

Ownership Transparency and Cross-Border Investment

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Abstract: Policymakers across the globe have recently shown a heightened interest in ownership transparency—the disclosure of information on the true, human owner of an entity (“beneficial owner”). However, we have a limited understanding of the real economic effects of such transparency. We study the effect of ownership transparency on cross-border investment. The focus on cross-border investment is consistent with the key role it plays in spurring global economic growth. Exploiting the staggered implementation of EU ownership registers, we find that investment from non-EU financial havens into EU countries declines significantly following the adoption of ownership transparency initiatives. We do not observe a decline from non-EU countries more generally, mitigating concerns that secular investment patterns drive the results. Moreover, public, but not private, ownership disclosures appear to drive the investment declines, underscoring the role public scrutiny plays in deterring financial-haven activity. Micro-level evidence from merger and acquisition activity indicates that the reduction in investment is partly attributable to ownership transparency discouraging EU investors from investing in the EU via offshore financial havens. Overall, our study provides timely insights that are relevant to current policy actions that governments worldwide, including in the U.S., are adopting to enhance ownership transparency.

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“The secret to success is to own nothing, but control everything.”
Nelson Rockefeller

1. Introduction

In recent years, policymakers across the globe have shown a heightened interest in ownership transparency—the disclosure of information on the true, human owner of an entity (“beneficial owner”) (e.g., AML Directives; FATF – Egmont Group 2018; IDB and OECD 2019).¹ Despite the high-profile role ownership transparency plays in current regulatory efforts in the EU (AML Directives 2015 and 2018) and regulation to take effect in 2024 in the U.S. (U.S. Treasury FinCEN 2022a), we have a limited understanding of the real economic effects of such transparency.

Our study begins to fill this void by investigating the effect of ownership transparency on cross-border investment. We focus on cross-border investment because of its integral role in spurring global economic growth (United Nations Conference on Trade and Development “UNCTAD” 2017) and evidence that suggests transparency, such as in a country’s government institutions and economic policies, is key to attracting foreign investment (Drabek and Payne 2002; Zhao et al. 2003).

We exploit a prominent regulatory initiative in the European Union (EU) to examine our research question. In 2015, the EU passed an anti-money laundering directive, requiring member countries to establish a central register of the beneficial human owner of corporations and other legal entities registered in the given country (AML Directive 2015/849). The directive requires entities to identify their beneficial owner(s) and to provide information regarding their name, nationality, country of residence, month and year of birth, nature of control, and size of interest. Each legal entity has responsibility to obtain, hold, and report this information to a central register. Absent provisions requiring disclosure, beneficial

¹ The term “beneficial owner” is sometimes used in other contexts, for example, by the SEC for regulations to increase investor protection. These alternative definitions do not necessarily refer to the human owner of a business. We discuss in detail the beneficial ownership information in our setting in Appendix B.

owners can obscure their identity and hide behind the corporate veil or third parties—such as lawyers, tax advisors, or intermediaries—who are not the beneficial owners of the entity or its assets (Europol 2021; FSATF 2006; IOSCO 2004; van der Does de Willebois et al. 2011). Importantly, the regulation governs (public or private) disclosure of the beneficial *human* owner of a legal entity and thus is distinct from foreign account ownership disclosure, which financial institutions privately report to the IRS (Hanlon et al. 2015; De Simone et al. 2020; Belnap et al. 2021), and from corporate subsidiary disclosures (e.g., De Simone and Olbert, 2021; Desai et al., 2006; Dyreng et al., 2016).

Understanding the investment effects of ownership transparency has implications beyond the EU. For example, the U.S. recently adopted a rule, set to become effective in January 2024, that requires “reporting companies [to] submit ... a report containing their BOI [Beneficial Owner Information].” The Financial Crimes Enforcement Network (FinCEN) of the U.S. Treasury notes that rule “collecting this information and providing access to law enforcement, the intelligence community, regulators, and financial institutions will diminish the ability of illicit actors to obfuscate their activities through the use of anonymous shell and front companies”(U.S. Treasury FinCEN 2022b). More generally, regulatory interest in ownership transparency parallels global efforts to increase transparency for various financial activities, such as FATCA (De Simone et al. 2020), country-by-country reporting (e.g., Joshi, 2020; Joshi et al., 2020; Overesch and Wolff, 2021), and DAC 6 (Casi-Eberhard et al., 2022; Edwards et al., 2021).

A priori it is unclear how ownership transparency will affect cross-border investment. On the one hand, ownership transparency could reduce uncertainty about potential business partners, reducing transaction costs and thus facilitating cross-border economic activity and investment (World Bank 2018). On the other hand, ownership transparency should deter investment of individuals seeking to obscure their identity—whether out of reputational or

safety concerns (e.g., Müller et al., 2022) or to conceal illicit activities. Indeed, ownership transparency could deter legitimate activities among individuals who simply seek to avoid the public scrutiny or bad press (reputational harm) associated with publicized wealth or involvement in certain financial arrangements, such as owning particular assets or investing through financial havens. Ownership transparency also likely increases enforcement risk for individuals involved in questionable or illegal activities by allowing competent authorities to connect the dots among owners, assets, and financial flows. Further, disclosing ownership information diminishes a key benefit of investing via financial havens (O'Donovan et al. 2019). Taken together, whether and how ownership transparency will affect cross-border investment is an open empirical question.

Our research design leverages variation in the timing and design of ownership transparency implementation among EU countries. Specifically, our empirical strategy exploits the staggered implementation of the Fourth and Fifth Anti-Money Laundering (AML) Directives in the EU. These directives require EU countries to establish a central register of the true, human beneficial owners of resident entities. The regulation affects individuals that either directly or indirectly (e.g., via other entities) own an entity registered in a given country. Although the directives require all EU countries to establish a central register, countries in our sample implemented the beneficial owner registers in a staggered fashion from 2016 to 2019. The EU countries also differ in the extent to which they publicize the beneficial ownership information. During our sample period, some countries (e.g., France) only require private reporting and limit access to certain parties, such as authorities or intermediaries (e.g., banks or tax advisors) that have a legitimate interest in beneficial ownership information (e.g., to prevent or discover illicit activities). Others, however, make ownership information available to the public, either for a fee (e.g., Austria) or for free (e.g., Denmark).

In our first analysis, we study bilateral investment stocks and examine whether the introduction of beneficial ownership registers affects investment *into* the EU. We employ a difference-in-differences (DiD) research design to compare the change in foreign direct investment (FDI) positions of non-EU investors in EU countries that had implemented a beneficial ownership register with those EU countries that had not (yet) implemented the register. We include country-pair fixed effects to absorb the effect of time-invariant country-pair characteristics, such as geographical or cultural proximity. As a result, we identify the investment response from within-country-pair variation in ownership transparency. We also include country of origin \times year fixed effects to absorb economic shocks in the non-EU country in which the investor is located (origin country). This approach limits the counterfactual to observations from the same origin-country-year, and exploits variation in ownership transparency across EU destination countries. To test whether ownership transparency alters the magnitude of investment into the EU via financial havens, we extend the baseline design and separately investigate FDI positions of investors located in non-EU origin countries classified as financial havens (Hines 2010).

The results from our primary tests suggest that investment from financial haven countries into the EU declines by a significant 15.2 percent after the adoption of ownership registers. Evidence from numerous additional tests corroborate this finding, including: i) modified samples, ii) an alternative treatment definition, iii) alternative financial-haven definitions, iv) distinct estimation techniques, and v) the use of a “stacked design” to address concerns associated with staggered difference-in-differences tests (e.g., Baker et al. 2022; Barrios 2021). An event study analysis suggests that investors respond fairly quickly to the regulation and that the negative investment response persists for at least three years. This analysis also provides no evidence to suggest that pre-treatment trends significantly differ between treatment and control countries, mitigating concerns that the parallel trends

assumption is violated in our setting. Taken together, our results suggest that ownership transparency deters cross-border investment from financial havens into the EU.

To identify the mechanism behind our main results, we test whether the documented investment response varies with the extent to which countries publicize beneficial ownership information. We find that public, as opposed to private, registers drive the cross-border investment reductions we observe. This result is consistent with financial-haven investment being sensitive to public scrutiny of beneficial ownership information. In additional tests, we differentiate between different types of financial havens and find that the reduction in investment is driven by large financial centers, known as the Big 7 havens. We also examine variation in investment effects across EU destination countries and find the reduction of cross-border investment *into* the EU is concentrated in EU countries classified as financial havens or as having preferential tax regimes (i.e., Belgium, Ireland, Luxemburg, and Malta, De Simone and Olbert 2022). The remaining EU destination countries, in contrast, experience an *increase* in cross-border investment. These results suggest that ownership transparency meaningfully affects the calculus surrounding the costs and benefits of investing in EU countries historically associated with preferential tax regimes and opacity.

Although changes in bilateral investment patterns speak to the overall cross-border investment effects of ownership transparency, they do not allow us to identify the ultimate origin country of the capital flowing (or no longer flowing) into the EU. In other words, we cannot observe the original source of investment responding to the adoption of ownership registers. Accordingly, we conduct a second set of tests employing a micro-level identification strategy. In particular, we examine merger and acquisition (M&A) transactions in the EU and study the effect of ownership transparency on the likelihood that non-EU investors (i) acquire an EU target or (ii) sell an EU entity. In this setting, access to ownership

information on acquirers and sellers allows us to identify the location of the investors involved in the M&A transaction and to determine their ultimate human owners.

We find that the adoption of ownership registers is associated with a decrease in acquisition activity, but only for non-EU acquirers with an ultimate owner located in the EU. When focussing on sales, we find that non-EU sellers with an ultimate owner located in the EU are more likely to sell EU targets after the adoption of the ownership registries. Taken together, these results indicate that the cross-border investment response we observe on the bilateral level is likely to reflect a reduction in “round-tripping” activity by EU investors. That is, ownership transparency deters EU investors from accumulating funds in non-EU entities, such as entities located in financial havens, and re-investing these funds back in the EU—a strategy commonly used to obscure the ownership of entities and assets. Since we find negative investment responses only for registers with public access to beneficial ownership information, our results are consistent with investors reducing haven investment to avoid potential public scrutiny and reputational harm. Our focus on the beneficial ownership of *entities* is distinct from other “round-tripping” settings that focus on U.S. equity and debt securities (Hanlon et al. 2015) or financial accounts (De Simone et al. 2020).

This study contributes to the literature on the real effects of transparency regulation (Leuz and Wysocki 2016) by highlighting the compelling role that ownership transparency plays in cross-border investment decisions. Prior research provides evidence that private disclosure of financial information to tax authorities can affect foreign portfolio investment (De Simone et al. 2020) and the location of foreign subsidiaries (De Simone and Olbert 2021). Moreover, Rauter (2020) examines the mandatory disclosure of extraction payments in firms’ financial statements and finds a reduction in corruption and investment in resource-rich countries. In contrast, our setting allows us to examine the differential effects of non-public versus public disclosures of ownership information on cross-border investment. Our

evidence that the investment appears to decline in response to public, but not private, disclosure offers timely evidence amid current policy initiatives surrounding ownership transparency (e.g., U.S. Treasury FinCEN 2022a) and recent developments in the EU that call into question whether or how countries will be able to implement public registers (ECJ 2022).

This study also contributes to the tax and financial haven literature by underscoring the relevance of ownership transparency for the structuring of cross-border investment and associated capital flows. Prior research provides evidence consistent with tax haven usage being associated with various firm-level outcomes, including lower worldwide tax payments (Dyreg and Lindsey 2009), managerial opportunism in havens with weak investor protections (Atwood and Lewellen, 2019), and lower corporate transparency (Balakrishnan et al. 2019). Our evidence suggests that (the lack of) ownership transparency shapes the attractiveness of particular financial havens for investors.

2. Background and hypothesis development

2.1 Institutional background on ownership transparency

The release of the Panama Papers, Pandora Papers, and FinCEN files revealed that anonymously owned companies and other anonymous entities (e.g., trusts) registered in financial havens were getaway vehicles for tax evaders, criminals, corrupt politicians, and other individuals seeking to obscure their identity.² These individuals set up a chain of corporate vehicles to hide their identity, the true purpose of the account, and the source or use of funds or assets owned by the vehicles (see Appendix B). Without information on the beneficial ownership, it is almost impossible for authorities and the public to identify the individual who has ultimate ownership and control of an entity or its assets, particularly when the arrangement involves several countries or opaque jurisdictions, such as financial havens (Chernykh 2008).

² See <https://offshoreleaks.icij.org/> and <https://www.icij.org/investigations/fincen-files/>

For example, as revealed in the Pandora papers, at least £4bn in UK property belongs to politicians, oligarchs, business tycoons, ruling families and a Middle Eastern monarch, who were anonymous before the leak (Goodley and Smith 2021). In 2017, the former British Prime Minister Tony Blair and his wife became the owners of a £6.5m office building in London. To arguably obscure their identity and avoid public scrutiny, the Blairs set up a UK real estate leasing company, which acquired a British Virgin Islands holding company (Romanstone International Limited) owning the property (see Appendix B, panel B). As a side effect, the Blairs avoided £312,000 stamp duty by buying a business instead of a property.³

The misuse of corporate vehicles as in the above example could arguably be reduced if information regarding their beneficial owner(s) were readily available to authorities and the public. In general, a beneficial owner is an individual who ultimately owns or controls more than 25 percent of an entities' shares or voting rights or exercises control over the entities' management (FATF 2014). *Ultimate* ownership or control in this regard refers to situations in which ownership or control is exercised through a chain of entities or by means of indirect control. Information on the beneficial owners of an entity can help competent authorities and the public to connect the dots between assets, financial flows and the individual who has de facto control ("following the money"). Consequently, there has been a global movement to enhance ownership transparency (FATF 2014; IDB and OECD 2019; World Bank 2020).

