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Finding Agreement in Return

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Authors	Mathias Czaika & Jiancheng Gu University for Continuing Education Krems (UWK)
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1. Introduction

Return and readmission policies are central pillars of migration governance in the European Union and affiliated EU+ countries (Stutz, 2025). These policies aim to enforce the departure of irregular migrants and rejected asylum seekers through either voluntary or forced return. The majority of EU countries formulate return policy on the basis of EU Return Directive (Directive 2008/115/EC, 2008), but return enforcement outcomes vary dramatically across bilateral corridors. Some member states achieve high return rates to certain countries of origin, while others struggle with enforcement gaps, diplomatic friction, or non-cooperation. This variation suggests that return enforcement is not merely a question of administrative capacity or legal obligation but is embedded in political incentives, institutional discretion, and strategic interactions.

Existing research on return enforcement has largely focused on descriptive statistics, institutional compliance, or the role of bilateral agreements (Stutz & Trauner, 2025; Torres Chedraui et al., 2025). However, these approaches often fail to capture the strategic nature of return cooperation where both the sending (EU+) and receiving (third) countries make calculated decisions based on domestic constraints, foreign policy goals, and reciprocal behaviour (Cham & Adam, 2025; Marie Borrelli & Lindberg, 2025). For instance, a third country's willingness to accept returnees may depend on the level of effort or incentives offered by an EU+ country, while the latter may withhold enforcement in the absence of cooperation. This interdependence calls for a more formalized framework to analyse the political economy of return enforcement.

This paper contributes to that effort by offering an integrated theoretical and empirical analysis of return enforcement as a strategic interaction between EU+ countries and third countries. We develop a game-theoretic model in which EU+ states choose enforcement effort and third countries choose acceptance willingness based on costs, benefits, reciprocity, and normative alignment. We show how different strategic logics (complementarity, deterrence, threshold effects) combined with normative alignment can explain observed variations in return outcomes.

Based on this theoretical model, we construct two empirical analyses that examine: (1) the policy and non-policy determinants of return outcome and (2) the behavioural feedback effects of non-enforcement on irregular migration flows. We rely on harmonized panel datasets at the dyadic and country-year levels, integrating return data, bilateral trade, governance indicators, and migration flows. We also rely on cross-sectional datasets that include micro, meso, and macro level policy and non-policy factors to assess return enforcement in a specific case country study.

In doing so, this paper offers several contributions. Theoretically, we model return enforcement not as a one-sided policy but as a dynamic, interactive process influenced by mutual incentives and constraints. Empirically, we identify structural data problems in commonly used return statistics and propose robust strategies for measurement and analysis. Policy-wise, we offer insights into how EU+ states can improve cooperation and increase return effectiveness through targeted incentives and institutional alignment.

The paper proceeds as follows. Section 2 discusses measurement and data challenges in modelling return enforcement outcomes. Section 3 introduces our theoretical model of strategic cooperation. Section 4 presents the empirical strategy and three models. Section 5 outlines the harmonization of data and temporal scope. Section 6 concludes with implications for policy and future research.

2. Data and Measurement Challenges

Robust empirical analysis of return enforcement policies depends on accurate, disaggregated, and comparable data on both the number of return orders issued and the number of actual returns. However, the primary data source for such information, the Eurostat *Enforcement of Immigration Legislation* (EIL) database, exhibits several structural limitations. These are hindrances for not only measurement accuracy but also comparability across countries and time. This section identifies and categorizes these challenges into four areas: (a) missing granularity in enforcement records, (b) inconsistent national practices, (c) methodological distortions in calculating return rates, and (d) structural limitations for dyadic (bilateral) analysis.

2.1. Missing Granularity in Enforcement Records

Eurostat's Enforcement of Immigration Legislation (EIL) database is the central source for tracking return enforcement outcomes in EU/EEA countries. It contains longitudinal data on the number of orders to leave and subsequent returns, updated annually between 2008 and 2020 and quarterly from 2021 onwards. However, the database has data quality limitations that compromise its value for analytical and policy purposes.

Missing Modality of Enforcement

Before 2014, most member states did not report the *type* of returns: forced removal, assisted voluntary return (AVR), or unassisted voluntary departure (Eurostat, 2024). This lack of modality detail is critical, as EU member states usually prefer voluntary return due to its lower financial, political, and humanitarian costs (Directive 2008/115/EC, 2008). Aggregate return counts, absent modality differentiation, obscure whether enforcement outcomes result from coercion or cooperation.

Undercounting Voluntary Departure

A related challenge is to track unassisted voluntary departure, where individuals comply with the return order without formal assistance from destination country's authorities. Only a subset of member states have systems to verify this type of return (Maliepaard et al., 2022). Unassisted voluntary returnees are therefore underreported in the EIL return data, even though this group is included in the data on orders to leave (Maliepaard et al., 2022). This issue may be mitigated with the Entry-Exit System's upcoming deployment (Belmonte et al., 2021).

Missing Destination of Return

Similarly, returns before 2014 were not disaggregated by final destination. Eurostat only reported whether returns were to another EU member state or to "a third country". For research bilateral

enforcement outcomes, knowing whether returns were to countries of origin or to transit countries is essential for understanding the effectiveness of specific return corridors.

