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Fiscal federalism and foreign direct investment – An empirical analysis

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Abstract

Previous empirical studies suggest that fiscal decentralisation, measured by the number of government layers, is associated with less foreign direct investment (FDI). With an improved dataset on the tax autonomy of subfederal government tiers, we present evidence that fiscal decentralisation (de facto) does not reduce FDI. If local governments can set their tax rates and bases autonomously, they attract more FDI. Analysing 128,425 corporate cross-border acquisitions (CBA), between 194 source and 215 host jurisdictions from 1997 to 2021, we find that full taxation autonomy by subnational governments can double the number of CBAs in a given year. These results apply to high-income hosts and do not depend on specific periods.

KEYWORDS

cross-border acquisition, fiscal decentralisation, foreign direct investment, tax autonomy

1 | INTRODUCTION

The decision of investors to allocate capital in different jurisdictions is related to several economic and cultural traits that may dampen or promote investment. An interesting institutional question is whether fiscal federalism (used throughout this work interchangeably with fiscal decentralisation) attracts or detains foreign direct investment (FDI). Theoretically, fiscal federalism may have

both directions of influence. On the one hand, fiscal decentralisation might have a positive effect on FDI if competition among autonomous sub-federal jurisdictions promotes opportunities for investors. Under tax autonomy, sub-federal jurisdictions can credibly signal that taxes will not be raised ex post (after the investment has taken place), such that FDI will be higher the more autonomous the units are. On the other hand, fiscal federalism can have a detrimental effect on FDI if a higher number of government units have access to the same tax base and cannot credibly commit to avoid increasing taxes ex post, such that a hold-up problem arises.

If, from a theoretical point of view, contradictory effects are conceivable, it is useful to analyse the impact of fiscal federalism on FDI empirically. According to some empirical findings, competition among sub-federal jurisdictions within a country (horizontal dimension) attracts FDI (e.g., Jensen & McGillivray, 2005), while a higher number of jurisdictions with which investors have to deal (vertical dimension) deters investments from abroad – a typical case of hold-up and common-pool problems (e.g., Kessing et al., 2007).

Regarding the existing empirical research on its effects on FDI, it can be questioned how federalism is measured, as it has many different features: legally as a vertical division of powers, politically as a way to reconcile different interests, or economically with different instruments of fiscal decentralisation. In this paper, we analyse the effects of the fiscal decentralisation trait of federalism on FDI by focusing on the degree of tax autonomy of sub-federal jurisdictions, i.e., their autonomy to set tax bases and tax rates.

Instead of simple capital flows, cross-border acquisitions (CBA) can be used to evaluate the impact of fiscal decentralisation on the attractiveness of a jurisdiction for foreign capital. Such measures can be seen as a cleaner version of FDI monetary flows, as the latter account for non-controlling stakes, earnings reinvestments and intercompany transactions, which are not a unilateral decision of the investor in the source nation.

By employing an extensive dataset of CBAs as the preferred measure of FDI between two countries in a given year, we provide evidence that higher tax autonomy in sub-federal jurisdictions attracts a larger number of CBAs, controlling for a set of FDI determinants that have already been studied in previous empirical works. Our dataset comprises 128,425 corporate CBA between 194 source and 215 host jurisdictions from 1997 to 2021. We apply a negative binomial model for count data as an econometric approach using two main measures of fiscal decentralisation: the number of different levels of government and the degree of tax autonomy of sub-federal units.

According to our results, the number of different levels of government does not robustly affect the amount of CBAs for both the whole sample and for developed economies. When fiscal decentralisation is measured as the tax autonomy of sub-federal units, the effect is positive: a higher degree of tax autonomy attracts more FDI. In quantitative terms, moving to full tax autonomy can double the number of CBAs in a given year.

The paper is organised as follows: Section 2 discusses the link between decentralisation and FDI from a theoretical perspective. Empirical findings from previous works on the determinants of FDI are presented, along with the effect of decentralisation on FDI. Section 3 deals with the data and the econometric specifications. Section 4 presents and discusses the empirical results. Section 5 summarises the findings.

2 | LITERATURE REVIEW

The inconclusive theoretical considerations on the effects of fiscal federalism on FDI require an understanding of what fiscal federalism means. In line with Litvack and Seddon (1999), fiscal

decentralisation is "the transfer of authority and responsibility for public functions from the central government to subordinate or quasi-independent organizations or the private sector". According to Riker (1964), a political system is defined as federal when (i) a hierarchy of governments, that is, at least two tiers of government, rule the same country and people, each with a delineated scope of authority, so that each level of government is autonomous in its own well-defined sphere of political authority; and (ii) the autonomy of each government is institutionalised in a manner that makes the restriction of federalism self-reinforcing.

Federalism comes with positive and negative effects for fiscal policy (Baskaran et al., 2016; Burret et al., 2022). On the one hand, decentralisation can show its positive side, as more autonomous units provide public goods closer to their citizenry (horizontal dimension). On the other hand, in its vertical dimension, the delegation of authority to subnational units can magnify the well-known time-inconsistency problem of taxation, i.e., the hold-up problem. Weingast (1995) puts this dilemma of federalism as follows: "A state strong enough to protect private markets is strong enough to confiscate the wealth of its citizens". Which effect dominates in the case of FDI, however, can only be resolved by empirical evidence.

In the following, the theoretical arguments for the effect of fiscal decentralisation on FDI (positive in its horizontal dimension and negative in its vertical characteristics) are briefly presented. Furthermore, the empirical findings of previous works are discussed.

2.1 | Benefits of decentralisation for FDI – horizontal dimension

In general, a theoretical line of fiscal decentralisation argues that shifting the provision of public goods to sub-federal jurisdictions is desirable, as decisions on public expenditure taken by levels of government closer to voters are more likely to correctly capture local demand. Already Hayek (1939, 1945) argues that local governments have better information about local conditions and citizens' preferences than a central authority, such that better decisions are made. Following Tiebout (1956), competing sub-federal jurisdictions are able, through sorting and matching, to efficiently offer a variety of tax-expenditure-combinations according to citizens' preferences.

Similar results are obtained if citizens of neighbouring jurisdictions compare the performance of their representatives within the framework of the so-called "Yardstick Competition". Not to be forgotten is the shift of government accountability to local representatives. If political decision-makers follow their own selfish interests, tax competition between jurisdictions can lead to a stronger focus on voters, thus limiting taxing powers (Brennan & Buchanan, 1977, 1980). Overall, factor mobility, the absence of spillover effects and the lack of soft budget constraints (Oates, 2005) are the basis for competing sub-federal jurisdictions promoting welfare gains and limiting excessive taxation.

Regarding the effects of decentralisation on FDI, it should be noted that the largest part of capital is location-specific and not geographically mobile. This is primarily the case for physical capital. The extent to which investors are able to respond to ex post changes in national policies and legislation in the host country depends primarily on the nature or, more specifically, the mobility, of FDI.

The advantages generated by fiscal decentralisation in the context of interregional competition for FDI might be insufficient in a particular environment of time-inconsistent tax policy (Feld et al., 2017). Starting with a staggered sequence of decisions by investors on their investments and by the government on the level (and objective) of taxation, the ex ante location decision by investors will allow public authorities to take any ex post decision on taxing their investment. The hold-up problem describes the risk of a foreign investor being dependent on representatives

in the absence of strong enforcement of legal contracts. Due to a lack of binding obligations, the public sector inevitably has the possibility of excessively increasing taxes ex post. Investors who anticipate such behaviour by the state reduce their investments or do not invest at all. The deterrent effect of excessive taxation leads to inefficient levels of investment.

Therefore, the question arises as to how political institutions should be designed in order to increase the credibility of the state in limiting its own discretionary powers in economic policy. The central components of a credible commitment (analogous to the idea of self-tied hands of Ulysses) must be formed by self-fulfilling characteristics, which align enforcement with the self-interests of political decision-makers.

Kehoe (1989) offers a time-consistent solution regarding the taxation of capital. If investment owners can decide where to place their investments among multiple authorities with independent and non-cooperative tax regimes, governments will reduce their tax rates to equilibrium. In a decision-making environment with alternative investment opportunities, tax competition among subnational units partially operates as a credible commitment to a reliable tax policy.

In the case of FDI, if investors prefer jurisdictions that do not change their tax parameters (base and rate) ex post, one could expect a lower prevalence of CBAs in jurisdictions that enjoy higher taxation autonomy. However, if local governments anticipate that investors are held back from investing in their jurisdictions fearing the time-inconsistent behaviour, it can be expected that jurisdictions somehow commit not to increase taxes ex post and can attract more capital than their competing local governments. Hence, such credible commitments can lead to higher FDI.

It is likely that this mechanism in a federal state will work even more efficiently at the regional level. Kehoe's argument regarding competition is only partially applicable to solving the hold-up problem of FDI, as this mechanism implies that investors can move their capital after governments have set their tax policies. This condition holds at best partly for FDI.

Schnitzer (1999) investigates the investment decisions of multinational corporations (MNCs), with a focus on the relocation option. Especially when authorities in federal systems have such outside options, these alternatives have relevance. Insufficient attractiveness of outside options means a weak bargaining position for the investor. The host nation can afford higher taxation, so MNCs are expected to underinvest.

Doyle and van Wijnbergen (1994) model this problem as part of a sequential game in which the negotiation between the foreign investor and the host country results in an equilibrium solution with a dynamic structure. If the investor is still granted tax relief even after the investment has been concluded, the tax rate is gradually increased. This so-called “tax holiday” acts as an instrument to alleviate the hold-up problem.

Hence, in the absence of strong legal enforcement or political institutions aligned towards a time-consistent behaviour by federal units, if FDI is not fully mobile, there is an incentive for tax increases ex post by all levels of government in a decentralised state. The higher the levels of government, the more this problem can arise, as the potential drawbacks of fiscal federalism (vertical dimension) play a major role. However, if subnational units can credibly commit (e.g., by competing) not to raise taxes ex post, a higher degree of foreign investment can be expected in more decentralised jurisdictions.

2.2 | Drawbacks of decentralisation for FDI – vertical dimension

As Romano (1985) shows, the delegation of constitutional powers to self-contained sub-federal jurisdictions leads investors to be constantly exposed to the policies not only of the national

government but, depending on how fiscal authority is delegated, of various governments. Multiple government tiers do not only cause a multiplication of governance problems between the host country and investors but may even lead to an intensification of the hold-up problem.

Unlike a unitary state, more financially autonomous governments in a federation have access to the same source of tax revenue (common pool problem), which might not be as mobile as suggested before. Their competition means that the respective tax base of one government level depends on other levels (Keen, 1998). Thus, a vertical fiscal externality emerges and causes excessive taxation.

Since potential investors know this common pool problem ex ante, the attractiveness of a location falls in the eyes of investors with vertical disintegration (Keen & Kotsogiannis, 2002; Kessing et al., 2006, 2007). This common pool problem may act as a catalyst for the hold-up problem. The interaction between the two phenomena makes it more attractive, especially for countries with multi-level governments, to institutionalise a coordinated tax policy.

Although countries cannot rely on credible commitments, investors and host countries remain free to enter into sustainable agreements. The motivation for the host country to conclude such implicit contracts is the future tax revenues from other investments – the extent to which such agreements are in fact sustainable is still debatable, especially related to FDI (Weingast, 1995).

A criticism that speaks against the negative aspect of vertical fiscal federalism lies in the externalities: Besides the common pool problem, multiple responsibilities of federal structures lead to positive externalities in terms of subsidies. Take, as an example, a municipality that attracts foreign investors with tax reductions and may consequently benefit the state-level government as well as the federation. While the sub-federal jurisdiction bears the cost of subsidising the investor alone, taxpayers' money also flows into the accounts of all people accessing the tax revenues at the upper levels of the federation.

