*The World Economy*

WILEY

The World Economy

ORIGINAL ARTICLE OPEN ACCESS

# High-Profile Attacks, Regimes of Criminal Governance and Foreign Direct Investment in Mexico

J. Eduardo Ibarra-Olivo[1] | Sandra Ley[2] | Covadonga Meseguer[3]

[1]Henley Business School, University of Reading, Reading, UK | [2]Tecnológico de Monterrey, Ciudad de México, Mexico | [3]ICAI-ICADE, Universidad Pontificia Comillas, Madrid, Spain

**Correspondence:** J. Eduardo Ibarra-Olivo (eduardo.ibarra-olivo@henley.ac.uk)

**Received:** 8 November 2024 | **Revised:** 22 April 2025 | **Accepted:** 7 May 2025

**Funding:** The authors received no specific funding for this work.

**Keywords:** crime | criminal governance | foreign direct investment | high-profile attacks | Mexico | political economy | violence

## ABSTRACT

This paper examines the influence of high-profile attacks (HPAs) on foreign direct investment (FDI) in Mexican municipalities. HPAs target political officials and signal attempts by organised criminal groups (OCGs) to dominate the local organisation of the communities under their influence. Such efforts to establish criminal governance controls can potentially create a stable environment conducive to FDI. Using a data set on HPAs and analysing their impact on sectoral FDI at the municipal level between 2007 and 2013 in Mexico, we find that HPAs do not discourage foreign investment. However, this effect depends on whether the establishment of criminal governance occurs amid widespread violence. Under conditions of generalised violence, the stabilising influence of HPAs has a negative effect on FDI, especially in the commerce and service sectors. Our findings offer new insights into the conditions under which organised crime affects FDI, contributing to an ongoing debate.

## 1 | Introduction

On June 13, 2007, Mario César Ríos Gutiérrez, a local legislator from Nuevo León, Mexico—a leading region for attracting foreign investment in manufacturing—was fatally shot multiple times with an AR-15 in the state capital, Monterrey (La Jornada 2007). The state of Guerrero, a top mining state with major investment by Canadian mining companies, was the second most violent state in terms of high-profile attacks perpetrated by organised crime between 1995 and 2014 (Trejo and Ley 2021). Mining municipalities such as Apaxtla, Cuetzala del Progreso, Teloloapan, La Unión de Isidoro Montes and Zihuatanejo, among others, saw the murders of former and current mayors, along with direct armed attacks against lower-level municipal authorities. Again and again, local officials have been killed with high-calibre weapons. In some cases, messages are left on the bodies of the deceased authorities, pointing to their collusion with criminal groups. In this paper, we explore whether attacks against political officials such as these shape foreign direct investment (FDI) decisions in Mexico. Using a unique data set on this type of high-profile attack (HPA) and exploiting variation in sectoral FDI at the municipal level, we study under what conditions HPAs trump foreign investments.

As widely documented, Mexico's so-called 'war on drugs' has turned the country into one of the most violent in the world (Shirk and Wallman 2015). Between 2007 and 2013—the period covered by this study—over 140,000 people were murdered. The national homicide rate rose sharply, increasing from 8.1 per 100,000 inhabitants in 2007 to 19.5 in 2013, with a peak in 2011 at 23.5 per 100,000 inhabitants (INEGI 2023). Thus, within just 6 years, Mexico's homicide rate increased by 140%, surpassing the regional average of 15.8 per 100,000 inhabitants for the Americas during the same period.[1] This sharp rise underscores both the rapid escalation and the severity of the country's violence crisis. Following the militarization of the Mexican security

strategy under the administration of President Calderón (2006–2012), and as cartel fights intensified, disappearances, kidnappings for ransom, extortion and human rights abuses reached record numbers (Trejo and Ley 2020). With the state security and judicial apparatus either incapable of countering organised criminal groups (OCGs) or often complicit with them, numerous sectors and groups were targeted by cartel violence. These included journalists, local business owners in various sectors, activists from civil society and local political officials (Ley and Guzmán 2019; Trejo and Ley 2020; Dorff et al. 2023; Trejo and Skigin 2024). Foreign firms have not been exempted from being targeted by organised crime, albeit less frequently than domestic businesses (Celis 2018; Ley and Guzmán 2019). For example, in 2012 the operations of a PepsiCo subsidiary suffered firebombing attacks by the Knights Templar in two different states (Ramos and Ashby 2017, 290; Ley and Guzmán 2019, 154). In 2015, criminals set fire to a branch of the U.S. firm Key Energy Services in the state of Tabasco (Garriga and Phillips 2023).

We engage with literature exploring how violent crime shapes foreign firms' investment decisions. The extant literature offers no unique answer to this complex question, but it does emphasise the need to distinguish among different types of economic sectors and different types of violence (Ashby and Ramos 2013; Oh and Oetzel 2017; Ramos and Ashby 2017; Witte et al. 2017; Blanco et al. 2019; Röell et al. 2022). To further the ongoing debate, we explore how the *political economy* behind high-profile attacks may affect inward FDI. Specifically, we argue that high-profile attacks signal an underlying process of political, societal and economic transformation through which OCGs seek to establish regimes of criminal governance. In these regimes, the OCGs' goal is to impose their own rules over political and economic actors, as well as the inhabitants of the communities under their influence. Ultimately, by murdering government and party officials, OCGs seek to expand their territorial control and opportunities for rent extraction (Arias 2017; Trejo and Ley 2020; Lessing 2021). What the existing qualitative research in Mexico shows us, and what we corroborate in our empirical analysis, is that international businesses may thrive or be unaffected in these settings (Correa-Cabrera 2017; López-Vallejo and Fuerte-Celis 2021). In short, we find that high-profile attacks do not necessarily deter foreign investment, leaving FDI broadly unaffected, or even increasing, in municipalities where this type of criminal governance prevails.

Furthermore, we also study whether criminal governance, as measured by high-profile attacks, takes hold in the context of OCG competition among the groups or under monopolistic structures. This scope condition shapes whether attacks are intermittent (under a monopolistic OCG structure) or, alternatively, whether the process of local takeover by criminal groups comes with frequent and indiscriminate violence (under a fragmented OCG structure). As recent research has shown (Garriga and Phillips 2023), cartel fragmentation and competition to control territory often result in visible and extreme violence that deters foreign investment. Using the municipal rate of homicides as a proxy for the context in which cartels attempt to gain territorial monopoly, we find that competition to establish a monopoly of criminal governance negatively moderates the positive or null effect of high-profile attacks on foreign investment. Taken together, these results show that previous contradictory results can be explained by considering (i) the local regimes of criminal governance as well as (ii) the permanent or sporadic character of violence, regardless of how extreme or visible it may be. Finally, as shown by our heterogeneous results across sectors, the type of investment and its reliance on local inputs and geographically concentrated business operations also matter, as well as the rents generated by the economic activity (Witte et al. 2017).

Empirically, we contribute to this debate using the Criminal Attacks Against Political Actors (CAPAM) data set on high-profile attacks against political officials and party activists in Mexico made available by Trejo and Ley (2020). We further contribute to this research agenda by exploring how the relationship between this specific type of criminal activity and foreign investment unfolds at the municipal level. To our knowledge, this is the first study of the impact of crime on FDI carried out at this level of subnational disaggregation, and as such, it sheds light on the relevance of the local dynamics of government, OCGs and Multinational Enterprises (MNEs) at the lowest level of administrative boundaries in Mexico. Importantly, the 2008–2013 period is critical for understanding the emergence of a new pattern of violence in Mexico. It coincides with the implementation of a militarised security strategy and a criminal decapitation approach by the federal government—both of which played a key role in fragmenting organised crime groups and fostering the rise of criminal governance (Calderón et al. 2015; Phillips 2015; Flores-Macías 2018). This period also marks the first major surge in high-profile attacks, an unprecedented development in the trajectory of criminal violence in the country.

## 2 | Subnational Regimes of Criminal Governance, High-Profile Attacks, and Foreign Direct Investment

### 2.1 | Subnational Regimes of Criminal Governance and High-Profile Attacks

Organised crime must be defined and understood in relation to the state, as it necessarily requires 'some form of state protection to exist' (Trejo and Ley 2020, 40). The protection networks that sustain organised crime lead, therefore, to an overlap between crime and the state. In this 'grey zone of criminality', some state agents provide both protection and information to criminal organisations in exchange for personal benefits or containment of violence in a region, sector or period (Snyder and Duran-Martinez 2009; Trejo and Ley 2020). This consequently implies that while organised crime groups might not have an interest in governing or taking over the state—unlike other non-state armed groups—criminal organisations do have political interests, because changes within the state greatly impact them. For instance, turnover among state authorities can affect their access to protection (Duran-Martinez 2015; Trejo and Ley 2020) and public security policy reforms can also shape organised crime's available resources (Lessing 2017).

At the same time, transformations within the state alter the criminal underworld. Protracted criminal wars are costly and therefore lead OCGs to diversify their resources. Their political interests and new economic needs steer criminal organisations into gaining control of local governments, populations and

natural resources. In this process, OCGs become de facto rulers and develop subnational criminal governance regimes through which they attempt to control the local organisation of the communities in which they operate (Trejo and Ley 2020). The development of criminal governance regimes is not necessarily violent. A context of criminal monopoly with a stable and solid 'grey zone' of criminality can 'naturally' lead to joint and collaborative provision of public order and enforcement of property rights between the two sets of actors, including the organisation of elections and the provision of goods and services (Arias 2017; Lessing 2021).

Political scientists concur on the three dimensions that OCGs attempt to control: society, economics and politics. The social dimension of criminal governance seeks to influence citizen behaviour—from establishing daily routines and conflict resolution mechanisms to regulating popular mobilisation and punishing reporting of crimes (Arias 2017; Lessing 2021). This type of control can be achieved through coercive and noncoercive means, including the provision of goods and services, as well as the direct use of violence against citizens. By controlling society, organised crime seeks to gain a deeper level of protection and collaboration between citizens and criminal groups (Magaloni et al. 2020). In this process, the 'grey zone' of criminality expands and incorporates society itself, which may also provide protection, information or rents to criminal groups in exchange for peace and order (Trejo and Ley 2020, 62).

Organised crime also tries to control the local economy, mainly through extortion and tax collection, while at the same time profiting from the exploitation of local natural resources (Lessing 2021). The study of economic controls and extortion efforts by organised crime has been dominated by a focus on the informal sector and microenterprises. These types of domestic businesses tend to have limited economic, political and social resources that would help them avoid the criminal extraction of rents, and they are the most likely to abandon their economic activity (Trejo and Ley 2020) unless they can organise collectively to resist crime (Moncada 2022). In contrast, MNEs are more likely to have political connections and sufficient financial resources to not only pay extortion rents but even benefit from collusion agreements between organised crime and the state, which sustain criminal governance regimes and can potentially yield order and stability for their investments (Correa-Cabrera 2017; López-Vallejo and Fuerte-Celis 2021).

Finally, the political dimension of criminal governance includes the use of violent and nonviolent means to influence campaigns, candidate selection, voter behaviour and to infiltrate local governments. As such, armed attacks of this type are more likely to occur during the campaign and close to election day to control and gain protection from new potential incoming authorities, particularly at the local level, at which organised crime operates (Trejo and Ley 2020). Nonetheless, high-profile attacks are not limited to electoral processes but occur throughout the election cycle and can be used for other purposes beyond protection. For example, criminal groups may use high-profile attacks as a sign of their local strength in a dispute over a given territory, to extract rents in resource-rich localities or to take revenge on authorities who did not behave the way the criminal organisation wanted them to (Trejo and Ley 2020).