Temporal Attribution Errors

The EIL data do not indicate whether a return occurred in the same calendar year as the corresponding order to leave (Belmonte et al., 2021). This lack of cohort tracking leads to systematic misclassification: returns are underestimated in year *T* and overestimated in year *T+1*. In the Netherlands, for example, roughly two-thirds of returns in 2019 occurred within the same year as the order to leave, but with an average six-month lag (Maliepaard et al., 2022). The absence of cohort identifiers distorts annual return rate calculations, especially in dynamic enforcement scenarios.

Improved Reporting Standards (post-2014)

Since 2014, some member states began reporting modality and destination data (Eurostat, 2025e). As of 2021, quarterly submissions with mandatory breakdowns by type of return, assistance received, and destination country are required under amended EU Regulation (Eurostat, 2025a, 2025d). While this represents a major improvement in standardization, data quality and comparability remain uneven.

2.2. Inconsistent National Practices

A more fundamental challenge for cross-national analysis is the heterogeneity in how EU countries implement return policies. Return enforcement data are generated through substantially different processes across EU countries due to variations in legal frameworks, administrative discretion, and enforcement capacity. Several key areas of divergence drive this heterogeneity:

Selective Application of the Return Directive

Under Article 2(2) of the Return Directive, member states may exclude specific categories of third-country nationals, such as those refused entry at the border, apprehended during unauthorized border crossing, subject to criminal law sanction, or involved in extradition proceedings (Maliepaard et al., 2022). These exceptions are applied inconsistently across states, shaping both the volume and profile of return orders.

Timing, Appeal, and Revocation of Orders to Leave

States also differ in when they issue orders to leave during the asylum process. Some issue return decisions immediately upon rejection of a first-instance asylum claim, while others wait until all appeals are exhausted (Neri, 2023; Strban et al., 2018). This affects the delay between irregular stay and enforcement and introduces institutional lag into return data.

When any order to leave is appealed and overturned, it becomes legally void. Yet these voided orders remain in the historical data. Eurostat's database does not distinguish whether orders to leave have been appealed and revoked. This leads to overestimation of enforceable orders. For instance, in France, "12.3% of deportation orders were suspended due to unfavorable judicial decisions" in 2021 (Pascual, 2022).

Documentation and Enforceability Thresholds

Practices around identity verification and documentation vary considerably. Some countries issue orders to leave even when individuals lack valid identity documents or cannot be located, which are circumstances that make enforcement practically impossible; Others refrain from issuing orders under such conditions (Belmonte et al., 2021). These choices reflect the level of enforcement and influence the likelihood of actual returns.

These divergences result in artificial differences in measured return performance across countries. In effect, similar enforcement outcomes may reflect very different policy behaviors, while dissimilar outcomes may reflect comparable constraints. Understanding these differences is necessary for meaningfully interpreting return rates and modelling return cooperation.

2.3 Methodological Distortion in Calculating Return Rates

Enforced return rates, typically defined as the number of returns divided by the number of orders to leave, are frequently used as performance metrics (Stutz & Trauner, 2022; Torres Chedraui et al., 2025). However, they suffer from three major limitations:

Concealed Discretionary Practices

Because states exercise discretion in issuing order to leave and counting returns, return rates may reflect policy choices rather than enforcement performance. For instance, issuing orders to individuals with unknown whereabouts deflates return rates, while issuing such orders to returning rejected border entrants immediately inflates them. Some states count individuals as "returned" when they are presumed to have left, essentially when they disappear from state records (Eurostat, n.d.). This practice inflates return rates, as these cases are unverified.

Small-N Distortion and Rounding

EIL data are rounded to the nearest five, which severely distorts calculations for corridors with few enforcement cases (Eurostat, n.d.; Maliepaard et al., 2022). If 2 of 3 orders to leave are enforced, the rounding may record 0 returns and 5 orders, yielding an in incorrect 0% return rate instead of 67%. This issue affects roughly 8% of all dyadic observations with returns rounded to 5 (Eurostat, 2025c, 2025b).

Nationality Composition Effects

Country-level return rates obscure the underlying composition of people subjected to return decisions. Researchers advise against calculating country-level total return rate because the aggregate calculation ignores the different nationality composition of the population to return, which varies hugely across member states (Belmonte et al., 2021). States issuing orders primarily to nationalities that are easier to return (e.g., Western Balkans) may appear more effective than those dealing with harder-to-return populations (e.g., Sub-Saharan Africa), regardless of policy effort or cooperation.

2.4. Structural Limitation in Dyadic Analysis

To increase granularity, researchers often disaggregate return rates by origin-destination pairs (Torres Chedraui et al., 2025). However, this introduces two structural problems:

a. Zero-Denominator Problem: When no orders are issued in a given dyad-year, return rates are undefined. Excluding these dyads introduces selection bias and erases meaningful variation in non-engagement or enforcement strategy.

b. Temporal Instability: Dyads may fluctuate between defined and undefined status across years. Excluding undefined years results in an inconsistent sample, skewing longitudinal analysis.

Both problems are compounded by temporal mismatch discussed earlier, where returns in year T+1 may correspond to orders from year T, leading to missing or misattributed performance indicators.

