THE EFFECTS OF COMPETITION POLICY, REGULATORY QUALITY AND TRUST ON INWARD FDI IN HOST COUNTRIES

Sergio Mariotti, Politecnico di Milano

Riccardo Marzano, Sapienza University of Rome

Abstract

This article develops a comparative institutionalist framework to investigate how pro-enforcement reforms leading to a change in competition policy regimes attracts FDI in host countries, and how this relationship is moderated by the interplay between key formal and informal institutions. We revisit the FDI theory by integrating insights from economics of competition policy and the most recent debate on how institutions matter to international business. We contend that the effectiveness of competition policy enforcement is a crucial factor in attracting FDI, but only in host countries characterized by institutional configurations where the lack of trust is concomitant with a high-quality regulatory institutional environment. Our analysis on a sample of 63 countries followed in the 1980-2017 period supports our hypotheses. This paper contributes to a deeper understanding on the competition policy–FDI relationship at national level and has implications for policy makers.

Keywords: Competition policy; Foreign Direct Investment; Institutions and International Business; Regulatory quality; Trust

1. Introduction

In the last half century massive pro-market reforms have been introduced worldwide, albeit like a pendulum swinging between the extremes represented by *laissez-faire* and government interventionism (Cuervo-Cazurra, Guar, & Singh, 2019a). Rules and policies aimed at facilitating market transactions and enhancing competition have spread with significant cross-country differences in time and effectiveness of implementation. These transformations have deeply modified the world economy and the location of foreign direct investment (FDI)[1].

In this paper, we aim at better understanding how the FDI activities have changed across countries in response to competition policy (CP) reforms[2]. Although the international business (IB) literature has traditionally considered the level of market competitiveness as an important determinant of inward FDI (Dunning & Lundan, 2008 for a review; Tsai, Mukherjee, & Chen, 2016 for a recent contribution), the specific role of host country's CP in improving the business climate for potential entrants has been overlooked by IB scholars. This occurred despite the seminal work by Brewer (1993: 314), which called for further research on the topic as "antitrust (competition) policies can be particularly important in their effects on market imperfections and FDI flows", a call successively echoed by influential scholars (e.g., Buckley & Casson, 1996; Rugman & Verbeke, 1998).

Studies on the relationship between variations in CP enforcement and inward FDI dating back to the early 2000s were predominantly practitioner-oriented publications (e.g., Clarke, 2003; Cooke & Elliott, 1999; Evenett, 2003; Kennedy, 2001; Noland, 1999). The subsequent literature has provided mixed empirical results. Some scholars found CP to favor inward FDI activity, arguing that CP

[1] FDI is defined as an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate). FDI may be undertaken by individuals as well as business entities. FDI implies that the investor exerts a significant degree of influence on the management of the enterprise resident in the other economy. See UNCTAD (2012), International Monetary Fund (2009).

[2] Hereafter, we will use the term 'competition policy' as a synonym of 'antitrust policy' (Motta, 2004). The former is the most widely used internationally, while the latter is commonly in use in the United States. Therefore, we refer to a narrow definition of competition policy that does not include other government policies, such as deregulation, privatization, trade liberalization and so on.

strengthening creates a non-discriminatory business climate towards foreign competitors (e.g., Bris, Brisley, & Cabolis, 2008; Oliveira, Hochstetler, & Kalil, 2001; Seth & Moran, 2017). Other scholars have suggested an opposite view (e.g., Aktas, Bodt, & Roll, 2007; Conybeare & Kim, 2010; Dinc & Erel, 2013; Clougherty & Zhang, 2020), mainly arguing that CP is protectionist in intent and/or in effect, as it may encourage domestic ownership and deter foreign ownership of businesses, especially when the dominant interest of national government is to protect local players.

Methodological and empirical limits relevant to the above mentioned literature contribute to these mixed results. The bulk of studies focuses on mergers and acquisitions, thus resulting in two kinds of deficiencies. As Clougherty & Zhang (2020) acknowledge, the merger review is only one of the three CP pillars, the remaining two being controls on price collusion and abuse of dominance. Only looking at the full breadth of CP allows to properly evaluate its effect on the inward FDI activities. Second, FDI includes greenfield investments, which can complement or substitute mergers and acquisitions. For instance, increasing control on cross-border acquisitions may enhance greenfield activities. Again, the exclusion of this important FDI component may invalidate empirical findings.

Further, some prominent studies are limited to one country. Although the selected country can be particularly representative and/or at the forefront in applying CP, the extension to other national jurisdictions is necessary to generalize empirical results. Nowadays, more than one hundred and thirty countries have competition laws, out of which one hundred and twenty have functioning national competition authorities (NCAs) with different practices and outcomes (OECD, 2014). Finally, NCAs do not operate in a vacuum, but are embedded in a social context that influences their policies and practices along several dimensions (Motta, 2004). CP literature converges on recognizing that a country's high-quality institutions are meaningful in executing a more legitimate CP and making its enforcement more effective. Econometric studies give evidence of this (Borrell, & Jiménez, 2008; Buccirossi, Ciari, Duso, Spagnolo, & Vitale, 2013; Krakowski, 2005; Voigt, 2009). In parallel, IB studies highlight the important role played by the quality of institutions on the

country attractiveness towards FDI (Bailey, 2018; Contractor, Dangol, Nuruzzaman, & Raghunath, 2020; Nielsen, Asmussen, & Weatherall, 2017). However, in both research fields, conceptualization has oscillated between generic approaches in which the label 'institutional' has become "a catch-all concept that ends up meaning everything and therefore nothing" (Aguilera & Grøgaard, 2019: 23), and additive approaches that have reduced the institutional context to the sum of single institutional dimensions in isolation from one another (Jackson & Deeg, 2019).

A major problem arises from the nature of the compound indicators used, which generally are highly correlated with each other (Borrell, & Jiménez, 2008; De Francesco, & Radaelli, 2010)[3]. To get around the problem, scholars often resort to 'umbrella' indicators (e.g., by using principal component analysis or taking the best card from the deck to put it into parsimonious specifications). Unfortunately, these approaches fail to serve either an interpretative or normative perspective, for which it is important to identify which specific institutions and interactive mechanisms are at work. Overall, the need emerges of going beyond vagueness and simplification by taking a more fine-grained approach (Aguilera, & Grøgaard, 2019; Cuervo-Cazurra, Mudambi, & Pedersen, 2019b).

With the above limits in mind, we attempt to fill the gap in the literature by studying the relationship between the pro-enforcement reform of CP regime and the inflow of FDI at host country level in a comparative institutionalist framework (Hotho, & Pedersen, 2012; Kostova, Beugelsdijk, Scott, Kunst, Chua, & van Essen, 2020). In accordance with previous literature on economics of competition and regulation (Aghion, Algan, Cahuc, & Shleifer, 2010; Pinotti, 2012), we argue that the relationship is shaped by the interplay between 'trust' and the 'regulatory institutional environment' (RIE). We focus on these two informal and formal institutional dimensions for two reasons. First, they are two of the most important elements influencing the host

[3] Just to give an idea, consider the six Worldwide Governance Indicators (WGI) constructed by the World Bank, which are widely used in IB studies on the impact of institutions on firms' internationalization decisions (e.g., Cantwell, Dunning, & Lundan, 2010; Lu, Liu, Wright, & Filatotchev, 2014; Slangen & Beugelsdijk, 2010; van Hoorn, & Maseland, 2016). Correlations across the different dimensions over the years are quite high, ranging from 0.8 to 0.95 (De Francesco, & Radaelli, 2010). A factor analysis confirms that the six indicators form one factor with a Cronbach's alpha of 0.96 with the first and only factor explaining 97% of the variation in the items (Beugelsdijk, Nell, & Ambos, 2017). The same holds for other sources (Borrell, & Jiménez, 2008).

country's attractiveness towards foreign investors (Holmes, Miller, Hitt, & Salmador, 2013). Trust is a key variable affecting the performance of enterprises (Buckley, 2016) both by acting as a lubricant of market interactions and by supporting a stable set of enduring business relationships (Murphree, & Breznitz 2020; Seyoum, 2011; Mondolo, 2019). A high-quality RIE entails effective policies and regulations designed to enable and promote business activities, including inward FDI (Daude, & Stein, 2007; Lu, Liu, Wright, & Filatotchev, 2014; Mariotti, & Marzano, 2020; Nielsen et al., 2017; Pajunen, 2008; Rammal, & Zurbruegg, 2006).

Second, and more importantly, they are the key traits of the host country institutional setting that explain the extent to which an increase in CP enforcement is perceived by business people, and in particular by foreign investors, as 'needed' and 'credible'. Aghion et al. (2010) and Pinotti (2012) show that higher mistrust leads to higher demand for regulation. High-trust societies need less regulation, as trust substitutes for formal enforcement and/or complements weak regulation. On the other side, the RIE quality ultimately influences the CP effectiveness. A low-quality RIE introduces elements of inconsistency that undermine the CP credibility and add to the uncertainty of decision making, especially of foreign investors suffering from liability of foreignness[4]. Overall, trust and RIE mutually interact (Carlin, Dorobantu, & Viswanathan, 2009), so as to define the boundaries is which CP enforcement is needed, credible and effective.

To address the interplay between these dimensions, we adopt the comparative institutionalist approach that Jackson & Deeg (2019) define as 'interactive view'. Accordingly, the country institutional context is seen as a two-dimensional space (trust and RIE) and our framework focuses on the joint effects of these two key dimensions, which in principle vary independently of each other, on the CP regime–FDI relationship.

[4] Conflicts and lack of coordination between ex-ante and ex-post regulation; lax institutional settings that allow the implementation of anticompetitive regulations by partisan institutions (governments, parliaments, municipal authorities) and the capture of NCAs by interest groups; rules that give immunity to ad hoc state interventions.

Our analysis refers to a sample of 63 countries and data spanning almost 40 years. Our findings indicate that a pro-enforcement reform of the CP regime has on average a positive effect on country attractiveness towards FDI. We establish the result controlling for country fixed effects (which absorb the constant unobserved heterogeneity) and for a wide array of economic and contextual factors. However, the relationship between CP enforcement and inward FDI is shaped by alternative configurations in the host country institutional setting. The positive effect of pro-enforcement reforms is statistically significant when a low level of trust within the society is concomitant with a high-quality RIE, whereas its significance vanishes in the remaining institutional configurations (generated by the other combinations of trust and RIE quality).