As a global frontrunner of transparency, the EU has taken legislative steps to implement ownership transparency. Specifically, the EU passed the Fourth EU Anti-Money Laundering Directive (AML Directive; EU 2015/849) in 2015 under which EU countries are required to establish a central register of beneficial ownership information on corporations

³ See <https://offshoreleaks.icij.org/nodes/240024734>, <https://offshoreleaks.icij.org/nodes/240025610> and <https://offshoreleaks.icij.org/nodes/10144712>

and other legal entities registered in the given country.⁴ The European Parliament passed the directive on May 20, 2015, and it came into force on June 25, 2015. The Directive required EU member countries to implement the provision in their domestic laws by June 26, 2017. Table 1 shows the timeline of implementation in the EU sample countries.

As a minimum standard to comply with the Fourth AML Directive, the registers established by the EU member countries must collect information regarding the beneficial owner's name, nationality, country of residence, month and year of birth, nature of control, and size of interest.⁵ Each entity must obtain, retain, and submit this information to the register. Entities listed on a regulated market are exempt from the reporting requirement because they have to disclose ownership information in the internal, non-public shareholder register under the EU transparency directive. Failure to comply with the reporting requirement or the reporting of inaccurate information can constitute a financial crime and result in penalties.⁶ According to the Fourth AML Directive, information in the register must be made available to competent authorities, Financial Intelligence Units (FIUs), and intermediaries with due diligence responsibilities such as banks or tax consultants. However, to access information, the parties must prove their "legitimate interest" in beneficial ownership information (e.g., to identify or prevent illicit activity).

The EU also passed the Fifth AML Directive (EU 2018/843), which entered into force on 9 July 2018 and should be implemented by 10 January 2020. This directive requires EU member countries to make the register open to the public, either for free or for a fee. In

⁴ A directive is a legislative act that sets out a goal that all EU countries must achieve. However, it is up to the individual countries to devise their own laws on how to reach these goals. See https://european-union.europa.eu/institutions-law-budget/law/types-legislation_en

⁵ We provide a real-world example based on the Belgian beneficial ownership register in Appendix B, panel C.

⁶ Fines vary across EU countries, ranging from EUR 700 in Latvia to EUR 5,000,000 in Germany. These maximum fines may be imposed for intended and/or repeated non-compliance. Several countries have additional penalties in place, such as the ban of dividend distributions (Czech Republic and Portugal), the public disclosure on governmental websites (Germany and Hungary), and the blacklisting for tax purposes (Lithuania). In Latvia and France, noncompliance may be punished with imprisonment.

addition, all registers in the EU must be interconnected by 2021. The main argument in favor of making the register open to the public is that more intense public scrutiny of beneficial ownership information should reduce the opportunities and incentives for investors to obscure their identity and hide behind the corporate veil. One concern, however, is data privacy. Opponents of ownership transparency argue that making registers available to the public violates data protection laws (Bieler 2022).⁷ In fact, the European Court of Justice recently ruled that the public disclosure of beneficial ownership information infringes on personal rights (ECJ 2022).

Anecdotal evidence suggests that stakeholders react to the implementation of the registers. A report in the UK indicates that stakeholders, such as law enforcement agencies, financial institutions, and civil society organizations and businesses scrutinize the register and act on the information provided (BEIS 2019). Consequently, the incorporation rate of Scottish Limited Partnerships, an entity known as the UK's home-grown secrecy vehicle, fell by 80 percent after the introduction of the register (Global Witness 2018). In Luxembourg, OpenLux, an investigation by 17 media outlets, suggests that the register helps uncover suspicious practices.⁸

However, the implementation of the registers in the EU is subject to deficiencies that can limit their effectiveness. First, the Fourth AML Directive contains vaguely defined concepts (e.g., "legitimate interest"), providing EU member countries with substantial discretion for register implementation. Further, branches or legally dependent entities of a foreign entity may be exempt from the reporting requirement.⁹ Second, a lack of information

⁷ See more at <https://www.ifcreview.com/articles/2019/april/are-public-registers-of-beneficial-owners-in-breach-of-the-gdpr/>

⁸ See the OpenLux investigation and database (<https://www.occrp.org/en/openlux/>), which combines data from the Luxembourg company register and the Luxembourg beneficial ownership register.

⁹ For example, in the Netherlands, foreign legal entities are formally classified legal entities not incorporated under Dutch law, and are therefore not obliged to provide information on their beneficial owners. The same applies to branches of foreign entities registered in the Netherlands.

verification can enable investors to exploit loopholes or submit false information. Third, investors may circumvent the 25 percent threshold through interlocked shareholder links (Transcrime, 2018) or circular ownership structures (Bosisio et al. 2021).¹⁰ As a result, when evaluating the UK register in 2019, Global Witness found that a significant number of entities claim to have no beneficial owner. In Luxembourg, more than half of the entities were not reporting beneficial owners, while others provided conflicting information (White 2021).

2.2 Hypothesis development

To shed light on the economic implications of ownership transparency, we study its effect on cross-border investment.¹¹ Specifically, we examine whether investment of non-EU investors into EU member countries changed in response to the adoption of ownership registers. *A priori* it is unclear how this transparency initiative will shape the incentives for cross-border investment.

On the one hand, ownership transparency could deter foreign investors concerned about the public exposure of their identity or wealth, both due to reputational reasons or safety concerns. As evident from recent data leaks, high-profile individuals, such as politicians, celebrities, and wealthy individuals, invest via financial havens—presumably to obscure their identity and minimize reputational and safety concerns. Use of financial havens is consistent only with the countries providing tax benefits, but also offering high levels of secrecy and limited disclosure requirements (Hines 2010). Through the implementation of *public* ownership registers, the general public, investigative journalists, and NGOs all can scrutinize ownership information and trace assets and their ownership to individuals.

Consequently, the adoption of public ownership registers increases the risk of investors being

¹⁰ See <https://www.taxjustice.net/2019/09/06/more-beneficial-ownership-loopholes-to-plug-circular-ownership-control-with-little-ownership-and-companies-as-parties-to-the-trust/>

¹¹ On an operational level, we focus on foreign direct investment (FDI) instead of foreign portfolio investment because ownership transparency targets individuals who have ultimate control over an entity. Hence, the initiative is not directed at portfolio holdings but at investors with substantial shareholdings.

publicly scrutinized and their wealth being publicly exposed. Hence, ownership transparency could reduce cross-border investment associated with perfectly legal activities to the degree investors are concerned about their reputation and personal safety.

The disclosure of beneficial ownership information could also increase enforcement risk for individuals involved in questionable or illegal activities. Law enforcement agencies can use the information reported in the register to connect the dots among owners, assets, and financial flows. The approach of “following the money” allows competent authorities to uncover illicit activities, such as tax evasion, corruption or money laundering (Konovalova et al. 2022; Hanlon et al. 2015; De Simone et al. 2020)(Konovalova et al. 2022). Thus, consistent with the economic theory of crime (Becker 1968) and its extensions to taxation (Allingham and Sandmo 1972; Slemrod 2007), disclosing beneficial ownership information can increase the expected costs of illicit activity through fines, penalties, and prison sentences. To the extent individuals and their investments are associated with illicit activities (e.g., money laundering), cross-border investment might fall in response to ownership transparency. Since individuals involved in illegal activity regularly use financial havens to obscure their identity, we would again expect ownership transparency to reduce investment via financial havens.

On the other hand, there are two compelling reasons that ownership transparency might not affect cross-border investment. First, prior research suggests that investors regularly escape transparency initiatives (Bennedsen and Zeume 2018; Langenmayr and Zyska 2021). To the degree investors can avoid reporting beneficial ownership information to the register, for example by means of interlocked shareholdings or circular ownership structures, ownership transparency might not affect the incentives for cross-border investment. Second, ownership transparency could reduce uncertainty about potential business partners. Specifically, the register allows businesses to obtain ownership information

on unrelated parties, decreasing transaction costs and the costs of business partner due diligence and thus facilitating cross-border economic activity. Moreover, beneficial ownership information can mitigate potential reputational costs that might arise if ex-post a business partner turns out to be involved in questionable or illicit activities. Collectively, this discussion suggests that the precise effect of ownership transparency on cross-border investment is ex-ante unclear and therefore an empirical question.

3. Investment response to ownership transparency

In our first analysis, we examine the effect of ownership transparency on cross-border investment *into* EU member countries. Specifically, we exploit the staggered adoption of beneficial ownership registers across EU countries and test for the effect on total, bilateral investment positions that non-EU investors hold in EU countries. The EU setting is ideal to investigate our research question because the Fourth AML Directive sets a minimum standard for ownership transparency, yielding registers that are fairly comparable across countries. At the same time, the registers differ during our sample period in the extent to which ownership information is made available to the public, providing variation in register design that we can leverage in our empirical analysis. Moreover, implementation of the registers occurred within a relatively short time window (Table 1), providing variation in the timing of policy adoption while alleviating concerns about concurrent events or trends affecting our inferences. This latter benefit is important because several other transparency initiatives have been implemented during a similar time period (see Appendix B, panel D).

By investigating bilateral investment positions, we can test whether ownership transparency changed the attractiveness of a particular EU country as a location for non-EU investors. Further, we can assess whether the registers altered the incentives for adopting certain investment structures, such as investing via financial havens, potentially speaking to the effectiveness of the transparency initiative. One drawback of analyzing bilateral

investment positions is that we only observe the last country-pair for an investment relation. For example, if U.S. investors invest into Germany via Bermuda, bilateral investment data only captures investment from Bermuda into Germany. Thus, we are unable to identify the source of capital flowing (or no longer flowing) into EU countries. To address this concern and speak to the source of capital, we present micro-level evidence in Section 4.

3.1 Baseline research design

To examine the effect of ownership transparency on cross-border investment, we estimate the following baseline model:

$$FDI\ positions_{ij,t} = \exp(\beta_1 Transparency_{j,t} + \sum_i \beta_i Controls_{ij,t} + \mu_{ij} + \delta_{i,t}) + \varepsilon_{ij,t} \quad (1)$$

The dependent variable, $FDI\ positions_{ij,t}$, is the aggregate stock of FDI positions investors from origin country i hold in EU destination country j in year t . For cross-border investment to classify as FDI, the investor must hold a minimum of 10 percent in the equity of a firm located in EU destination country j . Thus, bilateral FDI is associated with a certain degree of control over the firm, which aligns well with the concept of beneficial ownership. $FDI\ positions_{ij,t}$ is a comprehensive measure capturing investment in new businesses (greenfield investment) and the acquisition of existing businesses (brownfield investment). Moreover, it captures equity and debt instruments held by the investor. $FDI\ positions_{ij,t}$ falls if investors either close their business in EU destination country j or transfer the ownership stake to a domestic investor or to an investor located in a different country.

Our variable of interest, $Transparency_{j,t}$, is an indicator variable equal to one for years in which EU destination country j mandates ownership transparency. In our primary specification, we define $Transparency_{j,t}$ based on the year in which EU destination country j enacted the law transposing Article 30 of the Fourth AML Directive (i.e., the requirement to establish the beneficial ownership register) into domestic law (Table 1). We focus on the implementation of the directive into domestic law as a treatment event because it brings

ownership transparency to the attention of investors, likely inducing behavioral responses to the transparency initiative (Hanlon 2018; Ivanov et al. 2021).¹² β_1 is a DiD estimator, capturing the effect of ownership transparency on cross-border investment relative to the years before the treatment and destination countries that are not yet treated.¹³ In additional tests, we adopt a “stacked design” to address concerns associated with staggered difference-in-differences tests and find consistent results (Table 7, panel B).

One concern with studying the effect of ownership transparency on bilateral investment positions is that country-pair characteristics or shocks at the origin-country level could drive our results. To address these concerns and tighten our identification strategy, we employ an extensive fixed effects structure. First, we include country-pair fixed effects μ_{ij} to control for time-invariant country-pair characteristics that could affect bilateral investment, such as geographical distance and common culture, language, and history. Consequently, $Transparency_{j,t}$ is identified from within-country-pair changes in ownership transparency. Second, we include origin country \times year fixed effects δ_{it} to control for local economic conditions and other confounding dynamics in the origin country. Notably, with these fixed effects, we limit the set of counterfactuals when estimating $Transparency_{j,t}$ to observations from the same origin-country-year. Thus, we effectively compare the annual investment stocks of investors from origin country i in EU destination countries with a beneficial ownership register (treatment) to those in EU destination countries that have not yet implemented the register (control).¹⁴

¹² In sensitivity tests, we use the timing of when the law becomes effective (as opposed to when it is passed) as the treatment event and find consistent results (Table 7, panel A).

¹³ Since the dependent variable in Equation (1) is in levels, any coefficient estimate can be interpreted analogously to a log-linear estimation, i.e., a one-unit change in the regressor will lead to a $100(e^{\beta} - 1)$ percentage change in FDI stocks.

