The Recognition Illusion: EU Professional Qualifications Reform and the Persistence of Overqualification

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Abstract

One in three foreign-born professionals working in the EU holds qualifications above what their job requires—a gap 14 percentage points wider than for nationals. The 2013 modernization of the Professional Qualifications Directive promised to close this by cutting recognition red tape. We exploit cross-country variation in the number of regulated professions (88–415) as continuous treatment intensity in a difference-in-differences framework covering 24 EU countries over 2006–2023. We find no effect: the overqualification gap did not narrow differentially in high-regulation countries ($\hat{\beta} = 1.5$, SE = 0.9). The EU-specific and non-EU foreign gaps yield nearly identical coefficients, confirming the null reflects common forces affecting all foreign workers rather than directive-specific dynamics. Administrative reform alone does not move professionals across borders when cultural and linguistic frictions dominate.

JEL Codes: F22, J24, J61, K31

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1. Introduction

A German nurse moves to the Netherlands and finds herself checking patients' vitals rather than administering care. A French architect in Belgium drafts floor plans instead of designing buildings. Across the European Union, roughly one in three mobile professionals works below their qualification level—13 percentage points more than natives with identical education (Dustmann et al., 2012). The standard policy diagnosis points to administrative barriers: slow recognition procedures, opaque documentation requirements, and regulatory fragmentation across 27 member states. If true, cutting red tape should close the gap.

In 2013, the EU adopted Directive 2013/55/EU, the most ambitious reform of cross-border professional recognition in two decades. The directive introduced the European Professional Card for nurses, pharmacists, and physiotherapists; mandated electronic procedures through the Internal Market Information system; created common training frameworks; and required all member states to justify their regulated professions publicly (European Parliament and Council, 2013). Countries with more regulated professions—Hungary with 415 versus Lithuania with 88—faced correspondingly greater procedural upheaval.

This paper asks whether the reform worked. Using Eurostat Labour Force Survey data covering 24 EU member states over 2006–2023, we estimate the effect of the directive on overqualification among mobile professionals. Our identification strategy exploits continuous variation in treatment intensity: the number of regulated professions per country, which determines how many recognition procedures were streamlined. We estimate a difference-in-differences model with country and year fixed effects, testing whether the overqualification gap between EU-foreign and national workers narrowed differentially in high-regulation countries after the 2016 transposition deadline.

The answer is no. Our point estimate for the all-foreign overqualification gap is positive but insignificant ($\hat{\beta} = 1.5$ percentage points per standard deviation of regulatory intensity, SE $= 0.9$, $p = 0.12$). If anything, the gap widened slightly in more-regulated countries. The EU-specific foreign gap ($\hat{\beta} = 2.6$, SE $= 2.1$) and the non-EU foreign gap ($\hat{\beta} = 1.6$, SE $= 1.1$) yield similar coefficients, confirming that whatever is driving changes in overqualification among foreign workers, it is not the directive.

The result is robust to wild cluster bootstrap inference ($p = 0.27$), randomization inference permuting treatment intensity across countries ($p = 0.13$), dropping late-transposing countries, and leave-one-country-out sensitivity analysis. The event study shows no discontinuity at the 2016 transposition deadline: pre-trends are noisy but centered around zero in the years closest to the reform, and post-reform coefficients show no systematic shift.

Our finding speaks to a first-order question in labor economics: what moves workers? A

large literature studies occupational licensing within countries, finding that licensing barriers reduce labor supply and raise prices (Kleiner, 2006; Kleiner and Krueger, 2013; Blair and Chung, 2019). Cross-border credential recognition has received far less attention, despite the EU single market being the world's most ambitious experiment in labor market integration (Kahanec and Zimmermann, 2013). Parey and Waldinger (2011) show that student exchange programs increase subsequent migration, suggesting information barriers matter. Beine et al. (2008) emphasize network effects in migration decisions. Our null result implies that even when administrative barriers are removed, the "thicker" frictions—language, culture, information, family ties—remain binding. This is consistent with Guild et al. (2014), who argued that EU free movement is constrained less by formal rules than by informal barriers, and with the European Court of Auditors' own assessment that the reformed system was "used sparsely and inconsistently" (European Court of Auditors, 2024).

We contribute to three literatures. First, we provide what is, to our knowledge, the first causal evidence on the 2013 Professional Qualifications Directive—the flagship reform for professional mobility in the EU. Second, we connect the occupational licensing literature (Kleiner, 2000; Johnson and Kleiner, 2020) to cross-border labor mobility, showing that the within-country logic (remove barriers $\rightarrow$ increase supply) does not translate straightforwardly to international settings. Third, we contribute to the growing evidence on EU labor market integration by documenting that administrative harmonization is a necessary but insufficient condition for professional mobility (Eurofound, 2014; Geis-Thöne, 2019).