2.5. Implications for Analysis

These data limitations are not merely technical; they are *substantively political*. When EU+ countries decide how, when, and to whom return orders are issued, the decisions reflect domestic policy discretion, bilateral relationships, and strategic interests.

Given these constraints, we adopt enforced return counts as our primary dependent variable. Enforced returns are defined as departures that result from direct or indirect state involvement. Enforced returns include both forced removals and incentivized voluntary returns where authorities facilitate or finance the departure (Torres Chedraui et al., 2024).

While return counts avoid some pitfalls of rate calculations, they also suffer limitations. Rounding distortions persist, as Eurostat applies rounding to both orders and returns, potentially obscuring variation in low-volume corridors (Eurostat, n.d.). Concealed practices affect counts directly: States may register returns when individuals have gone off the radar, while not recording unassisted voluntary departures despite formal compliance with return orders (Belmonte et al., 2021).

We keep return rates as a metric for two reasons. First, they provide a standardized measure for comparing compliance with orders to leave across dyads with vastly different population sizes and migration volumes. Second, examining whether results align across both count and rate specifications serves as a robustness check.

Therefore:

- We employ both *return counts* and *return rates* as dependent variables in the following empirical analyses.
- We conduct robustness checks by excluding low-N dyads, lagging return indicators, and using alternative measures of enforcement.

- We interpret return metrics with caution, recognizing their construction is shaped by state behavior and institutional discretion.

The next section formalizes this logic by modelling return cooperation as a strategic interaction between EU+ and third countries.

3. Theoretical Framework: Strategic Return Cooperation

Return enforcement is best understood as a *strategic interaction* between sending (destination) states (EU+) and receiving (origin) countries (third countries), each facing their own political, logistical, and institutional constraints. In this section, we outline a formal model that captures this interaction. The model builds on standard assumptions in game theory but adapts them to reflect the specific features of return enforcement: policy discretion, bilateral cooperation, and the interdependence of outcomes.

3.1. Model Setup

We model return enforcement as a bilateral strategic interaction between two actors:

• Actor i (EU+ country) chooses enforcement effort $E_{\mathrm{i}} \in \boldsymbol{R}_{+}$
• Actor j (third country) chooses acceptance willingness $A_{\mathrm{j}} \in \boldsymbol{R}_{+}$

A return only succeeds if both actors exert effort. The effective return rate R_{ij} is given by:

$$R_{\mathrm{ij}} = \alpha \cdot E_{\mathrm{i}} \cdot A_{\mathrm{j}}$$

where:

- α is a productivity parameter capturing bureaucratic efficiency or contextual factors (e.g. logistics, geography).
    - The multiplicative form implies no return can occur unless both enforcement and willingness are positive.

This captures the complementary nature of return cooperation - neither actor can unilaterally guarantee success.

3.2. Payoff Functions

Each actor seeks to maximize its utility, balancing benefits from successful returns against the political or financial cost of effort.

EU+ country utility function: $U_{\mathrm{i}}(E, A) = B \cdot \alpha \cdot E_{\mathrm{i}} \cdot A_{\mathrm{j}} - c \cdot {E_{\mathrm{i}}}^2$

Where:

- $B > 0$: Political benefit (e.g., public legitimacy, electoral support) from successful return.
- $c > 0$: Marginal cost of enforcement effort (assumed quadratic to reflect increasing cost).

Third country utility function: $U_{\mathrm{j}}(A,E) = \beta \cdot \alpha \cdot E_{\mathrm{i}} \cdot A_{\mathrm{j}} - \cdot d \cdot A_{\mathrm{j}}^{\,2} + \delta \cdot E_{\mathrm{i}} \cdot A_{\mathrm{j}}$

Where:

- $\beta > 0$: Material or diplomatic benefit from cooperating (e.g., aid, visa facilitation).
- $d > 0$: Cost of accepting returnees (e.g., domestic legitimacy risk, reintegration burdens).
- δ: Cost offset provided by EU+ country through logistical support or financial (or, political) incentives.

The $\delta \cdot E_{\mathrm{i}} \cdot A_{\mathrm{j}}$ term implies that EU+ effort can lower third-country costs—capturing side payments, joint operations, or technical assistance.

3.3. Equilibrium Analysis

Each actor chooses its strategy to maximize its own utility, taking the other's decision as given. This defines a simultaneous-move game. Taking first-order conditions yields best responses:

$$E_i^* = \frac{B \cdot \alpha \cdot A_{\mathrm{j}}}{2c}$$

$$A_j^* = \frac{(\beta \cdot \alpha + \delta) \cdot E_{\mathrm{i}}}{2d}$$

Solving these simultaneously yields the Nash equilibrium values of enforcement and willingness in which both parties have no incentive to change unilaterally.

Based on this equilibrium and its optimal efforts, the equilibrium return rate is:

$$R_{ij}^* = \alpha \cdot E_i^* \cdot A_j^*$$

These expressions allow us to derive comparative statics, that is how return outcomes respond to changes in incentives, costs, or political context.

Existence of equilibrium requires:

$$4cd > (\beta \cdot \alpha + \delta) \cdot B \cdot \alpha$$

This ensures that the denominator is positive, and the marginal cost dominates the effort-subsidy effect.