Both social and economic control mechanisms are not, however, easily observable. In contrast, violence committed against political figures is not only noticeable but could also be signalling other underlying processes of criminal control that organised crime is attempting to establish at a social and economic level. The ability of organised crime to attack local authorities and candidates is only the beginning of broader developments in local politics, from the capture of government resources to infiltration of the security apparatus (Trejo and Ley 2021). Our main point is that these processes may result in fully functional regimes of criminal governance, in which FDI activities by foreign firms may thrive or remain untouched.

## 2.2 | Foreign Direct Investment and Violence

There is no dearth of research on the relationship between crime and foreign direct investment; but there has been little theorisation on this relationship, particularly when it comes to thinking about the role that subnational politics and the local dynamics of organised crime, and responses to it, may play in FDI decisions. Organised crime—that is, activities by OCGs related to the supply of illegal goods and services (Schelling 1971)—is often associated with a reduction in foreign direct investment (Oh and Oetzel 2017).[2] OCGs shape the risk environment, increasing the costs of these investments, be it due to extortion, kidnappings, disruptions of supply chains or changes in local demand. As a result, criminal activities often imply an increase in the costs of *doing business*; MNEs need to invest ex ante in careful risk-assessment exercises, and ex post in risk management, which entails investing in higher security budgets and in salary premia to attract or retain workers (Brown and Hibbert 2019, 1230). Organised crime is thus an important *hassle* factor (Schotter and Beamish 2013) and a locational disadvantage (Brown and Hibbert 2017) that deters FDI. This result has been found to hold at the subnational level in Russia (Brock 1998), Italy (Daniele and Marani 2011) and in a considerable number of crossnational studies ranging from Latin America (Blanco et al. 2019) to advanced countries (Brown and Hibbert 2017, 2019). Importantly, some of these studies look at different types of crimes (Blanco et al. 2019; Cabral et al. 2019) and at different sectors and industries (Blanco et al. 2019; Brown and Hibbert 2019), finding that foreign direct investment in some sectors appears to be unaffected by violence.

Along similar lines, an extensive scholarship explores how political conflict, broadly understood, affects MNEs' decisions to invest, divest or continue operations in a specific location. Researchers have explored the impact of civil and interstate wars (Biglaiser and DeRouen 2007), terrorism (Skovoroda et al. 2019), human rights violations (Wettstein et al. 2019), government corruption (Egger and Winner 2005; Oh and Oetzel 2017; Witte et al. 2017; Zakharov 2019; Röell et al. 2022; Chih et al. 2023) and generic 'crises' and 'disruptions' (Busse and Hefeker 2007; Oetzel et al. 2007; Witte et al. 2017) on foreign businesses' investment decisions. Not only do different types of violence lead to different types of risk, and therefore different responses by MNEs, but the type of investment and its reliance on local inputs and geographically concentrated business operations also matter, as well as the rents generated by the economic activity (Witte et al. 2017).

Foreign direct investment in the natural resource sector is the best example of both strong location constraints and high economic rents that may not deter multinationals in the sector from investing nor cause disinvestment in the presence of local and sporadic crimes (Witte et al. 2017).[3] High economic rents enable profitable business even in the presence of high taxes and royalty payments, as well as other 'extra costs' and risks such as bribes and extortions (Witte et al. 2017; Skovoroda et al. 2019). In contrast, FDI in sectors such as services and commerce faces lower sunk costs and is more heavily dependent on access to large markets, whose size may be affected by the relocation of businesses and consumers in response to crime. These factors make MNEs operating in this sector more vulnerable to crime (Ashby and Ramos 2013; Witte et al. 2017; Blanco et al. 2019; Brown and Hibbert 2019). Finally, FDI in manufacturing can serve safe distant markets even if they are established in areas of high crime, thereby reducing their exposure to criminal activities (Ashby and Ramos 2013).

In sum, extant research returns a nuanced understanding of how different types of conflict may or may not impact foreign direct investment, depending on relevant attributes of both violence and sector features. In Mexico, research by economists has reported a reduction in FDI due to an increase in organised crime (Madrazo Rojas 2009; Cabral et al. 2019). But sectoral heterogeneity is present. For example, using industry data on inward FDI across Mexican states, Ashby and Ramos (2013) report a reduction in FDI in financial services, commerce and agriculture, but no effect of organised crime on FDI in manufacturing, while the oil and mining sectors receive increasing FDI. Why are there such seemingly contradictory results? In our view, a political economy approach offers a rich perspective for understanding these disparate results.

### 2.3 | FDI and Criminal Governance: A Political Economy Approach

Foreign firms' strategies have varied implications in terms of investment decisions amid violent crimes. Collusion between local governments, MNEs and criminals may result in a peaceful environment in which the three parties can thrive (Correa-Cabrera 2017; López-Vallejo and Fuerte-Celis 2021). To illustrate this argument, López-Vallejo and Fuerte-Celis (2021, 103) show that despite the presence of organised crime groups, new foreign direct investments in energy projects still occurred in northeastern Mexico. In this case, multinationals, states and criminals; legal and illegal markets, overlap to produce 'hybrid' governance regimes by which criminal groups control territories and extract rents, but in exchange they reduce violence, and provide public services such as security and illegal goods. Hybrid governance—an extended 'grey zone' of criminality, as discussed above—is based on collusion between businesses reliant on these illegal goods, state governments benefiting from corruption and criminal groups (Correa-Cabrera 2017; López-Vallejo and Fuerte-Celis 2021; Stevens and Newenham-Kahindi 2021; Röell et al. 2022). Similar willingness to comply with criminals' demands, as well as negotiating with criminal groups in exchange for protection, has been reported by other scholars. For example, Ley and Guzmán (2019, 154) describe the case of McEwen Mining in Guerrero, a Canadian MNE which, besides paying extortion fees, coordinated its activities with cartels.[4]

High-profile attacks by organised crime against authorities and political candidates could negatively influence economic decisions, including investment, because high-profile attacks may signal to MNEs a weak rule of law that could jeopardise their property rights and revenues. However, following the discussion above, it is important to acknowledge that there are conditions that may limit the potential negative effects of high-profile attacks for foreign direct investment decisions. First, in a context of territorial *monopoly* and strong collusion with the state, high-profile attacks are sporadic and may ultimately help sustain and strengthen the 'grey zone' of criminality and extend criminal control over society by expanding and consolidating their political influence, ultimately increasing stability and order for economic actors, including foreign firms. And second, foreign firms are likely to be better equipped to pay extortion fees and remain competitive (Röell et al. 2022), while at the same time benefiting from collusion agreements between the state and organised crime. From this perspective, the 'grey zone' of criminality extends and incorporates foreign businesses that are themselves willing and able to pay extortion fees that feed criminal activities, in addition to state authorities being willing to protect organised crime and foreign firms (Correa-Cabrera 2017; López-Vallejo and Fuerte-Celis 2021). Taken together, these alternative mechanisms imply that the weakening effect of high-profile attacks on the rule of law may be largely mitigated from the perspective of multinationals.

In sum, when operating in contexts of high-profile crimes, through which criminal organisations signal the setting up of a hybrid regime of criminal governance, foreign businesses might not opt for leaving and instead choose to relocate part of their business or personnel, comply with criminal extortions or evaluate these costs against the rents they can obtain, and the incentives local authorities can offer. In all these situations, we hypothesise that high-profile attacks have a stabilising effect on foreign direct investment.

**H1.** *FDI may either be unaffected or may even thrive in the presence of HPAs in a particular location.*

However, we argue that there is an important scope condition for this hypothesis to hold, and this relates to whether the constitution of hybrid regimes is a monopolistic process or not. If state protection is unstable and no single criminal organisation has territorial monopoly, attempts to conquer unprotected territories can lead to turf wars among OCGs. In the context of a poor rule of law, violence is likely to intensify, particularly because criminal organisations, by definition, seek to establish territorial monopolies. In such a context, while high-profile attacks may still be relatively contained, violence against civilians is generalised, highly visible and, most importantly, sustained over time (Garriga and Phillips 2023). The combination of HPAs, turf wars and the widespread violence they generate have a permanent impact on local democracy: insecurity deepens, and the rule of law is further weakened; public resources are diverted, and policy becomes distorted (Arias 2017). Observing HPAs *and* generalised crime against civilians, foreign firms may

find that property rights are not sufficiently secured and that they are incurring too many risks, so they may opt for not investing or divesting. In other words, when high-profile attacks occur against a background of intense cartel fragmentation and competition, attacks are less likely to be 'anecdotal'. In these instances, foreign direct investment may not be so resilient, especially in economic sectors less attached to location. Therefore, we hypothesise that,

**H2.** *The stabilising effect of HPAs on FDI is negatively moderated by the spread of violence against civilians.*

Finally, as said before, the functional and stable environments created by a monopolistic OCG should be attractive conditions for multinationals across *all* economic sectors (H1). However, if there is intercartel competition, and violence becomes generalised as a result, the stabilising effect of high-profile attacks is expected to *vary* across sectors (Ashby and Ramos 2013; Witte et al. 2017). For instance, in the case of manufacturing, MNEs may not be deterred from investing and remaining in high-crime locations providing they can serve distant, safer markets (Ashby and Ramos 2013). In contrast, in natural resource-dependent sectors such as mining and oil extraction, which face high location constraints and high sunk costs, MNEs may have an incentive to learn to cope with the greater risks associated with indiscriminate violence instead of exiting (Brown and Hibbert 2019). Finally, a combination of lower sunk costs and fewer location constraints is likely to prompt MNEs operating in commercial and service activities to revise their foreign direct investment strategy amid increasing rates of crime (Daniele and Marani 2011; Ashby and Ramos 2013; Witte et al. 2017; Blanco et al. 2019; Brown and Hibbert 2019). Therefore, we add nuance to the negative moderating effect of generalised crime as spelled out before.

**H3.** *The stabilising effect of HPAs on FDI and the negative moderation effect of generalised violence is distinctively shaped by the characteristics of the FDI-recipient sector.*

## 3 | Data and Empirical Strategy

### 3.1 | Data

Our data set comprises a balanced panel of 1989 municipalities and a 6-year period from 2008 to 2013, yielding a total sample size of 11,481 municipality-year observations. Data were collected from various sources. The dependent variable, foreign direct investment inflows, is sourced from the Economic Census by the *Instituto Nacional de Estadística, Geografía e Informática* (INEGI 2004, 2009, 2014). The main independent variable, high-profile criminal attacks, HPAs, is taken from Trejo and Ley (2020). The rest of the explanatory variables (controls) were collected from various sources as indicated in Table A1, along with summary statistics, definitions, construction and operationalisation of the variables.

Our dependent variable, FDI, measures the amount of foreign direct investment in municipality $i$ and year $t$, expressed in thousands of constant Mexican pesos. It is constructed using firm-level data from the national statistical bureau, aggregated at the municipal level and reflects the net value of total assets held by firms with positive foreign ownership. The original figures are then log-transformed to reduce skewness.[5] The spatial distribution of FDI across municipalities at the end of our study period is shown on the map (Figure 1). We also provide FDI figures by economic sector; Table 1 shows the distribution of FDI in different sectors by municipality size. In particular, the municipalities below fifty thousand inhabitants, which include around 65% of the high-profile attacks, receive a combination of FDI inflows across the manufacturing, services, commerce and mining and oil sectors.