This leads to free-rider behaviour at other levels of government, causing insufficient promotion of investment. Thus, with attractive offers for foreign companies such as the tax holidays discussed previously, "bidding for firms" represents a way to mitigate the hold-up problem (Black & Hoyt, 1989), but may as well lead to a history of losses (Jha et al., 2013). Moreover, the higher the number of government tiers, the less investors can expect a subsidy policy. Kessing et al. (2007) thus argue that the free rider and the common pool problems reinforce each other because the benefits of winning an investment are underestimated from the perspective of any government unit, such that tax revenues for all other jurisdictions could be lower as a result of common excessive taxation.

The benefit of a tacit collusion at all levels of government is that taxpayers' money will be available in the long run. If the agreement on lower tax rates is not observed at the federal level, this will lead to a decline in investment and in tax revenues for all public actors in the future. There is an incentive for individual governments to renege on the agreement in order to generate higher tax revenues until others follow suit with higher tax rates. The trade-off between higher short-term revenues and long-term losses is decided between defection and cooperation.

According to Kessing et al. (2006), vertically decentralised federalist systems favour the defection of governments in two ways. First, with an increasing number of government tiers, the penalty in terms of tax losses fails in the long run. Second, a unilateral tax increase is more valuable the higher the number of levels of government. Hence, if subnational units act to attract investors and thereafter increase taxes, a lower number of cross-border acquisitions will be observed in the more decentralised countries.

2.3 | Empirical findings

Ultimately, FDI is determined by the establishment of credible institutions, alongside other economic traits that influence capital flows across countries. To this end, fiscal decentralisation, in its horizontal dimension, is theoretically hypothesized to have positive effects on FDI and, in its vertical dimension, negative effects. In order to assess which dimension (horizontal or vertical) of fiscal federalism dominates, one has to resort to empirical analysis.

Over time, the empirical literature on the effects of decentralisation on FDI has jointly evolved with newly available datasets and recent developments in econometric techniques. By using a sample of 115 countries from 1975 to 1995, Jensen and McGillivray (2005) provide an empirical assessment of whether federalism – measured by a score ranging from 0 if a state is unitary to 2 if the state is a fully fledged federation – has an impact on attracting foreign investments. According to the main hypothesis of the study, federal states are able to build a self-reinforcing commitment mechanism that prevents subnational units from deviating ex post from a contract (e.g., a greenfield investment project) if the reputation costs are given. Reputation costs are expected to limit the "misbehaviour" of sub-federal units such that FDI can be attracted. Using an OLS approach with FDI flows measured year on year as a percentage of GDP and usual controls, the authors find a positive effect of federalism on FDI, implying that a shift from a unitary to a federal system increases FDI by 0.6125 percent of GDP. This effect is more pronounced in autocracies – an observation closely related to the fact that democracies already have higher FDI flows.

In a more restricted sample comprising 60 countries within the same period, Jensen (2005) is unable to report an impact of fiscal federalism as measured by the percentage of total government revenue allocated to a country's state and local units. Again, FDI is measured as the change in FDI flows as a percentage of GDP. This evidence only tentatively suggests that federalism has no effect on FDI. Similarly inconclusive are the results reported by Madhu (2009). For 71 countries and the average of 1970–1998, he presents evidence that federalism does not have an additional positive effect on democracy in attracting FDI. Also, federalism does not help nondemocratic countries attract FDI but is still important in securing property rights, which in turn help attract greater FDI.[1]

Kalamova and Kessing (2007) propose a disaggregation of characteristics of federalism into vertical and horizontal decentralisation, the former measured as the number of administrative levels in a country (tiers) and the latter as the average area attributed to a unit that belongs to the first administrative level (community, prefecture, county, etc.). Although the empirical analysis does not deal directly with FDI but with trade, it is important to note the different implications of both traits of decentralisation. The vertical dimension can increase the cost of internal transactions, thus making foreign goods relatively cheaper and increasing international trade. The horizontal dimension makes economic agents subject to different jurisdictions with potentially diverse tax systems, regulations and infrastructures, thus restricting international trade. By using the gravity model (Anderson & van Wincoop, 2003) and a sample of 129 countries in the period from 1993 to 2000, Kalamova and Kessing (2007) provide evidence in support of those arguments.

The study provides evidence that different characteristics of federalism can have different effects on economic outcomes. For instance, can horizontal decentralisation promote FDI

[1]See also Tulu (2020) who refers to the complementary relationship between democracy and federalism in attracting FDI.

as a substitute for the curbing effect on international trade? Or can vertical decentralisation restrain FDI as trade is already facilitated and there is no need to invest abroad to gain market access?

The empirical evidence of both dimensions of decentralisation on FDI is assessed by Kessing et al. (2007), although with slight changes in the measurement of the horizontal dimension as compared to Kalamova and Kessing (2007). In a sample of 67 source countries and 147 host nations that joined together when a cross-border acquisition took place between two countries from 1997 to 2003, the authors use a negative binomial regression model (for count data) and the theoretical background of the Knowledge-Capital Model to evaluate whether FDI, measured by the number of cross-border transactions between a pair of countries, is affected by vertical decentralisation, measured by the number of levels of government (tiers), and by horizontal decentralisation – this time proxied by the share of both local and state revenue/expenditure in total government revenue/expenditure.

The main result – controlled for a rich set of covariates – points to the following: (i) vertical decentralisation, as measured by the number of government tiers, has a negative impact on FDI; (ii) horizontal decentralisation has a mixed effect on FDI, as expenditure decentralisation is associated with more FDI, whereas revenue decentralisation is correlated with less FDI between country pairs. Although the main result related to vertical decentralisation does not survive the inclusion of property rights protection as a control variable and is much more associated with European hosts of foreign investment, the remaining robustness tests build somewhat solid evidence that the more layers a country holds in administrative terms, the less FDI it can attract, given that such subdivisions provide room for the hold-up problem previously discussed.[2]

Kalamova (2008) continues the analysis of the impact of different traits of decentralisation on FDI by estimating the effect of its vertical dimension. As a measure of vertical decentralisation, she uses the variables proposed by Stegarescu (2005), which consider taxes on which sub-federal levels of government can autonomously decide. For OECD host countries from 1994 to 2005 (a total of 1601 cross-country observations) and both a Tobit and a Maximum Likelihood estimate, Kalamova (2008) concludes that tax decentralisation has a detrimental effect on the attractiveness of FDI – the more sub-federal levels of government can choose their own tax bases and tax rates, the less FDI will be observed. Curiously, expenditure decentralisation (included as a control and constructed as a share of sub-federal expenditure to total government expenditure) also has a negative effect on FDI, contrary to the results by Kessing et al. (2007).

Finally, Kalamova (2009) uses a sample of high-income country pairs (29 mainly European countries and 19 OECD hosts) over the period from 1994 to 2002, including more than a thousand observations, to analyse how both characteristics of decentralisation affect FDI. The preferred measure of decentralisation is the same as in Stegarescu (2005), which takes into account the taxation autonomy of sub-federal levels. Differently from other empirical work, FDI is measured as a three-year average of the stock of investments in constant US dollars from source to host country. The results estimated by the use of Tobit models point to a negative nonlinear effect of tax decentralisation on FDI for high-income country pairs – an effect that loses some of its explanatory power in the specifications with expenditure decentralisation.

[2]See also Sharma (2017) who presents evidence for Indian states that political alignment with the federal government affects the regional distribution of FDI in India. Rizvanov (2014) reports evidence that administrative federalism is more important in attracting FDI than fiscal federalism.

In sum, empirical evidence suggests that federalism, and more specifically, fiscal decentralisation, can have a negative impact on FDI, although some studies found positive or no effects. It is remarkable that, using different measures of decentralisation and foreign investment flows as well as depending on the econometric specification, the results might differ and provide an inconclusive pattern. Therefore, any empirical assessment must put emphasis on the measure of foreign investment flows and the variable that captures the essence of fiscal federalism.

Thus, this work brings together a stricter measure of FDI, as in Kessing et al. (2007), that uses cross-border acquisitions to account for foreign investments, as such a variable leaves out noisy data (such as inter-company investments), and a more specific variable to account for fiscal federalism: the power enjoyed by subnational units to decide on their taxes. By using this approach, it is possible to point out whether competition among subnational tiers (horizontal dimension) can trump the drawbacks of decentralisation in terms of the hold-up problem.

2.4 | Hypotheses

Federalism in its vertical dimension can have a negative impact on attracting foreign direct investment, and its effect might dominate the positive impact of the horizontal dimension. This relationship is the focus of our analysis, so Hypothesis H_1 reads as follows:

> H_1. An increase in the decentralisation degree of an FDI host country reduces the amount of foreign direct investment.

This idea comes from the vertical dimension and the hold-up problem, in which investors refrain from allocating capital to jurisdictions with more governmental layers. If the empirical findings point to a negative relationship between decentralisation (as measured by governmental tiers) and FDI, then the vertical dimension dominates and confirms previous works such as Kessing et al. (2007).

In order to test H_1, we resort to fiscal decentralisation variables and to the de jure measure of government layers – the number of government levels (tiers) taken from Kessing et al. (2007) as updated and revised for changes that have occurred during the period of our dataset. We also use both revenue and expenditure decentralisation variables from the IMF's Global Fiscal Statistics (GFS).

Based on theory, we expect less FDI where subnational tax revenues are higher as a share of total tax revenue. However, we expect a positive relationship between FDI and the proportion of subnational government spending as a share of total government expenditure. As Kessing et al. (2007) suggest, despite being attracted by a higher provision of public goods at the local level, foreign investors are deterred by the expected higher taxation by subnational units and hence reduce capital allocation towards countries with more governmental layers. We examine these hypotheses in H_1 by using the number of government levels in a country (Tiers) as the de jure measure.

As mentioned, we propose the use of a variable to capture the characteristics of fiscal decentralisation in its de facto trait: the power that sub-federal government levels have to establish their tax bases and rates (Tax Autonomy). And the more autonomous the subnational units are, the more they can, by themselves, attract investments by credibly committing to maintain taxation ex post. Hence, the previous hypothesis can be modified as follows:

H_2. Tax autonomy of sub-federal units increases the amount of foreign direct investment.

This modified hypothesis states that if the empirical findings point to a positive association between this trait of fiscal federalism and FDI, then the horizontal dimension dominates and competition among subnational units acts as a catalyst for foreign investments.

In order to test the hypothesis, we keep the same fiscal decentralisation measures from the IMF (regarding revenues and expenditure at subnational levels) and use the de facto measure of tax autonomy in addition to the de jure measure (Tiers). Hence, we test whether the hypothesis that local governments that possess a higher level of tax autonomy are committed to keeping taxes low is true, as they anticipate that investors expect time-inconsistency where tax autonomy is higher, and to avoid low FDI, local governments with high tax autonomy credibly commit themselves to setting and maintaining their tax level.

In order to account for other determinants of FDI, we use a set of controls that reflect the Knowledge-Capital Model by Markusen et al. (1996) and Carr et al. (2001) as the standard model for studying FDI flows. The basic Knowledge-Capital Model explains FDI flows based on size and differences among economies, and the model identifies several investment motives according to which individuals in multinational companies make their investment decisions. Some motives are related to geographical proximity, while others take into account differences between the source and host countries in their ability to produce goods more efficiently.

We expect a significant impact of demographic and geographical variables as well as macro- and institutional economic variables on the basis of the empirical findings in the literature (Asiedu, 2002; Dellis et al., 2017; Erel et al., 2012). Geographical proximity, a common (official) language, customs unions and/or membership in free trade agreements and high market capitalization in source nations may exert a positive influence on the attractiveness of foreign direct investment. Increases in real exchange rates, the distance between the source and the host country of FDI and higher costs to start a business may have a negative impact on the attractiveness of foreign direct investment.

3 | DATA AND ECONOMETRIC TEST STRATEGY

In order to assess whether fiscal federalism has an impact on the attractiveness of a country for foreign investment, we turn to an extensive dataset that comprises 25 years of CBA among different combinations of source and host countries. In Section 3.1, we introduce the database, and in Section 3.2, we present the econometric approach applied to test the hypotheses.