¹⁴ For instance, when examining investment positions of U.S. investors in 2017, our approach compares their FDI stocks in Belgium, Denmark, Finland, France, Germany, Ireland, Latvia, Portugal, Slovenia, and Sweden (countries already treated) to those in Bulgaria, Croatia, Czech Republic, Estonia, Greece, Lithuania, Luxembourg, Malta, Poland, Romania, Slovakia, and Spain (countries not yet treated; see Table 1).

We also include several variables to control for time-varying country-pair and destination-country characteristics. Specifically, we use the natural logarithm of GDP to control for the size of the destination country's economy (*Ln GDP*), and the natural logarithm of GDP per capita (*Ln GDP per Capita*) to control for wealth effects. We obtain data on both variables from World Bank. We also control for changes in statutory corporate tax rates using the tax-rate differential between origin country *i* and destination country *j* (*Tax Differential*) (Azémar and Dharmapala 2019). We do not control for time-varying origin-country characteristics as they are subsumed in the country of origin \times year fixed effect.

We follow Azémar and Dharmapala (2019) and estimate Equation (1) using the pseudo-maximum likelihood (PPML) estimator proposed by Santos Silva and Tenreyro (2006). This approach accommodates the large number of zeros common in bilateral investment data and accounts for heteroscedasticity.¹⁵ Since treatment occurs at the destination-country level, we cluster standard errors accordingly (Petersen 2009).

3.2 Extended research design: Investment response for financial havens

Our baseline research design, Equation (1), estimates the average effect of ownership transparency on cross-border investment into the EU. As noted above, financial havens provide high levels of secrecy and opaqueness and investors frequently invest via these countries to obscure their identity (Hampton and Christensen 2002; Hines and Rice 1994; O'Donovan et al. 2019). If ownership transparency reduces the level of secrecy provided by financial havens and thus makes haven investment less attractive, we would expect to observe a negative effect on cross-border investment via financial havens.

¹⁵ The PPML estimator has several advantages over standard OLS (both truncated and censored). First, PPML takes account of observed heterogeneity and avoids the problem of biased parameters common for log-linear models under heteroskedasticity. Second, the multiplicative form of PPML provides a natural way to deal with zero values for the dependent variable. Hence, PPML performs well in the presence of zeros and heteroscedasticity (Santos Silva and Tenreyro 2006). Third, PPML can be applied to nonnegative dependent variables without specifying their distribution (Correia et al. 2020).

To test this prediction, we adopt our baseline model following De Simone, Lester, and Markle (2020). Specifically, we extend our Equation (1) as follows:

$$FDI\ positions_{ij,t} = \exp(\beta_1 Transparency_{j,t} + \beta_2 Transparency_{j,t} \times FinancialHaven(Origin\ Country)_i + \sum_i \beta_i Controls_{ij,t} + \mu_{ij} + \delta_{i,t}) + \varepsilon_{ij,t} \quad (2)$$

$FinancialHaven(Origin\ Country)_i$ is an indicator variable equal to one if origin country i is classified as a financial haven, and zero otherwise. We identify financial havens using the Hines (2010) list. We begin with this list because it is the most comprehensive list of financial havens to date (see Appendix A, Table A2). Notably, our main findings are robust to using alternative financial-haven lists (see Table 7, panel A).

Our variable of interest is β_2 , which measures the investment response to ownership transparency for investors located in financial havens, relative to those located in non-haven countries. A negative coefficient would suggest a relative decrease in investment from financial havens into EU countries adopting ownership transparency. We again include country-pair fixed effects, country of origin \times year fixed effects, and controls for $Ln\ GDP$, $Ln\ GDP\ per\ Capita$, and $Tax\ Differential$. Note that the main effect of $FinancialHaven_i$ is subsumed in the country of origin \times year fixed effect.

3.3 Data and sample selection

Our initial sample includes annual, bilateral FDI stocks of non-EU investors in the EU 27 member countries, measured for the years 2013 to 2019.¹⁶ We obtain FDI data from Eurostat, which collects data through a joint OECD–Eurostat questionnaire. Eurostat harmonizes national data to obtain FDI statistics for each EU country (Navaretti and Venables 2020). Since the standard for reporting FDI data changed in 2013 (from OECD

¹⁶ We remove the UK from our sample because the adoption of the beneficial ownership register in 2016 coincided with the Brexit referendum. Thus, it is unclear whether Brexit or ownership transparency drive investment responses.

BMD3 to BMD4 and from IMF BPM5 to BPM6), data before and after 2013 are not comparable. We therefore start the sample in 2013, ensuring a common reporting standard. From Eurostat, we collect the annual value of bilateral FDI positions reported as liabilities by the EU countries. By using liabilities, we identify investment positions of foreign investors, which, from the perspective of an EU country, reflects a “liability”.

We next merge annual data for origin- and destination-country characteristics. As noted above, we obtain data for *Ln GDP* and *Ln GDP per Capita* from World Bank. To calculate *Tax Differential*, we compile statutory corporate tax rates from KPMG’s corporate tax rates tables, EY’s Corporate Tax Guides, and the Tax Foundation. To tighten identification, we remove EU countries from the sample that passed the domestic law implementing the Fourth AML Directive but that have not implemented the beneficial ownership register until the end of our sample period.¹⁷ We also eliminate bilateral FDI stocks between EU countries to avoid confounding the treatment (i.e., treating countries as both destination and origin countries in our tests). This step limits our sample to cross-border investment of non-EU investors into EU member countries. Further, since our research design exploits within-country-pair variation, we require a times series of at least six observations per country-pair. This requirement also ensures that each country-pair reports observations for the pre- and post-treatment period. Lastly, we drop EU member countries without FDI data (Austria) and observations with insufficient data to compute our regression variables.

Our final dataset is identified at the country-pair-year level. Each observation denotes the aggregate FDI stock of investors from origin country *i* in EU destination country *j* in year *t*. The final sample includes 12,622 observations for the years 2013 to 2019, representing 1,987 unique country-pairs and 186 unique non-EU origin countries/regions. Thus, our final

¹⁷ This step removes Cyprus, Hungary, Italy, and the Netherlands from the sample. In additional tests, we include these countries in the sample and find consistent results (see Table 7, panel A).

sample covers almost all cross-border investments from non-EU countries into the EU.

Table 2 shows the sample composition by EU destination country. As pointed out in prior research (Azémar and Dharmapala 2019), FDI stocks with a value of zero occur frequently in the data. Focusing on non-zero FDI stocks, the number of observations varies across EU destination countries. The number of cross-border investment relations are highest for large and fast-growing Eastern European countries (e.g., Poland and Bulgaria). Table A3 in Appendix A presents the sample composition by non-EU origin country. The number of investment relations is highest for major economies and countries known as active investors in the EU (e.g., U.S., Japan, Australia, Brazil, Norway, Russia, and Turkey). We also observe a relatively high number of investment relations for well-known financial havens, such as Hong Kong, Singapore and Switzerland.

3.4 Main results

Table 3 presents the cross-border investment response to ownership transparency. Column 1 presents the results of estimating our baseline specification, Equation (1). The coefficient on *Transparency* is negative but statistically insignificant ($p = 0.334$). This result suggests that investment positions of non-EU investors, on average, are not significantly associated with the adoption of ownership registers in EU destination countries.

We next test whether cross-border investment from financial havens into the EU responds differently to ownership transparency compared with investment from non-haven countries. We present the results of estimating Equation (2) Table 3, column 2. The coefficient on *Transparency* \times *FinancialHaven (Origin Country)* is negative and statistically significant ($p = 0.014$). This result indicates that investment from financial havens into the EU declines in response to ownership transparency compared with investment from non-haven countries. In economic terms, the estimate of -0.165 on *Transparency* \times *FinancialHaven (Origin Country)* suggests a relative decrease in FDI by 15.2 percent. The

coefficient on *Transparency* is insignificant and close to zero, consistent with no investment response by investors located in non-haven countries.¹⁸

In sum, our results suggest that while cross-border investment from non-EU countries into the EU, on average, does not respond to ownership transparency, the transparency initiative is associated with significant reductions in cross-border investment stemming from financial havens.

3.5 Mechanism test: Enforcement risk versus public scrutiny

To speak to the mechanism behind our main result, we exploit differences in the design of the beneficial ownership registers across EU destination countries. As noted in Section 2.1, some EU member countries during our sample period limit access to ownership information to specific parties while others have made the register available to the public, either from the beginning or in a separate step. This feature allows us to test whether the investment response to ownership transparency is driven by an increase enforcement risk or potential public scrutiny of beneficial ownership information. Specifically, while enforcement risk should already increase after the implementation of a non-public register, public scrutiny can only occur in the presence of a public register. To test whether the investment response in Table 3 varies for public and non-public registers, we split *Transparency* into *Transparency (Non-Public Register)* and *Transparency (Public Register)*, respectively. The latter variables reflect whether EU destination country j has a non-public or a public register in place in year t . We present the regression results in Table 4.

In column 1, we re-estimate our baseline specification, Equation (1). On average, we find no evidence of a cross-border investment response to either private or public registers (i.e., the coefficients on *Transparency (Non-Public Register)* and *Transparency (Public Register)* are insignificant, $p > 0.240$), respectively. In column 2, we differentiate between

¹⁸ We find consistent results for both equity and debt positions held by foreign investors.

origin countries classified as financial havens and those classified as non-havens. While the coefficient on *Transparency (Non-Public Register) × FinancialHaven (Origin Country)* is negative but insignificant ($p = 0.148$), the negative coefficient on *Transparency (Public Register) × FinancialHaven (Origin Country)* is statistically significant ($p = 0.002$).¹⁹ Thus, the results suggest that public registers are associated with decreases in cross-border investment from financial havens into the EU. Overall, these results suggest that haven investment is sensitive to potential public scrutiny of beneficial ownership information, consistent with investors using financial havens to obscure their identity primarily out of reputational concerns.

3.6 Additional analyses and robustness tests

Investment response for different types of financial havens

In a first set of additional tests, we examine whether the investment response to ownership transparency varies for different types of financial havens. Specifically, we modify Equation (2) and partition origin countries classified as financial havens into large havens (*Big 7 Haven (Origin Country)*) and small havens (*Dot Haven (Origin Country)*), respectively. Big 7 havens are well-known financial centers with a sizeable domestic population and significant economic activity. These haven nations include Hong Kong, Ireland, Lebanon, Liberia, Panama, Singapore, and Switzerland.²⁰ In contrast, dot havens are primarily small nations (often islands) with small domestic populations and relatively less economic activity (Desai, Foley, and Hines 2006). We then compare the investment response to ownership transparency for each group to that of non-haven countries. We present the results of these tests in Table 5.

For Big 7 havens in column 1, we observe a negative and statistically significant

¹⁹ The coefficients do not significantly differ (p-value = 0.41)

²⁰ Since Ireland is a destination country in our setting, it is not included in the Big 7 definition.

coefficient on *Transparency* \times *Big 7 Haven (Origin Country)* ($p = 0.014$). For dot havens in column 2, the estimate on *Transparency* \times *Dot Haven (Origin Country)* is negative but statistically insignificant ($p = 0.210$). Collectively, these results suggest that the effect of ownership transparency on haven investment into the EU is concentrated in origin countries classified as Big 7 havens. The transparency initiative has little effect on cross-border investment via dot havens.

Investment response for different types of EU destination countries

In our primary analyses, we focus on the investment response to ownership transparency for non-EU origin countries. In Table 6, we change the focus of our analysis and explore whether ownership transparency has heterogeneous investment effects across EU destination countries. Specifically, we examine EU destination countries classified as financial havens or as offering a preferential tax regime (De Simone and Olbert 2021) (*Pref Tax Regime (Destination Country)*). Ireland, Luxembourg, Malta, and Belgium from Table 1 each fall into this category. Historically, these countries have been known for providing investors with substantial tax savings and high levels of secrecy (European Parliament 2019). To test whether ownership transparency is differentially associated with cross-border investment *into* these EU countries versus the remaining EU countries, we modify Equation (2) and interact *Transparency* with *Pref Tax Regime (Destination Country)*.

In column 1, the coefficient on *Transparency* \times *Pref Tax Regime (Destination Country)* is negative and statistically significant ($p < 0.001$). This result suggests that cross-border investment into EU countries classified as financial havens or offering preferential tax regimes declines in response to ownership transparency. In column 2, we re-estimate the previous test but focus on EU countries classified as financial havens (*FinancialHaven (Destination Country)*). This definition captures Ireland, Luxembourg, and Malta but excludes Belgium. The coefficient on *Transparency* \times *FinancialHaven (Destination Country)*

is again negative and significant ($p < 0.001$). Interestingly, the coefficients on *Transparency* are positive and significant in both columns (all $p < 0.001$). This result indicates that ownership transparency is associated with increased cross-border investment into EU countries that are neither classified as financial havens nor special tax regime locations.

In Table 6, column 3, we again differentiate between non-public and public registers. Here, the coefficients on *Transparency (Non-Public Register) × Pref Tax Regime (Destination Country)* and *Transparency (Public Register) × Pref Tax Regime (Destination Country)* are both negative and significant (all $p < 0.001$).²¹ These results suggest that ownership transparency is associated with declines in investment into rather secretive EU countries, irrespective of whether beneficial ownership information is made available to the public. Thus, cross-border investment into these EU countries appears to be sensitive to both greater enforcement risk and potential public scrutiny of ownership information.