Our paper improves knowledge in several ways. First, it contributes to the IB debate on the role of CP by shedding light on previous contradictory findings. CP has proved to be a crucial factor in host country attractiveness, but its effect on inward FDI cannot be determined *per se*, as it depends on key institutional configurations. We contribute to a deeper understanding of the role of institutions in influencing country attractiveness toward FDI, yielding implications for normative policy. Finally, we help enrich the IB theory on FDI location choice (Sethi, Guisinger, Phelan, & Berg, 2003) by integrating concepts from economics of CP in the current IB debate on the role of institutions.

The remaining of the paper is organized as follows. In the next section, we develop the conceptual framework aimed at investigating the relationship between CP and national-level FDI under different institutional configurations. The third section presents the sample and describes the variables together with the empirical strategy. The fourth section reports the results, while the closing section, after discussing them, suggests policy implications and outlines avenues for future research.

2. Conceptual framework

2.1. Competition policy enforcement and FDI attraction

Caves (1996) and Rugman & Verbeke (1998) have already outlined how the foreign investor perception of the host country's public policy is a key factor influencing the location of FDI. According to them, foreign investors in their interaction with host governments aim to establish a level playing field for all (foreign and domestic) investors, i.e., a non-discriminatory context towards FDI affiliate enterprises. This issue is mainly under the responsibility of NCAs, which are also required to ensure static and dynamic efficiency in resource allocation and protection of the consumer welfare (Aghion & Schankerman, 2004; Buccirossi et al., 2013; Nickell, 1996; Sekkat, 2009). To pursue their multiple goals, NCAs share important similarities in principles and practice. They act to remove market entry barriers, mainly stemming from anti-competitive horizontal and vertical agreements, and the abuse of dominant market power, as well as to block mergers and acquisitions that lead to excessive market concentration. In addition, NCAs share an advocacy role with governments in harmonizing measures to remove impediments to trade and investment, and more generally to develop a competition culture across society.

Although poor competition raises barriers and impediments for both domestic and FDI affiliate enterprises, the latter are likely to be more severely affected for several reasons. Anti-competitive agreements are generally closed to new foreign entrants. Abuses of dominance (e.g., predatory prices, exclusive dealing, tying and bundling, and refusals to supply) increase the likelihood for FDI affiliate enterprises of being forced out of the market with substantial sunk costs (setting up production facilities, distribution and service network, establishing a brand name through advertising, bringing the product in conformity with health and safety regulations of the foreign country and so forth). Acquisitions and mergers that excessively increase market concentration can grant unfair long-lasting advantages to incumbents, which more often than not are domestic. Finally, FDI affiliate enterprises are exposed to possible intrusive forms of government intervention into the markets, such as granting exclusivity to domestic firms, especially state-owned enterprises or other regulated firms. These discriminations are often associated with a series of restrictive

business practices, which may impede new entry, especially of investors from foreign countries (OECD, 2005; Tunali & Fidrmuc, 2015).

The worldwide CP adoption and subsequent reforms have led to opportunities and challenges for foreign investors. On the opportunity side, the CP enforcement has significantly improved the attractiveness of countries as recipients of FDI. A country's commitment to ensure a level playing field favors foreign new entries and subsequent investments, as investors perceive a favorable business environment (Evenett, 2003; Grosse & Trevino, 2005; Oliveira et al., 2001). On the challenge side, despite the convergence in principles and legislation, the NCAs' attitude and power to prosecute and deter competition law violations has remained chaotically inconsistent. NCAs differ in their CP regime, i.e., independency and accountability, scope of action, investigative powers, sanctions, and available resources (Clougherty, 2005; Ginsburg, 2005). Especially, their activities take place in the broader context of national economic policy, thus being subject to political concerns and backlashes (Motta & Ruta, 2012). Host country governments may desire to assure better national security and public order by preserving national control over strategic industries (Bernitz & Ringe, 2010), and may act to promote national champions, thereby lobbying authorities to tolerate mergers between domestic firms and block foreign investors from acquiring domestic firms (Sudekun, 2010). Conversely, local governments may wish to create incentives to encourage inward FDI, confident of a *pros–cons* positive balance of FDI for economic efficiency and growth (Narula & Pineli, 2017; Norbäck & Persson, 2007). In this regard, diverging results still remain with more recent literature. With reference to U.S. market for corporate control, Clougherty & Zhang (2020) show that CP, regardless of its intent, is protectionist 'in effect', as the uncertainty related to the U.S. merger policy disproportionately deters the cross-border acquisitions by foreign investors[5]. With reference to the Brazilian market, Seth & Moran (2017) find that the policy of the

[5] Brewer (1993) already pointed out how the competition law leaves room to enforcement discretion and sometimes can be intentionally manipulated to prevent FDI projects. More in general, see Büthe (2014) on how CP may be abused as a trade and investment barrier, especially through discriminatory enforcement. For relevant implications in our context, see further the Discussion and Conclusion section.

local NCA is more likely to create injunctions for domestic acquirers than for foreign acquirers and do not find support for the argument that the Brazilian government favored the creation of national champions.

Taken together, uncertainty and inconsistencies create difficulties for foreign investors, which suffer from an asymmetric lack of host country-specific information and knowledge *vis-a-vis* their domestic peers. Aiming to economize on information costs (Mariotti, Piscitello, & Elia, 2010), rather than devoting efforts to unreliably compare country-specific competition legislations, foreign investing is driven by substantive signals of a country's commitment to assure a non-discriminatory CP and absence of market manipulations against foreign investors. Especially, new effective measures of CP enforcement are perceived as reducing business risks and increasing openness to FDI. Further, the observational learning by other foreign investors gives rise to mimetic behavior and informational cascades, i.e., a sequential and cumulative process in which agents decide on the basis of both their own private and probabilistic informational signals, and the aggregate actions of predecessors (Caplin, & Leahy, 1998).

Evidence on the catalytic role of CP enforcement in FDI attraction is given in a fragmentary way by previous empirical studies, which found a positive effect on FDI inflows (Clarke, 2003; Cooke & Elliott, 1999). The focus on the enforcement is also reflected in the long-standing CP experience and the economic history literature, both supporting the essential nature of CP as a tool of law enforcement. As Baker, Sallet, & Scott Morton (2018a) have pointed out, "there is no antitrust law without antitrust law enforcement. Legal action turns economic and jurisprudential theory into litigation, remedy, prohibition, deterrence, and precedent that advance competition". Further, recent studies on the history of U.S. CP have impressively demonstrated how large was the scope of discretion in CP enforcement, concluding that the most significant changes in CP for its effectiveness came from changes in the approach taken to the law enforcement (Baker, Frydman, & Hilt, 2018b). Even, it is suggested a sort of 'reverse causality', according to which "the most

significant change in antitrust jurisprudence occurred in the 1970s, when stringent antitrust enforcement triggered a backlash that transformed law and policy" (Sawyer, 2019, p. 3).

To sum up, governments' awareness of the role of CP enforcement in the effective functioning of national markets has increased with the intensification of pro-market reforms, thus leading to CP regimes characterized by a higher level of enforcement. Accordingly, we argue that in countries where pro-enforcement reforms have been introduced, thus creating a more favorable and non-discriminatory business climate, there has been an increase in FDI compared to the previous level. Hence, we advance our baseline hypothesis as follows:

HP1. A pro-enforcement reform brings about a change in the CP regime that leads to an increase of inward FDI in the host country.

2.2. The boundary conditions for the relation between competition policy enforcement and FDI

In the previous subsection, we have established a direct relationship between CP regime and country's attractiveness to FDI. We now move on to examining the boundary conditions under which the link is expected to be stronger or weaker. In particular, we look at the institutional dimensions that are likely to moderate the demand for CP enforcement by foreign investors and consequently their investment response when the relevant measures have materialized. In doing so, we have been inspired by the comparative institutionalism approach whose most fundamental contribution in the IB field is to identify differences in socio-economic organization between countries that "may have considerable impact on the structures and practices adopted by firms operating across national border" (Hotho & Pedersen, 2012: 246). Specifically, we assume an 'interactive view', thus emphasizing the institutional complementarity that links economic outcomes to the joint effects of particular combinations of institutions (Aoki, 2001), and to

institutional tensions among the latter (Alesina & Giuliano, 2015; Jackson & Deeg, 2019)[6]. Taking this perspective, we are equipped to investigate which combinations of institutional variables moderate the variation of FDI following a perceived positive change of status in the CP regime.

From a foreign investors' point of view, an increase in CP enforcement is worthwhile as long as two conditions are simultaneously met: i) investors deem CP a necessary tool for maintaining a favorable business environment in the host country; ii) investors believe that the host country's institutional setting would credibly support the CP enforcement. Previous literature on economics of competition and comparative institutionalism helps us to identify the key institutional dimensions defining the boundary conditions for the CP enforcement to be *needed* and *credible*.

Aghion et al. (2010) suggest that it is a lack of 'generalized trust' (i.e., trust in others, corporations and political institutions) that creates demand for market regulation. Trust[7] is an informal institution that can be defined as "the willingness to make oneself vulnerable to other people's actions, based on beliefs about their trustworthiness" (Bohenet, 2008: 253). If a society perceives most agents as untrustworthy, it will prefer stricter regulation over less restrictive alternatives. In this context, CP is a tool that constrains firms' choices and hence limits negative externalities. Only countries that have developed alternative institutional mechanisms such as trust can leverage it to curb the generation of negative externalities. Consequently, we have two type of society or 'two equilibria' (Aghion et al., 2010), as a result of the co-evolution of trust and market regulation: one with a large share of trustful (and trustworthy) individuals/organizations and no regulation, and another in which a large share of distrustful (and untrustworthy) individuals/organizations ask for heavy regulation. Empirically relevant to our purposes is the negative correlation between trust and demand for

[6] As Jackson & Deeg (2019) remark, the interactive view is contiguous to the configurational approach, as it shares the intent to understand institutional interdependence. The configurational approach is distinct as it gives attention to a 'constellation' of interconnected institutions that can be investigated by means of clustering techniques and configurational methods. As our conceptual framework focuses on two fundamental institutions that jointly influence the CP enforcement–FDI relationship (see below in the text), we don't need to recur to a configurational view in the strict sense.