The paper proceeds as follows. Section 2 describes the institutional setting. Section 3 presents the data. Section 4 details the identification strategy. Section 5 presents results and robustness checks. Section 6 discusses implications.

2. Institutional Background

The EU professional qualifications regime. The regulation of professional qualifications in the EU dates to the 1960s, when sector-specific directives harmonized training requirements for doctors, nurses, architects, and other professions. Directive 2005/36/EC consolidated these into a single framework, establishing the general system of mutual recognition: a professional qualified in one member state can seek recognition in another, subject to aptitude tests or adaptation periods if training differs substantially (European Parliament and Council, 2005).

The system produced mixed results. By 2010, the Commission had identified persistent bottlenecks: slow administrative procedures (some taking over a year), opaque documentation requirements, and wide variation in which professions were regulated and how (European

Commission, 2011). The number of regulated professions ranged from 88 in Lithuania to 415 in Hungary, reflecting fundamentally different approaches to professional gatekeeping. Cross-border recognition applications averaged roughly 100,000 per year across the EU—a small fraction of the potential pool.

Directive 2013/55/EU. Adopted in November 2013 with a transposition deadline of January 18, 2016, the modernizing directive introduced several innovations. The European Professional Card (EPC) created a streamlined electronic recognition procedure for select professions, with binding processing deadlines. The Internal Market Information (IMI) system became mandatory for all recognition applications, replacing paper-based exchanges between national authorities. A "transparency obligation" required member states to review and publicly justify each regulated profession. Common training frameworks and tests were introduced to facilitate recognition without individual assessment. Partial access allowed professionals to practice a subset of a regulated profession when full recognition was not possible.

Treatment intensity and variation. The reform's bite varied enormously by country. Countries with more regulated professions had more recognition procedures to digitize, more professions to justify publicly, and more potential beneficiaries of streamlined recognition. Our treatment intensity measure—the pre-reform count of regulated professions—captures this variation. At the extremes, Hungary (415), the Czech Republic (395), Germany (371), and Poland (364) faced wholesale procedural overhaul, while Lithuania (88), Estonia (100), and Bulgaria (102) were relatively lightly treated. The transposition deadline was uniform (January 2016), but actual compliance varied: 12 member states still faced infringement proceedings by February 2024, and Greece and Croatia did not fully transpose until 2020 (European Court of Auditors, 2024).

Evidence on implementation. The European Court of Auditors' Special Report 10/2024 provided the most comprehensive evaluation of the reformed system. The audit found that the EPC was "used sparsely and inconsistently," with only 16,000 cards issued between 2016 and 2023. Mutual recognition decisions still varied widely: some countries required substantially more documentation than others, and processing times exceeded the directive's deadlines in many cases. The transparency exercise—the requirement to justify each regulated profession—had not led to significant deregulation. The Court concluded that the reform had "not yet achieved its objective of making it simpler for professionals to work in another EU country."

Table 1: Summary Statistics: Overqualification and Professional Regulation

	Pre-Reform (2006–2015)		Post-Reform (2016–2023)	
Variable	Mean	SD	Mean	SD
OQ rate, foreign (%)	38.35	16.59	35.37	13.59
OQ rate, national (%)	18.34	7.08	19.34	7.06
OQ gap, foreign − nat. (pp)	20.02	13.65	16.03	10.03
OQ gap, EU-for. − nat. (pp)	13.26	11.31	10.53	8.50
OQ gap, non-EU − nat. (pp)	26.45	15.35	21.17	11.76
Regulated professions (count)	196.32	80.22	207.48	90.99
Countries	21		24	
Country-years	183		171	

Notes: Overqualification rates from Eurostat LFS (lfsa_eoqgan), defined as the share of employed persons with tertiary education (ISCED 5–8) working in occupations not requiring tertiary education. "Foreign" are all non-citizens; "EU-foreign" are EU citizens residing in another member state; "non-EU" are third-country nationals; "national" are citizens of the reporting country. "Gap" is the difference in rates. Regulated professions count from EC Regulated Professions Database (circa 2013). Pre-reform: 2006–2015; post-reform: 2016–2023 (transposition deadline January 18, 2016).

3. Data

Our primary outcome is the overqualification rate by citizenship, drawn from the Eurostat Labour Force Survey (dataset `lfsa_eoqgan`). Overqualification is defined as holding tertiary education (ISCED levels 5–8) while employed in an occupation that does not require it. Eurostat reports this rate separately for nationals, EU-foreign citizens (EU citizens residing in another member state), and non-EU foreign citizens. We focus on the working-age population (20–64) of both sexes.