In sum, our results suggest that ownership transparency has heterogenous investment effects within the EU. Specifically, the evidence suggests that such transparency affects the calculus surrounding the costs and benefits of investing in EU countries that have historically been associated with preferential tax regimes and high levels of secrecy. The increase in cross-border investment into the remaining EU countries is consistent with ownership transparency increasing the incentives to invest directly in the EU country of interest, rather than using EU havens as a gateway for investment.

Robustness Tests

In this section, we present several sets of tests assessing the robustness of our main findings. First, we conduct additional tests using an expanded sample by adding EU countries to our sample that did not implement the register during our sample period (i.e., Cyprus, Netherlands, Hungary, and Italy). As presented in column 1 of Table 7 (panel A), the

²¹ Note that the coefficients do not significantly differ (p-value 0.13).

coefficient on *Transparency* \times *FinancialHaven (Origin Country)* remains negative and significant ($p = 0.014$). In column 2, we modify the treatment definition and define *Transparency* based on the effective date of the transparency regulation (i.e., the effective date of the register) rather than the enactment of the domestic law transposing the Fourth AML Directive. Consistent with our main results, the coefficient on *Transparency* \times *FinancialHaven (Origin Country)* is negative and significant ($p = 0.006$). The coefficient estimate is comparable to that in our main tests.

In columns 3 and 4, we use alternative tax haven lists to classify origin countries as financial havens. Specifically, we use the list compiled by Johannesen and Zucman (2014) in column 3 and OECD's financial-haven list in column 4. The coefficients on *Transparency* \times *FinancialHaven_JZ (Origin Country)* and *Transparency* \times *FinancialHaven_OECD (Origin Country)* remain negative and significant in both columns (all $p = 0.002$), corroborating the robustness of our main results.

In column 5, we address the concern that a large number of zeros in the FDI data could affect our inferences and drop observations with zero FDI from the sample.²² Since the remaining observations exhibit non-zero (i.e., positive) values, we re-estimate our main test using OLS.²³ The coefficient on *Transparency* \times *FinancialHaven (Origin Country)* is negative and significant ($p = 0.022$). Thus, including observations with zero FDI stocks do not alter our inferences.

Our research design is a DiD estimation leveraging the staggered adoption of ownership registers. Therefore, we conduct two additional sets of tests to support the validity of the design and address recent econometric concerns relating to staggered treatments. First, since identification in a DiD test relies on treatment and control observations exhibiting

²² In line with our primary approach, we require a minimum number of six positive FDI stocks per country-pair.

²³ To account for skewness in the FDI data, we log the FDI stock prior to running the regression.

parallel pre-treatment trends, we adopt an event-study approach (Borusyak et al. 2021; Sun and Abraham 2021) and examine yearly treatment effects around the treatment. We use year $t-4$ as a reference year and graphically depict yearly treatment coefficients along with their 95 percent confidence intervals.²⁴ Panel A of Figure 1 shows the results using our baseline specification, Equation (1). We find that the yearly treatment effects are indistinguishable from zero in the pre-treatment period, mitigating concerns that the treatment and control observation exhibit differential pre-treatment trends. Moreover, and in line with the results in column 1 of Table 3, the treatment effects also do not statistically differ from zero after the adoption of the registers. Figure 1, panel B presents the results when using the extended research design, Equation (2), to examine the investment response for financial havens compared with non-haven countries. Yearly treatment effects in the pre-period are again statistically insignificant and close to zero, mitigating concerns that differential trends in cross-border investment prior to treatment drive our results. For the post-treatment period, we observe a marked drop in cross-border investment from financial havens immediately after the treatment, consistent with investors responding rather quickly to ownership transparency. Moreover, we find the negative investment response for financial havens persists for at least three years after treatment.

Then, we address potential econometric concerns associated with staggered treatments by adopting a “stacked” event-by-event research design (Baker et al. 2022). For each event (i.e., adoption of a register), we pair treated EU destination countries with EU destination countries that were not yet treated (“clean control observations”). We focus on two events: i) EU destination countries that adopt the register in 2016 and ii) those that adopt the register in 2017. We do not include countries for the treated group that adopted the register in 2018 or 2019 because there is no clean control group for these observations. We then restrict the

²⁴ Since most treatments occur from 2017 onwards, we limit the post-treatment period to three years.

sample to four years around treatment (i.e., two years before treatment and two years after treatment), stack all event-specific datasets, and re-estimate Equation (2) on the stacked sample. By using the stacked design, we exclude registers implemented in 2018 or 2019. We adopt this approach as an additional test, rather than as our primary analysis, because it considerably reduces the number of treated countries in our sample (we lose 12 of the 22 countries in our primary sample).

Table 7, panel B presents the results of these analyses. In column 1 (2), we compare treated destination countries to last treated (not yet treated) countries as a control group. This approach compares earlier treated (as treated) to later treated (as control) destination countries without including the effect of later treated (as treated) versus earlier treated (as control) destination countries, mitigating concerns related to dynamic treatment effects (Callaway and Sant’Anna 2021; de Chaisemartin and D’Haultfoeuille 2022; Goodman-Bacon 2021).²⁵ In line with our main results, the coefficients on *Transparency* \times *FinancialHaven (Origin Country)* are negative and significant in both columns (all $p < 0.001$). In sum, the results of these additional tests corroborate the robustness of our primary findings.

4. M&A response to ownership transparency

4.1 Research design

Although the observed changes in bilateral investment speak to the cross-border investment effects of ownership transparency, the FDI data do not allow us to determine whether capital originates in a given origin country or whether it merely flows into the EU through that country. To provide evidence on where investors responding to ownership transparency are located, we supplement our macro-level FDI tests with micro-level analyses, examining the effect of ownership transparency on M&A transactions, which comprise a

²⁵ Since we exclude destination countries that have not implemented the register during our sample period, we do not have a never treated group in our sample.

distinct channel of FDI. Specifically, we investigate whether the transparency initiative is associated with the M&A activity of foreign investors in EU destination countries that implement the beneficial ownership register. In line with the FDI tests, we focus on targets located in EU destination countries and test whether the implementation of registers is associated with changes in the likelihood of a target being acquired by a non-EU investor.

We estimate the following linear probability model:

$$\begin{aligned} non - EUAcquirer_i = & \beta_1 Transparency_{j,t} + \beta_2 Size_{i,t-1} + \beta_3 ROA_{i,t-1} + \\ & \beta_4 Leverage_{i,t-1} + \beta_5 Intangibles_{i,t-1} + \beta_6 Loss_{i,t-1} + \mu_{jk} + \delta_t + \\ & \varepsilon_i \end{aligned} \quad (3)$$

The dependent variable, *non-EU Acquirer*, is an indicator variable equal to one if the acquirer of target *i* is located outside the EU, and zero otherwise. *Transparency* takes the value of one for years after the adoption of ownership registers in target country *j* (i.e., EU destination country). β_1 captures the effect of ownership transparency on the probability of target *i* being acquired by a non-EU investor. A negative (positive) coefficient on β_1 is consistent with the adoption of ownership registers reducing (increasing) the likelihood of target *i* being acquired by a non-EU investor.

We include target country \times industry fixed effects ($\alpha_{j,k}$), using industry classifications at the one-digit NACE level (Amberger and Robinson 2023) and year fixed effects (α_t). These fixed effects absorb the impact on M&A activity of time-invariant target-country-industry characteristics and time-specific shocks, such as changes in local economic conditions. By including these fixed effects, we identify the effect of ownership transparency on M&A activity within each target-country-industry.²⁶

We also control for several target characteristics that could affect its attractiveness for

²⁶ Including fixed effects is less of a concern in linear probability models with a binary dependent variable, compared to non-linear logit or probit models which. The latter models could suffer from the incidental parameters problem (Allison 2009; Greene 2004; Wooldridge 2010).

foreign acquirers. Following Bird, Edwards, and Shevlin (2017) and Amberger and Robinson (2023), we control for target size (*Size*), profitability (*ROA*), non-current liabilities (*Leverage*), and intangible assets (*Intangibles*). We also include *Loss* as an indicator variable equal to one if target *i* incurs a loss. This variable captures differences in future tax rates that could differently affect foreign and domestic acquirers. We lag these control variables by one year to capture target characteristics in the year prior to the deal. Consistent with the FDI tests, we cluster standard errors at the target-country level.

4.2 Data and sample

We obtain a sample of M&A deals with EU targets from Bureau van Dijk's Zephyr database. This database includes deal-level data, providing information on deal type and the acquirer, target, and seller involved in the transaction. We begin with all acquisitions of EU targets completed between 2013 and 2019 that have non-missing deal values. We require the target and the acquirer to report non-missing country information. To ensure consistency with the sample selection for the FDI tests, we exclude target countries that are not in the FDI sample and drop deals with foreign acquirers located in the EU. This latter step limits our sample to deals with either a domestic or a non-EU acquirer. We then merge the deal-level data with financial statement and ownership information from Bureau van Dijk's Orbis database. We drop observations with data missing for calculating control variables.

Table 8, panel A presents information on the sample composition by target country. Our final sample includes 9,562 deals. The largest number of deals are for Spain, France, and Sweden. Panel B presents target-level descriptive statistics. Targets in our sample have a mean (median) profitability of 1.5 (3.2) percent. Targets exhibit rather low leverage and have low levels of intangible assets. 35.5 percent of the targets report a loss.

4.3 Regression results

Table 9 presents the results for estimating Equation (3). In column 1, the coefficient on *Transparency* is insignificant and close to zero ($p = 0.939$). Consistent with the results for the FDI tests, this estimate suggests that, on average, M&A activity of non-EU acquirers does not respond to ownership transparency. In columns 2 and 3, we leverage ownership information in Orbis to identify the ultimate owner of the acquiring entity and its location.²⁷ This information allows us to differentiate between non-EU acquirers with an ultimate owner located in the EU and non-EU acquirers with an ultimate owner located outside the EU. For each group, we examine whether ownership transparency affects their M&A activity compared with that of domestic acquirers. In column 2, we find the coefficient on *Transparency* is negative and significant for non-EU acquirers with an EU ultimate owner ($p = 0.091$). In contrast, the coefficient on *Transparency* for non-EU acquirers with a non-EU ultimate owner is insignificant and close to zero in column 3 ($p = 0.551$). Taken together, these results are consistent with foreign investors reacting to ownership transparency by reducing their M&A activity. Notably, this effect is driven by EU investors investing in EU countries indirectly via non-EU entities.

In Table 10, we repeat the previous analysis but focus on the entities selling targets in our sample.²⁸ We find that, on average, the adoption of ownership registers is not associated with the likelihood of non-EU investors selling EU entities (column 1). However, mirroring the results in Table 9, we find that non-EU sellers with an ultimate owner located in the EU are more likely to sell an EU entity after the adoption of the register (column 2). However,

²⁷ The sample size in columns 2 and 3 is smaller than in column 1 because ultimate owner information is only available for a subset of targets in our sample.

²⁸ The sample size in Table 10 is substantially smaller than in Table 9 because data on sellers is less well populated than data on targets and acquirers.

the likelihood of selling an EU entity does not change for non-EU sellers with an EU ultimate owner (column 3).

In combination, the results in Tables 9 and 10 suggest that cross-border M&A activity responds to ownership transparency, corroborating the findings from our FDI tests. Since the observed change in cross-border M&A activity is concentrated in non-EU entities owned by *EU investors*, the cross-border investment response to ownership transparency is likely driven by a reduction in “round-tripping”. That is, the evidence is consistent with ownership transparency reducing the incentives for EU investors to obscure their identity by accumulating capital in non-EU entities, such as entities located in financial havens, and re-investing the funds back into the EU.

5. Conclusion

This study investigates the cross-border investment effects of ownership transparency—the mandatory disclosure of the true, ultimate human owner of an entity. Prior research suggests that transparency in government institutions and economic policies is key to attracting foreign investment (Drabek and Payne 2002; Zhao et al. 2003) and recent policy initiatives underscore heightened regulatory interest in ownership transparency. Exploiting the staggered adoption of beneficial ownership registers in the EU, we find that ownership transparency is associated with a significant decline in investment from financial havens, but not from non-EU countries generally, into the EU. The evidence suggests that public, as opposed to private, registers drive the cross-border investment response we observe, underlining the role potential public scrutiny can play in shaping the incentives for investment via financial havens. The results of analyses examining M&A transactions are consistent with ownership transparency discouraging “round-tripping” behavior through which EU investors can obscure their identity by investing indirectly in the EU via offshore financial havens. Notably, this form of round-tripping activity is distinct from the foreign

portfolio investment activity documented in prior research (Hanlon et al. 2015). The transparency setting we study also differs from the foreign account transparency focus in prior research (De Simone et al. 2020; Belnap et al. 2021) and speaks to the role individual *entity* ownership transparency plays in cross-border investment decisions. Overall, our study provides compelling policy-relevant insights that can inform ownership transparency efforts designed to limit particular capital flows through offshore hubs.