[7] Hereafter, we use the term 'trust' to refer to 'generalized trust' as opposed to 'particularized trust'. The former corresponds to trust in unknown others, the latter corresponds to trust in specific others (e.g., family and friends, or specific out-groups) (Uslaner, 2002).

market regulation. Aghion et al. (2010) and Pinotti (2012) find this to be true in a cross-section of countries. Zingales (2009) finds that a similar relationship also exists in the time series, as the demand for regulating markets increases after every major crisis.

Since trust is a substitute for market regulation in general and NCAs' intervention in particular, we would expect more (less) need for CP from foreign investors in host countries characterized by a lower (higher) level of trust. Likewise, we would expect more (less) inward FDI responsiveness to measures of CP enforcement in host countries characterized by a lower (higher) level of trust, i.e., a higher (lower) increase of inward FDI as compared to the previous level.

Yet, more CP enforcement due to the lack of trust is not sufficient for inward FDI being positively affected. Here comes the second condition. The host country's institutional setting should be able to support the CP enforcement so as to set the scene for NCAs to truly deliver on their promise to ensure a ubiquitous level playing field. Comparative institutionalism holds that societal institutions develop in a mutually reinforcing way (Hall & Soskice, 2001; Whitley, 1999), so that the credibility of an institution depends on the co-evolution of the other institutions acting to pursue similar goals. In this light, CP is only one piece of the puzzle that, once completed, defines a country's RIE, i.e., all the overarching policies, disciplines, rules and tools that increase the government's capacity to promote contracting efficiency and facilitate market transactions and business development (Radaelli & De Francesco, 2013). In turn, RIE is a fundamental component of the country's overall system of pro-market institutions (Cuervo-Cazurra et al., 2019a).

Our notion of RIE implies that if the goals of its constituent institutions are aligned with each other and in line with the government policy, the well-functioning of the institutional system helps individual complementary institutions perform better and gain social credibility, through mechanisms of mutual reinforcement. However, this alignment is not easy, because of tensions among institutions (Alesina & Giuliano, 2015). First of all, conflicts can arise between the two regulatory regimes: sector regulation versus CP. Theoretically, they serve as complements, as sector

regulators act *ex-ante,* e.g., by imposing or controlling firms' prices, investments, and product choices, while NCAs intervene *ex-post*, e.g., by checking the legitimacy of business conducts and, where appropriate, filling gaps in *ex-ante* regulation (Motta, 2004: xviii). However, overlapping areas and misalignments are frequent (Kolstad, Ulen & Johnson, 1990), with resulting mutual reputational externalities that may undermine the credibility of both regimes. Furthermore, a low-quality RIE introduces other elements of inconsistency that may make CP enforcement less credible. Too much discretion may be left to governments, parliaments and local autorithies to favor certain interest groups, possibly under the umbrella of some sort of immunity that exclude these bodies from the investigation and possible prosecution by the NCA (Fox & Webb, 2013). Lax rules and lack of monitoring leave room for government capture by lobbies and consequently *ad hoc* attempts to influence the NCA on behalf of special interests, thus weakening its ability to hinder anti-competitive actions and undermining the perception of its institutional independence (Mehta, Srinivasan, & Zhao, 2020). More in general, dysfunctionalities in important regulatory areas – such as financial, labour, environmental regulations, and so on – fuel negative credibility externalities on CP enforcement.

To summarize, the higher the RIE quality, and therefore the country effectiveness in implementing strategies and actions to foster competitive market mechanisms, the higher the likelihood that an increase in CP enforcement will actually translate into non-discriminatory competition policies and absence of market manipulations against foreign investors. As a consequence, the perception of the CP enforcement reliability gives more incentives to investing in the country. Therefore, in the following we put forward 'trust' and 'RIE' as the most relevant traits of the host country, the variation of which makes an increase in CP enforcement perceived as needed and credible by foreign investors. According to the interactive view, we then consider the different combinations of levels of trust and RIE quality and inquire into how they shape the relationship between an increase in CP enforcement and countries' FDI attractiveness.

As regards as their interplay, literature in developmental economics has claimed that trust and the quality of institutions in general are positively correlated (for a review, Algan & Cahuc, 2014). This raises the important question as to whether trust and RIE quality can be seen as separate constructs or they are rather part of a higher order construct. We contend that, though correlated because of mutual reinforcing, they are two distinct institutional dimensions. Trust belongs to the realm of informal institutions and interweaves with the structure and evolution of behavioral patterns in social interactions. Conversely, RIE is a facet of the pro-market institutional setting pertaining to a given community and consists in interdependent formal rules and tools deployed to foster a resource allocation driven by market interactions. Therefore, institutional contexts may be characterized by mixed combinations of trust and RIE.

Both factors are expected to favour inward FDI. Trust helps reduce the probability of opportunistic behaviour and moral hazard, mitigates the inefficiencies associated with incomplete contractual relationships between FDI affiliate enterprises and domestic stakeholders, and facilitates the establishment of cooperative relations between the parties (Bhardwaj, Dietz & Beamish, 2007; Da Rin, Di Giacomo, & Sembenelli, 2019; Guiso, Sapienza, & Zingales, 2009; Zhao & Kim, 2011). A high-quality RIE involves policies designed to enable and promote business activities, including inward FDI (Bailey, 2018; Daude & Stein, 2007; Lu, et al., 2014; Nielsen et al., 2017). For example, Pajunen (2008) finds that labour regulation encourages inflow FDI. Rammal & Zurbruegg (2006) show that a deterioration in the enforcement of investment regulations adversely affects inflow FDI. Uddin, Chowdhury, Zafar, Shafique & Liu (2019) find that regulations governing credit market, labour market and business are the most important institutional factors influencing inflow FDI. Further, RIE is closely related to the government effectiveness, which contributes to a positive perception of the CP functioning in a country (e.g., Krakowski, 2005). Indeed, both are performance measures that provide an assessment of the country's quality of governance and in the literature the indicators proposed for them are highly correlated.

However, according to the interactive view of institutions, we here are rather interested in investigating the issue of whether and how trust and RIE jointly moderate the CP enforcement–FDI relationship stated in our baseline hypothesis. In this light, the institutional configuration of the host countries that is expected to effectively enhance the FDI responsiveness to more stringent measures of CP enforcement is the one characterized by a lower level of trust and a higher quality RIE. Namely, in this scenario both the conditions under which foreign investors deem worthier an increase in CP enforcement are met. On the contrary, when the level of trust in the host economy is higher and/or the RIE quality is lower, one of the two or both the conditions turn out to be unmet. As a consequence, an increase in CP enforcement ends up be unnecessary or frail or even counterproductive in promoting the rise of FDI in the country. To sum up, we argue that the causal effect between CP enforcement and FDI is jointly moderated by two variables whose variations are able to generate specific 'institutional configurations'. Thus, we put forward our second hypothesis as follows:

HP2. The positive effect of pro-enforcement reforms of CP on inward FDI is higher in the institutional configuration characterized by the co-presence of a lower level of trust and a higher quality of the regulatory institutional environment.

3. Methodology

3.1. Sample

We test our hypotheses using data concerning 63 countries in the 1980–2017 period. The selection was driven by both the country economic relevance and available information about the CP enforcement. Table 1A in Appendix reports the list of sampled countries. They account for more

than 90% of the Gross World Product in 2018 (full coverage of OECD member countries is assured)[8].

3.2. Variables and sources

To measure inward FDI we refer to the UNCTAD database. We use *IFDI_on_GDP*, i.e., the net inward FDI (considered in stock to take into account both the flows and the revaluations of past investments) scaled by the gross domestic product (GDP). We are aware that international statistics on FDIs are criticized. Beugelsdijk, Hennart, Slangen & Smeets (2010) show that they are a biased measure as the degree to which they overestimate or underestimate affiliate activity varies systematically with host-country characteristics. These characteristics include tax haven status, financial development and labor productivity. The limitations of FDI data have led many scholars to rely on databases that directly track the foreign investments of enterprises. However, this approach only represents a partial remedy. Corporate-level measures of multinationality also have limitations and distortions (Hennart, 2011). Moreover, corporate-level measures often refer to a limited set of countries and are available along a limited time span. In fact, roughly two-thirds of empirical studies in IB relies on single country samples (Ghemawat, 2017). Conversely, FDI stock data are available for many countries and cover a long time period. In need of a long panel, we followed Mira Wilkins' suggestion: "we have long – albeit imperfect – series on FDI stock for many countries. Handled with care, these series provide one very useful measure, if we are aware of what is included (and excluded) in the data, that is, the data limitations" (Wilkins, 2012). In particular, in order to limit the impact of above mentioned biases on our results, aside from using a fixed effects estimator, which absorbs time-invariant cross-country differences, we also control for labor cost and tax burden in our econometric exercise as well as drop tax haven countries in a specific robustness check (see below).

[8] Data unavailability and events that led many territories to declare political independence and set themselves up as sovereign states (e.g. the collapse of the supranational Soviet Bloc and the dissolutions of Czechoslovakia and Yugoslavia) made it impossible to construct a balanced panel.

In order to detect the pro-enforcement reforms that changed the CP regimes around the world, we use the staggered passage of national 'leniency programs', which by giving amnesty to cartel conspirators that cooperate with NCAs, lead to more cartel detections and generally increased the costs of collusion. The CP literature has demonstrated that leniency programs were effective in general and their introduction represented a critical juncture that allowed NCAs to better enforce the law (Dasgupta & Žaldokas, 2019; Dong, Massa & Žaldokas, 2019; Ordóñez-De-Haro, Borrell & Jiménez, 2018). More important, Borrell, Jiménez, & García (2014) show that the adoption of leniency programs significantly increases the 'perception' of CP effectiveness (not only with reference to collusion), thus acting as "a weapon of mass dissuasion in the hands of antitrust enforcers" (Borrell et al., 2014: 107). This evidence definitely supports our choice of the staggered passage of those programs as a proxy for a general positive change in the perceived status of CP enforcement.

Accordingly, we construct the variable *Leniency_post*, a dummy variable set equal to 1 if a leniency law was passed in a given country for every year after the one in which the law came into force and 0 otherwise. During the period under investigation, leniency laws were passed in 55 out of the 63 sampled countries. The first country to pass leniency law was the United States in 1993, whereas the last ones (in our sample) were Taiwan and Ukraine in 2012 (see Figure 1).