The main independent variable, high-profile criminal attacks, is a count variable recording the number of attacks fin municipality $i$ and year $t$. The CAPAM data set was collected by Trejo and Ley (2021). This original data set draws on a systematic analysis of 8 national newspapers, 18 subnational daily papers and 2 weekly magazines that specialise in drug trafficking and organised crime news. It provides detailed information on criminal attacks against government authorities, political candidates, and party activists perpetrated during the period 2007–2013. Moreover, besides murders, the database provides information on murder attempts, public death threats and kidnappings (Trejo and Ley 2020, 299, appendix B). As noted, this was the first period in Mexico's recent history to have experienced a wave of criminal attacks against political figures along with a major increase in homicide-related deaths.

The spatial distribution of these criminal attacks is shown on the map in Figure 2. The changes in the incidence of attacks are striking. While in 2007 they were concentrated in some municipalities on the northern border and the southwest and southeast regions, 6 years later these crimes were not only more widespread across Mexico (notably in the central and central-north regions), but their numbers dramatically increased, totalling 356 in the period of study. The cumulative count of HPAs during our study period by municipality size is shown in Figure 3. It emerges that the bulk of these attacks were perpetrated in relatively small, semiurban municipalities.

Next, cartel fragmentation and competition, which engender the general climate of violence, should be accounted for as a conditioning factor, given their proven impact on FDI (Garriga and Phillips 2023). Unfortunately, data on cartel fragmentation for our period of study are available only at the state level, but as a proxy, given that OCG fragmentation likely results in indiscriminate violence and high-crime rates against the general population, we control for the moderating effect of *homicide rates*[6] at the municipal level. In this way, we can get close to the fact that while HPAs may be targeted, sporadic and intermittent, they may occur against a background of sustained violence when OCGs fight to establish their territorial monopoly. In the robustness tests, we show that our main finding is robust to including the number of cartels as a control.

The controls included in our estimations are also important determinants of locational choices of foreign direct investment. First, we control for coordination/conflict between incumbent political parties at different administrative levels, proxied by a *party juxtaposition* index in which higher levels indicate lower ideological alignment of political parties. Party juxtaposition

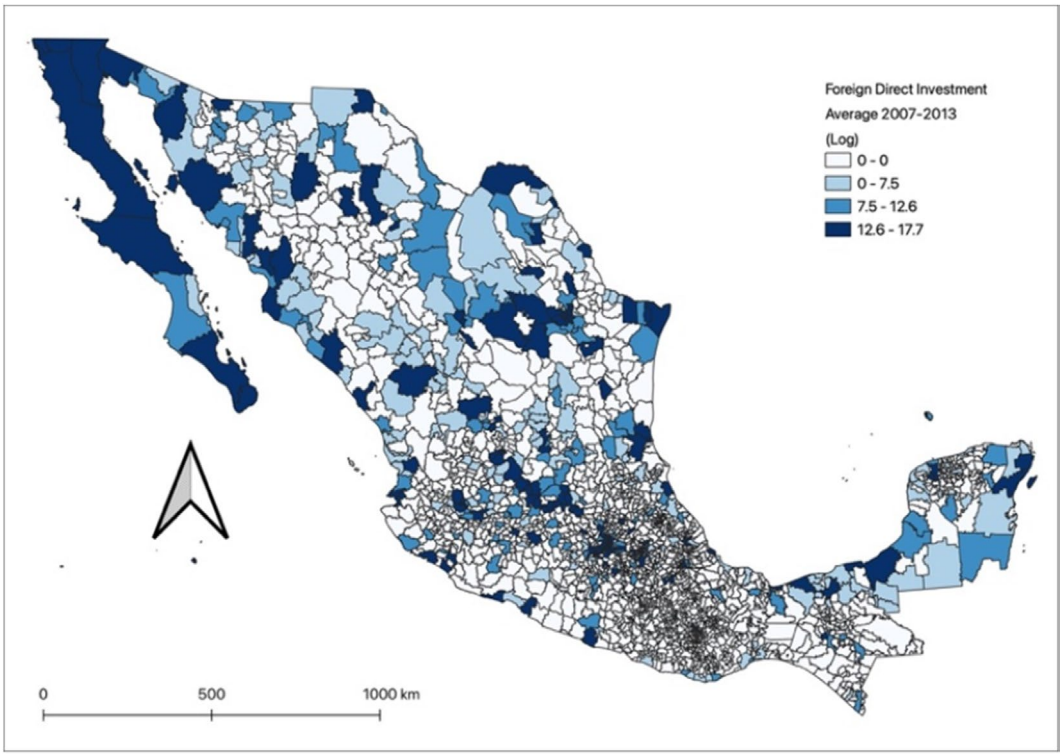


**FIGURE 1** | Spatial distribution of foreign direct investment (FDI). Average foreign direct investment during the study period (2007–2013). *Source:* Authors' calculations with data from INEGI (2004, 2009, 2014). [Colour figure can be viewed at wileyonlinelibrary.com]

**TABLE 1** | Foreign direct investment by sector and municipality size.

| | Municipalities by population size | | | | | |
|---|---|---|---|---|---|---|
| **Sector** | **>500,000** | **500,000–100,000** | **100,000—50,000** | **50,000—10,000** | **10,000 >** | **Total** |
| Manufacturing | 5,100.12 | 1,017.04 | 439.24 | 16.51 | 0.00 | 6,572.90 |
| Services | 1,994.13 | 514.69 | 6.40 | 2.50 | — | 2,517.73 |
| Commerce | 623.77 | 131.58 | 4.98 | 0.18 | 0.01 | 760.51 |
| Mining and Oil | 151.09 | 233,000 | — | 0.23 | — | 233,151.31 |
| Other | 324.13 | 56.57 | 0.04 | — | — | 380.74 |
| Total | 8,193.23 | 234,719.9 | 450.65 | 19.42 | 0.01 | 243,383.18 |

*Note:* Figures represent the yearly average foreign investment flows (2007–2013), in million Mexican pesos. The 'Other' category includes agriculture, construction and transportation.
*Source:* Authors' calculations with data from INEGI (2004, 2009, 2014).

appears to leave municipalities of a different party label from that at the federal and state level in a particularly vulnerable situation, which in turn makes them more prone to being targeted by OCGs (Trejo and Ley 2021). As noted earlier, this may or may not shape FDI inflows; but we control for this variable since party conflict can shape MNEs' decisions via other routes, for instance, through access to politicised state protection.

Second, as a measure of the strength and stability of formal institutions and governments at the municipality level, we control for the *number of public prosecutor offices* per 1000 inhabitants, as well as for the percentage of municipal income raised through *local tax collection* as an indicator of judiciary and state capacity, both of which are expected to affect foreign investment in a positive direction (Comi et al. 2021). Third, we include three additional control variables traditionally associated with foreign direct investment: (i) the size of the economy is proxied by the *(log of) total gross value added*, and we expect this variable to attract foreign investors, (ii) local labour costs are an important locational consideration for multinational firms; thus, we include the *(log) average wages*, as we expect low wages to be attractive to foreign investors, and finally (iii) the *(log) population density* is included as a measure of labour market pool, market size and potential for externalities. This last variable is used as the selection variable in our estimations because it constitutes a good all-encompassing proxy for labour market pool, market density and potential for externalities. All these factors play a crucial role in determining firms' locational choices.

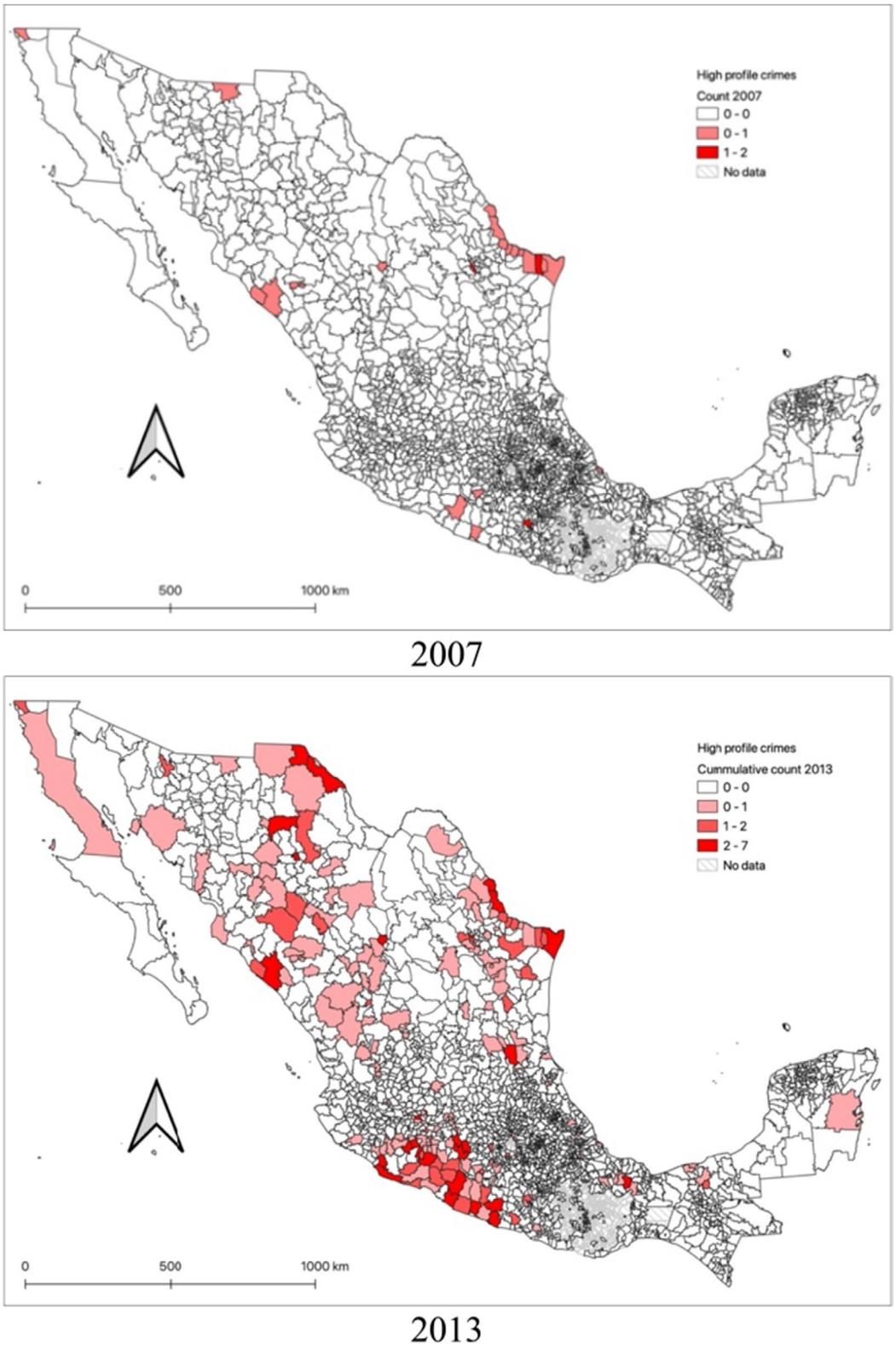


**FIGURE 2** | Spatial distribution of high-profile attacks (HPAs). The maps show the count of HPAs at the beginning (top) and end (bottom) of the study period (2007–2013). *Source:* Authors' calculations with data from Trejo and Ley (2021). [Colour figure can be viewed at wileyonlinelibrary.com]