3.4. Alternative Strategic Logics for EU+ countries

The model can be used to formalize several strategic logics in return enforcement:

- ***Complementarity***: EU+ increases effort when third country cooperates.
- ***Substitution***: EU+ reduces effort when cooperation is high (to save cost).
- ***Threshold strategy***: EU+ only enforces when cooperation exceeds a minimum.

- ***Deterrence***: EU+ enforces even with low cooperation to signal resolve.
- ***Reciprocity / Tit-for-Tat***: EU+ bases current effort on past cooperation behavior.

These logics can be embedded in empirical models via interaction terms, lagged cooperation variables, or non-linear thresholds.

3.5 Model extensions

This baseline model can be extended in several ways:

- ***Dynamic interaction*:** Repeated game or event-history structure to capture trust-building or punishment cycles.
- ***Multiple actors*:** Incorporate network effects among EU+ states or third countries (e.g. regional deterrence or policy diffusion.
- ***Uncertainty***: Introduce probabilistic success or incomplete information.
- ***Side payments*:** Explicit model aid, trade, or visa concessions as strategic instruments.
- ***Legitimacy and international norms:*** Incorporate legitimacy propositions and alignment to international norms.

These extensions allow for richer interpretation and align closely with real-world return diplomacy.

In the next section, we turn to empirical strategies for testing the model's implications across three domains: return effectiveness, agreement formation, and migrant behaviour in response to enforcement signals.

4. Empirical Strategy

To empirically evaluate the strategic dynamics of return enforcement, we develop and estimate two complementary models. Model 1 measures the determinants of return, including policy and non-policy factors; Model 2 measures the impact of (non-)enforcement on (irregular) migration flows. Each is designed to test a different implication of the theoretical framework presented in the previous section. Collectively, these models enable us to assess institutional design, strategic interaction, and enforcement outcomes.

All models draw on harmonized panel data and employ fixed effects to control for unobserved heterogeneity across countries and years. We describe each model in turn, outlining the outcome variable, key predictors, data sources, and methodological considerations.

4.1 Model 1: Return Effectiveness and Enforcement Outcomes

As part of Model 1, we assess the policy and non-policy determinants of enforced return. For this purpose, we have divided the analysis on three papers: the first one looks at the effects of the different types of return and readmission frameworks on enforced returns in Europe; the second one, looks at the combination of both policy and non-policy factors on enforced returns across Europe; and, the third one, zooms specifically into the Netherlands case and assesses the effect of policy and non-policy factors at the micro, meso and macro levels.

Paper 1: Policy drivers of enforced return

In this paper we assess the effect of the different types of return and readmission frameworks as policy drivers of enforced return. Return and readmission frameworks are the instruments that states use to operationalize intergovernmental return policies.

Model Specification

This model estimates the effects of the different types of return and readmission frameworks. Return and readmission frameworks differ along four dimensions, which are assessed in the paper: their *level* (bilateral/pooled) depending on the number of states that intervene and whether the EU forms part of the frameworks. The legal *bindingness* which indicates whether the framework is legally binding or not. The *issue linkage* which indicates the presence of incentives mentioned in the frameworks themselves. The *implementation*, which indicates whether the framework includes implementation protocols to facilitate return processes.

Our dependent variable is the enforced return rate between each EU-third country dyad and year (RR_{ijt}). To capture the effect of the different types of return and readmission frameworks, our regression model is a Poisson fixed effects model, defined as follows:

$$\log\left(E[RR_{ijt}]\right) = \alpha + \beta_1 X_{1ijt} + \beta_2 X_{2ijt} + \beta_3 X_{3ijt} + \ldots + \mu_{1ij} + \mu_{2ij} + \mu_{3ij} + \tau_t + \varepsilon_{ijt}$$

- Where X_{nijt}, … represent the type of return and readmission framework disaggregated by level, bindingness, issue-linkage and implementation.
- μ_{1ij}: Dyadic fixed effects control for time-invariant characteristics such as geography or cultural affinity.

- μ_{2ij} and μ_{3ij}: Origin country-year and Destination country-year account for push and pull factors that could produce changes in return flows to or from a particular country, such as a change in government or civil wars.
- τ_t: Year fixed effects account for EU-wide policy changes and global migration shocks.
- ε_{ijt}: Error term.

RR_{ijt} is defined as a ratio between the total returns of the population at risk divided by the total orders to leave of the population at risk. Population at risk is defined as excluding the number of third country nationals that were returned to another European state. Consequently, the formula for enforced return rate is $RR_{ijt} = R_{ijt} - REU_{ijt}/Orders_{ijt} - REU_{ijt}$.

Besides year and dyad fixed effects, we also added country-year fixed effects to control for unobserved effects specific to each country in each year, which may affect the RR we use fixed effects at those levels.

Data sources, Variables, and Estimation Strategy

We constructed a panel dataset with EU-third country dyad-years as observations. Each observation represents a unique combination of a dyad (pair of countries) and specific year. Using Eurostat data on orders to leave and number of returns (Eurostat, 2025b, 2025c), we calculated our dependent variable, the enforced return rate, for each dyad-year. Our independent variables, the presence and type of an RRF for each dyad and year, are derived from Cassarino's dataset (Cassarino, 2024) and European Migration Network's inventory (EMN, 2022).