[Insert Figure 1 about here]

The trust is measured by using data from the World Values Survey (WVS). The WVS is an international social survey exploring values and beliefs, cultural stability or change over time and the impact of values on social and political development in different societies around a large sample of countries. Six survey waves have been administered from 1981 to 2014. For our purposes, we use the answers to the following question: "*Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?"*, which has been previously used in the literature to construct a measure of trust (Sapienza, Toldra-Simats & Zingales, 2013). In

the WVS database, the answer *"Most people can be trusted"* is coded as a 1, while the answer *"Need to be very careful"* is coded as a 2. To construct our time-varying *Trust* variable, we first compute the average by year of the WVS indicator for each country and then take the reciprocal of the WVS indicator minus one[9].

The RIE quality (*RIE_quality*) is measured by resorting to the regulatory quality index sourced from the Worldwide Governance Indicators of the World Bank database. While a variety of measurements of the broad construct of pro-market institutions quality is available (Cuervo-Cazurra et al., 2019a; see below), specific indexes that directly capture stakeholders' perceptions of the government's ability to formulate and implement sound policies and regulations that permit and promote private sector development are not as numerous (see De Francesco, & Radaelli, 2010 for a review). The World Bank constructed a composite indicator by using aggregation techniques and cluster analysis and resorting to a wide array of measures such as regulatory burden on business operations, investment and financial freedom, discriminatory taxes, discriminatory tariffs, market-unfriendly policies such as price control, inadequate bank supervision, excessive protection, and so forth (Kaufmann, Kraay, & Mastruzzi, 2004). Ultimately, the index was designed to portray a broad conceptualization of regulatory quality, by following an approach that distinguishes it from indicators provided by other sources, which generally have a narrower scope and are generated by government surveys not integrated with business perception surveys. Thus, as suggested also by Lu et al. (2014), we believe that the World Bank indicator is the most suitable proxy among the available ones as a measure of RIE quality.

We estimate a regression model that allows us to control for an array of factors that extant literature has documented to influence the country's attractiveness to FDI (Bailey, 2018; Nielsen et al., 2017).

[9] It should be pinpointed that claiming that trust relevant to the host country would have an effect on foreigners' need for CP enforcement may be criticized on the grounds that the level of trust among compatriots do not necessarily mirror the level of trust between them and the people who live in other countries (Guiso et al. 2009). However, consistent with a trustworthiness interpretation of trust, several studies have shown that people characterized by higher (lower) levels of intra-national trust are also trusted (untrusted) to a greater extent by foreigners (Bornhorst, Ichino, Kirchkamp, Schlag, & Winter, 2010; Guiso et al. 2009; Willinger, Keser, Lohmann, & Usunier, 2003).

We control for the *GDP* and the GDP per capita (*GDP_pc*) in order to take into account the effect of the market size and the degree of economic development and productivity level on the location choice of multinational enterprises across countries (and therefore the inward FDI). Data are gathered from the UNCTAD database and are expressed in million U.S. dollars at current prices. In the models, we use the logarithm of both variables to deal with their skewness.

Country attractiveness to FDIs can be influenced by the openness of the economy to the international trade. We construct our variable *Openness* by summing the values of exports and imports of goods and services and scaling the total by the GDP; data come from the World Bank database.

Ricardian technology and resource endowment differences across countries are taken into account through three different measures. *Natural_resources*, measured as the share of merchandise exports (as a percentage of GDP) accounting for fuels (i.e., commodities in SITC section 3: mineral fuels, lubricants and related materials) and ores and metals (i.e., commodities in SITC sections 27, 28 and 68: crude fertilizer, minerals, metalliferous ores, scrap, non-ferrous metals); the indicator has been obtained from the World Bank database; *Human_resources*, measured as the share of the population aged 30–34 years who have successfully completed university or university-like (tertiary-level) education with an education level ISCED 1997 (International Standard Classification of Education) of 5–6; the indicator comes from the Barro-Lee Educational Attainment Database made available by the World Bank. *Technology*, measured as the gross domestic expenditure on research and development (R&D) as a percentage of GDP, where R&D "comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society and the use of this stock of knowledge to devise new applications" (OECD 2002: 30); the indicator also comes from the World Bank.

To take into account other country specificities and FDI biases, in further specifications, we consider additional controls that we are not able to measure along the entire period and/or for the

entire sampled countries. In particular, we control for *Labor_cost*, *Tax_burden*, *Pro_market_reforms*, *Country_risk* and *IFDI_restrictions*.

Labor_cost is measured using data on the hourly compensation costs of labor in manufacturing gathered under The Conference Board International Labor Comparisons program (2018). Compensation costs are expressed in U.S. dollars and are available for 41 countries from 1980 to 2016. *Tax_burden* is the amount of tax on corporate profits defined as taxes levied on the net profits (gross income minus allowable tax reliefs) of enterprises. It also covers taxes levied on the capital gains of enterprises. This indicator relates to government as a whole (all government levels) and is measured in percentage of GDP. Data are made available by the World Bank database and refer to 59 countries along the 1980–2017 time span.

Quite importantly, we account for the institutional reforms that complement RIE quality into creating a pro-market environment. Following Cuervo-Cazurra & Dau (2009), we include *Pro_market_reforms* to capture economic liberalization, improvements in national governance, and the movement from high toward low government intervention. The variable is measured by resorting to the Index of Economic Freedom delivered by the Fraser Institute, which provides a comprehensive representation of the pro-market institutions at the country level (Cuervo-Cazurra et al., 2019a). It is available for each of our sampled countries along the entire time span. The index is expected to be positively correlated with FDI inflows (for a recent empirical analysis, Ghazalian & Amponsem, 2019).

Country_risk is constructed by using the indicator developed by the International Country Risk Guide (ICRG), which covers both political and social attributes, such as: voice and accountability, political stability and absence of violence, government effectiveness, rule of law, control of corruption. Since the indicator ranges between 0 and 1 moving from the riskiest to the safest countries, we subtract it from 1 in order to obtain a variable whose highest values indicate riskiest countries. The indicator is available from 1996 to 2016. Finally, *IFDI_restrictions* is measured by

using the FDI Regulatory Restrictiveness Index (FDI Index), which considers statutory restrictions on FDI in 22 economic sectors across 69 countries, including all OECD and G20 countries. The FDI Index is available from 1997 to 2018 and has been developed by the OECD.

Table 1 summarizes operationalization and sources of the variables used in the econometric models.

[Insert Table 1 about here]

3.3. Empirical strategy

The empirical analysis is carried out in a panel-data setting as we follow the sampled countries across four decades. As we have jurisdictions that passed leniency programs (treated countries) and jurisdictions that did not (control countries), we can estimate a difference-in-differences (DiD) model (see Kim, Pevzner, & Xin, 2019 for a recent adoption of DiD in the IB literature). We estimate fixed effects model to reduce unobservable time-invariant heterogeneity at the country level. Accordingly, in order to test Hypothesis HP1, *IFDI_on_GDP* is regressed against our explanatory variable measuring the positively perceived pro-enforcement reform of the CP regime (*Leniency_post*). To avoid simultaneity problems, country-level controls are lagged by one year. The general model is the following:

$$IFDI\_on\_GDP_{it} = \beta_0 + \beta_1(Leniency\_post_{it-1}) + \gamma X_{it-1} + \theta_i + \delta_t + \varepsilon_{it} \quad (1)$$

where X_{it-1} is the vector of controls, θ_i is a country fixed effect, δ_t is a year fixed effect and ε_{it} is the error term. Our Hypothesis HP1 is supported if β_1 is positive and statistically significant.

To test Hypothesis HP2, we augment the model in Equation (1) with our two moderating variables (*Trust* and *RIE_quality*), stood alone, interacted with each other and interacted with *Leniency_post*. To sum up, we estimate the following model:

$$IFDI_{on_{GDP}\,it} = \beta_0 + \beta_1(Leniency\_post_{it-1}) + \beta_2(Leniency\_post_{it-1} * Trust_{it-1}) +$$

$$\beta_3(Trust_{it-1}) + \beta_4(Leniency\_post_{it-1} * Regulatory\_institutional\_quality_{it-1}) +$$

$$\beta_5(Regulatory\_institutional\_quality_{it-1}) + \beta_6(Trust_{it-1} *$$

$Regulatory\_institutional\_quality_{it-1}) + \beta_7(Leniency\_post_{it-1} * Trust_{it-1} *$

$Regulatory\_institutional\_quality_{it-1}) + \gamma X_{it-1} + \theta_i + \delta_t + \varepsilon_{it}$ (2)

In this case, the hypothesis testing cannot be carried out by simply looking at the coefficients of the model in Equation (2) as we need to sum coefficients up and compute the joint effect of the two moderators at different levels of each of them. Therefore, we will rely upon graphical analysis as a method of hypothesis testing.

4. Results

4.1. Summary statistics

Table 2 shows the summary statistics for each variable, overall, between- and within-country. In our sample, the average *IFDI_on_GDP* is 0.407. The lowest values taken by the variable are not 0 (although due to approximation they are reported as 0.000) and refer to some Eastern Europe countries at the beginning of their transition to market economy. The highest value (10.237) refers to Cyprus in 2017. The country featuring the higher trust is Norway (*Trust* is above 3 along the entire time span), whereas the country where trust reaches the lowest level (1.029) is Brazil in the 1995–1998 period. The highest RIE quality levels (with the variable *RIE_quality* ranging from 2.02 to 2.26) are recorded in Singapore, the Netherlands, New Zealand, Hong Kong and the United Kingdom, while the lowest one (-2.000) refers to Venezuela in 2016 (the last available year for the series of that country).

[Insert Table 2 about here]

Table 3 shows the correlation matrix of our dependent and independent variables. As expected, *Trust* and *RIE_quality* are positively correlated. However, countries characterized by low levels of trust and high-quality RIE are not uncommon. Examples are Chile and Singapore (*Trust* always in the lowest decile and *RIE_quality* always in the highest decile of the respective distributions). On the other side of the space, the Chinese institutional context presents a relatively high trust and underdeveloped regulatory institutions (*Trust* always in the highest decile and *RIE_quality* always

in the lowest decile of the respective distributions). All in all, the regressors have fairly low correlation coefficients and do not suffer from multicollinearity because the single variance inflation factors (VIF) are never higher than 10 – the widely accepted threshold to detect collinearity – while the mean VIF is 2.90, well below the standard threshold of 6 (Hair, Black, Babin, & Anderson, 2010).