### 3.2 | Empirical Strategy

$$FDI_{it} = \beta HPA_{it-1} + \epsilon_{it} \quad (1)$$

Our empirical strategy at the municipality level exploits the year-on-year variation in FDI to estimate its association with HPAs. The general empirical model takes the following functional form:

for municipality $i$ and year $t$. The dependent variable, $FDI_{it}$, captures the volume of foreign direct investment, as the total value of foreign assets. Our main independent variable, $HPA_{it-1}$

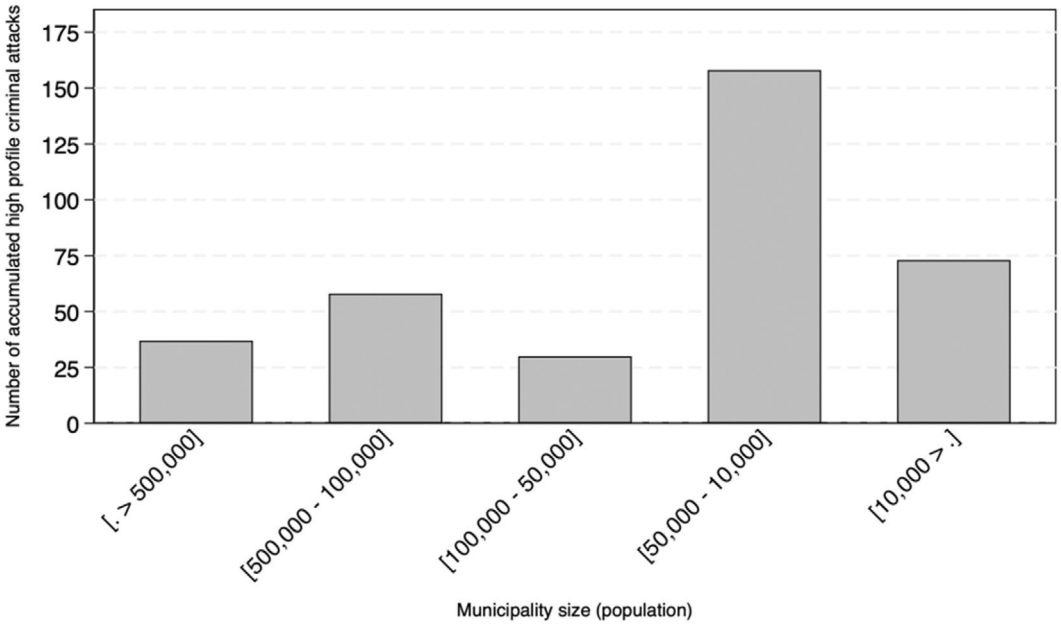


**FIGURE 3** | Cumulative high-profile attacks by municipality size. The chart shows the distribution of the accumulated count of HPAs during the study period (2007–2013). *Source:* Authors' calculations based on data from Trejo and Ley (2021).

, is the count variable measuring the number of high-profile criminal attacks in the previous year, and $\varepsilon_{it}$ is the error term.

We identify two main threats to the internal validity of our estimates of the effect of high-profile attacks on foreign direct investment in Equation (1). First, omitting municipality characteristics correlated with the error term may lead to biased estimates of the effect of HPAs. To partly address the potential omitted variable bias, we account for some of the time-varying socioeconomic, demographic and political factors that are also associated with FDI by including a vector of controls. Furthermore, once a foreign firm has chosen to invest in Mexico, it must choose a municipality to invest in. Hence, whether we observe the foreign direct investment in a given municipality depends on MNEs' decision to invest; for example, MNEs may be reluctant to invest in contexts of rampant crime and insecurity due to uncertainty and the additional costs of protecting against this risk. We are thus left with a nonrandom sample to estimate our FDI equation. However, since we also have municipalities that did not receive any FDI (Nayyar and Luiz 2023), the presence of self-selection can be treated as an omitted variable bias (Heckman 1979). To address this incidental truncation problem, we estimate an equation to capture the effects of the covariates on the probability of FDI in a first step: The selection equation is defined by a probit model to estimate the effect of our independent variables on the probability of inward foreign direct investment in a given municipality and time period.

$$p\left(fdi_{it}\right) = \beta_1 HPA_{it-1} + \theta_1 X_{it-1} + \delta_t + u_{it} \tag{2}$$

where $p(\cdot)$ denotes a probability function, $fdi_{it}$ is a dichotomous variable equal to one if there is a positive amount of FDI in the municipality-year and zero otherwise. The main explanatory variable $HPA_{it-1}$ is the number of attacks in municipality $i$ in the previous year $t-1$. $X_{it-1}$ is a vector of the complete set of controls (which includes a selection variable), and $\delta_t$ is a vector of year effects. The error term is denoted by $u_{it}$. In a second step, once the selection bias has been accounted for, we estimate the effect of HPAs on the extent of FDI by means of a fixed-effect generalised least squares regression. The outcome equation, including a selection term, has the following functional form,

$$FDI_{it} = \beta_2 HPA_{it-1} + \theta_2 X^s_{it-1} + \eta\widehat{\lambda}_{it-1} + \alpha_i + \delta_t + \upsilon_{it} \tag{3}$$

The outcome $FDI_{it}$ is the *amount* of foreign direct investment in municipality $i$ and year $t$. The variable of interest, $HPA_{it-1}$, is the same as in Equation (2). The lagged vector $X^s_{it-1}$ is a given subset of determinants of FDI.[7] The estimated inverse Mills ratio, $\widehat{\lambda}_{it-1}$, is obtained from the first step and controls for selection bias, while $\alpha_i$ is the fixed effect that captures time-invariant unobserved heterogeneity across municipalities. Year effects are captured by $\delta_t$. Finally, $\upsilon_{it}$ is the error term of the second stage.

While Equation (3) describes *the amount* of foreign direct investment in municipalities, Equation (2) describes whether a municipality has received positive FDI inflows. The distribution of the error terms $\left(u_{it}, \upsilon_{it}\right)$ is assumed to be bivariate normal with correlation $\rho$. If $\rho \neq 0$, the two equations are related and estimating only *FDI* would induce sample selection bias in the estimate of $\beta$.

The second source of endogeneity is reverse causality. This may arise insofar as foreign direct investment influences the number of criminal attacks against political officers. For instance, it could be the case that the arrival of a foreign firm could potentially translate into new, illegal business opportunities. In the attempt to control these new investments, criminals may want to get rid of noncooperative political officers, impacting HPAs. Introducing the independent variables in

**TABLE 2** | First step of Heckman equation, selection regression.

| Dep. var. *Foreign direct investment (dichotomous)* | (1) Total | (2) Manufacturing | (3) Services | (3) Commerce | (4) Mining and oil |
|---|---|---|---|---|---|
| High-profile criminal attacks (HPAs) | −0.0246 | 0.1407 | 0.2809*** | 0.1827** | 0.4807*** |
| | (0.075) | (0.091) | (0.099) | (0.075) | (0.152) |
| Homicides | 0.3661*** | −0.03049 | 0.3096** | 0.2888*** | 0.2672 |
| | (0.071) | (0.143) | (0.146) | (0.069) | (0.184) |
| HPAs * Homicides | −0.195** | −0.03931 | −0.1032 | −0.353*** | −0.3519* |
| | (0.087) | (0.136) | (0.150) | (0.093) | (0.209) |
| Political party juxtaposition | −0.04597*** | −0.04092*** | −0.03796** | −0.02133** | −0.08252 |
| | (0.010) | (0.014) | (0.019) | (0.010) | (0.042) |
| Public prosecutor offices | 2.559*** | −1.595* | 4.127*** | 1.754*** | 2.926** |
| | (0.492) | (0.871) | (1.000) | (0.552) | (1.262) |
| Tax revenue | 0.04127*** | 0.03243*** | 0.06749*** | 0.03471*** | 0.01551 |
| | (0.005) | (0.004) | (0.005) | (0.004) | (0.011) |
| Gross value added | 0.8965*** | 0.7156*** | 0.7863*** | 0.7819*** | 0.37*** |
| | (0.022) | (0.027) | (0.037) | (0.021) | (0.067) |
| Average wages | −0.05636*** | −0.01839*** | −0.06757*** | −0.0703*** | −0.01221 |
| | (0.004) | (0.005) | (0.008) | (0.004) | (0.014) |
| Population density | −0.1906*** | −0.07005*** | −0.01249 | −0.1929*** | −0.2239*** |
| | (0.015) | (0.018) | (0.024) | (0.015) | (0.055) |
| Observations | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 |
| Log likelihood | −2,266.9833 | −1,217.7264 | −696.94418 | −2,126.7422 | −122.09414 |
| Pseudo $R^2$ | 0.6170 | 0.6205 | 0.6946 | 0.5611 | 0.3968 |
| Year dummies | Yes | Yes | Yes | Yes | Yes |

*Note:* Dependent variable is a dichotomous variable equal to 1 if there is foreign direct investment and equal to 0 otherwise. Main independent variable is the cumulative count of high-profile criminal attacks. Clustered standard errors at the municipality level in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

one-year lags serves, then, a twofold purpose.[8] First, they partially mitigate the simultaneity issue since it is hardly likely that changes in current FDI could explain changes in the explanatory variables in the past. Secondly, lagged independent variables capture the necessary time for investment decisions to be made.

Finally, our main explanatory variable, high-profile attacks, includes many zeros, indicating no high-profile attacks were recorded in those municipalities. To address this issue of zero-inflated independent variables, we estimated an additional specification including a dichotomous variable, equal to 1 if at least one HPA was recorded, and zero otherwise. The estimated coefficient of the dummy variable captures the effect of the mere occurrence of high-profile attacks on foreign direct investment. The original count variable estimates the effect of the number of HPAs on FDI in municipalities where attacks were recorded, capturing the relationship between the frequency of HPAs and changes in FDI.[9]

## 4 | Results and Discussion

We model how attacks against political officials affect foreign direct investment decisions. Since the possibility of observing positive amounts of FDI in a municipality depends on multinationals' decisions to invest, we have a nonrandom sample to estimate the relationship of interest.

### 4.1 | Propensity of FDI Inflows

To test H1, we first examine the main effect of high-profile attacks on the probability of foreign direct investment inflows at the municipal level. Table 2 presents these first stage estimates and reveals sectoral heterogeneity: While HPAs increase the likelihood of FDI in services, commerce and natural resources, the effect on manufacturing is not significant.

The result for the mining and oil sector echoes previous findings regarding crime and foreign direct investment in the

resource sector, where high sunk costs and profitable contracts are at stake (Ashby and Ramos 2013; Witte et al. 2017; Blanco et al. 2019; Brown and Hibbert 2019; Röell et al. 2022). At the municipal level, multinationals in the natural resource sector not only are not deterred by 'grey zones' of criminal governance but often benefit from these.[10] Illustrating this finding, between 2005 and 2011, the 'Los Zetas' cartel in the state of Coahuila was linked to large mining enterprises 'and with the state government's stealing coal and selling it through middlemen to the government's Federal Electricity Commission' (López-Vallejo and Fuerte-Celis 2021, 115). As explained, hybrid governance is based on collusion between businesses reliant on these illegal goods, state governments benefiting from corruption and criminal groups. Such collusion has been associated with higher FDI inflows.