3.1 | The dataset

There are several popular databases that measure international capital flows. For this study, following the approaches of Erel et al. (2012) and Kessing et al. (2007), we use the "SDC Platinum Financial Securities" database from Refinitiv. The SDC database provides a total of 128,425 acquisitions in which more than 50% of the shares of the target firm were purchased by a new foreign owner. The variable covers 194 source countries and 215 host jurisdictions across the period from 1997 to 2021.

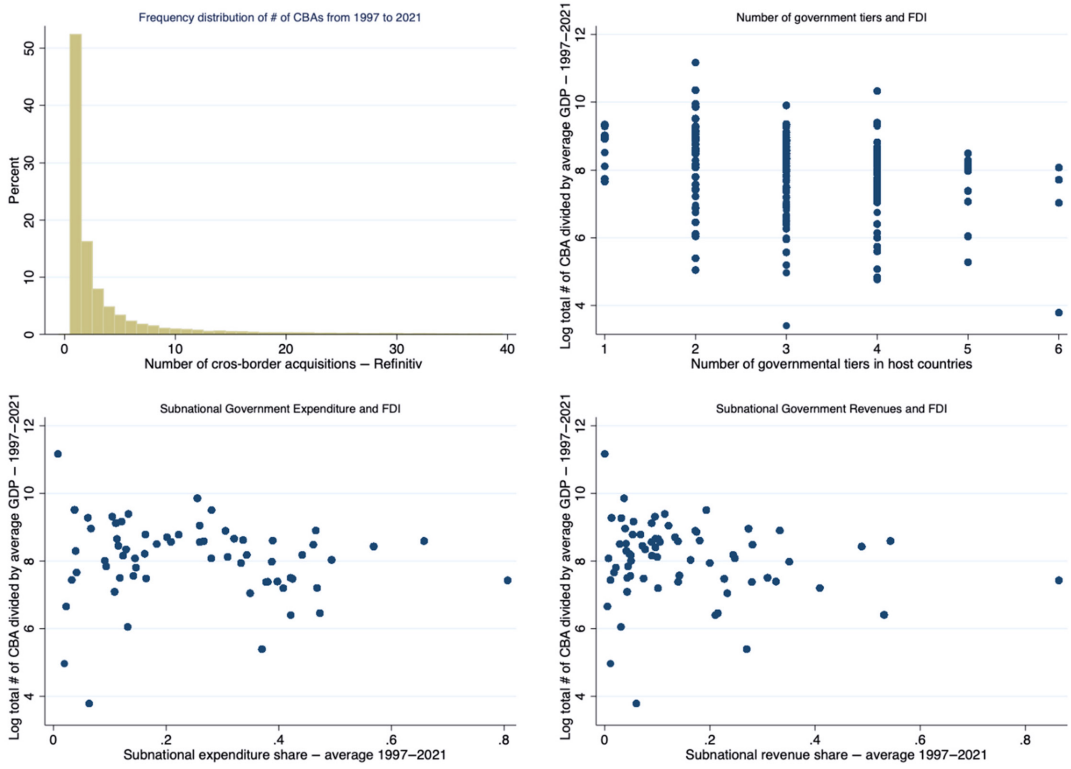

FIGURE 1 Distribution of the dependent variable cross-border acquisitions and decentralisation measures. *Source*: London Stock Exchange, Constitute Project, OECD, International Monetary Fund.

Comparisons with databases from UNCTAD or from Bloomberg have also been performed. Given that the number of observations in the "SDC Platinum Financial Securities" database is larger, it is the preferred dataset. Nevertheless, we present results using Bloomberg's database as the FDI measure in the Robustness Check section.

The dependent variable CBA_{ijt} is given in non-negative integers $N = [1, 2, 3, 4, ..., n]$. If the variable $CBA_{CHE,BEL,2004}$ assumes the number 4, it means that in 2004, there were four corporate acquisitions of Swiss companies by investors located in Belgium. Figure 1 *(top left)* provides an overview of the distribution of the number of CBAs, and it displays that approximately 75% of all observations take the value 1, 2 or 3.

The variables that are also key to our study are presented in Figure 1 in addition to the dependent variable. The focus of interest is the variable Tiers, which represents the number of government layers in the host country. We took the variable from Kessing et al. (2007) and updated it for relevant changes and for the inclusion of host countries with the extended dataset from Refinitiv. In the scatterplot CBA/Tiers (Figure 1, *top right*), it can be observed that there are only a small number of FDI host countries that have more than 4 government levels. The majority of observations lie between 2 and 4 governmental tiers.

To measure the degree of fiscal decentralisation, we also use data from the International Monetary Fund (IMF). They capture the share of sub-federal government expenditure from total government spending and the share of sub-federal government revenue from total revenue at all government levels. We expect that an increase in the proportion of sub-federal government

TABLE 1 OECD's taxonomy of tax autonomy.

a.1	The recipient SCG sets the tax rate and any tax reliefs without the need to consult higher level government
a.2	The recipient SCG sets the rate and any reliefs after consulting a higher level government
b.1	The recipient SCG sets the tax rate, and a higher level government does not set upper or lower limits on the rate chosen
b.2	The recipient SCG sets the tax rate, and a higher level government sets upper and/or lower limits on the rate chosen
c.1	The recipient SCG sets tax reliefs – but it sets tax allowances only
c.2	The recipient SCG sets tax reliefs – but it sets tax credits only
c.3	The recipient SCG sets tax reliefs – and it sets both tax allowances and tax credits
d.1	There is a tax-sharing arrangement in which the SCGs determine the revenue split
d.2	There is a tax-sharing arrangement in which the revenue split can be changed only with the consent of SCGs
d.3	There is a tax-sharing arrangement in which the revenue split is determined by legislation and may be changed unilaterally by a higher level government, but less frequently than once a year
d.4	There is a tax-sharing arrangement in which the revenue split is determined annually by a higher level government
e	Other cases in which the central government sets the rate and base of the SCG tax
f	None of the above categories a, b, c, d or e applies

Source: OECD, https://www.oecd.org/tax/federalism/fiscal-decentralisation-database/methodological-guide-tax-autonomy-indicators.pdf.

spending will have a positive effect on a country's attractiveness for FDI. Due to the expected higher tax burden at the local level, one can speculate that a higher proportion of sub-federal government revenues will have a negative impact on the attractiveness of FDI.

As the variable Tiers only measures the de jure characteristics of a decentralised government organisation, we resort to a variable that describes the tax autonomy that sub-federal units enjoy. Therefore, we resort to a variable in the spirit of that previously proposed by Stegarescu (2005) and also used by Baskaran (2012) or Baskaran and Feld (2013). The variable called Tax Autonomy refers to the share of subnational total tax revenue controlled by subnational units, either when it sets the tax base, the tax rate, or both without resorting to central government. We retrieve the variable from the OECD with the following classifications in Table 1:

As the data are already given as a percentage of total taxation and it is further split into state and local levels, we define the Tax Autonomy variable as follows:

$$\text{Tax Autonomy} = (\%\,\text{of state / regional level own tax revenues } a.1 \text{ to } c.3 + \%\,\text{of local level own tax revenue } a.1 \text{ to } c.3) \quad (1)$$

Thus, our measure of tax autonomy enjoyed by state and local levels is the proportion of their taxes effectively controlled by these subnational entities.

Below, in Figure 2, we plot the Tax Autonomy variable against the number of CBAs, the number of governmental levels (Tiers) and the fiscal decentralisation variables:

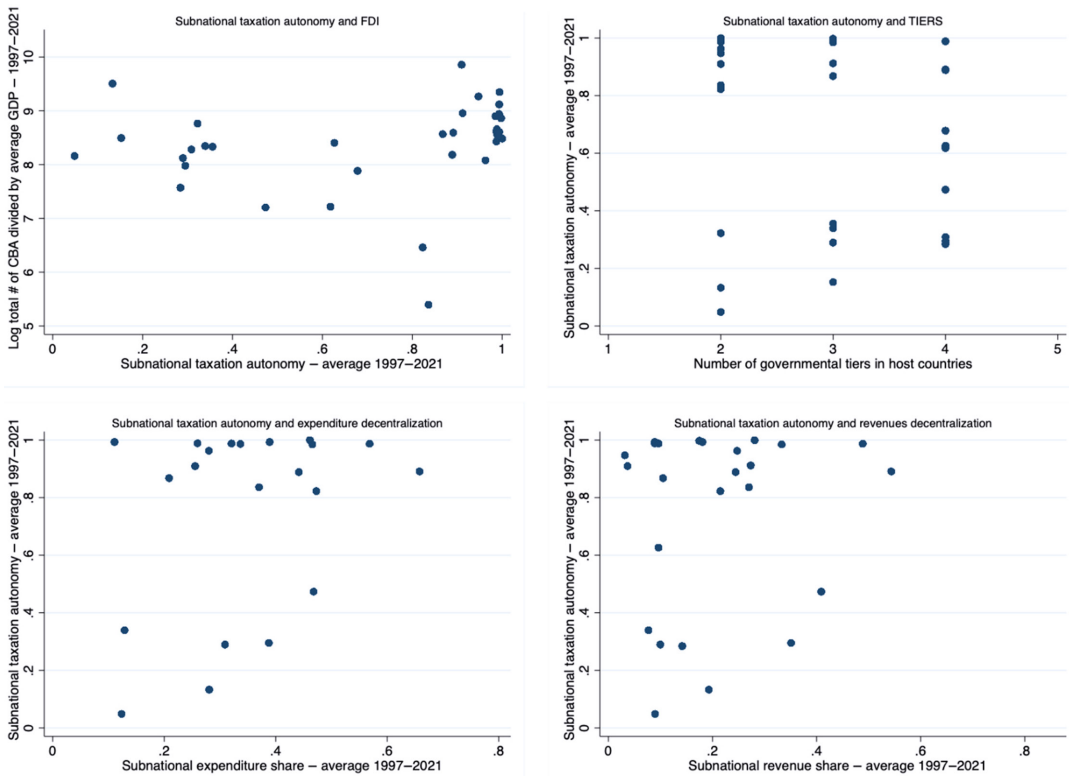

FIGURE 2 Tax Autonomy and cross-border acquisitions, Tiers and decentralisation measures. *Source*: London Stock Exchange, Constitute Project, OECD, International Monetary Fund.

It is worth noting that within the same number of government levels (Tiers), tax autonomy can greatly vary, which indicates that simply accounting for tiers may not truly capture how decentralised the power to tax in a federation is. Moreover, taxation autonomy also varies within the same range of expenditures and revenues decentralisation.

If revenue decentralisation were a synonym for tax autonomy, one could expect the bottom-right figure to resemble a straight-line 45-degree pattern. However, the plot is more dispersed than that – even countries with revenue decentralisation higher than 25% may not exert control over their tax bases and rate. The correlation between the average (across the years) tax autonomy of a country and its average revenue decentralisation measure is as low as 0.05, whereas the correlation with expenditure decentralisation is 0.35 – hence, the Tax Autonomy variable captures a different trait of fiscal federalism than simply revenue collection or spending mandates.

In addition, to isolate the effects of decentralisation on FDI, we employ a workhorse model to explain foreign investments and also control for characteristics that may play a role in attracting FDI, such as institutional traits (ease of doing business, property rights protection, World Governance Index score), legal frameworks that could facilitate business (free trade agreements, customs union membership) and previous FDI from a source country to a host nation. We further explain the hypotheses tested along with the variables used in the following sections. All the variables are described in Table A1.

3.2 | The econometric model

In order to investigate the effects of fiscal decentralisation on FDI, we define foreign-direct investments as *CBAijt*, the number of cross-border corporate acquisitions between a host country *i* and the source country *j*, over the period t and therefore look at a variety of events that may determine the number of cross-border acquisitions in a given year between the two countries by resorting to the knowledge-capital model.