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Appendix A

Table A1: Variable definitions

Name	Description	Source
FDI Tests		
<i>FDI positions</i>	The total value of financial direct investment liabilities (data item: DI__D__F) of residents of destination country j to non-resident investors located in origin country i at the end of year t ²⁹ .	Eurostat
<i>Transparency</i>	Indicator variable equal to one if the destination country has introduced a beneficial ownership register in year t , and zero otherwise.	Government websites and documents as well as official gazettes from EU member countries (collected from https://eur-lex.europa.eu/legal-content/EN/NIM/?uri=celex:32015L0849 and other sources).
<i>Transparency (Non-Public Register)</i>	Indicator variable equal to one if the destination country has introduced a non-public beneficial ownership register in year t , and zero otherwise.	Government websites and documents as well as official gazettes from EU member countries (collected from https://eur-lex.europa.eu/legal-content/EN/NIM/?uri=celex:32015L0849 and other sources).
<i>Transparency (Public Register)</i>	Indicator variable equal to one if the destination country has introduced a public beneficial ownership register in year t , and zero otherwise.	Government websites and documents as well as official gazettes from EU member countries (collected from https://eur-lex.europa.eu/legal-content/EN/NIM/?uri=celex:32015L0849 and other sources).
<i>FinancialHaven (Origin Country)</i>	Indicator variable equal to one if the origin country is on Hines (2010)'s tax haven list, and zero otherwise (see Table A2).	Hines (2010)
<i>FinancialHaven_JZ (Origin country)</i>	Indicator variable equal to one if the origin country is on Johannesen and Zucman	Johannesen and Zucman (2015)

²⁹ Eurostat's definition for FDI is "the category of international investment in which an enterprise resident in one country (the direct investor) acquires an interest of at least 10 % in an enterprise resident in another country (the direct investment enterprise). Subsequent transactions between affiliated enterprises are also direct investment transactions. As it gives the investor an effective voice in the management of the enterprise and a substantial interest in its business, FDI implies a long-term relationship between the direct investor and the direct investment enterprise. Investment may take place through the establishment of an entirely new firm, so-called "Greenfield" investment, or through the complete or partial purchase of an existing firm via a merger or an acquisition." See https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=DSP_GLOSSARY_NOM_DTL_VIEW&StrNom=CODED2&StrLanguageCode=EN&IntKey=16701585&RdoSearch=BEGIN&TxtSearch=foreign&CboTheme=&IntCurrentPage=1

	(2014)'s tax haven list, and zero otherwise (see Table A2).	
<i>FinancialHaven_OECD (Origin Country)</i>	Indicator variable equal to one if the origin country is on the OECD (2000)'s tax haven list, and zero otherwise (see Table A2).	OECD (2000)
<i>Big 7 Havens (Origin country)</i>	Indicator variable equal to one if the origin country is on Hines (2010)'s Big 7 list, and zero otherwise (see Table A2).	Hines (2010)
<i>Dot Havens (Origin country)</i>	Indicator variable equal to one if the origin country is on Hines (2010)'s dot haven list, and zero otherwise (see Table A2).	Hines (2010)
<i>Pref Tax Regime(Destination Country)</i>	Indicator variable equal to one if the destination country is included on the tax haven list of Hines (2010) (Johannesen and Zucman, 2014; see Table A2) or has a preferential regime according to De Simone and Olbert (2021).	Hines (2010) and De Simone and Olbert (2021)
<i>FinancialHaven (Destination Country)</i>	Indicator variable equal to one if the destination country is on Hines (2010)'s tax haven list, and zero otherwise (see Table A2).	Hines (2010)
<i>Ln GDP</i>	Destination country GDP (<i>ny_gdp_mktp_cd</i>)	World Bank – World Development Indicators
<i>Ln GDP per Capita</i>	Destination country GDP per capital (<i>ny_gdp_pcap_cd</i>)	World Bank – World Development Indicators
<i>Tax Differential</i>	Origin-country statutory tax rate - destination-country statutory tax rate	KPMG corporate tax rates table, EY Corporate Tax Guides, and the Tax Foundation
M&A Tests		
<i>non-EU Acquirer</i>	Indicator variable equal to one if the acquirer of target <i>i</i> is located in a non-EU country, and zero otherwise.	Zephyr/Orbis
<i>non-EU Acquirer with EU Owner</i>	Indicator variable equal to one if the acquirer of target <i>i</i> is located in a non-EU country and the acquirer's ultimate owner is located in an EU country, and zero otherwise.	Zephyr/Orbis
<i>non-EU Acquirer with non-EU Owner</i>	Indicator variable equal to one if the acquirer of target <i>i</i> is located in a non-EU country and the acquirer's ultimate owner is located in a non-EU country, and zero otherwise.	Zephyr/Orbis
<i>non-EU Seller</i>	Indicator variable equal to one if the seller of target <i>i</i> is located in a non-EU country, and zero otherwise.	Zephyr/Orbis
<i>non-EU Seller with EU Owner</i>	Indicator variable equal to one the seller of target <i>i</i> is located in a non-EU country and the seller's ultimate owner is located in an EU country, and zero otherwise.	Zephyr/Orbis
<i>non-EU seller with non-EU Owner</i>	Indicator variable equal to one if the seller of target <i>i</i> is located in a non-EU country	Zephyr/Orbis

	and the seller's ultimate owner is located in a non-EU country, and zero otherwise.	
<i>Transparency</i>	Indicator variable equal to one if the target country has introduced a beneficial ownership register in year t , and zero otherwise.	Government websites and documents as well as official gazettes from EU member countries (collected from https://eur-lex.europa.eu/legal-content/EN/NIM/?uri=celex:32015L0849 and other sources).
<i>Size</i>	The natural logarithm of total assets of target i in the year prior to the deal.	Orbis
<i>ROA</i>	Earnings before interest and taxes of target i in the year prior to the deal, scaled by total assets.	Orbis
<i>Leverage</i>	Non-current liabilities of target i in the year prior to the deal, scaled by total assets.	Orbis
<i>Intangibles</i>	Intangible assets of target i in the year prior to the deal, scaled by total assets.	Orbis
<i>Loss</i>	Indicator variable equal to one if the earnings before interest and taxes of target i in the year prior to the deal are negative, and zero otherwise.	Orbis

Table A2: Financial-haven lists

Country	Hines (2010)	Big 7 Havens	Dot Havens	Johannesen and Zucman (2014)	OECD
American Samoa	0	0	0	0	
Andorra	1	0	1	1	1
Anguilla	1	0	1	1	1
Antigua and Barbuda	1	0	1	1	1
Aruba	1	0	1	1	1
Austria	0	0	0	1	0
Bahamas	1	0	1	1	1
Bahrain	1	0	1	1	1
Barbados	1	0	1	1	1
Belgium	0	0	0	1	0
Belize	1	0	1	1	1
Bermuda	1	0	1	1	1
Bolivia	0	0	0	0	0
Botswana	0	0	0	0	0
Brunei Darussalam	0	0	0	0	0
Cayman Islands	1	0	1	1	1
Chile	0	0	0	1	0
Cook Islands	1	0	1	1	1
Costa Rica	1	0	1	1	0
Curacao	0	0	0	1	0
Cyprus	1	0	1	1	1
Djibouti	1	0	1	0	0
Dominica	1	0	1	1	1
Dominican Republic	0	0	0	0	0
Gambia	0	0	0	0	0
Ghana	0	0	0	0	0
Gibraltar	1	0	1	1	1
Grenada	1	0	1	1	1
Guam	0	0	0	0	0
Guatemala	0	0	0	0	0
Guernsey	1	0	1	1	1
Hong Kong	1	1	0	1	1
Ireland	1	1	0	0	1
Isle of Man	1	0	1	1	1
Jersey	1	0	1	1	1
Jordan	1	0	1	0	1
Latvia	0	0	0	0	0
Lebanon	1	1	0	0	1
Liberia	1	1	0	1	1
Liechtenstein	1	0	1	1	1
Luxembourg	1	0	1	1	0
Macau	1	0	1	1	0
Macedonia	0	0	0	0	0

Malaysia	0	0	0	1	0
Maldives	1	0	1	0	1
Malta	1	0	1	1	1
Marshall Islands	1	0	1	1	1
Mauritius	0	0	0	0	0
Micronesia	1	0	1	0	0
Monaco	1	0	1	1	1
Mongolia	0	0	0	0	0
Montenegro	0	0	0	0	0
Montserrat	1	0	1	1	1
Namibia	0	0	0	0	0
Nauru	1	0	1	1	1
Netherlands Antilles	1	0	1	1	1
Niue	1	0	1	1	1
Palau	0	0	0	0	0
Panama	1	1	0	1	1
Paraguay	0	0	0	0	0
Philippines	0	0	0	0	0
Saint Kitts and Nevis	1	0	1	1	1
Saint Lucia	1	0	1	1	1
Saint Martin	1	0	1	0	0
Saint Vincent and Grenadines	1	0	1	1	1
Samoa	1	0	1	1	1
San Marino	1	0	1	1	1
Saudi Arabia	0	0	0	0	0
Seychelles	0	0	0	1	1
Singapore	1	1	0	1	1
Sint Marten	0	0	0	1	0
South Korea	0	0	0	0	0
Switzerland	1	1	0	1	0
Taiwan	0	0	0	0	0
Tanzania	0	0	0	0	0
Trinidad and Tobago	0	0	0	1	0
Tonga	1	0	1	0	1
Tunisia	0	0	0	0	0
Turkey	0	0	0	0	0
Turks and Caicos Islands	1	0	1	1	1
United Arab Emirates	0	0	0	0	0
Uruguay	0	0	0	1	0
Vanuatu	1	0	1	1	1
Venezuela	0	0	0	0	0
Virgin Islands (British)	1	0	1	1	1
Virgin Islands (USA)	0	0	0	1	1

Note: This table presents information regarding different financial-haven lists and the resulting haven classification of the origin countries included in our main sample.

Table A3: Observations by origin country

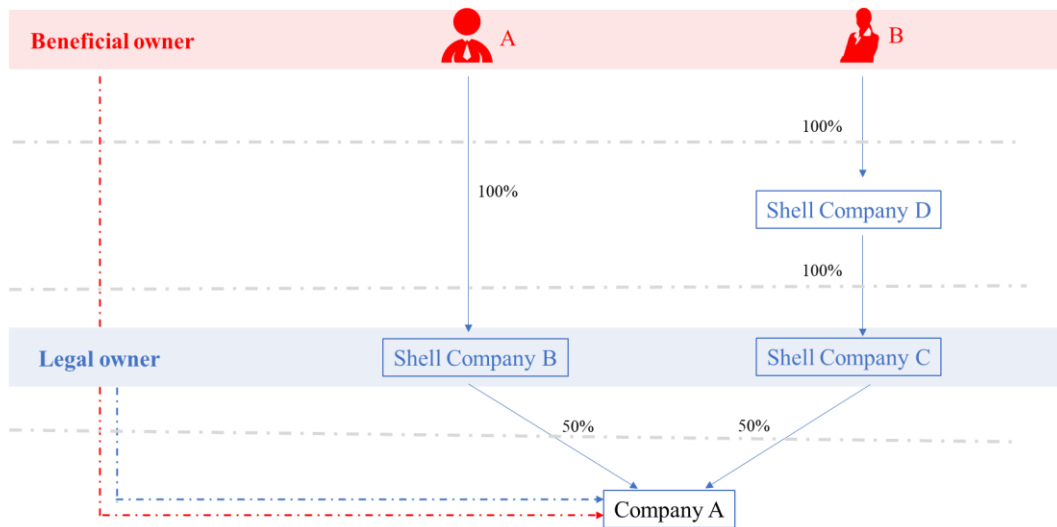
Origin country	N	%	Origin country	N	%
Afghanistan	66	0.52	Lebanon*	57	0.45
Albania	51	0.40	Lesotho	85	0.67
Algeria	51	0.40	Liberia*	65	0.51
American Samoa	35	0.28	Libya	78	0.62
Andorra*	64	0.51	Liechtenstein*	60	0.48
Angola	72	0.57	Macao*	76	0.60
Anguilla*	52	0.41	Macedonia	50	0.40
Antigua and Barbuda*	72	0.57	Madagascar	78	0.62
Argentina	80	0.63	Malawi	79	0.63
Armenia	51	0.40	Malaysia	87	0.69
Aruba*	79	0.63	Maldives*	79	0.63
Australia	114	0.90	Mali	78	0.62
Azerbaijan	63	0.50	Mauritania	51	0.40
Bahamas*	38	0.30	Mauritius	36	0.29
Bahrain*	70	0.55	Mexico	93	0.74
Bangladesh	58	0.46	Micronesia*	85	0.67
Barbados*	45	0.36	Moldova	57	0.45
Belarus	51	0.40	Mongolia	65	0.51
Belize*	45	0.36	Montenegro	30	0.24
Benin	79	0.63	Montserrat*	85	0.67
Bermuda*	38	0.30	Morocco	83	0.66
Bhutan	85	0.67	Mozambique	72	0.57
Bolivia	59	0.47	Myanmar	72	0.57
Bonaire, Saint Eustatius and Saba	85	0.67	Namibia	72	0.57
Bosnia and Herzegovina	57	0.45	Nauru*	39	0.31
Botswana	72	0.57	Nepal	70	0.55
Brazil	103	0.82	New Caledonia	35	0.28
British Virgin Islands*	44	0.35	New Zealand	67	0.53
Brunei	79	0.63	Nicaragua	78	0.62
Burkina Faso	72	0.57	Niger	63	0.50
Burundi	60	0.48	Nigeria	82	0.65
Cambodia	58	0.46	Northern Mariana Islands	78	0.62
Cameroon	65	0.51	Norway	131	1.04
Canada	76	0.60	Oman	58	0.46
Cape Verde	78	0.62	Pakistan	57	0.45
Cayman Islands*	30	0.24	Palestine	63	0.50
Central African Republic	66	0.52	Panama*	50	0.40
Chad	79	0.63	Papua New Guinea	79	0.63
Chile	55	0.44	Paraguay	38	0.30
Colombia	70	0.55	Peru	43	0.34
Comoros	48	0.38	Philippines	80	0.63
Congo	71	0.56	Qatar	58	0.46
Cook Islands*	43	0.34	Russia	111	0.88
Costa Rica*	65	0.51	Rwanda	72	0.57
Cote d'Ivoire	65	0.51	Saint Kitts and Nevis*	64	0.51
Curacao	29	0.23	Saint Lucia*	73	0.58
Democratic Republic of Congo	51	0.40	Saint Vincent and the Grenadines*	77	0.61
Djibouti*	60	0.48	Samoa*	65	0.51
Dominica*	64	0.51	San Marino*	71	0.56