[Insert Table 3 about here]

4.2. The effect of pro-enforcement reform of the competition policy regime on inward FDI

We start by estimating the average effect of a pro-enforcement reform of the CP regime on inward FDI. Table 4 shows the results of the estimation of the fixed-effects panel-data model (1) described in the previous section. In the specification reported in column (2), we only control for year and country fixed-effects. In the specification (3), we add the *GDP*, the *GDP_pc* and the country *Openness*. In the specification (4), which is the most thorough one, we also include the Ricardian technology and resource endowment factors (*Natural_resources*, *Human_resources* and *Technology*). For comparison purposes, column (1) reports results of a specification including only control variables. In every specification, we compute robust standard errors to mitigate heteroscedasticity.

[Insert Table 4 about here]

Regardless of the specification, the results shown in Table 4 provide evidence that, on average, a pro-enforcement reform of the CP regime proxied by the passage of leniency programs has a positive effect on inward FDI. The magnitude of the coefficients of *Leniency_post* ranges from 0.156 in the specification (2) to 0.090 in the specification (3), whereas they always are statistically significant at the 10% level. These results and the robustness checks that will be presented in the following subsections support our Hypothesis HP1.

4.3. Additional controls

Using data on a comprehensive sample of countries observed along a fairly long time span may severely constrain the set of controls a researcher can include in the regression models. In order to prove that our results are not invalidated by the exclusion of relevant determinants affecting the country's attractiveness, we re-estimate our model (1) by including additional controls and using different subsamples.

Table 5 shows the estimates of four different augmented models. In the specification (1), we include *Labor_cost* and *Tax_burden*, which we are able to measure jointly for only 40 countries. In the specification (2), we control for *Pro_market_reforms* and *Country_risk*, the latter being observed for 60 countries and along a shorter time span (1996–2016). In the specification (3), we include *Labor_cost*, *Tax_burden*, *Pro_market_reforms* and *Country_risk* simultaneously. Finally, in the specification (4), we also include *IFDI_restrictions*, a measure available only for 37 countries and along the 1997–2017 period.

[Insert Table 5 about here]

The results prove to be unaffected by the inclusion of additional controls in all of the specifications. The coefficients of the variable *Pro_market_reforms* are not statistically significant, but positive in the specifications (2–3). In the specification (4) the sign turns to be negative, but the switch may be due to the limited number of countries included in the subsample used to estimate the model, most of which are advanced countries with a lower between group variance in pro-market reforms. Consistent results are obtained when the Index of Economic Freedom developed by the Heritage Foundation is used to operationalize the variable *Pro_market_reforms*.[10]

The coefficients of *Leniency_post* keep being positive and statistically significant, at the 10% level in the specifications (1–2), at the 5% level in the specification (3) and at the 1% level in the specification (4). The magnitude of the effect ranges from 0.049 in the specification (1) to 0.097 in the specification (2).

[10] Estimates are available upon request.

4.4. Robustness checks

In this subsection, we perform some robustness checks aimed at strengthening the results shown in Tables 4 and 5.

Table 6 reports estimates that validate the use of our DiD approach. In Panel A, we tackle the concern related to diverging trends in pre-reform years. Our DiD identification requires the pre-reform parallel trend hypothesis to be valid. In other words, no pre-reform differential trends between treated and control countries should be correlated with the inward FDI. Our strategy to support the parallel trend hypothesis is twofold. First, we create a placebo test in which we artificially move the leniency law's passage for each treated country three years back. Accordingly, we replace *Leniency_post* with *Leniency_placebo* and re-estimate the model. The result of the placebo test in column (1) reveals no differences with respect to inward FDI on GDP between treatment and control groups. Second, we replace the *Leniency_post* indicator in equation (1) with a set of dummies that capture the dynamic effect of the treatment, from 3 years before up until 3 years or later (and using as benchmark group 4 years or more before the treatment). As shown in column (2) of Panel A, inward FDI on GDP does not differ across countries three, two and one year prior to the treatment. By contrast, we detect a positive and significant effect on the year after as well as two years after the treatment. The coefficient relative to the year after the treatment is also statistically different from the coefficients relative to one, two and three years before the treatment (at the 5%, 10% and 5% statistical levels, respectively). This dynamics is in line with the absence of diverging trends and confirms that most of the increase in inward FDI occurs in the immediate period following the leniency law's passage. After three years, the effect vanishes perhaps as a consequence of the diffusion of pro-enforcement CP reforms around the world. After having established that diverging trends is not an issue, we conduct balancing tests for changes in composition. In Panel B, we report the results of covariate balance regressions obtained by replacing *IFDI_on_GDP* with each covariate and fitting our standard DiD regression model. We

use observations ranging from 5 years before to 5 years after the treatment. The estimates show that most of the variables do not differ going from the pre- to the post-treatment period (only *Natural_resources* and *Pro_market_reforms* differ at the 5% and 10% statistical level, respectively), thus further validating our DiD approach.

[Insert Table 6 about here]

Table 7 reports some additional robustness checks. In column (1) of Table 7, we address a possible concern with the determination of the year when a leniency law comes into force in the EU. In fact, while the EU passed a leniency law that would become applicable to all EU member countries in 2002, individual countries adopted a leniency law that would apply to all organizations doing business in these countries in a staggered manner. In the estimates displayed in column (1), we assume that, for an EU member, the leniency program becomes effective in 2002. When the country was not yet an EU member at that date, we assume the leniency law to be passed in the year the country joined the EU. Our results remain unchanged.

[Insert Table 7 about here]

Furthermore, we establish the effect of the passage of leniency laws on inward FDI on GDP after controlling for differences in past attractiveness to foreign investors across countries by augmenting the specification with *IFDI_on_GDP* lagged by one year. It is well recognized that fixed-effects estimates are inconsistent when lags of the dependent variable are included as explanatory variables because of the correlation between lags and residuals. We therefore use the dynamic generalized method of moments (dynamic GMM) developed by Arellano & Bond (1991). This method first differentiates the model (to eliminate fixed effects) and then performs an instrumental variables regression of the resulting model using lags of the explanatory variables as instruments. As shown in column (2) of Table 7, the variable *Leniency_post* remains statistically significant at the 10% level as well as economically close to previous estimates.

Finally, we check whether our results are driven by the presence of tax havens in the sample. There are a number of different lists available that classify countries as tax havens (Hines & Rice, 1994; Desai, Foley & Hines, 2006; Jones & Temouri, 2016). We take a conservative approach and exclude all the sampled countries that are present in at least one of the lists put forward in Hines & Rice (1994) and Desai, Foley & Hines (2006).[11] This approach leads us to leave Cyprus, Hong Kong, Ireland, Jordan, Luxembourg, Netherlands, Singapore and Switzerland out of the sample and rerun the regression with the remaining countries. Column (3) shows that the coefficient of *Leniency_post* preserves the positive sign and statistical significance (at the 10% level).

4.5. The joint moderating effect of trust and regulatory institutional environment quality

To test Hypothesis HP2, we estimate the model shown in Equation (2). However, as already mentioned in the 'Empirical strategy' subsection, we cannot look at the statistical significance of a given coefficient or a set of coefficients, but instead, we need to properly sum some of them up at different levels of our moderating variables. In order to circumvent this problem, we rely on graphs displayed in Figures 2–3. Although not immediately usable as hypothesis testing tool, the coefficients of the regressions are inputs to plot the Figures and are shown in Table 8.

[Insert Table 8 about here][Insert Figure 2 about here]

Figure 2 depicts the marginal effect of the introduction of a leniency program at various levels of *Trust* and *RIE_quality* in order to see how the two institutional dimensions jointly moderate the relationship between the perceived level of CP enforcement and the country's attractiveness to foreign investors. As the reader can easily realize, *Trust* and *RIE_quality* moderate in different way the relationship depending on the level of the other dimension. However, for our purposes, what matters is the magnitude of the marginal effect in the four configurations generated by the combinations of *Trust* (lower and higher level) and *RIE_quality* (lower and higher level).

[11] Jones & Temouri (2016) rely on Hines & Rice (1994) and Desai, Foley & Hines (2006) to obtain their list.

[Insert Figure 3 about here]

The highest magnitude of the marginal effect is observed when *Trust* is at the lowest level and *RIE_quality* is at the highest level. However, hypothesis testing requires us to show that the marginal effect is also statistically significant. In order to do so, we use Figure 3, which shows the projections of the surface depicted in Figure 2 onto the faces (A), (B), (C) and (D), as labelled in Figure 2, along with 90% confidence intervals. Figure 3 confirms that the marginal effect of the passage of leniency laws on inward FDI on GDP is statistically significant only at the intersection between faces (A) and (D), that is, when *Trust* is lower and *RIE_quality* is higher (note that the zero line is out of the 90% confidence intervals). Moreover, consistent with our conceptual framework, the marginal effect of the CP enforcement on inward FDI increases as the RIE quality goes up when trust is lower, and decreases as trust goes down in high-quality RIEs.

In the remaining three institutional configurations, i.e. (i) lower level of trust/low-quality RIE, (ii) higher level of trust/low-quality RIE, (iii) higher level of trust/high-quality RIE, the CP enforcement effect on inward FDI vanishes as it becomes not statistically significant. Our Hypothesis HP2 implies that in those configurations the CP enforcement effect should only be mitigated. Actually, data show that institutional configurations characterized by underdeveloped RIE and/or higher levels of trust go beyond mitigating the CP enforcement effect on inward FDI to the point of nullifying it.

In sum, the graphical analysis supports our Hypothesis HP2 but partly weakens Hypothesis HP1. As above said, a pro-enforcement reform of the CP regime has a statistically significant positive effect on country attractiveness towards FDI only on average; this positive effect does not remain valid in all the institutional configurations.

In order to check whether our results are robust to the exclusion of tax havens, we re-estimate our model (3) of Table 8 by using the same subsample of countries as in the specification (3) of Table 7. The plotting procedure above described confirms the support for the Hypothesis HP2.