Until the 1990s, there was still a two-tier model for the explanation of FDI (Horstmann & Markusen, 1987). It was assumed that multinational companies produce their goods and services in many countries simultaneously using identical production processes. On top of that, it was assumed that companies only outsource parts of the value chain, so that different pre- or part-products are produced in different and specialised countries. This second explanation is where the different factor endowments between the source and host countries are more prominent. According to this approach, FDI occurs mainly where low factor costs prevail.

Because of these central features, the knowledge-capital model is a suitable theoretical model for our interests. The model allows us to assess the influence of decentralisation on FDI, measured as CBA, taking into account other factors such as investment motives. The basic knowledge-capital model explains FDI flows based on size and differences among economies. Therefore, the main regressors are the sum of gross domestic product (GDP) of the source and host nations, the difference of GDP per capita of the source and the host countries (squared) and three interaction terms: INT 1, INT 2 and INT 3.

INT 1 is the interaction term between the difference in per capita income multiplied by the difference in GDP between the source and host countries. We expect a negative coefficient as CBAs are lower when per capita income in the source country is higher than in the host country, and at the same time, the source country has a higher national income than the host country. This interaction term describes, in particular, FDI inflows from developing countries. It can also be described as a south–north flow that is magnified the larger the difference in per capita income between both nations.

INT 2 is the interaction term between the difference in per capita income multiplied by the sum of the GDP of the source and host countries, provided that the per capita income in the source country is higher than in the host country. We expect a positive coefficient as CBAs rise when per capita income in the source country is higher than in the host country. This interaction term particularly describes FDI outflows from developed economies to so-called "emerging economies". Such a variable can be understood as a north–south flow boosted the larger both countries involved are.

INT 3 is the interaction term between the difference in per capita income multiplied by the sum of GDP of the source and host countries, provided that per capita income is higher in the host than in the source country. We expect a negative coefficient as CBAs fall when per capita income in the host country is higher than in the source country. This interaction term models, in particular, the FDI flows from emerging economies to developed ones, i.e., a south–north flow amplified as both economies are large in absolute terms.

Given these main features of the knowledge-capital model, it can be appended with our variables of interest to estimate and identify the effects of decentralisation on FDI. In order to test our hypotheses H_1 and H_2, we resort to the variables Tiers and Tax Autonomy, which are the number of government levels and the autonomy that sub-federal units enjoy in setting their taxes, respectively.

Other controls that may also explain the motives for FDI between two countries were derived from different sources: The distance between source and host, whether they share a common

border and/or language, can be retrieved from Glick and Rose (2016). Membership in customs unions and/or free trade/services agreements was gathered from the World Trade Organisation (WTO). The market capitalization of a source country as well as the real exchange rate and the ease of doing business in the host nation were obtained from different databases of the World Bank.

Finally, institutional controls can be used, such as the WGI Score from the World Bank and the property rights protection index from the Heritage Foundation. In addition, some specifications may contain important regressors that help to explain FDI flows, such as the lagged dependent variable (in the sense that once FDI has occurred between two countries, it is easier to establish new transactions).

The data are available as integers, and to perform a regression of such nature, we use a count data approach for a distribution that follows a negative binomial curve (Cameron & Trivedi, 2013). In its simplest form, we assume that the distribution of CBAs between the source country j and the host country i in year t is subject to a process in which the variance and the mean are equally distributed. The variance here is larger than the mean. The model is specified as follows:

$$E\left[CBA_{ijt}|\, x_{ijt}, d_{ijt}\right] = \exp\left(controls'_{ijt}\beta_1 + DEC'_{ijt}\beta_2 + d_{ijt}\right), \tag{2}$$

where CBA_{ijt} depends on the covariance vector x_{ijt} and the shift variable d_{ijt}. This process should be described by the control vector $controls'_{ijt}$ and the decentralisation variable DEC'_{ijt}, where β represents the parameters to be estimated.

In its simplest form, count-data models imply that the natural integers of the variable CBA_{ijt} follow a negative binomial distribution with parameter λ_{ijt}. Formally, it can be written as:

$$f\left(CBA_{ijt}|\, x_{ijt}\right) = \left(e_{ijt}^{-\lambda}\right)CBA_{ijt}, \text{where } \lambda_{ijt} = \exp\left(x'_{ijt}\beta\right) \tag{3}$$

with the covariate vector x_{ijt}, such as β is the parameter to be estimated by the model.

We assume time-invariant effects for each calendar year of the study between 1997 and 2021. In addition, we cluster the standard errors between the country pairs so that we approximate a "quasi-fixed effects" parameter estimate. We also control for population and for the area of the host country (squared and its inverse), the latter as a time-invariant characteristic (what rules out annexations of territories).

4 | RESULTS

In presenting the results of the regressions based on the knowledge-capital model, the dependent variable is always the number of CBA between a country pair in a given year. We also show several specifications that take into account different sets of controls and focus on the explanatory variables of interest: the decentralisation measures.

In all tables, specifications (1)–(5) control for the typical determinants of FDI according to the empirical literature. In specifications (6)–(10), new controls are added to take into account the income level of the host country, the lagged dependent variable, a World Governance Index score and the protection of property rights in the host country. Given the availability of data, especially for the tax autonomy measure, we further focus the analysis on high-income hosts in order to present the results with the de facto measure of fiscal decentralisation (Tax Autonomy).

4.1 | The benchmark model

In the benchmark model, the whole sample for the period from 1997 to 2021 is used to estimate the general factors that determine FDI based on the knowledge-capital model as appended by the fiscal decentralisation measures and our set of controls.

With regard to general factors, specifications (1)–(10) in Table 2 confirm the empirical evidence from previous studies. If the languages of the host and source countries are identical, if they share a common border, or if both are members of a customs union, more FDI will be observed. The greater the distance between two countries, the less cross-border acquisitions will occur. We also acknowledge the economic explanations for FDI derived from the knowledge-capital model: the greater the sum of GDP of the host and source countries, the higher the number of cross-border acquisitions. Moreover, we confirm a significant impact of the differences in factor endowments: if per capita income in the host country is higher than in the source country (INT 3), there are significantly fewer corporate acquisitions. This effect is confirmed in all estimates, as the squared national income difference (always a positive number) between the source and host countries is negative and significant in all specifications. These findings lead to the conclusion that, in addition to the size effects, economic development is also decisive for the explanation of FDI flows.

In comparison to the estimates in Kessing et al. (2007), we can only confirm statistical significance for the interaction term INT 1 in the less strict specifications (1 and 2). Moreover, the interaction term INT 2 is significant in less strict specifications (1–5), while the interaction term INT 3 remains significant across all specifications.

In connection with H_1, we review the two related hypotheses on the effect of fiscal decentralisation on FDI. First, we expect less FDI and higher local and subnational tax revenues (as a percentage of total tax revenues, i.e., Rev. Decent.). Second, we expect a positive relationship between FDI and a high proportion of local and subnational government spending (Exp. Decent.). We test both hypotheses in the specifications (3)–(5), (8)–(10) and find significant evidence in only two specifications for revenue decentralisation.

Additionally, our main variable of interest (Tiers) has no statistically significant effect, meaning that more government layers do not affect FDI in a host nation – this already contradicts the previous findings that the vertical dimension trumps the horizontal dimension of decentralisation by curbing investments, a finding present in Kessing et al. (2007) that does not survive in our extended dataset.

In the specifications (6)–(10), we control for institutional characteristics of host countries (measured both by the WGI Score – an average of the normalised World Governance Index – and by the property rights index) and include the (log of) GDP per capita and the lagged dependent variable (it does not imply there was a CBA in a certain country pair in the previous year, but in any previous period) and repeat the test sequence as in (1)–(5). Only the lagged dependent variable and GDP per capita are consistently and positively significant across specifications, which confirms our point that once FDI has occurred between two countries, it is easier to repeat the move.

The impact of the Tiers variable is not significantly different from zero as the dataset covers a longer period as compared to Kessing et al. (2007) and as additional controls are introduced.

Even though we control for the income of the FDI hosts in some specifications, there may be differences between them. Hence, in order to assess the effects of taxation autonomy (given data availability), high-income host countries are examined separately.

TABLE 2 Full sample of hosts. Dependent variable: CBA.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tiers		0.018		−0.002			−0.001		0.027	
		(0.040)		(0.069)			(0.034)		(0.057)	
Exp. Decent.			0.396	0.398	0.292			−0.126	−0.160	−0.196
			(0.488)	(0.489)	(0.478)			(0.445)	(0.442)	(0.443)
Rev. Decent.			−0.765	−0.762	−0.593			−0.732*	−0.757*	−0.616
			(0.483)	(0.486)	(0.469)			(0.433)	(0.433)	(0.425)
Tiers*Pop.					−1.030					−0.818
$\sum GDP_{ij}$	0.325***	0.323***	0.323***	0.323***	0.324***	0.168***	0.168***	0.193***	0.193***	0.193***
	(0.017)	(0.017)	(0.020)	(0.020)	(0.020)	(0.025)	(0.025)	(0.034)	(0.034)	(0.034)
ΔGDP_{ji}^2	−0.010***	−0.010***	−0.009***	−0.009***	−0.009***	−0.005***	−0.005***	−0.006***	−0.006***	−0.006***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
INT 1	−0.001**	−0.001**	−0.001	−0.001	−0.001	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INT 2	−0.001**	−0.001**	−0.001*	−0.001*	−0.001*	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INT 3	−0.003***	−0.003***	−0.003***	−0.003***	−0.003***	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Distance	−0.086***	−0.086***	−0.082***	−0.082***	−0.082***	−0.056***	−0.056***	−0.045***	−0.045***	−0.046***
	(0.017)	(0.017)	(0.021)	(0.021)	(0.020)	(0.013)	(0.013)	(0.017)	(0.017)	(0.016)
Com. Border	0.605***	0.604***	0.710***	0.710***	0.706***	0.338***	0.338***	0.456***	0.461***	0.453***
	(0.112)	(0.112)	(0.156)	(0.156)	(0.155)	(0.096)	(0.096)	(0.154)	(0.154)	(0.153)
Com. Language	0.524***	0.522***	0.550***	0.551***	0.560***	0.324***	0.324***	0.349***	0.345***	0.357***
	(0.089)	(0.088)	(0.098)	(0.099)	(0.098)	(0.069)	(0.070)	(0.088)	(0.088)	(0.088)

TABLE 2 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Market Cap.	0.081***	0.081***	0.054***	0.054***	0.054***	0.046***	0.046***	0.040***	0.041***	0.040***
	(0.016)	(0.016)	(0.015)	(0.015)	(0.015)	(0.011)	(0.011)	(0.011)	(0.011)	(0.010)
REER	0.006***	0.005***	0.007***	0.007***	0.008***	0.002*	0.002	0.006***	0.006**	0.007***
	(0.001)	(0.001)	(0.002)	(0.003)	(0.002)	(0.001)	(0.001)	(0.002)	(0.003)	(0.002)
Inflation	0.002	0.002	0.004	0.004	0.005	0.009	0.009	0.010	0.009	0.010
	(0.010)	(0.009)	(0.010)	(0.011)	(0.010)	(0.008)	(0.008)	(0.009)	(0.010)	(0.009)
Free Trade	0.120	0.119	0.145	0.145	0.134	0.071	0.072	0.185*	0.185*	0.174*
	(0.115)	(0.115)	(0.116)	(0.116)	(0.117)	(0.089)	(0.089)	(0.107)	(0.107)	(0.106)
Free Services	0.208	0.210	0.095	0.095	0.110	0.067	0.067	−0.026	−0.024	−0.017
	(0.147)	(0.148)	(0.142)	(0.142)	(0.142)	(0.106)	(0.107)	(0.132)	(0.133)	(0.131)
Custom Union	0.327***	0.323***	0.357**	0.358**	0.349**	0.265***	0.265***	0.364***	0.361***	0.353***
	(0.102)	(0.102)	(0.143)	(0.141)	(0.143)	(0.086)	(0.086)	(0.130)	(0.131)	(0.129)
Costs	−0.645***	−0.640***	−3.151***	−3.150***	−3.113***	−0.480**	−0.480**	−1.364**	−1.358**	−1.325**
	(0.165)	(0.171)	(0.673)	(0.673)	(0.676)	(0.219)	(0.217)	(0.613)	(0.613)	(0.612)
Time	0.001	0.001	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.002
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)
Procedures	−0.037***	−0.039**	−0.006	−0.006	−0.005	−0.009	−0.009	0.002	0.000	0.004
	(0.014)	(0.015)	(0.022)	(0.024)	(0.023)	(0.010)	(0.011)	(0.018)	(0.019)	(0.018)
GDP per capita						0.004*	0.004*	0.016***	0.016***	0.015***
						(0.002)	(0.002)	(0.004)	(0.004)	(0.004)
Nr CBA ($t-1$)						0.034***	0.034***	0.023*	0.023*	0.023*
						(0.012)	(0.012)	(0.013)	(0.013)	(0.013)
WGI Score						−0.022	−0.022	−0.024	−0.020	−0.016
						(0.032)	(0.032)	(0.049)	(0.049)	(0.049)