Dominican Republic	52	0.41	Sao Tome and Principe	60	0.48
Ecuador	69	0.55	Saudi Arabia	35	0.28
Egypt	82	0.65	Senegal	77	0.61
El Salvador	78	0.62	Seychelles	46	0.36
Equatorial Guinea	71	0.56	Sierra Leone	66	0.52
Eritrea	79	0.63	Singapore*	111	0.88
Ethiopia	72	0.57	Solomon Islands	72	0.57
Faeroe Islands	71	0.56	South Africa	67	0.53
Falkland Islands	85	0.67	South Korea	97	0.77
Fiji	79	0.63	South Sudan	78	0.62
French Polynesia	30	0.24	Sri Lanka	64	0.51
Gabon	78	0.62	St Maarten*	65	0.51
Gambia	55	0.44	Sudan	71	0.56
Georgia	57	0.45	Suriname	78	0.62
Ghana	65	0.51	Swaziland	71	0.56
Gibraltar*	36	0.29	Switzerland*	132	1.05
Greenland*	73	0.58	Syria	72	0.57
Grenada	79	0.63	Taiwan	93	0.74
Guam	84	0.67	Tajikistan	71	0.56
Guatemala	66	0.52	Tanzania	64	0.51
Guernsey*	31	0.25	Thailand	75	0.59
Guinea	72	0.57	Timor	78	0.62
Guinea-Bissau	76	0.60	Togo	60	0.48
Guyana	79	0.63	Tonga*	65	0.51
Haiti	79	0.63	Trinidad and Tobago	78	0.62
Honduras	71	0.56	Tunisia	43	0.34
Hong Kong*	101	0.80	Turkey	112	0.89
Iceland	47	0.37	Turkmenistan	78	0.62
India	97	0.77	Turks and Caicos Islands*	71	0.56
Indonesia	86	0.68	Uganda	70	0.55
Iran	64	0.51	Ukraine	65	0.51
Iraq	44	0.35	United Arab Emirates	64	0.51
Isle of Man*	35	0.28	United States	110	0.87
Israel	81	0.64	United States Virgin Islands	52	0.41
Jamaica	79	0.63	Uruguay	75	0.59
Japan	109	0.86	Uzbekistan	64	0.51
Jersey*	44	0.35	Vanuatu*	84	0.67
Jordan*	44	0.35	Venezuela	95	0.75
Kazakhstan	45	0.36	Vietnam	64	0.51
Kenya	51	0.40	Wallis and Futuna	78	0.62
Kiribati	79	0.63	Yemen	71	0.56
Kuwait	72	0.57	Yugoslavia	30	0.24
Kyrgyz Republic	70	0.55	Zambia	59	0.47
Laos	59	0.47	Zimbabwe	77	0.61
				Total	12,622 100

Note: This table presents the sample composition for the FDI tests by origin country. * denotes origin countries classified as financial havens according to Hines (2010).

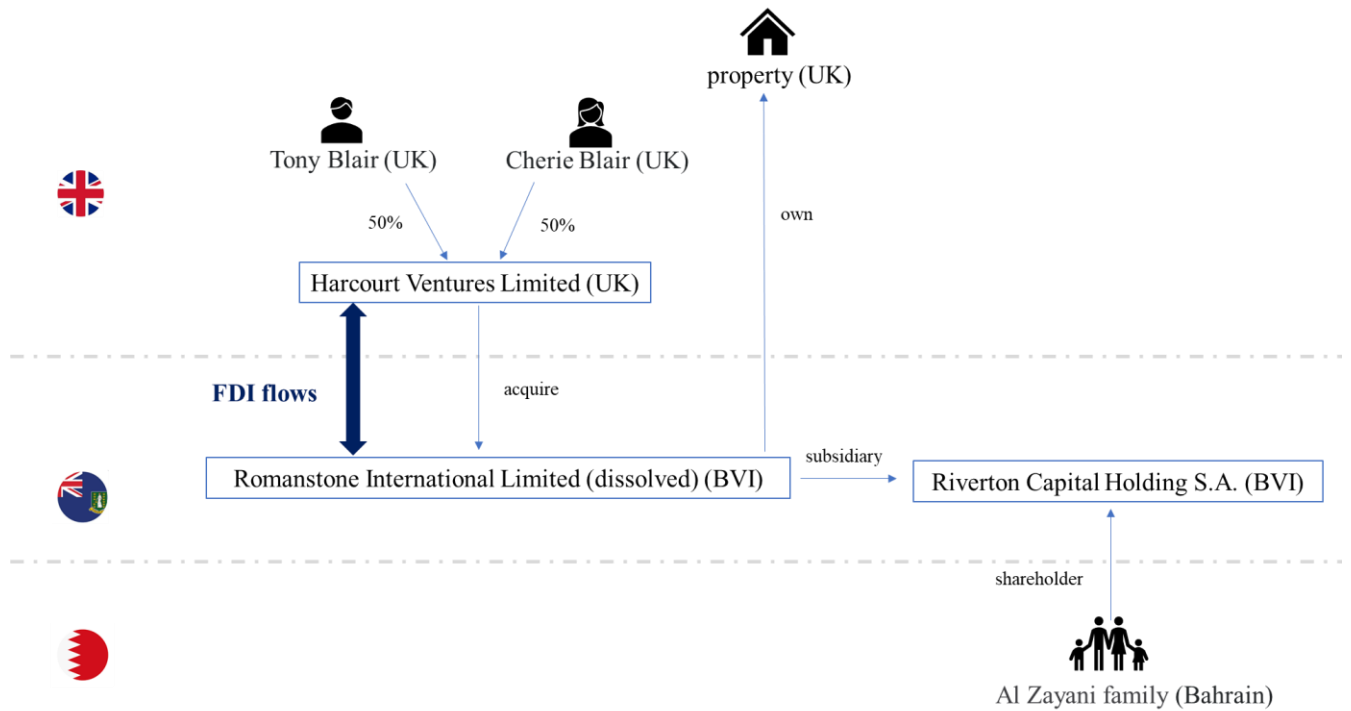
Appendix B

Panel A: Using entities to obfuscate the ownership of entities and assets



Note: In this graph, company B and C are the legal owners of Company A, while individuals A and B are the beneficial owners of Company A. As individual A hides behind Shell Company B and individual B hides behind Shell Company C and D, identifying A and B as the beneficial owners of Company A can be difficult.

Panel B: Tony and Cherie Blair buy property via offshore entity



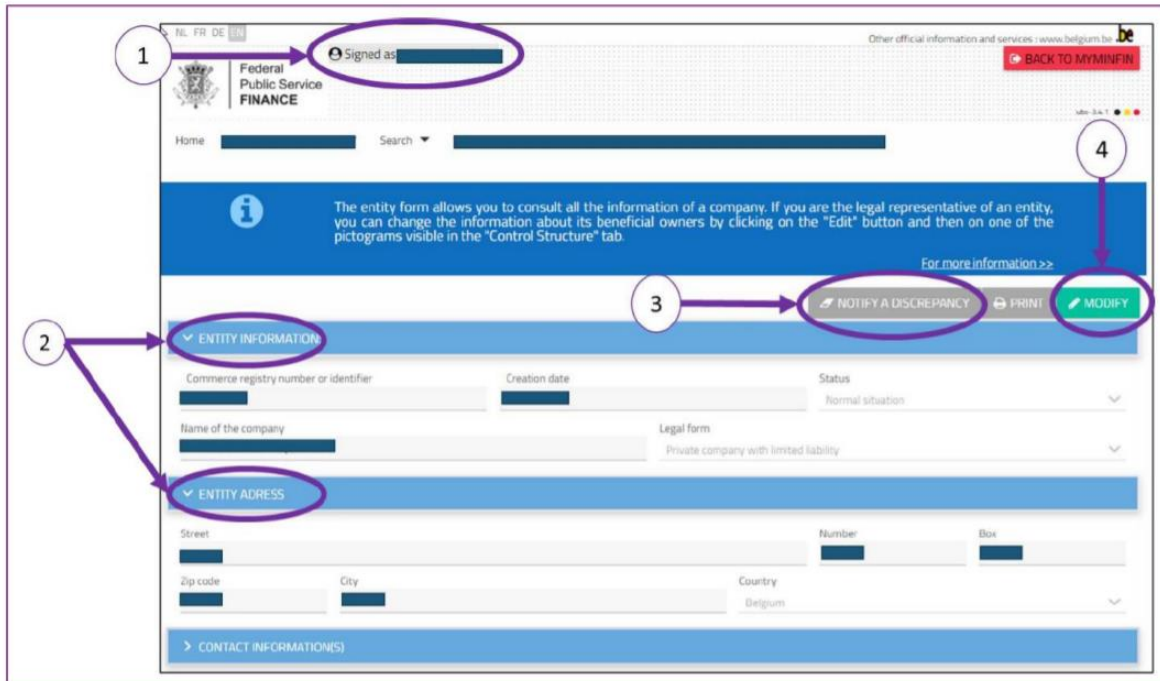
Note: In 2017, the former British Prime Minister Tony Blair and his wife became the owners of a £6.5m office building in London. Tony Blair and Cherie Blair set up a UK real estate leasing company (Harcourt Ventures Limited) and each held 50% of the company. This leasing company then acquired a British Virgin Islands holding company (Romanstone International Limited) that owned the property, which was dissolved later. About £312,000 in stamp duty was avoided as they were buying a business, not a property.

Panel C: Example of beneficial ownership register: Belgium

Illustration of Belgium beneficial ownership register from Taymans and Guillaume (2021) available at

https://finances.belgium.be/sites/default/files/thesaurie/20210208_LookingBackAndTheRoadAhead_Final.pdf

Legal entity and arrangement homepage visuals, p 8.



Note:

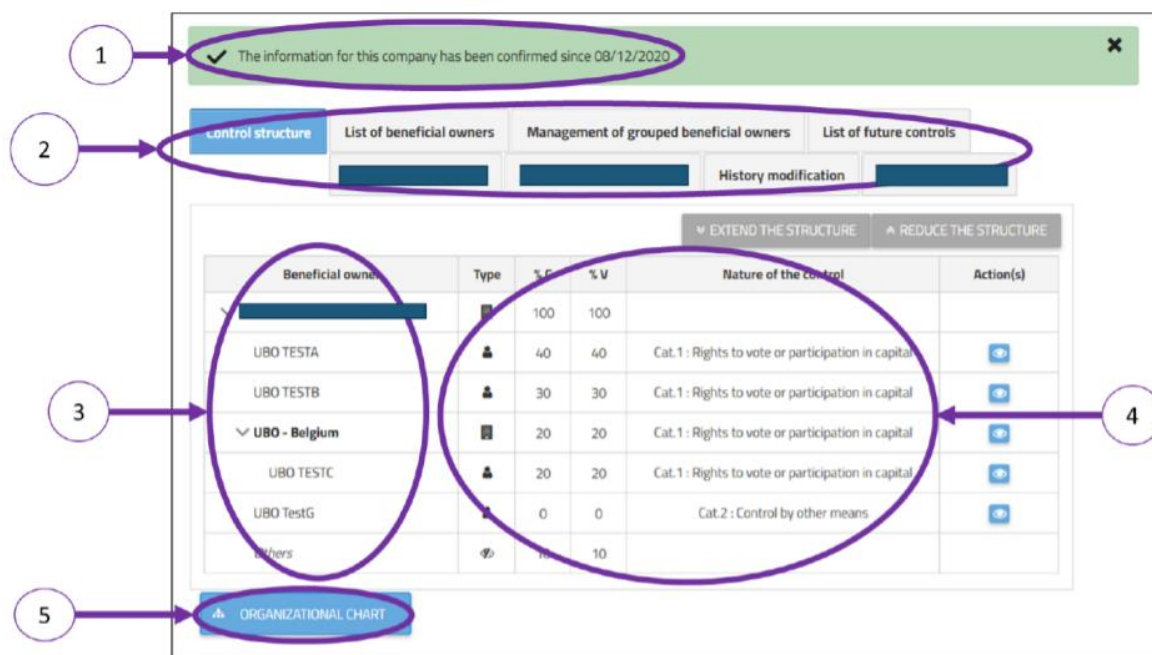
Item 1 To make sure the user visualises in which capacity (s)he is connected, the user's TIN number or the unique ID number of the legal entity or arrangement will appear under the item 1. This will depend on whether the user connected in his/her own name or in the name of a company;

Item 2 Information pertaining to the legal entity that is available at the commerce registry will be extracted and displayed here. This enables amongst others, the legal representative to identify missing information or any information that is not up to date;

Item 3 This feature is only available to users that are either competent authorities or obliged entities. The EU AMLD requires such users to notify discrepancies they observe between information they hold and information that is available in the register. As it is a new feature, it is currently being laid out and outreach activities are planned to inform those users on how this mechanism works, the type of information that should be reported as well as what will happen once a notification is submitted;

Item 4 This item enables the legal representative to modify information related to the ownership and control structure. Information on the entity itself such as the address, cannot currently be modified directly through the BO Register platform. This item is only available to natural persons that have the rights to act in the name of the legal entity or arrangement (e.g. legal representative, person in charge of the daily management, accountants, lawyers and any third party who received a digital power attorney).