Key methodological challenges include:

- The high dimensionality of the model, implied that it would not converge with traditional algorithms.
- Returns often have a time lag as orders registered on one year are often executed in subsequent years.
- EU border states can be outliers in relation to their enforced return rate, due to their geographical position
- High return rates can be due because states do not issue orders to leave

The first challenge was overcome by running the fixed effects models by using the algorithm for the estimation of (pseudo-)Poisson regression with multiple high-dimensional fixed effects of Correia et al. (2020). To address the second challenge, we measured the RR as a three-year average and fitted a model on it as a robustness check. The third challenge was addressed by excluding EU border states and running the model without those states as a robustness check. The fourth challenge was overcome by setting 25 as the minimum orders to leave per dyad-year and the models were run as robustness check.

Paper 2: Policy and non-policy drivers of enforced return

Model Specification

Building upon Paper 1, this model estimates how policy factors and non-policy factors influence the actual number of enforced returns (R_{ijt}) or the return rate ($RR_{ijt} = R_{ijt}/Orders_{ijt}$) between EU+ and third countries.

Our dependent variable is the (log-transformed) count of enforced returns between each EU-third country dyad and year (R_{ijt}). To capture both structural and temporal variation, we estimate the following fixed-effects panel model:

$$log(R_{ijt} + 1) = \alpha + \beta_1 Agreement_{ijt} + \beta_2 Capacity_{ijt} + \beta_3 InterRelat_{ijt} + \beta_4 PolEconPres_{ijt} + \beta_5 HistTies_{ijt} + \mu_{ij} + \tau_t + \varepsilon_{ijt}$$

- Where: $Agreement_{ijt}$: Indicates presence of formal return-related agreements (e.g., readmission treaties).
- $Capacity_{ijt}$: Captures administrative capacity, including government effectiveness, embassy presence, and return policy tools (e.g. safe country designations).
- $InterRelation_{ijt}$: Reflects bilateral political and economic ties (e.g., aid, trade, UN voting alignment, visa waivers).
- $PolEconPresssure_{ijt}$: Measures domestic political and economic pressures in both EU- and third country.
- $HistTies_{ij}$: Encodes historical and sociocultural linkages such as colonial ties, common language, and diaspora presence.
- μ_{ij}: Dyadic fixed effects control for time-invariant characteristics such as geography or cultural affinity.
- τ_t: Year fixed effects account for EU-wide policy changes and global migration shocks.
- ε_{ijt}: Error term.

We include both contemporaneous (year t) and one-year lagged (year t-1) values of orders to leave, also log-transformed, to account for return issuance volumes in the absence of individual-level cohort linkages. The contemporaneous OTL variable captures orders issued in the same year

as the recorded returns; the one-year lagged variable accounts for returns that may correspond to orders issued in the previous year, addressing the temporal attribution challenge identified in Section 2.2.

Data Sources, Variables, and Estimation Strategy

To operationalize this model, we have built up two main panel datasets covering EU-third country dyads from 2009 to 2024. The primary dataset (~50,000 dyad-years) includes return enforcement outcomes from Eurostat, while a secondary dataset (~20,000 observations from 2014–2023) disaggregates return modalities (forced vs. voluntary). Although data quality improves after 2021 due to standardized quarterly reporting, key limitations persist, notably the lack of cohort identifiers and inconsistent national reporting practices.

Variable categories and data sources include:

Administrative Capacity:

- Government effectiveness (World Bank)
- Embassy presence (Diplometrics)
- Policy instruments (readmission agreements, safe country designations)

Interstate Leverage:

- Bilateral aid and trade (OECD-DAC, CEPII-BACI)
- Political alignment (UN voting distance)
- Visa policy and EU candidacy status

Domestic Political-Economic Pressures:

- GDP growth, unemployment (World Bank)
- Asylum pressure (first-instance applications)
- Public salience of immigration (Eurobarometer)
- Far-right party strength (parliamentary seat share)

Historical/Sociocultural Linkages:

- Colonial ties, shared language (CEPII)
- Diaspora size (bilateral migrant stocks)

Our empirical strategy implements a four-tier fixed-effects design which isolates causal effects while controlling for confounding:

- **Model 1**: Baseline with year-fixed effects and full covariates.
- **Model 2**: Adds origin-year and destination-year effects to capture country-specific shocks.

- **Model 3**: Adds dyad fixed effects, focusing on within-dyad variation.
- **Model 4**: Includes dyad and destination-year effects to examine origin-country dynamics.

A parallel framework is applied to disaggregated return modality data (Models A–D), enabling analysis of the distinct drivers of forced versus voluntary returns.

Key methodological challenges include:

- Measurement error, arising from data limitation discussed in the previous section.
- Endogeneity, as countries more willing to cooperation may self-select into return agreements.
- Omitted variable bias, particularly due to the lack of indicators for informal or ad hoc cooperation.
- Serial correlation, driven by persistent patterns in return enforcement over time.