(Continues)

TABLE 2 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Property Rights						0.130***	0.130***	−0.132	−0.148*	−0.122
						(0.045)	(0.045)	(0.089)	(0.087)	(0.087)
Pop. controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Area controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. Deviance R^2	.6641	.6641	.6962	.6960	.6969	.7361	.7381	.7400	.7399	.7403
N	8967	8967	5067	5067	5067	7653	7653	4452	4452	4452
# of CBA	52,960	52,960	38,447	38,447	38,447	51,183	51,183	37,611	37,611	37,611

Note: Panel estimates (1997–2021). Dependent variable is number of yearly CBA for source–host country pairs from SDC Platinum. These include 190 different source countries and 214 different host countries. Standard errors are clustered by country pair. All estimations include year dummies, and p-values are denoted as follows: *$p < .1$; **$p < .05$; ***$p < .01$.

4.2 | High-income hosts

For the high-income hosts subset, there are 16,221 observations (pairs of source and host in any year with at least one CBA in the period), approximately 55% of the sample, which make up 103,691 CBAs, or about 81% of the total number of acquisitions in the database. It is worth noting that the sample is restricted to FDI hosts based on their income. An acquisition of a German company by a South African enterprise is still part of the subsample, as the interest is how fiscal decentralisation in host nations affects FDI. Based on the knowledge-capital model we test whether fiscal decentralisation affects FDI for the subsample as shown below in Table 3.

While we have seen no significantly negative impact of the number of tiers on FDI for the full sample, this lack of effect tends to remain – one more government layer is not associated with more or less CBA per year for the high-income hosts. The evidence found in the whole sample is thus confirmed in the subset of high-income hosts: size effects (as measured by the sum of the GDP of source and host countries) and differences in factor endowments retain their significance with the expected sign.

With regard to the hypotheses of the effect of fiscal decentralisation on the attractiveness of FDI (H_1), the high-income subsample offers some empirical evidence for revenue decentralisation. We find a negative coefficient in the less strict specifications – a more decentralised revenue collection is linked to less FDI in high-income hosts. So far, a more decentralised state in terms of tax revenues has at best a minor effect on FDI as measured by the variables at hand.

As the data on tax autonomy is only available for OECD countries, we cannot test our main hypothesis on emerging economies in the next sections and must devote our attention to high-income nations.

4.3 | Filling the gap: Tax autonomy and corporate tax differential

To this point, Tiers and the fiscal variables from the IMF have been used as measures for fiscal federalism. Although they indeed measure some characteristics of fiscal federalism, they do not truly reflect the autonomy that regional and local authorities have in setting their taxes. In sum, they do not measure whether taxation is de facto controlled by sub-federal levels in terms of freely choosing the tax base and its rate.

Fundamentally, this is the problem that can arise to affect FDI attractiveness – whether local authorities can increase taxes ex post. Such movement depends on the control local governments have over their tax policies, and it is not appropriately measured simply by the number of tiers (control over taxes can remain at national level) or by revenue/expenditure proportions (still, revenues can come from transfers from the national level or expenditures can be earmarked).

A variable that represents the tax autonomy of sub-federal layers can ideally measure whether lower government levels are free to set their tax bases and their tax rates without resorting to central government. To capture the tax autonomy of sub-federal units properly, we turn to our variable called Tax Autonomy, which refers to the proportion of sub-federal tax revenue controlled by the subnational unit itself, either when it sets the tax base, the tax rate, or both. Data for sub-federal tax autonomy are available from the OECD database and are collected every second year. For the years in which the data were not collected, the OECD has simply adopted the tax autonomy of the closest year.

As related to Hypothesis H_2, one might expect that a positive effect will arise from tax autonomy for FDI, given that local units can credibly commit not to increase taxes ex post, as they set tax bases and rates the more autonomous they are, and hence it minimises the common pool problem. Given the sample at hand and the institutional controls that already capture credibility,

TABLE 3 High-income hosts. Dependent variable: CBA.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tiers		0.042		0.009			0.026		0.069	
		(0.065)		(0.082)			(0.053)		(0.072)	
Exp. Decent.			1.285	1.264	1.243			0.103	−0.144	−0.053
			(0.868)	(0.916)	(0.872)			(0.885)	(0.906)	(0.857)
Rev. Decent.			−1.517**	−1.516**	−1.300*			−0.946	−0.912	−0.687
			(0.749)	(0.750)	(0.681)			(0.645)	(0.644)	(0.600)
Tiers*POP.					−1.360					−1.608
					(1.879)					(1.939)
$\sum GDP_{ij}$	0.332***	0.332***	0.339***	0.338***	0.341***	0.194***	0.195***	0.223***	0.224***	0.223***
	(0.018)	(0.018)	(0.021)	(0.021)	(0.021)	(0.032)	(0.032)	(0.035)	(0.035)	(0.035)
ΔGDP_{ji}^2	−0.010***	−0.010***	−0.010***	−0.010***	−0.010***	−0.006***	−0.006***	−0.007***	−0.007***	−0.007***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
INT 1	−0.001	−0.001	−0.001	−0.001	−0.001	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INT 2	−0.001	−0.001	−0.001	−0.001	−0.001	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
INT 3	−0.003***	−0.003***	−0.003***	−0.003***	−0.003***	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDP per capita						0.005*	0.005**	0.016***	0.018***	0.016***
						(0.003)	(0.002)	(0.005)	(0.004)	(0.004)
Nr CBA $(t-1)$						0.028**	0.028**	0.019	0.018	0.019*
						(0.013)	(0.013)	(0.011)	(0.011)	(0.011)
WGI Score						0.046	0.040	−0.045	−0.031	−0.027
						(0.038)	(0.040)	(0.066)	(0.065)	(0.067)

TABLE 3 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Property Rights						0.073	0.074	−0.108	−0.160	−0.026
						(0.063)	(0.063)	(0.109)	(0.104)	(0.106)
Pop. controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Area controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. Deviance R^2	.6888	.6890	.7142	.7140	.7146	.7387	.7387	.7487	.7489	.7489
N	6701	6701	4024	4024	4024	5858	5858	3600	3600	3600
# of CBA	47,205	47,205	35,620	35,620	35,620	46,040	46,040	35,042	35,042	35,042

Note: Panel estimates (1997–2021). Dependent variable is number of yearly CBA for source–host country pairs from SDC Platinum. These include 172 different source countries and 66 different host countries. Standard errors are clustered by country pair. All estimations include the same covariates as in Table 2 on top of year dummies, and p-values are denoted as follows: *$p < .1$; **$p < .05$; ***$p < .01$.

we expect a positive coefficient of Tax Autonomy, meaning the competition among units to attract investments dominates and the hold-up problem is weakened.

These new variables are only available for OECD members. Thus, we empirically test their effect on FDI for high-income hosts (this rules out OECD members such as Mexico and Chile). We first test the Tax Autonomy variable alone (see Table 4) and then add as a new regressor the corporate tax differential and an interaction term of these variables (see Table 5).

For this subset, there are 12,500 observations (pairs of source and host) for the period (approximately 42.2% of the full dataset), which make up 71,735 CBAs, or about 55.9% of the total number of acquisitions in the database. When we use the model with corporate tax differential, the subsample is comprised of 9483 pairs of countries for the period, which are responsible for 62,913 cross-border acquisitions.

When the measure of tax autonomy is added to the model to better capture the scale of fiscal federalism, the effects of Tiers turn out to be positive for FDI, and the negative effect observed for revenue decentralisation on FDI disappears. As our proposed variable reflects the power to tax at subnational governmental levels, this is the decentralisation measure that matters for FDI.

This means that, when tax autonomy is taken into account, the net effect of having an extra layer of government can be positive for attracting FDI. Moreover, our de facto measure of fiscal decentralisation has a positive impact on attracting FDI, which sheds some light on the possibility that the horizontal dimension of federalism (competition among units) can trump the vertical dimension. In quantitative terms, moving to full autonomy could increase the number of CBAs by 30.1% to 94.2% per year for a given host (from specifications 5 and 7 that present the lowest and highest coefficient estimates).

Some previous studies, such as Kessing et al. (2007) and Kalamova (2008), found empirical evidence that vertical fiscal decentralisation, as measured either by the number of government tiers or by the variables proposed by Stegarescu (2005), had a negative impact on FDI – that is, the hold-up problem manifests itself in the case of foreign investments and investors refrain from allocating capital towards jurisdictions where they tend to deal with more governmental layers.

When we extend the dataset, revise and update the decentralisation measures, such a negative effect disappears and even turns out to be positive. As a matter of fact, some traits of revenue decentralisation appear to exert negative pressure on FDI. In the less strict specifications without Tax Autonomy as a control, countries where subnational government layers receive more taxes (in relation to the total revenues) tend to have less FDI. However, when taxation autonomy is taken into account, this effect disappears and the more subnational entities control their taxes, the more CBAs can be observed (see Figures 3 and 4). Hence, based on our empirical findings, the competition among subnational entities acts as a catalyst for FDI.

It must be mentioned that well-known determinants for FDI, such as common border and language, are used as controls in our specifications on top of a rich set of covariates that minimise endogeneity concerns. Geographical and cultural traits that reduce transaction costs exert a positive effect on cross-border acquisitions and the economic determinants of the knowledge-capital model are still significant (such as the sum of GDP, INT 3).

The empirical evidence presented so far supports the theory that fiscal federalism, as measured by the tax autonomy of subnational units, is positively linked to the attractiveness of foreign direct investments. In addition to tax autonomy at subnational levels, from a theoretical perspective, corporate tax can have an effect on a country's attractiveness for FDI, especially if it varies at local or sub-federal levels. Such a variable, if set in relation to the total aggregated corporate taxes of any country and interacted with the number of government levels, would be a suitable way to measure the strength of decentralisation effects on FDI.