Ownership structure, identity, nature and extent of the beneficial ownership, p 9



Note:

Item 1 This item indicates the last date upon which the BO information has been confirmed or modified. The regulatory framework indeed provides for a mandatory yearly confirmation as from the last modification has been made;

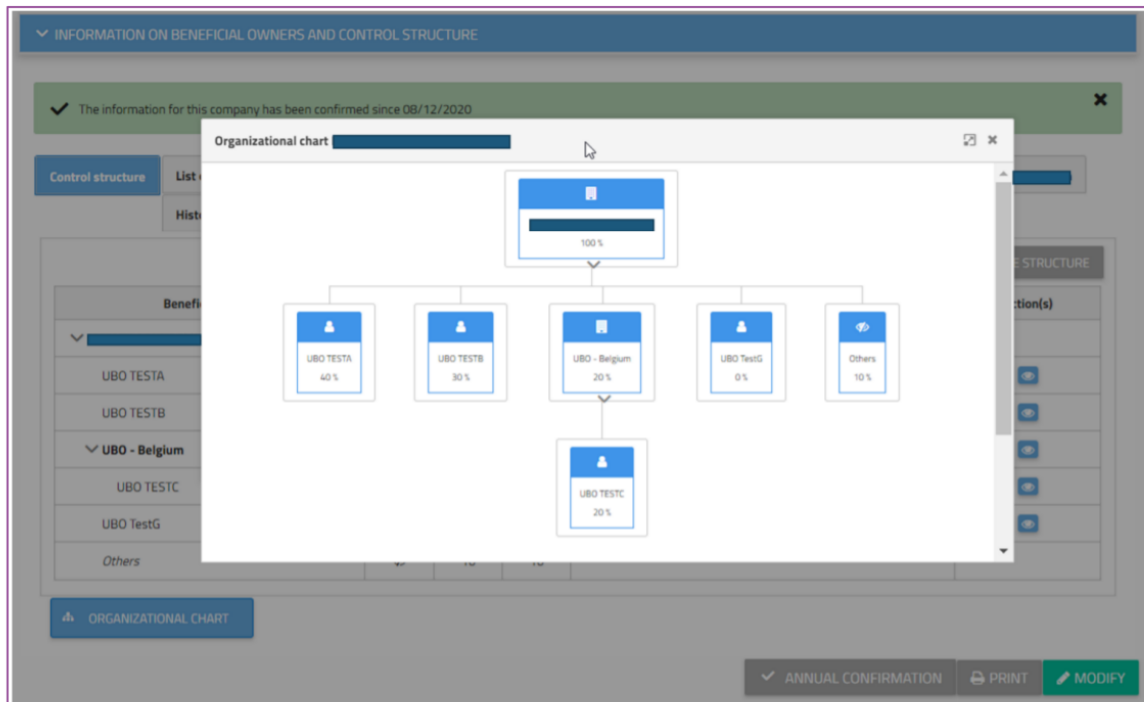
Item 2 This item groups different sets of information available on the BO. For instance, there is a possibility to have the list of all BO where, when clicking on one of them, the platform will list all legal entities and arrangements for which the person is registered as BO. Likewise, it is possible to register and visualize BO that are “grouped” (e.g. for instance in the case of a shareholders agreement). Another feature is the possibility for competent authorities to visualize the history of modifications made;

Item 3 This item shows the ownership structure with all legal intermediaries registered up to the identified BO (i.e. BO TESTC).

Item 4 All the information related to the nature and extent of the BO interest held in the entity is visible here. The column “Type” indicates whether it is a natural person or a legal person (i.e. a legal intermediary), the column “%C” and “%V” relate respectively to the percentage of shares of capital and of voting rights owned or controlled by the BO. The column “Nature of the Control” indicates the category of BO to which the natural person belongs (i.e. cat. 1: controlling ownership of shares or voting rights, cat. 2: control by other means, cat. 3: senior management).

Item 5 This item was added in order to enable the visualization of the ownership structure in the form of an “ownership tree”

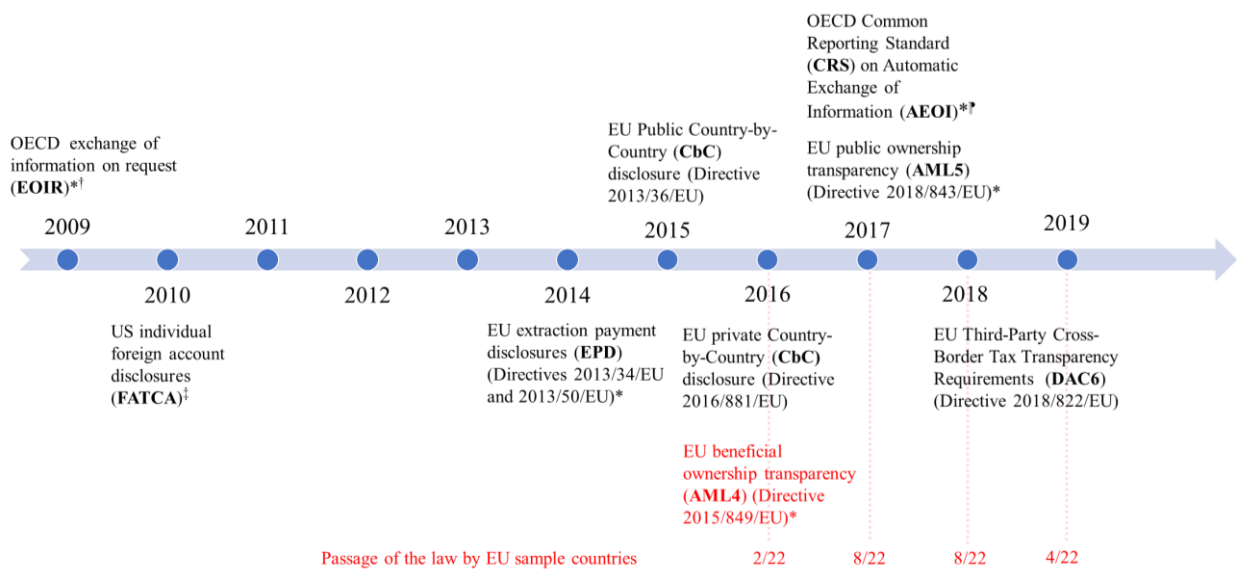
Ownership chart visual, p 10.



Source: https://finances.belgium.be/sites/default/files/thesaurie/20210208_LookingBackAndTheRoadAhead_Final.pdf

Panel D: Timeline of global transparency events

Passage of ownership transparency laws by EU member countries



* Effective in the first country

[†] See <https://www.oecd.org/tax/transparency/documents/exchange-of-information-on-request-peer-review-process.htm>

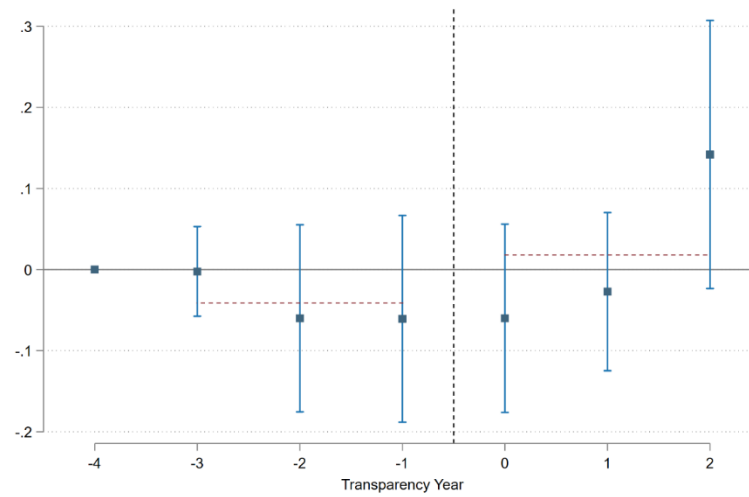
[‡] See <https://www.irs.gov/businesses/corporations/foreign-account-tax-compliance-act-fatca>

[‡] See <https://www.oecd.org/tax/automatic-exchange/common-reporting-standard> and <https://www.oecd.org/tax/automatic-exchange/about-automatic-exchange>

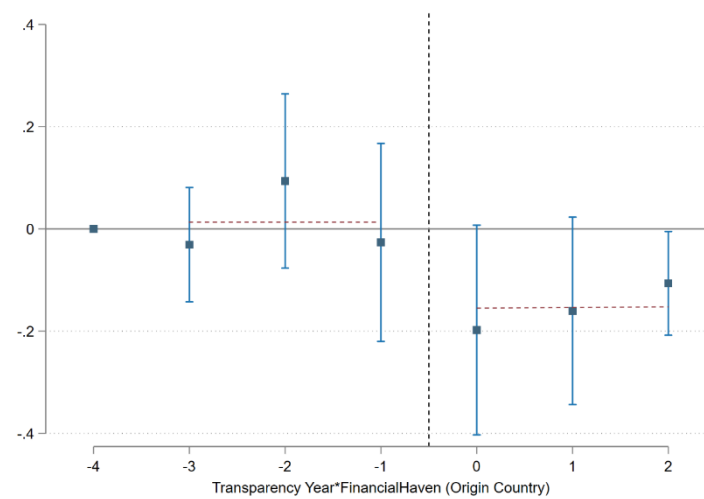
Figures and Tables

Figure 1: Annual treatment effects

Panel A: Investment response to ownership transparency



Panel B: Investment response for financial havens relative to non-haven countries



Note: This figure plots yearly treatment effects. Specifically, it plots the point estimates together with the 95% confidence intervals of the yearly coefficients on *Transparency* in Panel A and the yearly interaction coefficients on *Transparency* \times *Financial Haven (Origin Country)* in Panel B. We define variables in Table A1 in Appendix A.

Table 1: Timeline of ownership transparency in EU destination countries

Destination Country	Announcement of ownership transparency	Passage of the law for ownership transparency	Year ownership transparency becomes effective	Information available to the public
Belgium	2017	2017	2018	2018
Bulgaria	2018	2018	2019	2019
Croatia	2017	2018	2019	
Czech Republic	2017	2018	2018	
Denmark	2016	2017	2017	2017
Estonia	2017	2018	2018	2018
Finland	2017	2017	2019	
France	2016	2017	2017	
Germany	2017	2017	2017	
Greece	2018	2018	2019	2019
Ireland	2016	2016	2019	2019
Latvia	2017	2017	2017	2017
Lithuania	2017	2019	2019	
Luxembourg	2018	2019	2019	2019
Malta	2017	2018	2018	2018
Poland	2018	2019	2019	2019
Portugal	2017	2017	2018	2019
Romania	2019	2019	2019	2019
Slovakia	2018	2018	2018	
Slovenia	2016	2016	2017	2018
Spain	2018	2018	2018	
Sweden	2017	2017	2017	2017

Note: the table shows the timeline for the adoption of ownership registers in the EU destination countries included in our primary sample. The sample period covers the years 2013 to 2019.

Table 2: Sample composition for FDI tests: Observations by destination country

Country	N if FDI = 0	N if FDI > 0	N Total	% of Sample
Belgium	158	81	239	1.89
Bulgaria	372	687	1,059	8.39
Croatia	794	296	1,090	8.64
Czech Republic	16	155	171	1.35
Denmark	667	203	870	6.89
Estonia	415	318	733	5.81
Finland	937	90	1,027	8.14
France	0	192	192	1.52
Germany	6	140	146	1.16
Greece	43	143	186	1.47
Ireland	0	79	79	0.63
Latvia	939	187	1,126	8.92
Lithuania	682	166	848	6.72
Luxembourg	18	198	216	1.71
Malta	0	14	14	0.11
Poland	657	417	1,074	8.51
Portugal	258	302	560	4.44
Romania	18	26	44	0.35
Slovak Republic	755	161	916	7.26
Slovenia	856	233	1,089	8.63
Spain	0	41	41	0.32
Sweden	854	48	902	7.15
Total	8,445	4,177	12,622	100.00

Note: This table presents the sample composition for the FDI tests by destination country.