Interestingly, despite prior work identifying commerce and services as more sensitive to crime due to their lower locational dependence (Ashby and Ramos 2013; Ramos and Ashby 2013; Witte et al. 2017; Blanco et al. 2019; Brown and Hibbert 2019) we observe a similar pattern in these sectors: Municipal-level disaggregation suggests that profitable business and collusion with OCGs may explain why, in the presence of isolated high-profile attacks, we do not find a decrease in the probability of new investments in commerce and services.

To test H2, we examine whether the effect of HPAs is conditional on broader violence by interacting HPAs with homicide rates, a proxy for background crime linked to cartel fragmentation (Rios 2013; Phillips 2015).[11] If the establishment of criminal governance regimes may take place in a context of sustained and indiscriminate violence, we expect the probability of new FDI inflows to decrease. As shown in Table 2, homicide rates have a positive and significant main effect on FDI in commerce and services. This seemingly paradoxical result may reflect marginal deterrence: in already high-crime areas, additional homicides may not significantly alter risk perceptions, particularly for firms deploying ex ante risk-assessment strategies (Brown and Hibbert 2019).[12]

The interaction results indicate that the effect of HPAs on foreign direct investment is conditional on the broader security context. In other words, the influence of HPAs on FDI operates within specific scope conditions, specifically the level of background violence. Figure 4 presents a plot of the average marginal effects of high-profile attacks (main effect and interaction) on the predicted probabilities of foreign direct investment at different levels of homicide rates, based on the coefficients in Table 2.[13] Across sectors, the downward sloping curves suggest that the effect of HPAs on the probability of FDI is generally positive at relatively low levels of background crime but becomes negative as generalised crime increases.

We find consistent evidence in favour of hypothesis H2: At relatively low homicide rates—suggestive of more stable or less contested environments—HPAs may be interpreted by investors as a signal of consolidation or hybrid governance, potentially reducing uncertainty and enabling investment. However, as homicide rates increase, reflecting heightened criminal competition and fragmentation, the effect of HPAs on FDI diminishes or becomes negative. These findings suggest that the stabilising signal of HPAs is conditional on the broader context of violence: Only beyond certain thresholds of insecurity do these attacks cease to convey conditions amenable to investment.

Consistent with H3, sectoral heterogeneity is evident in the varying slopes and significance levels of the average marginal effects of HPAs. Four key patterns emerge. First, in mining and oil, HPAs significantly increase FDI at moderate crime levels, but lose significance at higher homicide rates, pointing to high-rent-seeking investment in 'grey zones' of governance. Second, in commerce, the effect of HPAs on FDI is positive only at very

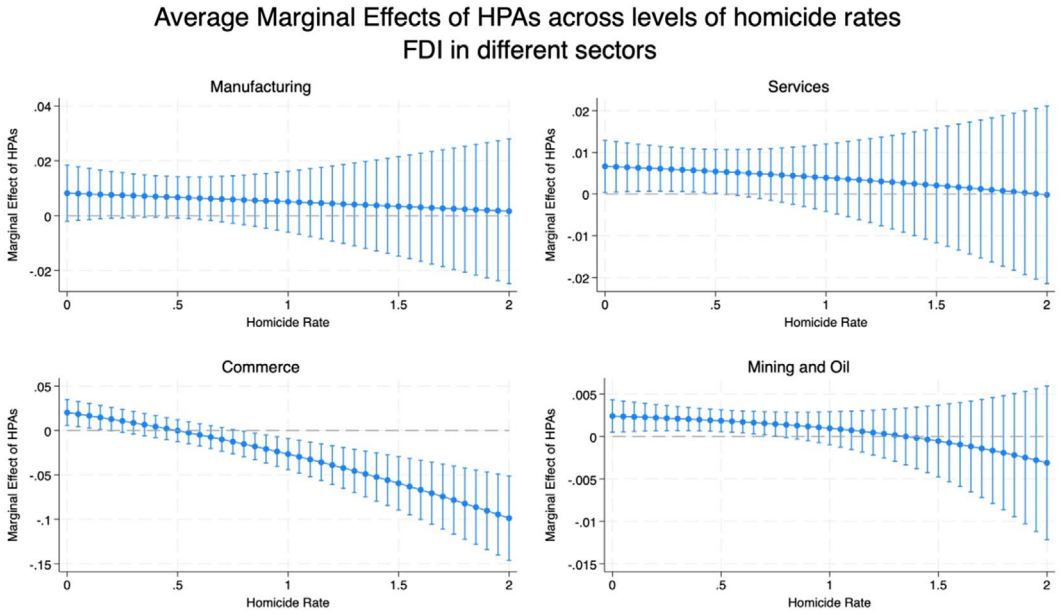


**FIGURE 4** | Predicted probabilities of FDI: The moderating effect of generalised crime. Average estimated marginal effects of HPAs on predicted probabilities of sectoral FDI at different levels of homicide rates, holding the rest of covariates at their mean values. [Colour figure can be viewed at wileyonlinelibrary.com]

low levels of crime but turns sharply negative and significant as homicide rates rise, highlighting this sector's vulnerability to compounded insecurity.

Third, manufacturing appears largely unaffected by HPAs across all crime levels, suggesting strong resilience of the sector. Fourth, in services, HPAs initially boost FDI, but this effect fades as violence intensifies—indicating a degree of resilience relative to commerce. The commerce sector's vulnerability is consistent with previous findings that identify it as a primary target of OCG extortion (Arias 2017; Trejo and Ley 2020, 265, 270). From pharmacies to restaurants, criminal groups have disrupted access and conditions of local markets, making foreign firms particularly responsive to the deteriorating security environment (Trejo and Ley 2020, 270).

Finally, turning to other factors influencing the probability of foreign direct investment, higher wages, population density[14] and political party juxtaposition decrease the probability of FDI inflows, while higher density of public prosecutor offices, tax revenue and the size of the economy (GVA) increase the probability of FDI. The effects of these variables vary across sectors, strengthening the argument of sector heterogeneity in foreign investments. Importantly, the main findings are robust to using the number of cartels (only available at the state level) instead of homicide rates to capture the context of violence (Table A3).

### 4.2 | Levels of FDI Inflows

In the second stage of our analysis, we account for potential selection bias in foreign direct investment inflows by including the inverse Mills ratio from the first-stage estimates. Table 3 presents the second-stage results. To test H1 and H2—namely, that isolated high-profile attacks may not deter FDI, but that their effect becomes negative when combined with sustained violence—we estimate the effect of HPAs on subsequent investment inflows into municipalities where FDI operations are already established. We then examine how this relationship varies across sectors (H3).

**TABLE 3** | Second step of Heckman equation, main regression with sample selection correction.

| Dep. var. *Foreign direct investment (continuous)* | (1) Total | (2) Manufacturing | (3) Services | (3) Commerce | (4) Mining and oil |
|---|---|---|---|---|---|
| High-profile criminal attacks (HPAs) | −0.1302 | −0.1491 | 0.3875* | 0.3595** | −4.979 |
| | (0.143) | (0.231) | (0.231) | (0.141) | (3.832) |
| Homicides | 0.4894*** | 0.6808 | 1.402** | 0.2682 | 0.3325 |
| | (0.161) | (0.555) | (0.694) | (0.219) | (10.699) |
| HPAs * Homicides | 0.06396 | −0.07814 | −0.4106 | −0.4127** | 3.008 |
| | (0.169) | (0.281) | (0.287) | (0.176) | (6.314) |
| Political party juxtaposition | −0.0194 | −0.01309 | 0.05778 | −0.05595** | 1.464 |
| | (0.027) | (0.054) | (0.059) | (0.027) | (1.591) |
| Public prosecutor offices | −1.229 | −6.021** | 5.087 | 5.346*** | 91.42 |
| | (1.330) | (2.967) | (3.286) | (1.632) | (50.742) |
| Tax revenue | 0.067*** | −0.02267 | 0.2276*** | 0.09467*** | −0.2868 |
| | (0.008) | (0.017) | (0.023) | (0.009) | (0.356) |
| Gross value added | 1.486*** | 0.6524*** | 1.865*** | 1.896*** | −2.605 |
| | (0.067) | (0.226) | (0.261) | (0.085) | (2.687) |
| Average wages | −0.04748*** | 0.02338 | −0.152*** | −0.1428*** | 0.4083 |
| | (0.010) | (0.019) | (0.031) | (0.013) | (0.482) |
| Mills ratio | −0.5985*** | −1.72*** | 1.603*** | 1.178*** | −15.22** |
| | (0.186) | (0.586) | (0.512) | (0.230) | (7.708) |
| Observations | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 |
| Selected observations | 2,735 | 1,081 | 664 | 1,895 | 34 |
| Wald $\chi^2$ | 1,378.11 | 91.92 | 142.55 | 1,340.16 | 11.21 |
| Year dummies | Yes | Yes | Yes | Yes | Yes |

*Note:* Dependent variable is foreign direct investment measured as the total variation in the value of total assets in companies with foreign ownership. Main independent variable is the cumulative count of high-profile criminal attacks. Clustered standard errors at the municipality level in parentheses. Wald $\chi^2$ with 13 degrees of freedom. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

In line with H1, increases in the number of HPAs are associated with higher investment inflows, particularly in the commerce sector, though the effect is barely significant for services. This pattern, revealed by municipal-level disaggregation, suggests that isolated attacks do not necessarily lead to divestment. However, consistent with H2, when HPAs occur alongside high homicide rates—indicating sustained and generalised violence—the effect on the *largesse* of foreign investments becomes negative, but only in the commerce sector. This implies that under conditions of persistent insecurity, firms in commerce may seek more stable environments. Higher exposure to extortion, bribery and kidnapping, along with consumer displacement and declining market confidence, likely contribute to MNEs' sensitivity in this sector (Witte et al. 2017; Brown and Hibbert 2019; Garriga and Phillips 2023).

In contrast, existing foreign investment in the mining and oil sector remains largely unaffected by HPAs or general crime, as indicated by the lack of statistically significant results. This resilience aligns with existing literature that highlights the sector's tolerance for insecurity due to location rigidity, high sunk costs and the promise of exceptional rents (Ashby and Ramos 2013; Oh and Oetzel 2017; Ramos and Ashby 2017; Witte et al. 2017; Blanco et al. 2019; Brown and Hibbert 2019; Röell et al. 2022). In some cases, criminal governance may even facilitate continued investment. For example, in Michoacán's steel sector, firms like ArcerolMittal and Ternium expanded operations under a combination of 'close business relationships between legal and illegal companies, extreme violence, militarization of security, paramilitarism, land displacements, and government protection of corporate capital and foreign investments' (Correa-Cabrera 2017, 180).

Similarly, FDI in manufacturing appears largely insulated from both high-profile attacks and broader violence—echoing findings from previous studies at the state level in Mexico (Ashby and Ramos 2013). Neither the likelihood nor the volume of investment appears to be shaped by sporadic or permanent criminal governance. This may reflect the fact that many manufacturing multinationals serve distant or global markets and are less exposed to localised criminal disruptions than retail firms (Ashby and Ramos 2013; Brown and Hibbert 2019).

Taken together, these findings support H3, which anticipated *different* responses to high-profile attacks and to the spread of violence depending on sectoral characteristics. Importantly, all these results are robust to using the number of cartels (measured at the state level) instead of homicide rates to capture the spread of violence (Table A3).