TABLE 4 OECD high-income hosts. Dependent variable: CBA; control: Tax Autonomy.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tax Autonomy	0.445***	0.386***	0.550***	0.149	0.658***	0.317***	0.263***	0.436**	−0.030	0.620***
	(0.095)	(0.098)	(0.187)	(0.191)	(0.180)	(0.088)	(0.089)	(0.172)	(0.186)	(0.168)
Tiers		0.191***		0.426***			0.175***		0.482***	
		(0.073)		(0.089)			(0.060)		(0.086)	
Exp. Decent.			−0.144	0.602	−0.610			−0.576	−0.175	−1.559*
			(1.203)	(1.091)	(0.902)			(1.140)	(1.107)	(0.828)
Rev. Decent.			0.042	−0.613	0.503			0.184	−0.436	0.997
			(0.902)	(0.834)	(0.685)			(0.802)	(0.791)	(0.650)
Tiers*Pop.					−1.402					−2.789
					(2.124)					(2.859)
$\sum GDP_{ij}$	0.355***	0.355***	0.357***	0.355***	0.359***	0.240***	0.242***	0.260***	0.268***	0.262***
	(0.018)	(0.018)	(0.021)	(0.021)	(0.021)	(0.034)	(0.033)	(0.030)	(0.027)	(0.030)
ΔGDP_{ji}^2	−0.011***	−0.011***	−0.011***	−0.011***	−0.011***	−0.008***	−0.008***	−0.008***	−0.008***	−0.008***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)
INT 1	−0.000	−0.000	−0.000	−0.001	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)
INT 2	−0.001	−0.001	−0.001	−0.001	−0.001	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
INT 3	−0.003***	−0.003***	−0.003***	−0.003***	−0.003***	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDP per capita						0.004	0.005*	0.008**	0.017***	0.008**
						(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
Nr CBA ($t-1$)						0.019*	0.018*	0.013*	0.012*	0.013*
						(0.011)	(0.011)	(0.008)	(0.007)	(0.008)

(Continues)

TABLE 4 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
WGI Score						0.043	0.019	−0.020	0.041	0.012
						(0.055)	(0.056)	(0.074)	(0.070)	(0.083)
Property Rights						0.062	0.067	−0.036	−0.306**	0.100
						(0.085)	(0.083)	(0.116)	(0.119)	(0.127)
Pop. controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Area controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. Deviance R^2	.7347	.7377	.7554	.7635	.7555	.7576	.7602	.7702	.7794	.7705
N	5562	5562	3668	3668	3668	4865	4865	3255	3255	3255
# of CBA	41,966	41,966	32,941	32,941	32,941	40,993	40,993	32,377	32,377	32,377

Note: Panel estimates (1997–2021). Dependent variable is number of yearly CBA for source–host country pairs from SDC Platinum. These include 154 different source countries and 38 different host countries. Standard errors are clustered by country pair. All estimations include the same covariates as in Table 2 on top of year dummies, and *p*-values are denoted as follows: *$p < .1$; **$p < .05$; ***$p < .01$.

TABLE 5 OECD high-income hosts. Dependent variable: CBA; controls: Tax Autonomy and Corporate Tax Differential.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Δ Corp. Tax.$_{ji}$		0.653	0.292	0.802	0.036		0.876	0.413	0.960	0.233
		(0.705)	(1.167)	(1.097)	(1.136)		(0.610)	(1.111)	(1.039)	(1.104)
Tax Autonomy		0.395***	0.617***	0.189	0.792***		0.291***	0.521***	−0.102	0.732***
		(0.122)	(0.196)	(0.208)	(0.182)		(0.112)	(0.193)	(0.194)	(0.180)
Tax Interaction		−0.164	0.014	−0.403	0.244		−0.489	−0.196	−0.684	−0.095
		(0.822)	(1.332)	(1.232)	(1.308)		(0.739)	(1.298)	(1.189)	(1.287)
Tiers		0.219**		0.504***			0.222***		0.681***	
		(0.086)		(0.099)			(0.073)		(0.080)	
Exp. Decent.			−0.761	−0.017	−1.565			−1.151	−0.960	−2.238**
			(1.147)	(1.046)	(0.961)			(1.227)	(1.189)	(0.936)
Rev. Decent.			0.682	−0.022	1.515**			0.859	0.164	1.784**
			(0.858)	(0.802)	(0.713)			(0.841)	(0.825)	(0.718)
Tiers*Pop.					−2.854					−3.336
					(2.266)					(3.078)
$\sum$GDP$_{ij}$	0.332***	0.317***	0.316***	0.312***	0.321***	0.195***	0.225***	0.247***	0.257***	0.251***
	(0.018)	(0.021)	(0.024)	(0.023)	(0.024)	(0.032)	(0.031)	(0.029)	(0.025)	(0.029)
ΔGDP$^2_{ji}$	−0.010***	−0.010***	−0.010***	−0.010***	−0.010***	−0.006***	−0.007***	−0.008***	−0.008***	−0.008***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
INT 1	−0.001	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
INT 2	−0.001	−0.001*	−0.001*	−0.001*	−0.001*	−0.000	−0.000	−0.001	−0.001	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
INT 3	−0.003***	−0.002***	−0.003***	−0.002***	−0.003***	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

(Continues)

TABLE 5 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
GDP per capita						0.005*	0.005	0.009**	0.026***	0.009*
						(0.003)	(0.003)	(0.005)	(0.005)	(0.005)
Nr CBA ($t-1$)						0.028**	0.014*	0.009*	0.007*	0.009*
						(0.013)	(0.009)	(0.005)	(0.004)	(0.005)
WGI Score						0.044	0.015	−0.027	0.089	0.004
						(0.038)	(0.063)	(0.082)	(0.079)	(0.088)
Property Rights						0.074	0.057	−0.142	−0.596***	0.031
						(0.063)	(0.093)	(0.137)	(0.139)	(0.162)
Pop. controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Area controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. Deviance R^2	.6888	.7524	.7764	.7859	.7774	.7356	.7670	.7827	.7970	.7831
N	6701	4219	2690	2690	2690	5858	3768	2432	2432	2432
# of CBA	47,205	36,491	28,398	28,398	28,398	46,040	35,823	28,028	28,028	28,028

Note: Panel estimates (1997–2014). Dependent variable is number of yearly CBA for source–host country pairs from SDC Platinum. These include 48 different source countries and 36 different host countries. Standard errors are clustered by country pair. All estimations include the same covariates as in Table 2 on top of year dummies, and *p*-values are denoted as follows: *$p < .1$; **$p < .05$; ***$p < .01$.

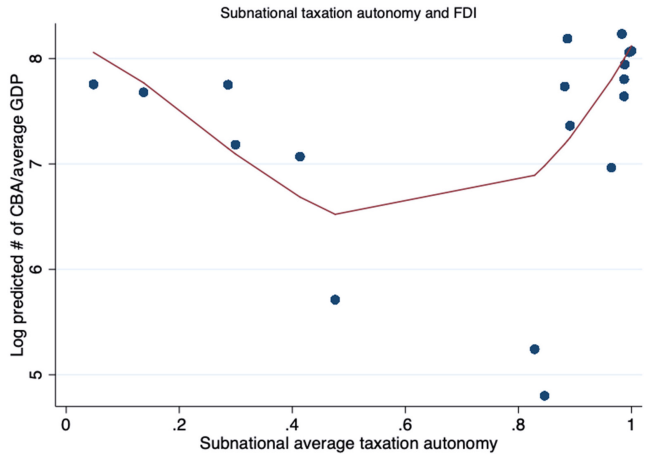

FIGURE 3 Tax Autonomy and CBA (predicted by specification 4). *Source*: Own calculations based on the London Stock Exchange and the OECD.

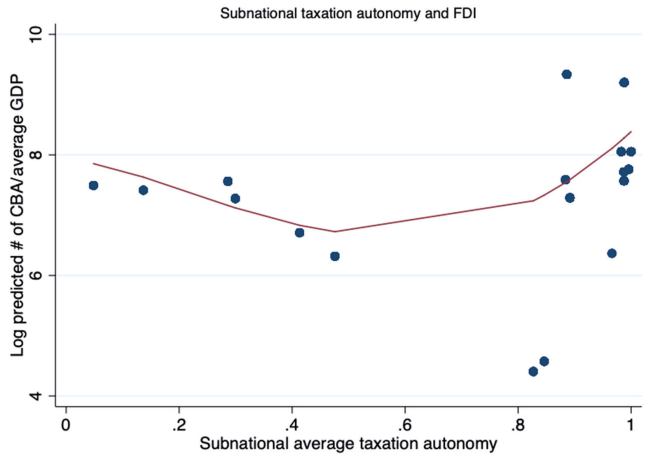

FIGURE 4 Tax Autonomy and CBA (predicted by specification 9). *Source*: Own calculations based on the London Stock Exchange and the OECD.

However, data is available only on aggregated corporate tax rates for OECD countries. Nevertheless, corporate taxes can be used to attract FDI, and a corporate tax differential variable can be created to assess whether investors also seek investments in countries where corporate tax is lower as compared to their national burden. If the corporate tax rates in the source country are higher than in the host nation (i.e., $\Delta\, Corp.\, Tax_{ji} > 0$), we expect a positive and significant impact on the number of CBAs.

We further develop the model by adding the corporate tax differential variable along with an interaction term between it and Tax Autonomy (see Table 5). Such a variable would capture the potential increase or decrease in the corporate tax gap (between source and host countries) that subnational units could change given their level of tax autonomy.

The addition of the corporate tax variable (along with the interaction term) does not qualitatively alter the results. Neither the corporate tax differential nor the interaction term play a role in attracting FDI, but tax autonomy remains the driver of fiscal federalism for attracting foreign capital. Nevertheless, in quantitative terms, moving to full taxation autonomy could double the number of CBAs (a maximum increase of 120.9% per in specifications 5) for a given host.

4.4 | Robustness checks

As previously mentioned, data from other sources have been collected. The information retrieved from Bloomberg comprises count data for cross-border transactions and can be used to perform some robustness checks in our models and specifications. Nevertheless, a significant number of CBAs from Bloomberg can only be obtained when we relax the restriction on controlling stakes being purchased.

A total number of 43,024 controlling and non-controlling stake purchases of CBAs involving companies from different jurisdictions can be retrieved. When the sample is restricted to high-income hosts, for which data on taxation autonomy is available, Bloomberg provides a total of 49,335 CBAs that occurred between a maximum of 121 source countries and 66 host countries within the period analysed.

We hereby estimate the specifications found in Tables 3 and 4, using as the dependent variable the number of CBAs between countries retrieved from Bloomberg. Table 6 replicates the model without the Tax Autonomy variable, whereas Table 7 presents the results using Tax Autonomy.

The results obtained using Bloomberg's data show, as observed in the specifications with the Refinitiv database, that the number of governmental layers has no explanatory power over FDI. However, the fiscal decentralisation measures from the IMF show the expected results in the less strict specifications – more spending and lower revenues at local levels are associated with a larger number of CBAs.

When we add the Tax Autonomy variable to Bloomberg's data on CBA, the positive effect on FDI is maintained, although with slightly lower magnitudes, as observed in Table 4. Nevertheless, the hypothesis that higher tax autonomy can lead to higher foreign direct investment is sustained by the analysis with the alternative dataset.

As the Refinitiv database covers a long period in which the Global Financial Crisis (GFC) has occurred, the sample is split between two periods, i.e., from 1997 until 2008 and from 2009 until 2021, as another robustness exercise. This can uncover potential differences in investor behaviour regarding fiscal federalism before and after the GFC.

Tables 8 and 9 replicate Tables 4 and 5, respectively, but they restrict the sample to the period, between 1997 and 2008. In addition, Tables 10 and 11 also respectively replicate Tables 4 and 5, but for the subsample from 2009 on.

The results of the specifications with and without the Tax Autonomy variable for the period prior to the GFC confirm the findings for the whole time frame. Factors such as the size of both economies and their differences are, respectively, positively and negatively associated with FDI.

Expenditure decentralisation can attract FDI, whereas revenue decentralisation may repel them in the less strict specifications without the Tax Autonomy variable. However, when the power to tax enjoyed by subnational units is included in the model, it presents the same results observed in the whole sample: the higher the tax autonomy of subnational levels, the more CBAs occur. Prior to the GFC, fiscal decentralisation, as measured by the number of governmental layers, had a negative relationship with CBA, although it was only infrequently significant.

Finally, in the period after the GFC, tax autonomy at subnational levels remains positively associated with more foreign direct investments and the Tiers follow the same path: more decentralisation leads to more CBAs. Hence, for tax autonomy, the period of analysis is irrelevant. In other words, it is not a specific time frame that drives the result of a positive effect of tax autonomy at subnational levels on FDI. It is a long-term relationship.