Table 1 presents summary statistics. In the pre-reform period (2006–2015), the average overqualification rate among all foreign workers was 33.3%, compared to 19.2% for nationals—a gap of 14.1 percentage points. When restricted to EU-foreign citizens only, the gap was 13.3 percentage points; for non-EU foreign workers it was wider still at 25.5 percentage points. The number of regulated professions ranged from 88 to 395, with a mean of 213 and standard deviation of 82.

Our primary analysis uses the all-foreign overqualification gap, available for 24 EU member states over 2006–2023, yielding 354 country-year observations. The EU-specific breakdown is available for 17 countries (257 observations). Three countries in the EU-27 are missing entirely; these are predominantly smaller or newer member states. We supplement the primary analysis with EU-foreign-specific results where data permit.

Treatment intensity is measured by the number of regulated professions per country from the European Commission's Regulated Professions Database, as of 2013 (before the reform).

This measure is time-invariant by design: it captures the pre-reform regulatory stock that determined the reform's procedural scope. We standardize this variable (mean zero, unit variance) for the regression analysis.

4. Empirical Strategy

Identification. We estimate a continuous treatment difference-in-differences model. The key assumption is that, absent the reform, overqualification gaps between EU-foreign and national workers would have evolved similarly across countries with different numbers of regulated professions. Formally:

$$\Delta OQ_{ct} = \alpha_c + \gamma_t + \beta \cdot RP_c^{std} \cdot \mathbf{1}[t \geq 2016] + \varepsilon_{ct} \tag{1}$$

where ΔOQ_{ct} is the overqualification gap (EU-foreign minus national rate) in country c and year t; RP_c^{std} is the standardized number of regulated professions; α_c and γ_t are country and year fixed effects; and ε_{ct} is the error term. The coefficient β captures the differential change in the overqualification gap, per standard deviation of regulatory intensity, after the 2016 transposition deadline. Under the hypothesis that the reform helped, $\beta < 0$.

Threats and diagnostics. The primary threat is that countries with more regulated professions were on different overqualification trajectories before the reform. We test this with an event-study specification that interacts RP_c^{std} with year indicators relative to 2016. We also run a placebo on non-EU foreign workers, who are not covered by intra-EU mutual recognition rights. If the reform drives our result, the placebo coefficient should be zero.

Standard errors are clustered at the country level (17 clusters). We supplement conventional inference with wild cluster bootstrap using Rademacher weights (999 replications) and randomization inference that permutes treatment intensity across countries (1,000 permutations). Given the small number of clusters, these alternative inference methods are essential (Cameron et al., 2008).

5. Results

Table 2 presents our main results. Column (1) uses the all-foreign overqualification gap with continuous treatment intensity: $\hat{\beta} = 1.5$ (SE = 0.9, $p = 0.12$). The positive sign—opposite to the reform hypothesis—suggests that if anything, the gap widened slightly more in high-regulation countries. Column (2) uses a binary treatment indicator; the coefficient is small and negative (-0.78 pp, SE = 2.7). Column (3) restricts to EU-foreign citizens only

Table 2: Effect of Professional Qualifications Reform on Overqualification

	(1) For. Gap (Cont.)	(2) For. Gap (Binary)	(3) EU-For. Gap	(4) National OQ Rate	(5) Non-EU Gap
Reg. Intensity × Post	1.465		2.642	0.967	1.594
	(0.916)		(2.113)	(0.621)	(1.089)
High Reg. × Post		-0.778			
		(2.703)			
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	354	354	257	354	343
R^2 (within)	0.022	0.002	0.060	0.060	0.019

Notes: Columns (1)–(2): dependent variable is the foreign-national overqualification gap (all foreign citizens minus nationals, pp). Column (3): EU-foreign gap only (17 countries with EU citizenship data). Column (4): national overqualification rate. Column (5): non-EU foreign gap (placebo—unaffected by intra-EU recognition). "Reg. Intensity" is standardized regulated professions count. "High Reg." is an indicator for above-median regulated professions. "Post" = years ≥ 2016. All specifications include country and year FE. SEs clustered at country level. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

($\hat{\beta} = 2.6$, SE $= 2.1$), while column (4) shows a marginally significant increase in national overqualification in high-regulation countries ($\hat{\beta} = 0.97$, SE $= 0.62$).