## 5 | Concluding Remarks

As we hypothesised, high-profile criminal attacks against political officials do not scare foreign investors away, but when they coexist with protracted turf wars and the subsequent generalised violence, this effect is negatively moderated and significant in the commerce sector. Using data on crimes against political officials and exploiting the municipal level of analysis for the first time, to the best of our knowledge, we hypothesised and demonstrated that the territorial controls exerted by OCGs, of which high-profile attacks are a signal, are compatible with foreign direct investment across most sectors. By incorporating the local dynamics of hybrid governance modes and regimes of criminal governance into multinationals' investment decisions, this paper sheds a novel light on the relationship between crime and foreign direct investment, thereby contributing to a better understanding of an unresolved debate in the political economy of organised crime (Arias 2017; Lessing 2017; Witte et al. 2017; Moncada 2022).

Through provision of social peace and protection, and even the possibility of lucrative business, controlling for self-selection and a host of political and socioeconomic variables, we find that high-profile attacks do not deter FDI in the commerce, manufacturing or natural resource sectors. In fact, the probability of investing increases, while the amounts committed appear mostly unaffected, except for commerce, in the presence of increasing political assassinations. These results confirm some previous research carried out at a higher level of subnational aggregation, namely the resilience of FDIs in the natural resource sector. In addition to this finding, by disaggregating the analysis to the municipality level, we gain new insights into effects on other economic sectors, namely that foreign direct investment in commerce seems to be most affected by an escalation of criminal violence. Understanding the concrete dynamics in this sector will require careful case study research in local hybrid zones of criminal governance, this being an area for future research.

Overall, our work shows the importance of studying different types of crime not as isolated events, but rather as part of deeper and broader processes of state capture and state failure that may or may not be monopolistic—which translates into sporadic or sustained violence. Unlike indiscriminate homicide rates, attacks directed against political officials appear to be a precondition for hybrid regimes of governance to come into existence. By considering the heterogenous conditions under which high-profile attacks unfold, our research reconciles previous studies, some of which reported an increase and others no effect of violence on FDI (Madrazo Rojas 2009; Ashby and Ramos 2013; Witte et al. 2017; Cabral et al. 2019). Thus, research based on political economy perspectives broadens our understanding of how foreign direct investment is shaped by the presence of complex hybrid regimes of governance at the local level in the host economies.

While we acknowledge the temporal and data limitations of our analysis—specifically, the focus on the 2008–2013 period—we contend that this timeframe remains critical for understanding the emergence of high-profile criminal attacks as a distinct form of violence in Mexico. This period coincides with the onset of a new security landscape shaped by the state's militarised strategy and the fragmentation of organised crime groups, offering a clearer identification strategy and valuable insight into the early dynamics of criminal governance and its economic implications. We also recognise that data limitations played a role in defining our study period. Publicly available data on HPAs during the 2012–2018 administration is limited or nonexistent, and municipal-level FDI data for the more recent period is not readily available. As such, conducting a coherent panel analysis over a longer timeframe remains a challenge. Nonetheless, our findings provide a robust empirical foundation and theoretical

lens for future research. As more comprehensive data become available, future studies should extend this analysis to assess whether the patterns we identify have persisted or evolved in the context of Mexico's shifting security landscape.

Finally, our research is far from specific to Mexico. Beyond the Mexican case scrutinised here, our findings are of relevance to other instances in which OCGs expand their political ambitions by pursuing socioeconomic and political control of the jurisdictions in which they operate. Similar processes have been documented in Central American (Blume 2022; Moncada 2022) and Latin American countries (Arias 2017; Lessing 2017). By specifying that these processes may or may not translate into indiscriminate violence, we provide tools for scholars in other geographical contexts to better understand under what conditions international investments may be resilient to OCG activities and even thrive in their presence.


### Acknowledgements

Previous versions were discussed in the Workshop 'The Economic Consequences of Crime in Mexico' held at the Centre for Research and Teaching in Economics (CIDE), Mexico City, 29–30 September 2022; States & Markets Seminar, ICADE, 14 February 2023; 49th Academy of International Business UK-Ireland Chapter Conference, Glasgow, 14–15 April 2023; GSSI Social Sciences Seminar, L'Aquila, 19 April 2023; International Business and Strategy Seminar, Henley Business School, 26 April 2023. We thank participants in these conferences and Elisa Aracil for helpful comments. Finally, we thank Margaret Schroeder for proofreading various versions of the manuscript.


### Conflicts of Interest

The authors declare no conflicts of interest.

### Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

### Endnotes

[1] As reported by the UN Office on Drugs and Crime's International Homicide Statistics database.

[2] Other studies have focused on the relationship between other types of country-scale violence (e.g., overall homicide rates, terrorism or risk of war) and FDI (Brown and Hibbert 2019; Li et al. 2022).

[3] Witte et al. (2017) also mention 'firm-level attributes'; in particular, the geographic diversification of MNEs in different countries, which makes them less exposed to local criminal activities. Our analysis does not explore firm-level decisions and therefore this factor is not relevant for our argument.

[4] Some research has shown that in rare instances, *domestic* business cohesion and cooperation with state governments can result in the deployment of new initiatives to successfully counter crime (Ley and Guzmán 2019; Moncada 2022); in turn, states have tried to compensate for the rise of criminal violence by offering tax and other incentives to MNEs (Ley and Guzmán 2019). However, we are not aware of research that explores whether *international* businesses engage in a similar kind of concerted action together and in cooperation with local authorities to actively combat OCGs. This possibility seems remote, considering that this kind of cooperative arrangement to deploy coordinated security strategies locally relies on mutual trust, in turn based on a long history of prior coordination, close contact and embeddedness of business in social and political life, which international businesses are less likely to have. Nonetheless, this is an area for future research.

[5] The natural logarithm is a monotonic transformation that does not alter the distribution of the original variable. The logarithm function is applied to the original values plus 1.

[6] We use homicide rates as a proxy for generalised violence due to data reliability. Unlike other crimes such as extortion or kidnappings, which rely on citizen reporting and are severely underreported (Carreto Romero and Ramírez-Álvarez 2022) in Mexico, homicide data from municipal level sources, are considered more complete and less prone to measurement bias.

[7] Let $X_{it-1}$ denote the full set of exogenous explanatory variables observed in every period $t-1$. Then $X^{s}_{it-1} \subset X_{it-1}$; the former is a subset of the latter. In other words, the vector of explanatory variables in the main equation must contain at least one less covariate than in the selection equation (Equation 2) (Wooldridge 2002).

[8] We analyse the lag structure of the effects for the main explanatory variable (see Figure A1). Using different lags yields different estimated effects, suggesting that there are no pretrends that we should be concerned about. The highest estimated effect is the contemporaneous value, and it decreases over time. We chose 1-year lags for the reasons explained in the main text.

[9] The estimated effect between observing or not HPAs is consistently not significant across specifications. Thus, the regressions are only included in the appendix as robustness tests (Table A2).

[10] This process took place at the expense of 'small entrepreneurs who initially exploited these resources as well as land and property owners who had to flee these regions due to extreme violence, extortion and scores of assassinations and disappearances by irregular armed groups (either criminal or linked to the government)' (Correa-Cabrera 2017: 165, 171).

[11] The correlation between HPAs and homicide rate is 0.25, so there are no major concerns about increasing multicollinearity in the equation.

[12] Additionally, the relationship between crime and FDI may be non-monotonic—moderate increases in homicides may have little impact on investment, while extreme levels could be strongly deterrent (Garriga and Phillips 2023). However, if the empirical model assumes linearity, such threshold effects could be masked, making the observed effect appear consistently positive.

[13] The effect of an interaction in a nonlinear model is calculated as the sum of the main effects of the interacted variables, the coefficient of the interaction term, holding the values of the other covariates fixed (Hoetker 2007)—at their mean.

[14] The selection variable is chosen to be population density, since this consideration is more likely to affect the probability of investing in a particular location than are increases in the volume of FDI. The estimated coefficient is significant in all regressions. We also use we use (log) total population as an alternative selection variable in the two-step Heckman model. This ensures that our selection equation is appropriately specified and not overly sensitive to a single identification strategy. Estimates of this model are reported in Table A4.

### References


Arias, E. D. 2017. *Criminal Enterprises and Governance in Latin America and the Caribbean*. Cambridge University Press.

Ashby, N. J., and M. A. Ramos. 2013. "Foreign Direct Investment and Industry Response to Organized Crime: The Mexican Case." *European Journal of Political Economy* 30: 80–91. https://doi.org/10.1016/j.ejpoleco.2013.01.006.

Biglaiser, G., and K. DeRouen. 2007. "Following the Flag: Troop Deployment and U.S. Foreign Direct Investment." *International Studies*

*Quarterly* 51, no. 4: 835–854. https://doi.org/10.1111/J.1468-2478.2007.00479.X.

Blanco, L. R., I. Ruiz, and R. B. Wooster. 2019. "The Effect of Violent Crime on Sector-Specific FDI in Latin America." *Oxford Development Studies* 47, no. 4: 420–434. https://doi.org/10.1080/13600818.2019.1611754.

Blume, L. R. 2022. "Collusion, co-Optation, or Evasion: The Politics of Drug Trafficking Violence in Central America." *Comparative Political Studies* 55, no. 8: 1366–1402. https://doi.org/10.1177/00104140211066218.

Brock, G. J. 1998. "Foreign Direct Investment in Russia's Regions 1993–95. Why So Little and Where has It Gone?" *Economics of Transition* 6, no. 2: 349–360.

Brown, L., and K. Hibbert. 2017. "The Effect of Crime on Foreign Direct Investment: A Multi-Country Panel Data Analysis." *Journal of Developing Areas* 51, no. 1: 295–307.

Brown, L., and K. Hibbert. 2019. "The Incidence of Crime on Industry-Level Foreign Direct Investment: An Assessment of OECD Member Countries." *Social Science Quarterly* 100, no. 4: 1228–1240.

Busse, M., and C. Hefeker. 2007. "Political Risk, Institutions and Foreign Direct Investment." *European Journal of Political Economy* 23, no. 2: 397–415. https://doi.org/10.1016/j.ejpoleco.2006.02.003.

Cabral, R., A. V. Mollick, and E. Saucedo. 2019. "Foreign Direct Investment in Mexico, Crime, and Economic Forces." *Contemporary Economic Policy* 37, no. 1: 68–85.

Calderón, G., G. Robles, A. Díaz-Cayeros, and B. Magaloni. 2015. "The Beheading of Criminal Organizations and the Dynamics of Violence in Mexico." *Journal of Conflict Resolution* 59, no. 8: 1455–1485. https://doi.org/10.1177/0022002715587053.

Carreto Romero, C., and A. A. Ramírez-Álvarez. 2022. "Why Do Mexicans Report So Little Crime? The Determinants of Crime Reporting in Mexico." *Sobre México. Temas de Economía. Nueva Época, Año* 2: 12569.

Celis, F. 2018. *Inseguridad, el Fantasma que Persigue a las Empresas Mexicanas*. Forbes Mexico. https://www.forbes.com.mx/inseguridad-el-fantasma-que-persigue-a-las-empresas-mexicanas/#google_vignette.

Chih, Y. Y., F. Demir, C. Hu, J. Liu, and H. Shen. 2023. "A Spatial Analysis of Local Corruption on Foreign Direct Investment: Evidence From Chinese Cities." *European Journal of Political Economy* 79: 102443. https://doi.org/10.1016/j.ejpoleco.2023.102443.

Comi, S., M. Grasseni, and L. Resmini. 2021. "Can Judicial Efficiency Improve Territorial Attractiveness to FDI? The Italian Experience." *European Journal of Political Economy* 70: 102043. https://doi.org/10.1016/j.ejpoleco.2021.102043.