TABLE 6 High-income hosts. Dependent variable: CBA (Bloomberg).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tiers		0.042		0.049			0.018		0.101	
		(0.059)		(0.077)			(0.053)		(0.072)	
Exp. Decent.			1.657**	1.526*	1.671**			0.499	0.103	0.272
			(0.757)	(0.780)	(0.796)			(0.780)	(0.781)	(0.798)
Rev. Decent.			−1.634**	−1.626**	−1.298*			−1.061*	−1.009*	−0.594
			(0.686)	(0.685)	(0.689)			(0.613)	(0.610)	(0.632)
Tiers*Pop.					−2.397					−3.249*
					(1.638)					(1.829)
$\sum GDP_{ij}$	0.329***	0.329***	0.340***	0.340***	0.343***	0.223***	0.223***	0.248***	0.250***	0.250***
	(0.019)	(0.019)	(0.023)	(0.023)	(0.023)	(0.029)	(0.029)	(0.028)	(0.027)	(0.027)
ΔGDP_{ji}^2	−0.010***	−0.010***	−0.010***	−0.010***	−0.011***	−0.007***	−0.007***	−0.008***	−0.008***	−0.008***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
INT 1	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
INT 2	−0.001*	−0.001*	−0.001	−0.001	−0.001	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
INT 3	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***	−0.001***	−0.001***	−0.002***	−0.002***	−0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDP per capita						0.008***	0.008***	0.017***	0.020***	0.017***
						(0.002)	(0.002)	(0.004)	(0.004)	(0.004)
Nr CBA ($t-1$)						0.017*	0.017*	0.012**	0.012**	0.012**
						(0.009)	(0.009)	(0.005)	(0.005)	(0.005)
WGI Score						−0.024	−0.028	−0.131	−0.104	−0.103
						(0.043)	(0.044)	(0.085)	(0.084)	(0.085)

(Continues)

TABLE 6 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Property Rights						0.045	0.044	−0.096	−0.175*	0.082
						(0.066)	(0.065)	(0.100)	(0.106)	(0.114)
Pop. controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Area controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. Deviance R^2	.7276	.7277	.7448	.7449	.7462	.7642	.7641	.7715	.7722	.7730
N	4966	4966	3076	3076	3076	4453	4453	2830	2830	2830
# of CBA	34,934	34,934	27,386	27,386	27,386	34,231	34,231	27,040	27,040	27,040

Note: Panel estimates (1997–2014). Dependent variable is number of yearly CBA for source–host country pairs from Bloomberg. These include 121 different source countries and 66 different host countries. Standard errors are clustered by country pair. All estimations include the same covariates as in Table 2 on top of year dummies, and p-values are denoted as follows: *$p < .1$; **$p < .05$; ***$p < .01$.

TABLE 7 OECD high-income hosts. Dependent variable: CBA (Bloomberg); control: Tax Autonomy.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tax Autonomy	0.451***	0.408***	0.482***	0.115	0.772***	0.313***	0.273***	0.337**	−0.084	0.755***
	(0.104)	(0.108)	(0.184)	(0.196)	(0.194)	(0.098)	(0.100)	(0.162)	(0.172)	(0.174)
Tiers		0.123*		0.379***			0.116**		0.439***	
		(0.072)		(0.087)			(0.057)		(0.078)	
Exp. Decent.			0.199	0.952	−1.015			−0.229	0.263	−2.531***
			(1.001)	(0.943)	(0.897)			(0.937)	(0.910)	(0.816)
Rev. Decent.			−0.154	−0.822	1.074			−0.059	−0.716	1.861***
			(0.783)	(0.745)	(0.706)			(0.679)	(0.670)	(0.647)
Tiers*Pop.					−3.771**					−6.605***
					(1.816)					(2.502)
$\sum GDP_{ij}$	0.342***	0.342***	0.349***	0.347***	0.355***	0.240***	0.240***	0.259***	0.266***	0.264***
	(0.018)	(0.018)	(0.022)	(0.022)	(0.022)	(0.028)	(0.027)	(0.027)	(0.024)	(0.026)
ΔGDP_{ji}^2	−0.011***	−0.011***	−0.011***	−0.011***	−0.011***	−0.008***	−0.008***	−0.009***	−0.009***	−0.009***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
INT 1	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
INT 2	−0.001	−0.001	−0.001	−0.001	−0.001	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
INT 3	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDP per capita						0.007***	0.008***	0.011***	0.019***	0.011***
						(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
Nr CBA ($t-1$)						0.015**	0.015**	0.011**	0.010**	0.011**
						(0.007)	(0.007)	(0.005)	(0.004)	(0.005)

(Continues)

TABLE 7 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
WGI Score						−0.116*	−0.127*	−0.058	−0.009	0.037
						(0.067)	(0.067)	(0.087)	(0.084)	(0.091)
Property Rights						0.061	0.063	−0.086	−0.314***	0.212*
						(0.077)	(0.075)	(0.097)	(0.102)	(0.124)
Pop. controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Area controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. Deviance R^2	.7446	.7456	.7564	.7621	.7583	.7708	.7718	.7761	.7831	.7785
N	4194	4194	2833	2833	2833	3772	3772	2592	2592	2592
# of CBA	30,423	30,423	24,782	24,782	24,782	29,840	29,840	24,443	24,443	24,443

Note: Panel estimates (1997–2021). Dependent variable is number of yearly CBA for source–host country pairs from Bloomberg. These include 120 different source countries and 38 different host countries. Standard errors are clustered by country pair. All estimations include the same covariates as in Table 2 on top of year dummies, and *p*-values are denoted as follows: *$p < .1$; **$p < .05$; ***$p < .01$.

TABLE 8 High-income hosts (1997–2008). Dependent variable: CBA.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tiers		−0.086		−0.469			−0.129		−1.249*	
		(0.140)		(0.296)			(0.104)		(0.677)	
Exp. Decent.			5.899***	6.487***	5.454***			2.932	4.209**	2.834
			(1.572)	(1.652)	(1.808)			(1.855)	(2.005)	(1.846)
Rev. Decent.			−3.259**	−2.933**	−3.218**			−1.498	0.633	−1.186
			(1.340)	(1.327)	(1.343)			(1.347)	(1.625)	(1.472)
Tiers*Pop.					2.199					−2.923
					(4.410)					(6.522)
$\sum GDP_{ij}$	0.476***	0.475***	0.500***	0.499***	0.500***	0.274***	0.275***	0.378***	0.378***	0.378***
	(0.039)	(0.039)	(0.050)	(0.050)	(0.050)	(0.056)	(0.056)	(0.060)	(0.060)	(0.060)
ΔGDP_{ji}^2	−0.022***	−0.022***	−0.023***	−0.023***	−0.023***	−0.012***	−0.012***	−0.017***	−0.017***	−0.017***
	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
INT 1	−0.001	−0.001	−0.001	−0.001	−0.001	−0.000	−0.000	−0.001	−0.001	−0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
INT 2	−0.002	−0.002	0.000	0.000	0.000	−0.001	−0.001	0.000	0.000	0.000
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
INT 3	−0.005***	−0.005***	−0.006***	−0.006***	−0.006***	−0.002*	−0.002*	−0.005***	−0.005***	−0.005***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
GDP per capita						−0.005	−0.007	0.013	−0.035	0.016
						(0.005)	(0.005)	(0.019)	(0.028)	(0.017)
Nr CBA ($t-1$)						0.027*	0.027**	0.010	0.010	0.010
						(0.014)	(0.014)	(0.008)	(0.008)	(0.008)
WGI Score						0.078	0.151	0.267	0.132	0.229
						(0.204)	(0.206)	(0.309)	(0.310)	(0.307)

(Continues)

TABLE 8 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Property Rights						0.371***	0.323**	−0.267	1.309	−0.178
						(0.134)	(0.137)	(0.378)	(0.818)	(0.505)
Pop. controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Area controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. Deviance R^2	.6912	.6912	.7687	.7686	.7681	.7278	.7281	.7655	.7650	.7647
N	2021	2021	1181	1181	1181	1669	1669	1010	1010	1010
# of CBA	14,750	14,750	10,485	10,485	10,485	14,260	14,260	10,255	10,255	10,255

Note: Panel estimates (1997–2008). Dependent variable is number of yearly CBA for source–host country pairs from Refinitiv. These include 125 different source countries and 56 different host countries. Standard errors are clustered by country pair. All estimations include the same covariates as in Table 2 on top of year dummies, and *p*-values are denoted as follows: * $p < .1$; ** $p < .05$; *** $p < .01$.

TABLE 9 OECD high-income hosts (1997–2008). Dependent variable: CBA; control: Tax Autonomy.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tax Autonomy	0.782***	0.904***	0.928**	0.906**	1.553***	0.600***	0.695***	0.489	0.389	1.067**
	(0.133)	(0.140)	(0.384)	(0.375)	(0.470)	(0.132)	(0.137)	(0.494)	(0.492)	(0.516)
Tiers		−0.259		−0.443			−0.237*		−1.118*	
		(0.176)		(0.290)			(0.142)		(0.669)	
Exp. Decent.			1.953	2.610	1.225			2.274	3.555*	1.162
			(1.919)	(1.779)	(1.802)			(1.934)	(2.082)	(1.797)
Rev. Decent.			−1.348	−1.090	−0.232			−1.415	0.475	−0.252
			(1.381)	(1.435)	(1.237)			(1.333)	(1.628)	(1.424)
Tiers*Pop.					−9.626*					−9.944
					(5.571)					(7.410)
$\sum GDP_{ij}$	0.487***	0.489***	0.498***	0.496***	0.499***	0.323***	0.328***	0.379***	0.379***	0.380***
	(0.038)	(0.038)	(0.050)	(0.050)	(0.050)	(0.059)	(0.059)	(0.060)	(0.060)	(0.060)
ΔGDP_{ji}^2	−0.022***	−0.022***	−0.023***	−0.023***	−0.023***	−0.014***	−0.015***	−0.017***	−0.017***	−0.017***
	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
INT 1	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
INT 2	−0.001	−0.001	0.000	0.000	0.000	−0.000	−0.001	0.000	0.000	0.000
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
INT 3	−0.005***	−0.006***	−0.007***	−0.007***	−0.007***	−0.003**	−0.003**	−0.005***	−0.005***	−0.005***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
GDP per capita						−0.002	−0.004	0.010	−0.032	0.018
						(0.006)	(0.006)	(0.018)	(0.029)	(0.017)
Nr CBA $(t-1)$						0.020	0.020	0.010	0.010	0.010
						(0.013)	(0.013)	(0.008)	(0.008)	(0.008)

(Continues)

TABLE 9 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
WGI Score						−0.326	−0.218	0.166	0.065	−0.083
						(0.239)	(0.236)	(0.320)	(0.320)	(0.305)
Property Rights						0.429***	0.363**	−0.316	1.105	−0.074
						(0.162)	(0.163)	(0.403)	(0.863)	(0.505)
Pop. controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Area controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. Deviance R^2	.7294	.7314	.7695	.7693	.7695	.7435	.7448	.7649	.7643	.7646
N	1869	1869	1181	1181	1181	1568	1568	1010	1010	1010
# of CBA	14,275	14,275	10,485	10,485	10,485	13,861	13,861	10,255	10,255	10,255

Note: Panel estimates (1997–2008). Dependent variable is number of yearly CBA for source–host country pairs from Refinitiv. These include 112 different source countries and 38 different host countries. Standard errors are clustered by country pair. All estimations include the same covariates as in Table 2 on top of year dummies, and *p*-values are denoted as follows: *$p < .1$; **$p < .05$; ***$p < .01$.