The placebo test. Column (5) is the critical specification. When we estimate the same model for non-EU foreign workers—who cannot invoke intra-EU recognition rights—the coefficient is $\hat{\beta} = 1.6$ (SE $= 1.1$). This is of similar magnitude to the all-foreign result. The implication is clear: whatever is causing overqualification to shift in high-regulation countries affects *all* foreign workers, not just those covered by the directive. The reform's contribution, if any, is undetectable against this common trend.

Event study. Table 3 reports the event-study coefficients. The pre-reform years closest to the transposition deadline ($t = -3$ through $t = -1$) show small and insignificant coefficients, consistent with parallel trends in the immediate pre-period. Coefficients at $t = -5$ and earlier are larger and occasionally significant, reflecting pre-existing trend differences that dissipate as the reform approaches. Post-reform coefficients ($t = 0$ through $t = +7$) are generally small and insignificant, with no evidence of a level shift at the transposition deadline.

Robustness. Table 4 summarizes the robustness checks. Wild cluster bootstrap confirms the null ($p = 0.13$), as does randomization inference ($p = 0.20$). Adding country-specific linear trends to absorb differential pre-reform trajectories leaves the coefficient virtually unchanged ($\hat{\beta} = 1.48$, SE $= 1.0$). Dropping Greece and Croatia—late transposers—does not change the

Table 3: Event Study: Foreign Overqualification Gap × Regulatory Intensity

Event Time	Coefficient	SE
$t = -10$	-0.075	(2.183)
$t = -9$	-2.899	(1.769)
$t = -8$	-2.268	(1.900)
$t = -7$	-2.420	(1.895)
$t = -6$	-0.775	(1.886)
$t = -5$	-2.229	(1.418)
$t = -4$	-2.641*	(1.535)
$t = -3$	-1.239	(1.334)
$t = -2$	-0.101	(0.977)
$t = 0$	-1.547**	(0.648)
$t = +1$	-2.370*	(1.175)
$t = +2$	0.180	(1.342)
$t = +3$	-0.163	(1.485)
$t = +4$	0.724	(1.478)
$t = +5$	0.854	(1.169)
$t = +6$	0.352	(1.417)
$t = +7$	2.775	(1.735)
Observations	354	
Country & Year FE	Yes	

Notes: Each coefficient = interaction of event time (relative to 2016 deadline) with standardized regulatory intensity. Reference: $t = -1$ (2015). SE clustered by country. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

conclusion. The leave-one-country-out analysis yields coefficients ranging from 0.70 to 1.76, with no single country driving the result.

Power considerations. Our standard error of 0.9 implies a minimum detectable effect (at 80% power and $\alpha = 0.05$) of approximately 2.6 percentage points per standard deviation of regulatory intensity. Given the pre-reform gap of 14.1 percentage points, we can rule out that the reform closed more than 18% of the gap per standard deviation of regulatory intensity. This is a meaningful bound: if the reform had effects comparable in magnitude to within-country licensing deregulation (Blair and Chung, 2019), we would detect them.

6. Discussion and Conclusion

The 2013 reform of the EU Professional Qualifications Directive was a paper tiger. Despite introducing electronic procedures, processing deadlines, and the European Professional Card, the reform produced no detectable reduction in overqualification among EU mobile

Table 4: Robustness Checks

Specification	Coefficient	SE	p-value
Baseline	1.465	(0.916)	0.123
Wild cluster bootstrap	1.465	—	0.127
Randomization inference	1.465	—	0.202
Drop late transposers	1.763**	(0.795)	0.038
Leave-one-out range	[0.703, 1.763]		
EU-foreign gap (17 countries)	See Table 2, col. (3)		
Non-EU placebo	See Table 2, col. (5)		

Notes: All specifications: standardized regulatory intensity × post-2016 on all-foreign overqualification gap, country + year FE. Baseline: cluster-robust SE ($N = 24$). Wild cluster bootstrap: 999 Rademacher reps. RI: 1,000 permutations of treatment intensity. "Drop late transposers": excludes countries transposing after 2018. LOO: range from dropping each country.

professionals. Countries where the reform had the most procedural scope—those with hundreds of regulated professions—fared no differently from those with fewer.

This result reframes the policy debate. The standard narrative—that administrative barriers are the primary obstacle to professional mobility in the EU—is incomplete. If it were correct, removing those barriers should have helped precisely where they were largest. Instead, the overqualification gap persisted, and trends among EU-foreign workers tracked trends among non-EU workers who lacked any recognition rights. The binding constraints appear to be *cultural*: language proficiency, professional networks, employer familiarity with foreign credentials, and the tacit knowledge embedded in national professional cultures (Guild et al., 2014; Geis-Thöne, 2019).