5. Discussion and conclusion

5.1. Main findings and theoretical contribution

Our results provide evidence on the role played by one of the most significant pillars of competition enhancing policies, namely the CP enforcement, in attracting FDI. We find a positive relationship between the pro-enforcement reform of the CP regime in the host country and the national-level inward FDI. However, this relationship is interactively moderated by key formal and informal institutions. Our findings suggest that pro-enforcement reforms play a significant role in signaling conditions of level playing field in host countries with an institutional configuration characterized by a lower level of trust and a higher RIE quality. Indeed, the lack of trust calls for the introduction of formal rules of the game, i.e., the enforcement of regulation to prevent opportunistic behaviors. But a high-quality RIE is needed to make CP credible and to set the scene for the NCAs to truly deliver on their promise to ensure a ubiquitous level playing field, thus stimulating a higher FDI inflow. In other trust–RIE quality configurations the signaling role of the CP enforcement vanishes and its effect on inward FDI becomes non statistically significant. It is worth noting that, in our models, we control for the institutional reforms that complement RIE quality in creating a pro-market environment: this makes us quite confident that RIE quality is the specific institutional trait that matters to foreign investors when forming their perceptions of how much credible CP enforcement is in host countries.

Our paper contributes to the discussion about the influence of host NCAs and other coevolving key institutions on the country's attractiveness towards FDI. Relying on a comparative institutionalist framework (Hotho, & Pedersen, 2012), we go beyond the extant literature on the CP–FDI relationship that does not consider institutional interdependencies (Jackson, & Deeg, 2019). We show how the significance of CP enforcement in driving FDI in a country depends on the peculiar trust/RIE configuration of the latter. In this way, the paper helps shed light on previous mixing

results, as specific configurations tend to nullify the CP enforcement effect, thus also leaving room for a possible negative impact on FDI for specific host countries (Clougherty & Zhang, 2020).

5.2. Policy implications

The main policy implication for FDI location is that the NCAs' effort to make CP more effective and to signal a level playing field is not sufficient to change the inflow of FDI in the host country. In the recent past, the discontinuity represented by pro-enforcement reforms of CP regimes has favoured inward FDI, by improving the business climate in countries characterized by lower levels of trust, but only provided that a high-quality RIE makes CP work well.

More in general, our results suggest that the effectiveness of CP enforcement, as well as other regulatory policies, depends on important complementarities between the pillars of the national institutional setting. We think this is even truer after the global financial crisis, as governments have increasingly adopted protectionist and discriminatory measures to favor local players (Evenett, 2019). In a context where the pendulum of history swings back, biases in CP enforcement in favor of domestic firms are more likely to emerge as the CP can be used to achieve objectives others than competition, through political intervention and the capture of NCAs by governments or national interest groups. A selective manipulation of the law nullifies its signaling value, thus changing the FDI location.

Therefore, local public policies seriously committed to assuring level of playing field must be aware that CP enforcement measures are effective only if complemented by other regulatory policies. In this regard, the good news is that countries with low levels of trust can follow the path of development by strengthening their regulatory institutions. Although this may not be an easy task, an institutional strategy is probably more workable than the strategy of changing culture-based thinking and behaviour patterns that are important sources of trust (Algan & Cahuc, 2014). In fact, cultural changes tend to occur at a slow pace and to be strongly path-dependent. In addition, in

turbulent times characterized by a widespread propensity to implement protectionist measures, a commitment to improve the RIE quality may change FDI affiliate enterprise perceptions of possibly unfair CP enforcement.

5.3. Limitations and future research

As usual, our article is not immune from limitations that, still, provide opportunities for future research. First, our econometric model highlights a statistically robust relationship between the introduction of pro-enforcement reforms of CP regime and the increase in FDI inflow for the reform adopting countries, albeit moderated by formal and informal institutional factors. In our empirical strategy, we use the introduction of leniency programs as a proxy of a perceived positive discontinuity in the CP regime. Indeed, in the last decades and so far, the economics of CP literature has unanimously considered this event as the most reliable proxy for measuring the transition to an effective CP regime (Dasgupta & Žaldokas, 2019; Dong, Massa & Žaldokas, 2019). We therefore consider our results and the inferences they allow totally reliable. However, as with any type of innovation, even institutional innovation follows a diffusion curve that reaches saturation and exhausts its signaling significance. Put in other words, to deepen future research on these issues it will be necessary to resort to new proxies and possibly to composite indicators capable of comparing in a systematic way the CP enforcement levels of countries worldwide. Over time, indicators have been proposed (for a review, Ilzkovitz & Dierx, 2015) and some promising progress has been made recently (e.g., Bradford & Chilton, 2018), but we are still far from having a set of indicators unanimously accepted by the scholars.

Second, our paper argues that the worldwide CP enhancing reforms have pushed significant adaptation in FDI location. Specifically, countries adopting a more stringent CP enforcement may have experimented a ‘quantitative’ increase of FDI. However, quite important from the host country’s point of view, is to understand whether this phenomenon is associated with an ‘advantageous selection’, i.e., an increase in the quality of the investments due to the entry of long-

term oriented investors and of non-speculative foreign capital able to stimulate local growth and welfare (Alfaro & Charlton, 2013). IB literature has massively investigated the impact of FDI on recipient country (for reviews, Narula & Pineli, 2017; 2019). However, the relationship between national CP and quality of FDI is unexplored, thus constituting a stimulating research area.

Third, the trend towards growing protectionism everywhere in the world challenges IB scholars to better understand the implications for FDI location in the host countries. In our econometric exercise, we controlled for the effect due to the adoption of unfavorable national legislative acts against foreign investments. However, future research should devote more attention, both in theory and in practice, to the problematic coexistence of domestic and international competition policies and new protectionist national environments (in a context characterized by the steady international growth of state owned enterpises: see Mariotti & Marzano, 2019) by investigating the unprecedented interdependencies between them and their effects (e.g., Bradford, Jackson & Zytnick, 2018). In this light, more cross-fertilization between IB and competition law and economics appears to be necessary.

Finally, we believe that a major limitation of existing IB research remains the rather thin view of institutional contexts (Jackson & Deeg, 2019). The interactive view of institutions opens the door to achieving a more nuanced understanding of complementarities between different institutional dimensions and to examining the conflicts or tensions between different institutions. Our paper takes this path by analyzing three key institutional dimensions (CP, RIE, and trust), and giving empirical evidence on the effects of their interaction. Future IB research should take advantage of more sophisticated configurational approaches and techniques, and exert new efforts in developing theoretical contributions that compare institutional configurations and inquire into how they influence the widest possible array of FDI activities.

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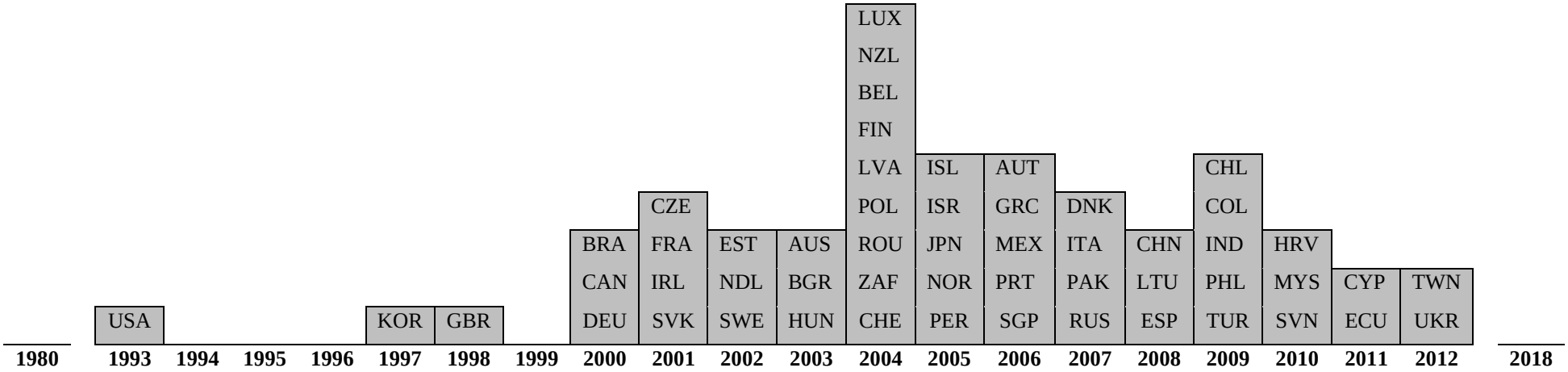
Figures

Figure 1 – Leniency programs



Leniency programs have not been passed (until 2018) in the following countries: Argentina, Hong Kong, Indonesia, Jordan, Nigeria, Oman, Thailand, Venezuela and Zambia.

The figure shows leniency program passage by year. Our primary source of information is Dasgupta & Žaldokas (2019). In order to update information and check that in the meantime leniency programs were not passed elsewhere, we complement the above mentioned source using press releases and news articles.

Figure 2 – Effect of leniency programs on IFDI on GDP as a function of trust and regulatory institutional environment quality.

