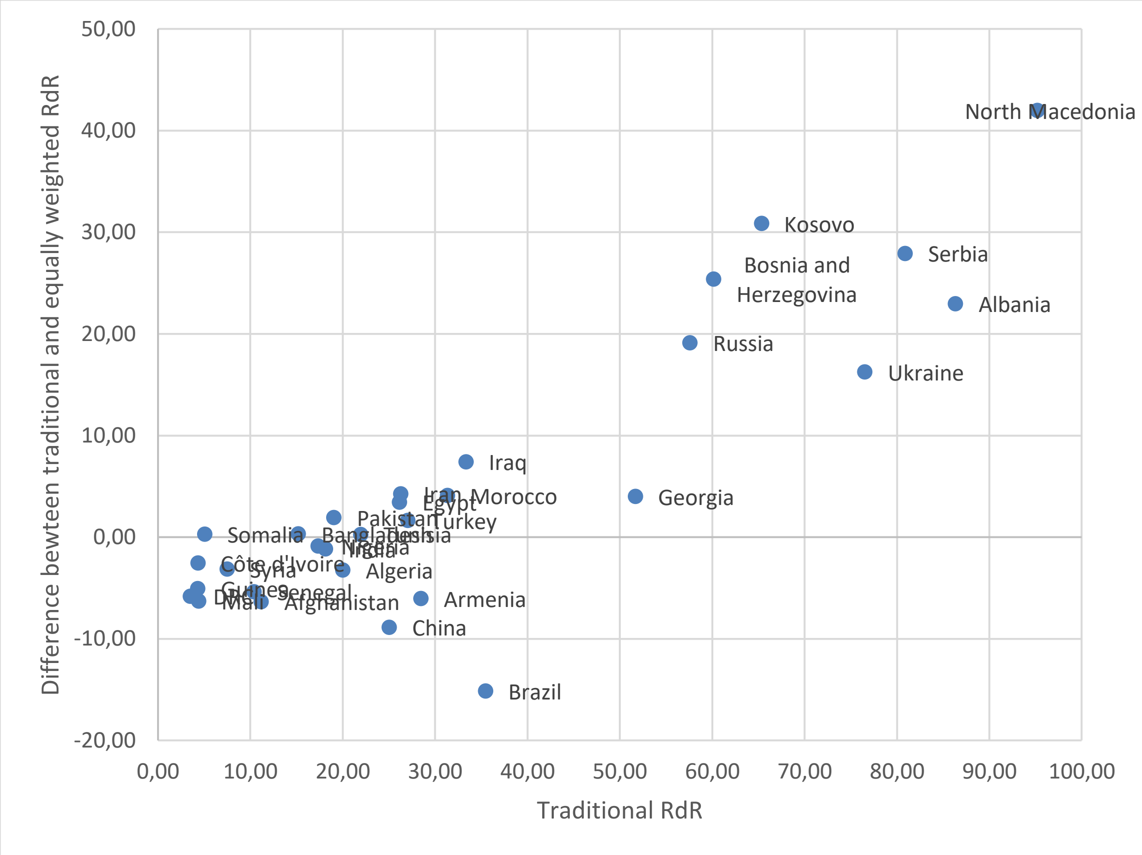


On the relationship between the **average difference RdR and the traditional RdR**: there is a strong positive correlation (coefficient: 0.73, p-value: 0.00), meaning that the more nationalities have a high RdR, the more they tend to have a RR higher than the one overall registered in the MS for all nationalities.

The relationship between the **equally weighted and traditional RdR** is positive, and specifically:

- There is a moderate positive correlation (coefficient: 0.64, p-value: 0.00) between the traditional RdR and the equally weighted RdR. This means that, to a moderate extent, as the traditional RdR increases, so does the RdR that each nationality would have if they had the same distribution of OLTs across MS has the total number of nationalities.
- There is a strong positive correlation (coefficient: 0.81, p-value: 0.00) between the traditional RdR and the extent to which this differs from the equally weighted RdR (Figure 36). The difference between the two RdRs indicates that the distribution of OTLs across MS is different from the nationality under analysis compared all nationalities. Therefore, the larger the difference, the higher the RdR for that nationalities.

Figure 36 - Traditional RdR and difference between traditional and equally weighted RdR in the cumulated period 2010-2019.



On the relationship between the **benchmark and traditional RdR**: the correlation between the traditional RdR and its difference with the benchmark RdR is and strong positive (coefficient: 0.85, p-value: 0.00). This means that the greater (smaller) what the MS does compared to what it can do, the greater (smaller) the RdR. There is also a moderate correlation (coefficient: 0.50, p-value: 0.00) between the benchmark and the traditional RdR, meaning that the more the MS is effective, the more the EU be effective if it had its composition to a moderate extent.

Table 35 reports the RdRs for the top 30 nationalities in the period 2010-2019.

Table 35 – Summary of all RdRs for the top 30 nationalities in the period 2010-2019.

Citizenship	Traditional RdR	Average RdR	Equally weighted RdR	Traditional RdR	Benchmark RdR	Difference with its benchmark RdR
Afghanistan	11.15	24.38	17.52	11.15	32.38	-21.23
Albania	86.33	62.58	63.37	86.33	30.65	55.68
Algeria	19.99	33.55	23.24	19.99	23.58	-3.59
Armenia	28.46	44.71	34.51	28.46	30.11	

						-1.65
Bangladesh	15.19	24.28	14.88	15.19	27.01	-11.82
Bosnia and Herzegovina	60.16	45.42	34.76	60.16	42.65	17.51
Brazil	35.45	45.62	50.59	35.45	19.82	15.63
China	25.03	45.16	33.91	25.03	28.71	-3.68
Côte d'Ivoire	4.32	17.21	6.88	4.32	24.57	-20.25
DRC	3.51	15.80	9.34	3.51	19.25	-15.74
Egypt	26.15	34.26	22.72	26.15	26.06	0.09
Georgia	51.68	57.07	47.68	51.68	38.78	12.90
Guinea	4.31	18.64	9.37	4.31	27.81	-23.50
India	18.14	37.58	19.31	18.14	34.30	-16.16
Iran	26.29	36.42	22.02	26.29	35.61	-9.32
Iraq	33.34	35.15	25.94	33.34	35.38	-2.04
Kosovo	65.34	47.07	34.49	65.34	39.27	26.07
Mali	4.40	20.92	10.69	4.40	23.66	-19.26
Morocco	31.35	40.54	27.26	31.35	24.70	6.65
Nigeria	17.34	33.33	18.22	17.34	34.42	-17.08
North Macedonia	95.20	54.99	53.23	95.20	45.36	49.84
Pakistan	19.04	26.66	17.13	19.04	30.46	-11.42
Russia	57.59	50.22	38.47	57.59	52.21	5.38
Senegal	10.40	21.24	15.77	10.40	23.73	-13.33
Serbia	80.89	60.58	52.98	80.89	48.77	32.12
Somalia	5.06	17.60	4.76	5.06	37.42	-32.36
Syria	7.48	23.39	10.63	7.48	29.45	-21.97
Tunisia	21.93	31.65	21.66	21.93	20.28	1.65
Turkey	27.04	44.30	25.40	27.04	35.25	-8.21
Ukraine	76.51	63.65	60.27	76.51	65.91	10.60

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