TABLE 10 High-income hosts (2009–2021). Dependent variable: CBA.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tiers		0.097*		0.065			0.072		0.126*	
		(0.059)		(0.080)			(0.050)		(0.072)	
Exp. Decent.			1.201	1.087	1.171			0.294	−0.058	0.254
			(0.931)	(0.964)	(0.885)			(0.962)	(0.985)	(0.859)
Rev. Decent.			−1.604*	−1.616**	−1.511**			−1.170	−1.199	−1.115*
			(0.823)	(0.808)	(0.702)			(0.758)	(0.739)	(0.650)
Tiers*Pop.					−0.528					−0.301
					(1.835)					(1.789)
$\sum GDP_{ij}$	0.317***	0.317***	0.319***	0.319***	0.320***	0.196***	0.197***	0.217***	0.219***	0.217***
	(0.018)	(0.018)	(0.021)	(0.021)	(0.020)	(0.036)	(0.036)	(0.037)	(0.037)	(0.037)
ΔGDP_{ji}^2	−0.009***	−0.009***	−0.009***	−0.009***	−0.009***	−0.006***	−0.006***	−0.006***	−0.007***	−0.006***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
INT 1	−0.000	−0.001	−0.001	−0.001	−0.001	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INT 2	−0.001*	−0.001*	−0.001	−0.001*	−0.001	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INT 3	−0.003***	−0.003***	−0.003***	−0.003***	−0.003***	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDP per capita						0.006**	0.006**	0.014***	0.018***	0.014***
						(0.003)	(0.002)	(0.004)	(0.004)	(0.004)
Nr CBA ($t-1$)						0.025*	0.025*	0.018	0.018	0.018
						(0.014)	(0.014)	(0.012)	(0.011)	(0.012)
WGI Score						0.033	0.015	−0.081	−0.069	−0.076
						(0.037)	(0.038)	(0.065)	(0.064)	(0.062)

(Continues)

TABLE 10 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Property Rights						0.077	0.079	−0.080	−0.172	−0.064
						(0.070)	(0.069)	(0.118)	(0.113)	(0.108)
Pop. controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Area controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. Deviance R^2	.7000	.7013	.7147	.7149	.7145	.7450	.7456	.7503	.7515	.7501
N	4680	4680	2843	2843	2843	4189	4189	2590	2590	2590
# of CBA	32,455	32,455	25,135	25,135	25,135	31,780	31,780	24,787	24,787	24,787

Note: Panel estimates (2009–2021). Dependent variable is number of yearly CBA for source–host country pairs from Refinitiv. These include 163 different source countries and 66 different host countries. Standard errors are clustered by country pair. All estimations include the same covariates as in Table 2 on top of year dummies, and *p*-values are denoted as follows: $^{*}p < .1$; $^{**}p < .05$; $^{***}p < .01$.

TABLE 11 OECD high-income hosts (2009–2021). Dependent variable: CBA; control: Tax Autonomy.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tax Autonomy	0.411***	0.375***	0.446**	0.051	0.457**	0.266***	0.232**	0.349*	−0.074	0.454**
	(0.103)	(0.099)	(0.215)	(0.201)	(0.189)	(0.103)	(0.098)	(0.204)	(0.206)	(0.180)
Tiers		0.273***		0.492***			0.252***		0.508***	
		(0.061)		(0.090)			(0.055)		(0.089)	
Exp. Decent.			0.047	0.745	0.003			−0.287	0.136	−0.812
			(1.407)	(1.269)	(1.030)			(1.332)	(1.287)	(0.894)
Rev. Decent.			−0.227	−0.772	−0.185			−0.147	−0.766	0.282
			(1.096)	(0.997)	(0.820)			(1.004)	(0.972)	(0.735)
Tiers*Pop.					−0.120					−1.288
					(2.211)					(2.774)
$\sum GDP_{ij}$	0.338***	0.339***	0.339***	0.336***	0.339***	0.248***	0.252***	0.256***	0.265***	0.257***
	(0.018)	(0.018)	(0.021)	(0.020)	(0.021)	(0.032)	(0.029)	(0.029)	(0.025)	(0.029)
ΔGDP_{ji}^2	−0.010***	−0.010***	−0.010***	−0.010***	−0.010***	−0.008***	−0.008***	−0.008***	−0.008***	−0.008***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
INT 1	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INT 2	−0.001	−0.001	−0.001	−0.001*	−0.001	−0.000	−0.000	−0.000	−0.001	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
INT 3	−0.003***	−0.003***	−0.003***	−0.003***	−0.003***	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDP per capita						0.005	0.006**	0.006	0.016***	0.006
						(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
Nr CBA ($t-1$)						0.015*	0.014*	0.012*	0.010*	0.012*
						(0.009)	(0.008)	(0.007)	(0.005)	(0.007)

(Continues)

TABLE 11 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
WGI Score						0.045	0.009	−0.055	−0.043	−0.034
						(0.054)	(0.056)	(0.066)	(0.062)	(0.078)
Property Rights						0.073	0.098	0.056	−0.196	0.120
						(0.097)	(0.093)	(0.133)	(0.132)	(0.119)
Pop. controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Area controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj. Deviance R^2	.7500	.7572	.7609	.7736	.7606	.7681	.7743	.7739	.7858	.7736
N	3693	3693	2487	2487	2487	3297	3297	2245	2245	2245
# of CBA	27,691	27,691	22,456	22,456	22,456	27,132	27,132	22,122	22,122	22,122

Note: Panel estimates (2009–2021). Dependent variable is number of yearly CBA for source–host country pairs from Refinitiv. These include 146 different source countries and 38 different host countries. Standard errors are clustered by country pair. All estimations include the same covariates as in Table 2 on top of year dummies, and *p*-values are denoted as follows: $^{*}p < .1$; $^{**}p < .05$; $^{***}p < .01$.

5 | CONCLUSIONS

The effect of federalism on the attractiveness of foreign direct investment is both theoretically and empirically controversial. This study may help to provide more evidence in favour of a positive relationship between federalism (fiscal decentralisation) and FDI. So far, the literature has provided mixed evidence regarding the effects of fiscal decentralisation on FDI. Kessing et al. (2007) set the standards in the empirical literature using a de jure measure of decentralisation – the number of governmental levels, the so-called Tiers. Although it is a variable that theoretically captures the number of authorities an investor has to deal with regarding taxation, it measures only the legal framework of a federation and not the de facto taxation power held by each level of government.

By extending the work of Kessing et al. (2007) and with the help of econometric evidence in Section 4, we cannot confirm the negative effect of the de jure characteristic of decentralisation on FDI. The effects for the whole sample and for high-income hosts lead to the conclusion that adding one more layer of government does not alter the number of CBAs per year.

Hence, a trivial question in assessing the effects of decentralisation on economic outcomes must be whether we are measuring what we want to evaluate. In this case, a decentralisation measure that captures how sub-federal governments can tax investors *ex post* is vital to the conclusions. We propose a variable that captures the tax autonomy of subnational government levels based on the work of Stegarescu (2005) and with the help of data available at the OECD. This is a more suitable way to assess the de facto traits of decentralisation, as it measures how sub-federal units control their taxes.

By using the Tax Autonomy variable that matters for the study of the hold-up problem, it is observed that fiscal federalism is associated with more foreign direct investment. As lower government levels become more autonomous, more CBAs are observed and can be doubled in a given year, even controlling for factors previously known to influence FDI. When subnational units fully control their tax bases and rates, CBAs can double in a given year towards a specific host, on top of the positive effect of having an extra subnational layer.

This is evidence that competition among subnational units that can credibly commit not to increase taxes ex post has a positive effect on attracting investments. The result holds for a relatively homogeneous sample of hosts (high-income OECD members), and we control for institutional differences among them. Finally, the evidence is not led by a specific time frame before or after the GFC.

We have also tested whether the corporate tax rate differential between the source and the host countries is a determinant of FDI, together with the tax autonomy of subnational governments. We observe no significant effects for high-income host countries.

In general, the evidence provided in this study points towards a positive effect of fiscal federalism on FDI, as the horizontal dimension trumps the vertical dimension when fiscal decentralisation is measured by tax autonomy at lower government levels. Naturally, further developments are necessary to confirm whether such effect is maintained for other groups of hosts, as data on tax autonomy is available only for OECD countries. An extension of the Tax Autonomy variable to other types of hosts can clarify the issue.

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DATA AVAILABILITY STATEMENT

I will provide the data after acceptance for publication with the exception of SDC data that is protected by property rights.

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APPENDIX

TABLE A1 Data and variables description.

Variable	Units	Source	Description
CBA_{ijt}	Count	SDC-Platinum Refinitiv, London Stock Exchange	Number of cross-border acquisitions between source and host countries
CBA_{ijt}	Count	Bloomberg	Number of cross-border acquisitions between source and host countries – robustness checks
$\sum GDP_{ijt}$	2015 Dollar (Trillion)	WDI – World Bank	Sum of real GDP of source and host countries
ΔGDP^2_{jit}	2015 Dollar (Trillion)	WDI – World Bank	Difference of real GDP between source and host countries squared
Population	Count (Million)	WDI – World Bank	Host country population
Area	km^2 (Thousand)	WDI – World Bank	Host country area
Distance	km (Thousand)	Glick & Rose	Distance between source and host countries' capital cities
Com. Border	Dummy	Glick & Rose	Dummy = 1 if source and host countries share a common border
Com. Language	Dummy	Glick & Rose	Dummy = 1 if source and host countries share an official common language
Market Cap.	Decimal	WDI – World Bank	Source country's yearly average market capitalization as % of GDP
REER	Index	WDI – World Bank	Host country's real effective exchange rate
Inflation	Decimal	WDI – World Bank	Annual change in consumer prices index
Free Trade	Dummy	Compiled WTO	Dummy = 1 if source and host countries are members of a Free Trade Agreement (either bilateral or multilateral)
Free Services	Dummy	Compiled WTO	Dummy = 1 if source and host countries are members of a Free Services Agreement (either bilateral or multilateral)
Custom Union	Dummy	Compiled WTO	Dummy = 1 if source and host countries are members of a Customs Union (either bilateral or multilateral)
Costs	Decimal	Doing Business – World Bank	Cost of starting a business as % of per capita GDP in host country
Time	Count	Doing Business – World Bank	Number of days to start a business in host country
Procedures	Count	Doing Business – World Bank	Number of procedures to be completed before starting a business in host country
GDP per capita	2015 Dollar	WDI – World Bank	GDP per capita of host countries

TABLE A1 (Continued)

Variable	Units	Source	Description
WGI Score	Index (0–5)	WGI – World Bank	Average of the rating of voice and accountability, regulatory quality, control of corruption, rule of law and government effectiveness in host country. All measures were first rescaled from (−2.5 to 2.5) to (0 to 5) and then normalised across the year. Interpolated values for years 1997, 1999 and 2001. Higher values indicate higher accountability
Property Rights	Index (0–100)	Heritage Foundation	Standardised rating of property rights protection in host country on a scale from 0 to 100 with changes every 10 points
Tiers	Count	Constitute Project, UNPAR, SNG, Statoids and Commonwealth	Number of governmental layers in host country updated for constitutional changes, different interpretation and new host countries in the sample, https://www.constituteproject.org/constitutions?lang=en&status=in_force&status=is_draft
Exp. Decent.	Decimal	GFS – IMF	Ratio of subnational government expenditure (local plus state level) to total government expenditure, https://www.constituteproject.org/constitutions?lang=en&status=in_force&status=is_draft
Rev. Decent.	Decimal	GFS – IMF	Ratio of subnational government tax revenues (local plus state level) to total government tax revenues, https://www.constituteproject.org/constitutions?lang=en&status=in_force&status=is_draft
Δ Corp. Tax_{ji}	Decimal	CBT Tax Database	Sum of federal tax rate, local tax rate taking into account surcharge and deductibility of local taxes
Tax Autonomy	Decimal	OECD	Tax autonomy of subnational levels as % of subnational taxes, https://stats.oecd.org/Index.aspx?DataSetCode=TAXAUTO