To address these issues, we apply several robustness strategies: lagging policy variables to reduce simultaneity bias, employing instrumental variables (e.g., exogenous changes in visa policy), and estimating alternative model specifications with lagged dependent variables and dyad-clustered standard errors. Sensitivity analyses also distinguish the effects of bilateral versus EU-level return agreements.

While this model captures key structural and relational drivers of bilateral return outcomes, it should be seen as one layer within a broader system of enforcement dynamics. Recent research, such as Sinnige et al. (2025), highlights how micro-level decision-making and destination-country practices also significantly shape enforcement variation. These findings underscore the value of a multi-level analytical approach—linking macro-level dyadic incentives with national institutional capacity and case-level discretion that seeks to unify these interacting levels of analysis.

Paper 3: A zoom-in into The Netherlands case

To complement the previous two papers' analyses, we have focused on the Netherlands case as an example on how different factors determine enforced return. We chose the Netherlands because we had access to micro-level data on enforced return, data that is typically managed by governments and/or international organizations and is difficult to obtain. Additionally, the Netherlands presents itself as an interesting case because of its thick enforcement regime, where both willingness and capacity to enforce returns are strongly present (Leerkes & van Houte, 2020). While not generalizable to every EU+ states, the results can shed light on how a well-institutionalized return system operates under conditions of high enforcement readiness, and may serve as a reference point for comparative analysis in future research.

Model Specification

This model assesses the determinants on enforced return using administrative data from the Netherlands. We assess specifically the effect of micro, meso and macro level factors on the actual return of irregular migrants. At the micro level, we look at individual characteristics such as gender, age, family, status determination time. At the meso level, we look at the level of urbanization of the municipality of residence, the size of the ethnic community to which the migrant belongs and the presence of native counsellor during return procedure. At the macro level, we focus on the country of citizenship of the migrant and look at the Unfreedom and Terror index, corruption level and GDP, the existence of EU readmission agreements, the allure of EU membership and whether the EU requires Schengen visa.

Our dependent variable is a categorical variable that captures whether the individual migrant return or not and under which modality. The categories are: forced return, assisted return and non-return; this latter also captures whether the person was transferred to another EU member state because of a Dublin claim. To account for the structural form of the data, we use a multilevel (random intercept) multinomial regression model, defined as follows:

$$
\begin{aligned}
R^{*}_{ijk} = \alpha_{ac} + \beta_{1c} Age_{ijk} + \beta_{2c} Age^{2}_{ijk} + \beta_{3c} Family_{ijk} \\
+ \beta_{4c} StatusDeterminationTime_{ijk} + \beta_{5c} StatusDeterminationTime^{2}_{ijk} \\
+ \beta_{6c} Urbanization_{k} + \beta_{7c} SizeEthnicCommunity_{k} \\
+ \beta_{8c} NativeCounsellor_{k} + \beta_{9c} UnfreedomTerrorIndex_{j} \\
+ \beta_{10c} Corruption_{j} + \beta_{11c} GDP_{j} + \beta_{12c} ReadmissionAgreement_{j} \\
+ \beta_{13c} AllureEUMembership_{j} + \beta_{14c} SchengenVisa_{j} + u_{0kc} + v_{0jc}
\end{aligned}
$$

Micro Level:

- Where *Age* represents the age of the rejected asylum seeker
- *Age²* represents age-square divided by 100 to capture the curvilinear relationship between age and enforced return
- *Family* represents the family composition of the rejected asylum seeker
- *StatusDeterminationTime* represents the length that it took for the asylum seeker to get their application decision.
- *StatusDeterminationTime²*: represents Status-determination-time-square divided by 100 to capture the curvilinear relationship between status-determination-time and enforced return

Meso Level:

- *Urbanization* represents the degree of urbanization of the municipality of residence
- *SizeEthnicCommunity* represents the relative size of the ethnic community (in log)
- *NativeCounsellor* represents whether the migrant had access to a native counsellor

Macro Level:

- *UnfreedomTerrorIndex* represents the level of unfreedom and terror in the country of citizenship
- *Corruption* represents the level of corruption in the country of citizenship
- *GDP* PPP
- ReadmissionAgreement represents whether the EU had a visa facilitation agreement with the migrant's country of citizenship
- *AllureEUMembership* represents whether migrants' country of citizenship had a realistic view of acquiring EU membership
- *SchengenVisa* represents whether the migrants' country of citizenship was required visa to enter the EU

Data Sources, Variables, and Estimation Strategy

To operationalize this model, we use a cross-sectional dataset obtained from Dutch government and IOM Netherlands that has administrative data on whether rejected asylum seekers returned or not to their country of citizenship and under which modality (forced/assisted). The dataset includes observations for around 15,680 rejected asylum claims during the period between 2005 and 2010. The dataset was enriched with meso and macro level data from Statistics Netherlands (to calculate the degree of urbanization of the municipality of residence), Freedom House and the Political Terror Index (to calculate the u*nfreedom-terror-index* in the country of citizenship), Corruption Perception Index by Transparency International (to calculate the corruption level in the country of citizenship), World Bank data on *GDP* PPP, Schengen Visa information (to determine whether the migrant's country of citizenship was required visa to the EU).