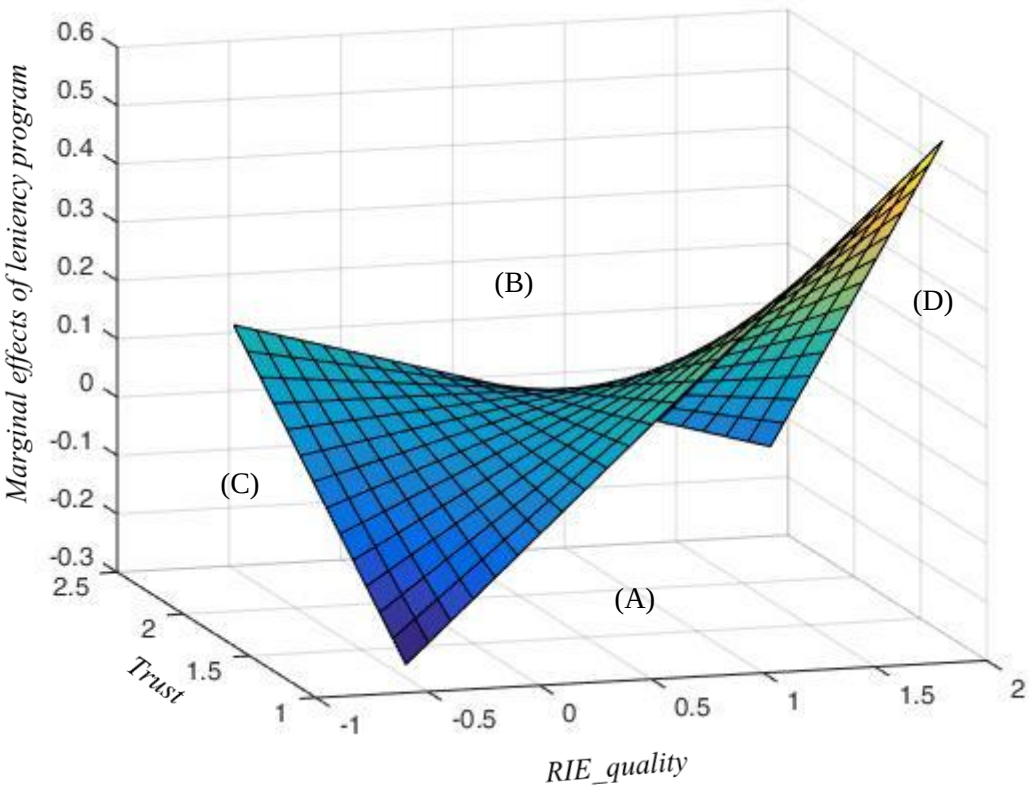
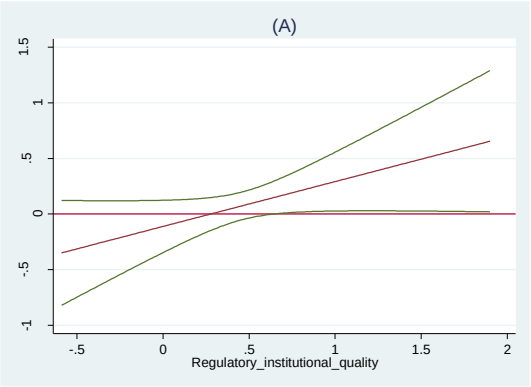
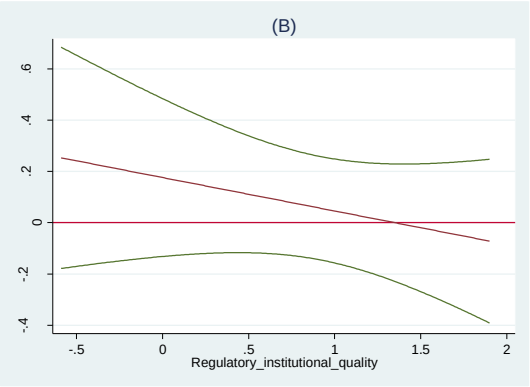


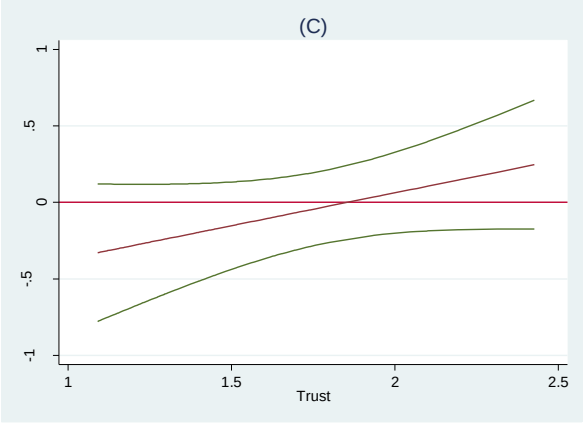
Figure 3 – Projections of the surface in Figure 3 along with 90% confidence intervals.



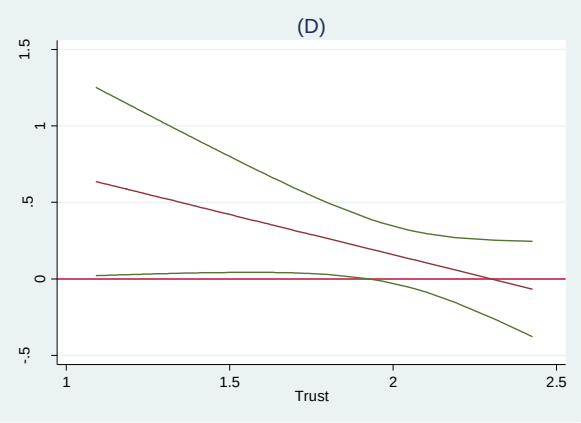
Trust=Lower level



Trust=Higher level



RIE_quality=Lower level



RIE_quality=Higher level

Tables

Table 1 – Variables and sources

	Variable	Operationalization	Source
Dependent	*IFDI_on_GDP*	(Stock of IFDI)/GDP	UNCTAD
Explanatory	*Leniency_post*	=1 if leniency passed	Dasgupta & Žaldokas, 2019
Moderators	*Trust*	1/ [Mean(WVSindicator)-1]	World Value Survey
	RIE_quality	Regulatory quality index	WGI – World Bank
Controls	*GDP*	log(GDP)	UNCTAD
	GDP_pc	log(GDP/(Population/10,000))	UNCTAD
	Openness	(Import+Export)/GDP	World Bank
	Natural_resources	$Export_{ORES/METALS/FUEL}$/GDP	World Bank
	Human_resources	$\%Population_{30-34}$ with tertiary schooling	Barro-Lee – World Bank
	Technology	Exp(R&D)/GDP	World Bank
Additional Controls	*Labor_cost*	Hourly compensation costs of labor in manufacturing	The Conference Board
	Tax_burden	Tax on income, profits and capital gains	OECD
	Pro_market_reforms	Index of Economic Freedom	Fraser Institute
	Country_risk	1/Country risk indicator	International Country Risk Guide (ICRG)
	IFDI_restrictions	FDI Regulatory Restrictiveness Index	OECD

Table 2 – Summary statistics

Variable		Mean	Sd	Min	Max	Obs.
IFDI_on_GDP	overall	0.407	0.837	0.000	10.237	2,187
	between		0.736	0.016	3.989	N=63
	within		0.518	-3.551	6.655	T=34.7
Leniency_post	overall	0.287	0.452	0	1	2,457
	between		0.148	0	0.641	N=63
	within		0.428	-0.354	1.210	T=39
Trust	overall	1.484	0.456	1.029	3.871	2,106
	between		0.436	1.059	3.313	N=54
	within		0.145	1.027	2.460	T=39
RIE_quality	overall	0.780	0.836	-2.000	2.260	1,386
	between		0.820	-1.164	1.995	N=63
	within		0.192	-0.056	1.768	T=22
GDP	overall	11.899	1.685	7.652	16.791	2,274
	between		1.546	8.766	15.983	N=63
	within		0.726	9.979	14.112	T=36.1
GDP_pc	overall	4.395	1.343	0.955	7.080	2,274
	between		1.179	1.708	6.171	N=63
	within		0.625	2.654	6.473	T=36.1
Openness	overall	83.567	65.024	9.136	442.620	2,286
	between		59.874	21.663	351.902	N=63
	within		22.659	-32.490	241.666	T=36.3
Natural_resources	overall	18.039	23.009	0.497	99.669	2,457
	between		19.580	0.519	82.648	N=63
	within		12.326	-63.965	72.531	T=39
Human_resources	overall	14.558	10.477	0.170	62.380	2,187
	between		8.201	0.419	30.870	N=60
	within		6.489	-6.766	49.884	T=36.5
Technology	overall	0.983	0.860	0.005	4.429	2,457
	between		0.734	0.144	2.719	N=63
	within		0.458	-0.776	3.076	T=39
Labor_cost	overall	13.469	13.673	0.410	65.860	1,599
	between		9.679	1.013	30.855	N=41
	within		9.772	-16.700	53.949	T=39
Tax_burden	overall	22.876	16.861	0.505	78.013	2,184
	between		12.924	2.587	62.240	N=56
	within		10.955	-38.689	57.894	T=39
Pro_market_reforms	overall	6.792	1.323	2.716	9.019	2,332
	between		1.015	4.723	8.853	N=63
	within		0.841	3.788	9.104	T=37
Country_risk	overall	1.472	0.408	1.004	3.536	1,374
	between		0.385	1.053	2.812	N=63
	within		0.138	0.376	2.533	T=21.8
IFDI_restrictions	overall	0.124	0.128	0.004	0.613	1,253
	between		0.118	0.004	0.487	N=51
	within		0.048	-0.112	0.427	T=24.6

Since sourced information on *Natural_resources*, *Technology*, *Labor_cost* and *Tax_burden* was plagued by missing values, we resort to regression imputation to obtain complete time series and construct the above mentioned variables. A regression model is estimated to predict observed values of a variable based on country and year fixed effects, and that model is then used to impute values in cases where the value of the variable is missing. The correlation coefficients between imputed and observed values for the four variables are always higher than 0.93.

The table reports summary statistics for each variable, overall, between- and within-country: N is the number of countries for which each variable is observed, whereas T is the average number of years each variable is observed in the data. Between-country minimums and maximums delimit the variation range of country-level averages. Within-country minimums and maximums refer to the deviation from country-level averages (adjusted by adding/subtracting back in the global mean), and naturally, some of those deviations may be negative.

Table 3 – Correlation matrix

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	VIF
(1) *IFDI_on_GDP*	1.000															
(2) *Leniency_post*	0.352	1.000														2.65
(3) *Trust*	0.095	0.074	1.000													1.97
(4) *RIE_quality*	0.431	0.274	0.357	1.000												8.55
(5) *GDP*	-0.276	0.262	0.138	0.021	1.000											2.97
(6) *GDP_pc*	0.299	0.431	0.390	0.786	0.323	1.000										8.53
(7) *Openness*	0.530	0.113	-0.036	0.201	-0.575	0.046	1.000									2.19
(8) *Natural_resources*	0.088	0.059	0.199	-0.081	-0.011	-0.032	-0.192	1.000								1.69
(9) *Human_resources*	0.144	0.391	0.208	0.469	0.262	0.590	0.013	0.096	1.000							2.17
(10) *Technology*	-0.087	0.256	0.341	0.458	0.356	0.602	-0.057	-0.249	0.576	1.000						2.73
(11) *Labor_cost*	0.173	0.310	0.504	0.631	0.386	0.796	-0.051	-0.060	0.457	0.620	1.000					4.41
(12) *Tax_burden*	-0.058	0.096	0.020	0.238	0.314	0.164	-0.213	0.124	0.181	0.104	0.152	1.000				1.59
(13) *Pro_market_reforms*	0.420	0.369	0.224	0.819	0.091	0.714	0.156	-0.055	0.473	0.338	0.549	0.336	1.000			4.18
(14) *Country_risk*	-0.277	-0.128	-0.360	-0.857	-0.062	-0.711	-0.159	0.182	-0.399	-0.473	-0.713	-0.638	-0.234	1.000		4.92
(15) *IFDI_restrictions*	-0.297	-0.322	0.042	-0.457	0.076	-0.568	-0.108	0.027	-0.246	-0.224	-0.380	0.374	-0.350	0.172	1.000	2.43
													n=849	Mean VIF		2.90[+]

The table reports Pearson correlation coefficients. [+]Mean VIF also considering year dummies.