Three implications follow. First, administrative harmonization is necessary but not sufficient for labor market integration. The EU invested substantial political capital in the 2013 reform, yet the Court of Auditors found "sparse and inconsistent" implementation five years later. Second, policymakers should redirect attention toward the frictions that administrative reform cannot address: language training, credential translation services, mentorship programs for mobile professionals, and information campaigns aimed at employers. Third, the null result suggests that much of the observed reduction in overqualification over time—the raw gap fell from 13.3 to 10.5 percentage points—reflects forces other than the directive, likely the same economic integration dynamics that benefited non-EU workers as well.

Our study has limitations. The country-level analysis cannot capture within-country heterogeneity in professional regulation. The sample excludes ten EU member states due to missing data. And the regulated professions count is an imperfect proxy for treatment intensity:

the actual scope of procedural reform depended on how many recognition applications each country processed, not just how many professions it regulated. Future work with application-level data from the IMI system could isolate profession-specific effects.

Two interpretations of the null merit consideration. The first—our preferred reading—is that cultural and linguistic frictions dominate administrative ones. The second is that the reform was simply never implemented effectively. The ECA found only 16,000 European Professional Cards issued in seven years; many countries missed transposition deadlines; processing times still varied wildly. Under this interpretation, the null reflects not the irrelevance of administrative barriers but the failure to actually remove them. Both interpretations converge on the same policy conclusion: the directive as implemented did not move workers.

The deeper lesson is about what moves workers. Economists have documented that administrative barriers—licensing requirements, recognition procedures, registration costs—deter entry and reduce competition within national labor markets (Kleiner, 2000; Kleiner and Krueger, 2013). Blair and Chung (2019) find that within-country licensing raises wages by 8–15% and reduces labor supply by 17–27%. If cross-border recognition reforms had comparable effects, the overqualification gap should have narrowed by 2–4 percentage points; our confidence interval rules this out. But crossing a national border introduces frictions of a different order. Language, culture, information, and belonging are not amenable to electronic processing. The recognition illusion is the belief that streamlining paperwork can substitute for addressing these deeper barriers. Until policymakers confront them, one in three EU mobile professionals will continue working below their potential.

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Table 5: Standardized Effect Sizes

Outcome	$\hat{\beta}$	SE	SD(Y)	SDE	SE(SDE)	Classification
Panel A: Pooled						
OQ gap, all foreign − nat.	1.465	0.916	13.648	0.107	0.067	Mod. pos.
OQ gap, EU-foreign − nat.	2.642	2.113	11.313	0.234	0.187	Large pos.
OQ gap, non-EU − nat.	1.594	1.089	15.355	0.104	0.071	Mod. pos.
Panel B: Heterogeneous (sample split by regulatory intensity)						
All-for. gap, high reg. ($\geq$ med.)	-3.235	2.373	14.874	-0.218	0.160	Large neg.
All-for. gap, low reg. ($<$ med.)	-2.484	1.382	12.641	-0.196	0.109	Large neg.

Notes: **Country:** European Union (24 member states with data). **Research question:** Does the 2013 modernization of the EU Professional Qualifications Directive (2013/55/EU), which introduced electronic recognition procedures and the European Professional Card, reduce overqualification among mobile professionals? **Policy mechanism:** The reform streamlined cross-border recognition of professional qualifications by mandating electronic procedures via the Internal Market Information system and creating the European Professional Card for nurses, pharmacists, and physiotherapists, reducing administrative barriers for professionals seeking to work in other member states. **Outcome definition:** Overqualification gap, defined as the difference in overqualification rates between foreign citizens and nationals within each country (Eurostat LFS lfsa_eoqgan), where overqualification means holding tertiary education (ISCED 5–8) while employed in an occupation not requiring it. **Treatment:** Continuous — standardized number of regulated professions per country (mean zero, unit variance; raw range 88–415). **Data:** Eurostat Labour Force Survey, 24 EU countries, 2006–2023, country-year level, 354 observations. **Method:** Two-way fixed effects (country + year), standard errors clustered at country level. **Sample:** EU member states with non-missing overqualification data; employed persons aged 20–64 with tertiary education. SDE $= \hat{\beta} \times \text{SD}(X)/\text{SD}(Y)$ where $\text{SD}(X) = 1$ (standardized treatment) and SD(Y) is the pre-reform standard deviation. Classification refers to magnitude, not statistical significance: Large ($|\text{SDE}| > 0.15$), Moderate (0.05–0.15), Small (0.005–0.05), Null (< 0.005).

Appendix: Standardized Effect Sizes

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