Key methodological challenges include:

- Due to data unavailability, not all relevant micro-level factors could be included in the model.
- There were difficulties in findings direct measurements of certain relevant factors that could determine return outcomes, such as social attachments and the perceived procedural legitimacy of the asylum procedure.

We relied on data provided by the Dutch Government and IOM Netherlands. This data included certain micro-level factors, such as age, gender and family composition. Other micro-level factors, such as educational level, migration history and initial migration motives, are not available in the data but may also influence enforced return. To overcome the second challenge, we used proxy variables. For social attachments, we measured it using family composition and age of the migrants. Under the assumption that the presence of children and the young age of the migrants

are associated with stronger social attachments. For the perceived procedural legitimacy of the asylum procedure, we use the asylum status determination time. There are indications in the literature, that the longer the asylum procedures, the lower the levels of perceived legitimacy. These proxies however only measure social attachments and legitimacy indirectly and could introduce some measurement error in the model estimation.

4.2. Model 2: Pull Effects of Non-Enforcement

Based on recent modeling approaches of different migration flow (Bertoli et al., 2022; Czaika et al., 2023, 2025; Di Iasio & Wahba, 2024), this model evaluates the extent to which non- or low-enforcement (either through policy gaps or regularization) influences irregular migration toward EU+ countries. The outcome, irregular migration ($IrregularMigration_{it}$), is proxied via unauthorized entry detections, asylum filings, or both, and is modelled in a time-series cross-sectional framework:

$$IrregularMigration_{ijt} = \alpha + \beta_1 EnforcementIndex_{it-1} + \beta_2 Regularisation_{it-1} + \beta_3 PushFactors_{jt} + \beta_4 PullFactors_{it} + \beta_5 RecognitionRate_{it} + \beta_6 NormAlignment_j + \gamma_i + \delta_t + \varepsilon_{ijt}$$

where:

- $EnforcementIndex_{it-1}$ is a composite index based on return rates, legal bans, and implementation gaps.
- $Regularisation_{it-1}$ is the number or existence of regularization programs.
- $PushFactors_{jt}$ and $PullFactors_{it}$ (e.g., GDP per capita, unemployment) in third countries (push) and EU countries (pull).
- $RecognitionRate_{it}$ acts as a pull factor, reflecting the probability of legal stay.

This model uses country- or dyad-year panel data to analyze how domestic return and regularization policies influence subsequent irregular migration flows. To address unobserved heterogeneity and common temporal shocks, we include:

- Country fixed effects to control for structural differences across EU+ member states (e.g., legal systems, border configurations, institutional capacity).
- Year fixed effects to absorb global or EU-wide events such as refugee crises, economic downturns, or changes in EU-level enforcement priorities.

Data sources

- Frontex: Irregular border detections and risk analyses.
- Eurostat: Asylum applications and enforcement statistics.
- UCDP / ACLED: Armed conflict and violence indicators in countries of origin.

- World Bank: Economic indicators (GDP growth, unemployment).
- National legal databases: Coded measures of regularization policies and return bans.

Methodological challenges

Several identification challenges are inherent to this design:

- Endogeneity: Migration policies may be adopted in response to rising migration, rather than the other way around.
- Simultaneity bias: Migrants may respond not only to current policy but also to anticipated policy changes (e.g. expected amnesties or deportations).
- Measurement error: Informal non-enforcement practices (e.g., de facto tolerance or administrative delay) are difficult to observe and code reliably.
- Autocorrelation: Migration flows and policy implementation are often persistent over time, violating stand error assumptions.

To address these challenges, we implement a multi-pronged strategy:

- Lagged policy variables reduce simultaneity and better capture delayed effects.
- Instrumental variables approaches are explored using plausibly exogenous shocks (e.g., domestic court decisions, EU legal rulings, or treaty obligations).
- Event-study methods distinguish between policy announcement effects and actual implementation periods, capturing anticipation behavior.
- Driscoll-Kraay standard errors correct for heteroscedasticity, serial correlation, and cross-sectional dependence – especially relevant in a short panel with strong spatial clustering.

Together, these strategies enhance the credibility of causal inference and allow for a more accurate estimation of how policy choices affect irregular migration outcomes over time.

5. Data Harmonization and Temporal Scope

The empirical strategy outlined in the previous section relies on multiple sources of panel data, each with its own reporting structure, frequency, and coverage period. This section describes how we harmonize these data for consistent analysis across the three models, with attention to time alignment, data completeness, and variable standardization. Given the limitations identified in Section 2, particular care is taken to align outcome and predictor variables temporally and to ensure robustness in the face of missing or inconsistent reporting.

5.1 Temporal Coverage

The main period of analysis spans 2009–2024, covering the full operational timeline of the Eurostat Enforcement of Immigration Legislation (EIL) database with consistent definitions of Orders to Leave and returns. However, different components of the dataset have varying start dates:

- Return modality and destination disaggregation (forced vs. voluntary; origin vs. transit) is only available from 2014 onward, and only becomes complete across all member states from 2021.
- Quarterly reporting begins in 2021, allowing for greater temporal resolution but also requiring aggregation to annual-level indicators for comparability with other sources.
- Frontex detections and asylum flows are available from 2009 monthly and aggregated to the annual level.
- Legal and policy datasets (e.g., regularization measures, bans on return) are coded annually based on national legal databases and EU-level reports.