Correa-Cabrera, G. 2017. *Criminal Corporations, Energy, and Civil War in Mexico*. University of Texas Press. https://doi.org/10.7560/312742.

Daniele, V., and U. Marani. 2011. "Organized Crime, the Quality of Local Institutions and FDI in Italy: A Panel Data Analysis." *European Journal of Political Economy* 27, no. 1: 132–142. https://doi.org/10.1016/j.ejpoleco.2010.04.003.

Dorff, C., C. Henry, and S. Ley. 2023. "Does Violence Against Journalists Deter Detailed Reporting? Evidence From Mexico." *Journal of Conflict Resolution* 67, no. 6: 1218–1247. https://doi.org/10.1177/00220027221128307.

Duran-Martinez, A. 2015. "To Kill and Tell? State Power, Criminal Competition, and Drug Violence." *Journal of Conflict Resolution* 59, no. 8: 1377–1402. https://doi.org/10.1177/0022002715587047.

Egger, P., and H. Winner. 2005. "Evidence on Corruption as an Incentive for Foreign Direct Investment." *European Journal of Political Economy* 21, no. 4: 932–952. https://doi.org/10.1016/j.ejpoleco.2005.01.002.

Flores-Macías, G. A. 2018. "The Consequences of Militarizing Anti-Drug Efforts for State Capacity in Latin America." *Comparative Politics* 51, no. 1: 1–20. https://doi.org/10.2307/26532712.

Garriga, A. C., and B. J. Phillips. 2023. "Organized Crime and Foreign Direct Investment: Evidence From Criminal Groups in Mexico." *Journal of Conflict Resolution* 67, no. 9: 1675–1703. https://doi.org/10.1177/00220027221145870.

Heckman, J. 1979. "Sample Selection Bias as a Specification Error." *Econometrica* 47, no. 1: 569.

Hoetker, G. 2007. "The Use of Logit and Probit Models in Strategic Management Research: Critical Issues." *Strategic Management Journal* 28, no. 4: 331–343. https://doi.org/10.1002/SMJ.582.

INEGI. 2004. *Censos Económicos*. Instituto Nacional de Estadística y Geografía.

INEGI. 2009. *Censos Económicos*. Instituto Nacional de Estadística y Geografía.

INEGI. 2014. *Censos Económicos*. Instituto Nacional de Estadística y Geografía.

INEGI. 2023. *COMUNICADO DE PRENSA NÚM. 418/23 25 DE JULIO DE 2023*. Instituto Nacional de Estadística y Geografía.

La Jornada. 2007. *Asesinan a Diputado Local del PRI en Monterrey, a 50 Metros de la Alcaldía*. LaJornada.

Lessing, B. 2017. *Making Peace in Drug Wars: Crackdowns and Cartels in Latin America: Cambridge Studies in Comparative Politics*. Cambridge University Press.

Lessing, B. 2021. "Conceptualizing Criminal Governance." *Perspectives on Politics* 19, no. 3: 854–873. https://doi.org/10.1017/S1537592720001243.

Ley, S., and M. Guzmán. 2019. "Doing Business Amid Criminal Violence." In *Civil Action and the Dynamics of Violence*, 147–177. Oxford University Press.

Li, D., T. W. Tong, Y. Xiao, and F. Zhang. 2022. "Terrorism-Induced Uncertainty and Firm R&D Investment: A Real Options View." *Journal of International Business Studies* 53, no. 2: 255–267. https://doi.org/10.1057/S41267-021-00470-X.

López-Vallejo, M., and M. d. P. Fuerte-Celis. 2021. "Hybrid Governance in Northeastern Mexico: Crime, Violence, and Legal-Illegal Energy Markets." *Latin American Perspectives* 48, no. 1: 103–125.

Madrazo Rojas, F. 2009. *The Effect of Violent Crime on FDI: The Case of Mexico 1998–2006* Masters Dissertations. Georgetown Public Policy Institute.

Magaloni, B., G. Robles, A. M. Matanock, A. Diaz-Cayeros, and V. Romero. 2020. "Living in Fear: The Dynamics of Extortion in Mexico's Drug War." *Comparative Political Studies* 53, no. 7: 1124–1174. https://doi.org/10.1177/0010414019879958.

Moncada, E. 2022. "Resisting Extortion: Victims, Criminals, and States in Latin America." *Journal of Development Studies* 59, no. 8: 1310–1311. https://doi.org/10.1080/00220388.2023.2196807.

Nayyar, R., and J. M. Luiz. 2023. "Location Choice and Indian Outward Foreign Direct Investment: Institutional Thresholds and Differentiating Between Institutional Quality and Institutional Distance." *Journal of Institutional Economics* 20: 292. https://doi.org/10.1017/S1744137423000292.

Oetzel, J., K. A. Getz, and S. Ladek. 2007. "The Role of Multinational Enterprises in Responding to Violent Conflict: A Conceptual Model and Framework for Research." *American Business Law Journal* 44: 44–358.

Oh, C. H., and J. Oetzel. 2017. "Once Bitten Twice Shy? Experience Managing Violent Conflict Risk and MNC Subsidiary-Level Investment and Expansion." *Strategic Management Journal* 38, no. 3: 714–731. https://doi.org/10.1002/SMJ.2498.

Phillips, B. J. 2015. "How Does Leadership Decapitation Affect Violence? The Case of Drug Trafficking Organizations in Mexico." *Journal of Politics* 77, no. 2: 324–336. https://doi.org/10.1086/680209.

Ramos, M. A., and N. J. Ashby. 2013. "Heterogeneous Firm Response to Organized Crime: Evidence From FDI in Mexico." *Journal of International Management* 19, no. 2: 176–194. https://doi.org/10.1016/j.intman.2013.01.002.

Ramos, M. A., and N. J. Ashby. 2017. "The Halo Effect: Violent Crime and Foreign Direct Investment." *Multinational Business Review* 25, no. 4: 287–306. https://doi.org/10.1108/MBR-04-2017-0020.

Rios, V. 2013. "Why Did Mexico Become So Violent? A Self-Reinforcing Violent Equilibrium Caused by Competition and Enforcement." *Trends in Organized Crime* 16, no. 2: 138–155. https://doi.org/10.1007/s12117-012-9175-z.

Röell, C., E. Osabutey, P. Rodgers, F. Arndt, Z. Khan, and S. Tarba. 2022. "Managing Socio-Political Risk at the Subnational Level: Lessons From MNE Subsidiaries in Indonesia." *Journal of World Business* 57, no. 3: 101312. https://doi.org/10.1016/j.jwb.2022.101312.

Schelling, T. C. 1971. "What Is the Business of Organized Crime?" *American Scholar* 20: 643–652.

Schotter, A., and P. W. Beamish. 2013. "The Hassle Factor: An Explanation for Managerial Location Shunning." *Journal of International Business Studies* 44: 521–544.

Shirk, D., and J. Wallman. 2015. "Understanding Mexico's Drug Violence." *Journal of Conflict Resolution* 59, no. 8: 1348–1376. https://doi.org/10.1177/0022002715587049.

Skovoroda, R., S. Goldfinch, K. DeRouen, and T. Buck. 2019. "The Attraction of FDI to Conflicted States: The Counter-Intuitive Case of US Oil and Gas." *Management International Review* 59, no. 2: 229–251. https://doi.org/10.1007/S11575-018-0374-Y.

Snyder, R., and A. Duran-Martinez. 2009. "Does Illegality Breed Violence? Drug Trafficking and State-Sponsored Protection Rackets." *Crime, Law and Social Change* 52, no. 3: 253–273. https://doi.org/10.1007/S10611-009-9195-Z.

Stevens, C. E., and A. Newenham-Kahindi. 2021. "Avoid, Acquiesce ... or Engage? New Insights From Sub-Saharan Africa on MNE Strategies for Managing Corruption." *Strategic Management Journal* 42, no. 2: 273–301. https://doi.org/10.1002/smj.3228.

Trejo, G., and S. Ley. 2016. "Federalism, Drugs, and Violence. Why Intergovernmental Partisan Conflict Stimulated Inter-Cartel Violence in Mexico." *Política y gobierno* 23, no. 1: 11–56.

Trejo, G., and S. Ley. 2020. *Votes, Drugs, and Violence: The Political Logic of Criminal Wars in Mexico*. Cambridge University Press.

Trejo, G., and S. Ley. 2021. "High-Profile Criminal Violence: Why Drug Cartels Murder Government Officials and Party Candidates in Mexico." *British Journal of Political Science* 51: 203–229.

Trejo, G., and N. Skigin. 2024. "Silencing the Press in Criminal Wars: Why the War on Drugs Turned Mexico Into the World's Most Dangerous Country for Journalists." *Perspectives on Politics* 56: 1–22. https://doi.org/10.1017/S153759272400135X.

Wettstein, F., E. Giuliani, G. D. Santangelo, and G. K. Stahl. 2019. "International Business and Human Rights: A Research Agenda." *Journal of World Business* 54, no. 1: 54–65. https://doi.org/10.1016/J.JWB.2018.10.004.

Witte, C. T., M. J. Burger, E. I. Ianchovichina, and E. Pennings. 2017. "Dodging Bullets: The Heterogeneous Effect of Political Violence on Greenfield FDI." *Journal of International Business Studies* 48, no. 7: 862–892. https://doi.org/10.1057/S41267-017-0079-7.

Wooldridge, J. M. 2002. *Econometric Analysis of Cross Section and Panel Data*. MIT Press. https://doi.org/10.1515/humr.2003.021.

Zakharov, N. 2019. "Does Corruption Hinder Investment? Evidence From Russian Regions." *European Journal of Political Economy* 56: 39–61. https://doi.org/10.1016/j.ejpoleco.2018.06.005.