Table 3: Investment response to ownership transparency

	(1) FDI Positions	(2) FDI Positions
<i>Transparency</i>	-0.056 (0.058)	0.003 (0.071)
<i>Transparency</i> × <i>FinancialHaven (Origin Country)</i>		-0.165** (0.067)
<i>Ln GDP</i>	-0.585 (0.474)	-0.568 (0.488)
<i>Ln GDP per Capita</i>	0.949 (0.643)	0.902 (0.649)
<i>Tax Differential</i>	-6.020*** (1.473)	-6.019*** (1.474)
<i>Constant</i>	16.465** (7.420)	16.539** (7.688)
Observations	12,622	12,622
Country-Pair FE	YES	YES
Origin-Country × Year FE	YES	YES

Note: This table presents regression results for the effect of ownership transparency on cross-border investment into EU destination countries. In column 2, we differentiate between origin countries classified as financial havens and origin countries classified as non-havens. The dependent variable is *FDI positions*. *Transparency* is an indicator variable equal to one if the EU destination country has introduced a beneficial ownership register in year t , and zero otherwise. *FinancialHaven (Origin Country)* is an indicator variable equal to one if the origin country is on Hines (2010)'s tax haven list, and zero otherwise. We define variables in Table A1 in Appendix A. We use a pseudo-maximum likelihood estimation (PPML) estimator proposed by Santos Silva and Tenreyro (2006). Standard errors are clustered at the countries of destination level. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).

Table 4: Mechanism tests: Enforcement risk versus public scrutiny

	(1) FDI Positions	(2) FDI Positions
<i>Transparency (Non-Public Register)</i>	0.015 (0.079)	0.059 (0.092)
<i>Transparency (Public Register)</i>	-0.118 (0.100)	-0.029 (0.086)
<i>Transparency (Non-Public Register) × FinancialHaven (Origin Country)</i>		-0.134 (0.093)
<i>Transparency (Public Register) × FinancialHaven (Origin Country)</i>		-0.238*** (0.075)
Controls	YES	YES
Observations	12,622	12,622
Country-Pair FE	YES	YES
Origin-Country × Year FE	YES	YES

Note: This table presents regression results for the effect of ownership transparency on cross-border investment into EU destination countries conditional on whether beneficial ownership information is made available to the public. In column 2, we differentiate between origin countries classified as financial havens and origin countries classified as non-havens. *Transparency (Non-Public Register)* is an indicator variable equal to one if the EU destination country has introduced a non-public beneficial ownership register in year t , and zero otherwise. *Transparency (Public Register)* is an indicator variable indicator variable equal to one if the EU destination country has introduced a public beneficial ownership register in year t , and zero otherwise. *FinancialHaven (Origin Country)* is an indicator variable equal to one if the origin country is on Hines (2010)'s tax haven list, and zero otherwise. We define variables in Table A1 in Appendix A. We use a pseudo-maximum likelihood estimation (PPML) estimator proposed by Santos Silva and Tenreiro (2006). Standard errors are clustered at the countries of destination level. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).

Table 5: Investment response for different types of financial havens (origin countries)

	(1) FDI Positions	(2) FDI Positions
<i>Transparency</i>	0.002 (0.071)	0.032 (0.054)
<i>Transparency</i> × <i>Big 7 Haven (Origin Country)</i>	-0.163** (0.067)	
<i>Transparency</i> × <i>Dot Haven (Origin Country)</i>		-0.335 (0.267)
Controls	YES	YES
Observations	10,491	12,106
Country-Pair FE	YES	YES
Origin-Country × Year FE	YES	YES

Note: This table presents regression results for the effect of ownership transparency on cross-border investment into EU destination countries conditional on the financial-haven classification of the origin country. In column 1, we differentiate between origin countries classified as Big 7 havens and origin countries classified as non-havens. In column 2, we differentiate between origin countries classified as dot havens and origin countries classified as non-havens. The dependent variable is *FDI positions*. *Transparency* is an indicator variable equal to one if the EU destination country has introduced a beneficial ownership register in year t , and zero otherwise. *Big 7 Haven (Origin Country)* (*Dot Haven (Origin Country)*) is an indicator if the origin country is on Hines (2010)'s Big 7 (dot haven) list, and zero otherwise. We define variables in Table A1 in Appendix A. We use a pseudo-maximum likelihood estimation (PPML) estimator proposed by Santos Silva and Tenreyro (2006). Standard errors are clustered at the countries of destination level. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).

Table 6: Investment response for different types of EU destination countries

	(1) FDI Positions	(2) FDI Positions	(3) FDI Positions
<i>Transparency</i>	0.158*** (0.035)	0.179*** (0.056)	
<i>Transparency</i> × <i>Pref Tax Regime (Destination Country)</i>	-0.338*** (0.074)		
<i>Transparency</i> × <i>FinancialHaven (Destination Country)</i>		-0.486*** (0.075)	
<i>Transparency (Non-Public Register)</i>			0.176*** (0.046)
<i>Transparency (Public Register)</i>			0.255 (0.175)
<i>Transparency (Non-Public Register)</i> × <i>Pref Tax Regime (Destination Country)</i>			-0.249*** (0.051)
<i>Transparency (Public Register)</i> × <i>Pref Tax Regime (Destination Country)</i>			-0.469*** (0.118)
Controls	YES	YES	YES
Observations	12,622	12,622	12,622
Country-Pair FE	YES	YES	YES
Origin-Country × Year FE	YES	YES	YES

Note: This table presents regression results for the effect of ownership transparency on cross-border investment into EU destination countries conditional on EU destination-country characteristics. In column 1, we differentiate between EU destination countries classified as a financial haven or as having a preferential tax regime and destination countries that do not fall into either of these categories. In column 2, we focus on EU destination countries classified as financial havens. In column 3, we further differentiate between public and private registers. The dependent variable is *FDI positions*. *Transparency* is an indicator variable equal to one if the EU destination country has introduced a beneficial ownership register in year t , and zero otherwise. *Transparency (Non-Public Register)* is an indicator variable equal to one if the EU destination country has introduced a non-public beneficial ownership register in year t , and zero otherwise. *Transparency (Public Register)* is an indicator variable equal to one if the EU destination country has introduced a public beneficial ownership register in year t , and zero otherwise. *Pref Tax Regime (Destination Country)* is an indicator variable equal to one if the EU destination country is classified as a financial haven or has a preferential regime according to De Simone and Olbert (2021). *FinancialHaven (Destination Country)* is an indicator variable equal to one if the EU destination country is classified as a financial haven. We define variables in Table A1 in Appendix A. We use a pseudo-maximum likelihood estimation (PPML) estimator proposed by Santos Silva and Tenreyro (2006). Standard errors are clustered at the countries of destination level. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).

Table 7: Robustness tests

Panel A: Alternative samples, treatment definitions, financial-haven lists, and estimation techniques

	(1)	(2)	(3)	(4)	(5)
	FDI	FDI	FDI	FDI	FDI
	Positions	Positions	Positions	Positions	Positions
	PPML	PPML	PPML	PPML	OLS
<i>Transparency</i>	-0.002	0.052	0.024	-0.039	0.0507
	(0.039)	(0.083)	(0.069)	(0.062)	(0.057)
<i>Transparency</i> × <i>FinancialHaven (Origin Country)</i>	-0.230**	-0.165***			-0.195**
	(0.094)	(0.060)			(0.079)
<i>Transparency</i> × <i>FinancialHaven_JZ (Origin country)</i>			-0.215***		
			(0.071)		
<i>Transparency</i> × <i>FinancialHaven_OECD (Origin Country)</i>				-0.292***	
				(0.096)	
Controls	YES	YES	YES	YES	YES
Observations	15,864	12,622	12,622	12,622	3,259
Country-Pair FE	YES	YES	YES	YES	YES
Origin-Country × Year FE	YES	YES	YES	YES	YES

Panel B: Stacked regression design

	(1) Early Treated vs Last Treated	(2) Early Treated vs Not Yet Treated
<i>Transparency</i>	0.240*** (0.078)	0.236*** (0.080)
<i>Transparency</i> × <i>FinancialHaven</i> (<i>Origin Country</i>)	-0.279*** (0.085)	-0.276*** (0.084)
Controls	YES	YES
Observations	6,425	9,013
Country-Pair × Event FE	YES	YES
Origin-Country × Year × Event FE	YES	YES

Note: This table presents regression results for robustness tests. In panel A, we include destination countries that have passed the law for ownership transparency during our sample period but where the transparency initiative has become active only after our sample period (column 1), define *Transparency* based on the date the transparency requirement became effective (column 2), use alternative lists to classify origin countries as financial havens (columns 3 and 4), and drop observations with zero FDI (column 5). In panel B, we adopt a stacked regression design and compare treated units with last treated units (column 1) and treated units with not yet treated units (column 2). The dependent variable is *FDI positions*. We define variables in Table A1 in Appendix A. We use a pseudo-maximum likelihood estimation (PPML) estimator proposed by Santos Silva and Tenreyro (2006). In column 5 of panel A, we use OLS with the log of *FDI positions* as a dependent variable. Standard errors are clustered at the countries of destination level. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).

Table 8: Descriptive statistics for M&A tests**Panel A: Sample Composition by Target Country**

Country	# of Deals with Domestic Acquirer	# of Deals with Non-EU Acquirer	Total # of Deals	%
Belgium	417	110	527	5.51
Denmark	301	57	358	3.74
Finland	946	76	1,022	10.69
France	1,526	204	1,730	18.09
Germany	373	222	595	6.22
Greece	19	8	27	0.28
Ireland	32	56	88	0.92
Luxembourg	6	15	21	0.22
Portugal	143	30	173	1.81
Spain	3,392	228	3,620	37.86
Sweden	1,222	179	1,401	14.65
Total	8,377	1,185	9,562	100.00

Panel B: Descriptive statistics for targets

VARIABLES	N	Mean	SD	Min	Median	Max
<i>Size</i>	9,562	7.940	1.886	3.807	7.851	13.270
<i>ROA</i>	9,562	0.015	0.283	-1.428	0.032	0.641
<i>Leverage</i>	9,562	0.183	0.280	0.000	0.059	1.548
<i>Intangibles</i>	9,562	0.050	0.128	0.000	0.000	0.709
<i>Loss</i>	9,562	0.355	0.479	0.000	0.000	1.000

Note: This table presents descriptive statistics for the M&A tests. Panel A (B) shows the sample composition by target country (target-level descriptive statistics). We define variables in Table A1 in Appendix A.

Table 9: Results for acquirer analysis

	(1) non-EU Acquirer	(2) non-EU Acquirer with EU Owner	(3) non-EU Acquirer with non-EU Owner
<i>Transparency</i>	-0.001 (0.016)	-0.032* (0.017)	-0.009 (0.014)
<i>Size</i>	0.029*** (0.006)	0.022*** (0.004)	0.046*** (0.004)
<i>ROA</i>	-0.043** (0.014)	-0.077** (0.026)	-0.099*** (0.013)
<i>Leverage</i>	-0.008 (0.020)	-0.060* (0.030)	-0.037 (0.029)
<i>Intangibles</i>	0.276*** (0.060)	0.084 (0.071)	0.357** (0.114)
<i>Loss</i>	-0.011 (0.012)	-0.066** (0.025)	-0.051** (0.018)
<i>Constant</i>	-0.113** (0.047)	0.044 (0.025)	-0.097** (0.033)
Observations	9,562	5,421	6,050
R-squared	0.167	0.064	0.156
Target-Country-Industry FE	YES	YES	YES
Year FE	YES	YES	YES

Note: This table presents regression results for the effect of ownership transparency on the likelihood that a target in the destination countries is acquired by a non-EU acquirer. The dependent variables are *Prob (non-EU Acquirer)*, *Prob (non-EU Acquirer with EU Owner)*, and *Prob (non-EU Acquirer with non-EU owner)* in columns 1, 2, and 3 respectively. *Transparency* is an indicator variable equal to one if the EU target country has introduced a beneficial ownership register in year t , and zero otherwise. We define variables in Table A1 in Appendix A. We use a linear probability model. Standard errors are clustered at the countries of destination level. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).

Table 10: Results for seller analysis

	(1) non-EU Seller	(2) non-EU Seller with EU Owner	(3) non-EU seller with non-EU Owner
<i>Transparency</i>	-0.016 (0.019)	0.107*** (0.033)	0.038 (0.080)
<i>Size</i>	0.029*** (0.005)	0.006* (0.003)	0.030*** (0.007)
<i>ROA</i>	-0.014 (0.023)	0.032 (0.026)	-0.003 (0.047)
<i>Leverage</i>	-0.005 (0.028)	-0.019 (0.030)	0.007 (0.049)
<i>Intangibles</i>	-0.040* (0.021)	0.060 (0.055)	-0.061 (0.106)
<i>Loss</i>	0.024** (0.010)	0.008 (0.013)	0.014 (0.026)
<i>Constant</i>	-0.163*** (0.036)	0.016 (0.035)	-0.095 (0.099)
Observations	3,400	1,196	1,341
R-squared	0.115	0.1	0.121
Target-Country-Industry FE	YES	YES	YES
Year FE	YES	YES	YES

Note: This table presents regression results for the effect of ownership transparency on the likelihood that a target in the destination countries is sold by a non-EU seller. The dependent variables are *Prob (non-EU Seller)*, *Prob (non-EU Seller with EU Owner)*, and *Prob (non-EU Seller with non-EU owner)* in columns 1, 2, and 3 respectively. *Transparency* is an indicator variable equal to one if the EU target country has introduced a beneficial ownership register in year t , and zero otherwise. We define variables in Table A1 in Appendix A. We use a linear probability model. Standard errors are clustered at the countries of destination level. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).