Accordingly, Models 1 and 2 use dyad-year panels from 2009 to 2024, while Model 3 operates at the country-year level over the same period. Sub-period models are estimated when variable coverage limits full panel use.

5.2 Unit of Analysis

- Model 1 uses the dyad-year as the unit of analysis, where each observation refers to a sending (EU+) country and a third country of return in a given year.
- Model 2 uses a country-year structure focused on EU+ destination countries only, to assess inflows of irregular migration.

In total, the dataset includes about 50,000 dyad-year observations across EU+ and 140 third countries and around 3,900 return corridors for the enforcement impact analysis.

5.3 Handling Missing Data

Missing data arise from four main sources: (a) unreported returns or orders to leave in certain dyads; (b) incomplete modality or destination breakdowns; (c) structural non-cooperation; and (d) incomplete governance or policy indicators for third countries.

To address these issues, we employ a combination of:

- Zero imputation for data with only non-zero records (e.g., trade, aid).
- Multiple imputation for continuous control variables (e.g., GDP, unemployment).
- Linear interpolation for lagged panel series with known endpoints (e.g., asylum trends).
- Listwise deletion only in cases where the outcome or key policy indicator is entirely absent.
- Sensitivity tests excluding dyads with fewer than 10 observations or with persistent data suppression due to rounding.

Zero-denominator dyads (no return orders issued) are retained for descriptive analysis but excluded from return rate regressions to avoid undefined outcomes.

5.4 Robustness Check

To enhance comparability across models and reduce scale bias, we conduct additional robustness check:

- All continuous predictors (e.g., trade, governance, return rates) are standardized to z-scores within the estimation sample.
- Categorical and binary variables (e.g., agreement type, political terror scale) are coded with clear reference categories.
- Policy variables are lagged by one year to mitigate simultaneity and allow for policy implementation time.

5.5 Replicability and Transparency

All data sources, transformations, and cleaning procedures are documented in a reproducible code archive (except for the Dutch administrative data used in the Paper 3 of the Model 1). Datasets are constructed using reproducible code (R/Stata), and metadata on all variables including coding decisions for categorical classifications will be made available in the project's methodological annex.

In sum, this section ensures that the empirical models are based on aligned, standardized, and well-documented data, allowing for valid comparison and robust inference across countries and time. The final section draws out the key theoretical and policy implications of the findings and outlines directions for future research.

6. Conclusion and Outlook

This working paper has developed and tested a strategic framework for understanding variation in return enforcement outcomes across EU+ member states and their third-country partners. Drawing on both formal modelling and empirical analysis, we demonstrate that return enforcement cannot be treated as a one-sided administrative function. Instead, it should be conceptualized as a dynamic process of bilateral cooperation shaped by mutual incentives, institutional discretion, and political costs.

Theoretically, we model return enforcement as a bilateral game of strategic interaction, where both the EU+ country and the third country simultaneously choose effort levels – enforcement and acceptance willingness, respectively – that jointly determine return outcomes. This approach incorporates a range of strategic logics, including complementarity, deterrence, substitution, and reciprocity, to capture real-world enforcement patterns.

Empirically, we deploy two interconnected models:

- Model 1 shows that, inter alia, return enforcement is driven less by formal policy instruments or domestic political pressures than by long-standing diplomatic infrastructures and bilateral embeddedness.

- Model 2 aims to test that weak enforcement, either through non-removal or regularization, can under certain circumstances increase irregular migration flows, underscoring the importance of credibility and consistency in migration policy.

6.1 Policy Implications

Our analysis yields several policy insights for EU institutions and member states:

- *Focus on incentives and long-term cooperation, not just instruments*: Agreements alone are not sufficient. Effective return cooperation often requires from side payments and logistical support to capacity-building and diplomatic engagement. These would lower the cost of compliance and improve capacity of readmission for partner countries.

- *Interpret return rates and counts cautiously*: These indicators are shaped by national discretion, data rounding, and temporal mismatches. They should be contextualized rather than used as simple performance benchmarks.

- *Prioritize data transparency and comparability*: Improving the quality, granularity, and consistency of return statistics, especially regarding modalities and destinations, can aid in evidence-based policymaking.

6.2 Future Research Directions

Several questions remain open for future exploration:

- *Dynamic modelling of cooperation*: Future work could extend the strategic model into a repeated-game framework, allowing for trust-building, retaliation, and renegotiation over time.

- *Subnational and procedural variation*: How do enforcement practices differ within countries, and how do legal appeals or procedural safeguards influence return outcomes?

- *Migration governance beyond Europe*: The model and methods developed here could be adapted to study return cooperation in other regional systems (e.g., North America, Australia–Pacific).

- *Mixed-method validation*: Qualitative fieldwork or elite interviews could be used to ground the incentives assumed in the formal model and identify informal dynamics not captured in quantitative data.

In conclusion, return enforcement outcomes are best understood through a relational lens that emphasizes strategic interaction, mutual constraints, and policy design. This working paper, by bridging formal theory with empirical modelling, offers a foundation for both scholarly inquiry and pragmatic policy evaluation in return migration governance.

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