Table 4 – Main models

Dependent variable: *IFDI_on_GDP*				
	(1)	(2)	(3)	(4)
Leniency_post		0.121*	0.156**	0.090*
		(0.064)	(0.071)	(0.047)
GDP	0.281		0.197	0.339
	(0.333)		(0.356)	(0.339)
GDP_pc	-0.495		-0.378	-0.552
	(0.351)		(0.329)	(0.359)
Openness	0.001		0.002	0.001
	(0.002)		(0.001)	(0.002)
Natural_resources	0.000			0.000
	(0.002)			(0.002)
Human_resources	0.017*			0.017*
	(0.010)			(0.010)
Technology	-0.027			-0.030
	(0.036)			(0.036)
Country fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Countries	60	63	63	60
Observations	2,040	2,187	2,149	2,040

Robust standard errors in parentheses. * $p < 0.10$; ** $p < 0.05$.

Table 5 – Additional controls

Dependent variable: *IFDI_on_GDP*				
	(1)	(2)	(3)	(4)
Leniency_post	0.049*	0.097*	0.086**	0.077***
	(0.024)	(0.055)	(0.035)	(0.025)
GDP	0.519	1.450*	1.128**	1.063*
	(0.449)	(0.788)	(0.522)	(0.626)
GDP_pc	-0.438	-1.809	-0.975*	-0.974
	(0.421)	(1.100)	(0.504)	(0.579)
Openness	0.002*	0.006	0.004*	0.008**
	(0.001)	(0.004)	(0.002)	(0.003)
Natural_resources	-0.001	0.005	0.000	0.002
	(0.003)	(0.005)	(0.005)	(0.004)
Human_resources	0.014	0.019**	0.017*	0.003
	(0.010)	(0.008)	(0.010)	(0.004)
Technology	-0.064	-0.083	-0.091*	-0.048*
	(0.042)	(0.050)	(0.046)	(0.026)
Labor_cost	0.004		0.001	0.002
	(0.003)		(0.002)	(0.002)
Tax_burden	0.001		0.000	-0.002
	(0.002)		(0.003)	(0.002)
Pro_market_reforms		0.190	0.029	-0.031
		(0.194)	(0.033)	(0.044)
Country_risk		-0.224*	-0.061	-0.241
		(0.122)	(0.172)	(0.150)
IFDI_restrictions				0.085
				(0.328)
Country fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Countries	40	60	40	37
Observations	1,361	1,295	866	785

Robust standard errors in parentheses. * p < 0.10; ** p< 0.05; ***p< 0.01

Table 6 – Robustness checks on the difference-in-differences

Panel A		
Dependent variable: *IFDI_on_GDP*		
	Placebo test (1)	Unpacked effect (2)
Leniency_post [t=-3]		0.218
		(0.168)
Leniency_post [t=-2]		0.245
		(0.172)
Leniency_post [t=-1]		0.238
		(0.144)
Leniency_post [t=0]		0.278
		(0.174)
Leniency_post [t=1]		0.294*
		(0.164)
Leniency_post [t=2]		0.244*
		(0.131)
Leniency_post [t=3]		0.245
		(0.153)
Leniency_post [t=3^{+}]		0.084
		(0.074)
Leniency_placebo	0.241	
	(0.154)	
Country controls	Yes	Yes
Country fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Countries	60	60
Observations	2,040	1,923

Panel B	
Balancing tests for changes in composition	
	Leniency_post
Trust	-0.014 (0.014)
RIE_quality	-0.010 (0.022)
GDP	-0.004 (0.016)
GDP_pc	-0.005 (0.017)
Openness	-0.419 (1.394)
Natural_resources	0.691** (0.323)
Human_resources	-0.114 (0.390)
Technology	0.070 (0.043)
Pro_market_reforms	-0.049* (0.025)
Country_risk	0.004 (0.009)

Panel A reports a placebo test and the effect of leniency laws after having unpacked the *Leniency_post* dummy into a set of dummies for each of the years before and after the passage of leniency laws (robust standard errors in parentheses). Panel B reports the results of covariate balance regressions obtained by replacing *IFDI_on_GDP* with each covariate and fitting the standard DiD regression model using observations relative to 5 years before and 5 years after the treatment (only *Leniency_post* coefficients along the relative standard errors are reported). * $p < 0.10$; ** $p < 0.05$.

Table 7 – Additional robustness checks

Dependent variable: *IFDI_on_GDP*			
	EU leniency	Lagged DV	Tax havens
	(1)	(2)	(3)
IFDI_on_GDP$_{t-1}$		0.777***	
		(0.099)	
Leniency_post	0.106**	0.181*	0.061*
	(0.049)	(0.111)	(0.034)
GDP	0.360	0.129	-0.478***
	(0.341)	(0.131)	(0.159)
GDP_pc	-0.576	-0.308*	0.324**
	(0.366)	(0.186)	(0.128)
Openness	0.001	0.001	0.003***
	(0.001)	(0.001)	(0.000)
Natural_resources	0.000	0.000	0.000
	(0.002)	(0.001)	(0.001)
Human_resources	0.017*	0.012**	-0.003
	(0.010)	(0.005)	(0.003)
Technology	-0.030	-0.009	0.013
	(0.036)	(0.015)	(0.027)
Country fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Countries	60	60	53
Observations	2,040	1,923	1,815

Robust standard errors in parentheses. * p < 0.10; ** p< 0.05; *** p< 0.01.

Table 8 – Moderating effects of trust and quality of regulatory institutional environment

Dependent variable: *IFDI_on_GDP*			
	(1)	(2)	(3)
Leniency_post	0.334	-0.044	-0.341
	(0.284)	(0.091)	(0.326)
*Leniency_post*Trust*	-0.158		0.213
	(0.173)		(0.192)
Trust	0.218		-0.036
	(0.181)		(0.236)
*Leniency_post*RIE_quality*		0.167	0.830
		(0.100)	(0.558)
RIE_quality		-0.097	-0.449
		(0.205)	(0.334)
*Trust *RIE_quality*			0.232
			(0.156)
Leniency_post Trust*RIE_quality*			-0.395
			(0.280)
GDP	1.293*	1.487*	1.367
	(0.759)	(0.776)	(0.833)
GDP_pc	-1.735	-1.808*	-1.824
	(1.044)	(1.041)	(1.113)
Openness	0.005	0.006	0.005
	(0.005)	(0.004)	(0.005)
Natural_resources	0.006	0.005	0.007
	(0.006)	(0.005)	(0.006)
Human_resources	0.019**	0.016**	0.013*
	(0.009)	(0.007)	(0.007)
Technology	-0.068	-0.083*	-0.062
	(0.071)	(0.048)	(0.066)
Pro_market_reforms	0.187	0.228	0.232
	(0.173)	(0.228)	(0.216)
Country_risk	-0.201	-0.239*	-0.256
	(0.126)	(0.132)	(0.164)
Country fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Countries	52	60	52
Observations	1,128	1,295	1,128

The table reports the results of the model shown in Equation (2) and of two restricted models. In column (1), only *Trust* and the interaction term *Leniency_post*Trust* have been added to the base model (Equation 1), whereas in column (2) they are replaced with *RIE_quality* and the interaction term *Leniency_post*RIE_quality*. In column (3), the two couple of variables are simultaneously included along with *Trust*RIE_quality* and the three-way interaction term *Leniency_post*Trust*RIE_quality* (Equation 2). In the three specifications, we include all the controls of our main regressions (see Table 4), plus *Pro_market_reforms* and *Country_risk* as we are able to observe these two variables for 60 countries and along a time period (1996-2018) that overlaps the time period along which the moderating variable *RIE_quality* is observable. Robust standard errors in parentheses. * $p < 0.10$; ** $p < 0.05$.

Appendix

Table 1A – Sampled countries, code and GDP (US$million) in 2018

Countries	Code	GDP	Countries	Code	GDP
Argentina	ARG	518,475	Lithuania	LTU	53,251
Australia	AUS	1,432,195	Luxembourg	LUX	69,488
Austria	AUT	455,737	Malaysia	MYS	354,348
Belgium	BEL	531,767	Mexico	MEX	1,223,809
Brazil	BRA	1,868,626	Netherlands	NLD	913,658
Bulgaria	BGR	65,133	New Zealand	NZL	205,025
Canada	CAN	1,712,510	Nigeria	NGA	397,270
Chile	CHL	298,231	Norway	NOR	434,751
China	CHN	13,608,152	Oman	OMN	79,295
Colombia	COL	330,228	Pakistan	PAK	312,570
Croatia	HRV	60,806	Peru	PER	222,238
Cyprus	CYP	24,470	Philippines	PHL	330,910
Czech Republic	CZE	245,226	Poland	POL	585,783
Denmark	DNK	352,058	Portugal	PRT	237,979
Ecuador	ECU	108,398	Romania	ROU	239,553
Estonia	EST	30,285	Russia	RUS	1,657,554
Finland	FIN	273,961	Singapore	SGP	364,157
France	FRA	2,777,535	Slovak Republic	SVK	106,472
Germany	DEU	3,996,759	Slovenia	SVN	54,235
Greece	GRC	218,032	South Africa	ZAF	368,288
Hong Kong	HKG	362,993	Spain	ESP	1,426,189
Hungary	HUN	155,703	Sweden	SWE	551,032
Iceland	ISL	25,882	Switzerland	CHE	705,501
India	IND	2,726,323	Taiwan	TWN	579,865
Indonesia	IDN	1,042,173	Thailand	THA	504,993
Ireland	IRL	382,487	Turkey	TUR	766,509
Israel	ISR	369,690	Ukraine	UKR	130,832
Italy	ITA	2,073,902	United Kingdom	GBR	2,825,208
Japan	JPN	4,970,916	United States	USA	20,494,100
Jordan	JOR	42,291	Venezuela	VEN	255,092
Korea, Republic	KOR	1,619,424	Zambia	ZMB	26,720
Latvia	LVA	34,849	TOTAL		79,191,892

Source: World Bank (2018)