## Appendix A

**TABLE A1** | Variables: Summary statistics, definitions, measures and sources.

| Variable | Summary statistics | | | | Definition, measures, and sources |
|---|---|---|---|---|---|
| | Mean | SD | Min | Max | |
| **Dependent variable** | | | | | |
| Foreign direct investment (total) | 2.2253 | 4.7166 | 0.0000 | 17.7115 | Total value of fixed assets in economic units with participation of foreign capital in thousands of 2003 Mexican pesos (log). Total and by sector. *Source:* Economic Census INEGI (2004, 2009, 2014) |
| Manufacturing | 1.0148 | 3.5794 | 0.0000 | 17.7113 | |
| Services | 0.5302 | 2.4320 | 0.0000 | 16.3970 | |
| Commerce | 1.2384 | 3.3034 | 0.0000 | 14.5483 | |
| Mining and Oil | 0.0338 | 0.7226 | 0.0000 | 26.1790 | |
| **Main independent variable** | | | | | |
| High-profile criminal attacks | 0.1080 | 0.4540 | 0.0000 | 7.0000 | Number of high-profile criminal attacks (count). *Source:* Trejo and Ley (2021) |
| **Controls** | | | | | |
| Homicide rate | 0.1876 | 0.4001 | 0.0000 | 11.6988 | Homicide rate per 1000 inhabitants (continuous no.). *Source:* INEGI (various years) |
| Political party juxtaposition | 3.6121 | 2.2105 | 0.0000 | 8.0000 | Juxtaposition index (0 to 8). From 'Full political party alignment across three administrative levels' to 'Full subnational political party opposition.' *Source:* Trejo and Ley (2016) |
| Public prosecutor offices | 0.0208 | 0.0432 | 0.0000 | 0.7987 | Number of public prosecutor offices per 1000 inhabitants (continuous no.). *Source:* INEGI (2004, 2009, 2014) |
| Tax revenue | 3.6638 | 5.1377 | 0.0000 | 44.7146 | Percentage of municipal income derived from local tax collection (%). *Source:* INEGI (2004, 2009, 2014) |
| Gross value added | 9.3243 | 2.5152 | 2.3429 | 18.4981 | Gross value added defined as production minus intermediate expenditure (log). *Source:* INEGI (2004, 2009, 2014) |
| Average wages | 8.7673 | 5.9107 | 0.5801 | 100.4311 | Total wages divided by total direct employees (log). *Source:* INEGI (2004, 2009, 2014) |
| Population density | 3.9948 | 1.7139 | −1.993 | 9.7823 | Number of inhabitants per square kilometre (log). *Source:* INEGI (2004, 2009, 2014) |
| | | | Obs.: 11,481 | | |

**TABLE A2** | Robustness tests: Two-step Heckman equations (controlling for zero-inflated independent variable).

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| | Total | | Manufacturing | | Services | | Commerce | | Mining and oil | |
| **Dep. var. *Foreign direct investment*** | **1st step** | **2nd step** | **1st step** | **2nd step** | **1st step** | **2nd step** | **1st step** | **2nd step** | **1st step** | **2nd step** |
| High-profile criminal attacks (HPAs) | −0.021 | −0.1809 | 0.1544 | −0.1029 | 0.2854** | 0.4094 | 0.1593* | 0.2857* | 0.4736*** | −5.417 |
| | (0.084) | (0.161) | (0.104) | (0.260) | (0.113) | (0.258) | (0.083) | (0.159) | (0.162) | (3.448) |
| Homicide rate | 0.3665*** | 0.4814*** | −0.02868 | 0.6972 | 0.3106** | 1.421** | 0.2864*** | 0.2597 | 0.2662 | −0.2552 |
| | (0.071) | (0.162) | (0.143) | (0.557) | (0.146) | (0.699) | (0.069) | (0.219) | (0.185) | (9.292) |
| HPAs * Homicide rate | −0.195** | 0.07101 | −0.04385 | −0.08881 | −0.1046 | −0.4172 | −0.3506*** | −0.399** | −0.3508* | 2.887 |
| | (0.087) | (0.169) | (0.137) | (0.282) | (0.151) | (0.289) | (0.093) | (0.177) | (0.209) | (5.455) |
| *HPAs dummy* | *−0.01573* | *0.2166* | *−0.05205* | *−0.2029* | *−0.01673* | *−0.09876* | *0.09864* | *0.3049* | *0.03733* | *1.943* |
| | *(0.161)* | *(0.315)* | *(0.189)* | *(0.518)* | *(0.208)* | *(0.506)* | *(0.153)* | *(0.295)* | *(0.292)* | *(5.009)* |
| Political party juxtaposition | −0.04597*** | −0.0194 | −0.04098*** | −0.01184 | −0.03798** | 0.05803 | −0.02129** | −0.05602** | −0.08286** | 1.238 |
| | (0.010) | (0.027) | (0.014) | (0.054) | (0.019) | (0.059) | (0.010) | (0.027) | (0.042) | (1.420) |
| Public prosecutor offices | 2.56*** | −1.24 | −1.593* | −6.021** | 4.129*** | 5.054 | 1.751*** | 5.369*** | 2.929** | 79.01* |
| | (0.492) | (1.330) | (0.871) | (2.969) | (1.001) | (3.288) | (0.552) | (1.632) | (1.262) | (46.191) |
| Tax revenue | 0.04127*** | 0.06697*** | 0.03244*** | −0.0228 | 0.06749*** | 0.2274*** | 0.0347*** | 0.09479*** | 0.01551 | −0.3409 |
| | (0.005) | (0.008) | (0.004) | (0.017) | (0.005) | (0.023) | (0.004) | (0.009) | (0.011) | (0.326) |
| Gross Value Added | 0.8965*** | 1.486*** | 0.7156*** | 0.6485*** | 0.7863*** | 1.861*** | 0.7819*** | 1.899*** | 0.3699*** | −1.649 |
| | (0.022) | (0.067) | (0.027) | (0.226) | (0.037) | (0.261) | (0.021) | (0.085) | (0.067) | (2.754) |
| Average wages | −0.05636*** | −0.0475*** | −0.01838*** | 0.0235 | −0.06757*** | −0.1516*** | −0.07032*** | −0.1431*** | −0.01216 | 0.3386 |
| | (0.004) | (0.010) | (0.005) | (0.019) | (0.008) | (0.031) | (0.004) | (0.013) | (0.014) | (0.437) |
| Population density | −0.1906*** | | −0.07002*** | | −0.01246 | | −0.1929*** | | −0.2237*** | |
| | (0.015) | | (0.018) | | (0.024) | | (0.015) | | (0.055) | |
| Mills Ratio | | −0.5986*** | | −1.733*** | | 1.594*** | | 1.187*** | | −13.13* |
| | | (0.186) | | (0.586) | | (0.513) | | (0.230) | | (7.197) |
| Observations | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 |
| Selected observations | — | 2425 | — | 922 | — | 575 | — | 1,718 | — | 29 |
| Log likelihood | −2,266.9833 | — | −1,217.7264 | — | −696.94418 | — | −2,126.7422 | — | −122.09414 | — |
| Pseudo $R^2$ | 0.6170 | — | 0.6205 | — | 0.6946 | — | 0.5611 | — | 0.3968 | — |

(Continues)

**TABLE A2** | (Continued)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| | Total | | Manufacturing | | Services | | Commerce | | Mining and oil | |
| Dep. var. *Foreign direct investment* | 1st step | 2nd step | 1st step | 2nd step | 1st step | 2nd step | 1st step | 2nd step | 1st step | 2nd step |
| Wald $\chi^2$ | — | 1,378.11 | — | 91.92 | — | 142.55 | — | 1,340.16 | — | 11.21 |
| Year dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

*Note:* In 1st step regressions, the dependent variable is a dichotomous variable equal to 1 if there is foreign direct investment, and equal to zero otherwise. In 2nd step regressions, the dependent variable is foreign direct investment measured as the total variation in the value of total assets in companies with foreign ownership. In both steps, the main independent variable is the accumulated count of high-profile criminal attacks. A dummy for HPAs is introduced to control for the zero-inflated independent variable as a robustness test of the model specification. Clustered standard errors at the municipality level in parentheses. Wald $\chi^2$ with 13° of freedom. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

**TABLE A3** | Robustness tests: Two-step Heckman equations (Alternative measure of general violence).

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| | Total | | Manufacturing | | Services | | Commerce | | Mining and oil | |
| Dep. var. *Foreign direct investment* | 1st step | 2nd step | 1st step | 2nd step | 1st step | 2nd step | 1st step | 2nd step | 1st step | step |
| High-profile criminal attacks (HPAs) | −0.06613 | 0.428* | 0.0945 | 0.08541 | −0.3359 | 1.387*** | −0.04021 | 0.5146** | 0.8062*** | −6.767 |
| | (0.094) | (0.220) | (0.128) | (0.376) | (0.210) | (0.460) | (0.096) | (0.206) | (0.193) | (9.863) |
| *Number of cartels* | *0.1353**** | *0.07591** | *0.07612**** | *−0.1328* | *0.1265**** | *0.1102* | *0.1665**** | *0.2244**** | *0.2559**** | *−1.289* |
| | *(0.021)* | *(0.043)* | *(0.024)* | *(0.086)* | *(0.030)* | *(0.091)* | *(0.020)* | *(0.044)* | *(0.070)* | *(2.305)* |
| *HPAs * Number of cartels* | *−0.0366* | *−0.1052*** | *−0.01022* | *−0.01628* | *0.133*** | *−0.1977*** | *−0.01822* | *−0.1143**** | *−0.1363**** | *1.184* |
| | *(0.032)* | *(0.043)* | *(0.032)* | *(0.068)* | *(0.052)* | *(0.079)* | *(0.030)* | *(0.040)* | *(0.042)* | *(2.553)* |
| Political party juxtaposition | −0.05066*** | −0.02451 | −0.04287*** | −0.01974 | −0.0411** | 0.06114 | −0.02724*** | −0.06324** | −0.09841** | 2.055 |
| | (0.010) | (0.027) | (0.014) | (0.054) | (0.019) | (0.060) | (0.010) | (0.027) | (0.046) | (1.805) |
| Public prosecutor offices | 2.615*** | −1.039 | −1.795** | −5.539* | 3.87*** | 6.036* | 1.67*** | 4.721*** | 2.741* | 83.05 |
| | (0.488) | (1.332) | (0.876) | (2.965) | (1.013) | (3.301) | (0.556) | (1.608) | (1.427) | (53.435) |
| Tax revenue | 0.03981*** | 0.06939*** | 0.03062*** | −0.014 | 0.06526*** | 0.2439*** | 0.03071*** | 0.08832*** | 0.01396 | −0.2344 |
| | (0.005) | (0.008) | (0.004) | (0.017) | (0.005) | (0.023) | (0.004) | (0.009) | (0.012) | (0.330) |
| Gross Value Added | 0.8624*** | 1.441*** | 0.6879*** | 0.7953*** | 0.7322*** | 1.913*** | 0.7428*** | 1.749*** | 0.3244*** | −2.094 |
| | (0.022) | (0.066) | (0.028) | (0.217) | (0.039) | (0.238) | (0.022) | (0.078) | (0.071) | (2.578) |
| Average wages | −0.05384*** | −0.04578*** | −0.01611*** | 0.01129 | −0.06287*** | −0.1605*** | −0.06755*** | −0.1304*** | −0.006665 | 0.3824 |
| | (0.004) | (0.010) | (0.005) | (0.020) | (0.008) | (0.030) | (0.004) | (0.012) | (0.015) | (0.505) |
| Population density | −0.1969*** | | −0.07008*** | | −0.02833 | | −0.1999*** | | −0.2754*** | |
| | (0.015) | | (0.018) | | (0.024) | | (0.015) | | (0.061) | |
| Mills Ratio | | −0.5734*** | | −1.51*** | | 1.923*** | | 1.006*** | | −13.41** |
| | | (0.182) | | (0.574) | | (0.492) | | (0.216) | | (6.690) |
| Observations | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 |
| Selected observations | — | 2,425 | — | 922 | — | 575 | — | 1,718 | — | 29 |
| Log likelihood | −2,260.8784 | — | −1,212.8802 | — | −681.36534 | — | −2,101.4943 | — | −114.30933 | — |
| Pseudo $R^2$ | 0.6180 | — | 0.6221 | — | 0.7014 | — | 0.5663 | — | 0.4353 | — |
| Wald $\chi^2$ | — | 1,387.23 | — | 99.54 | — | 159.72 | — | 1,365.10 | — | 10.21 |
| Year dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

*Note:* In 1st step regressions, the dependent variable is a dichotomous variable equal to 1 if there is foreign direct investment, and equal to zero otherwise. In 2nd step regressions, the dependent variable is foreign direct investment measured as the total variation in the value of total assets in companies with foreign ownership. In both steps, the main independent variable is the accumulated count of high-profile criminal attacks. The number of cartels is used here as a robustness test to account for the generalised level of violence. Clustered standard errors at the municipality level are in parentheses. Wald $\chi^2$ with 13° of freedom. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

**TABLE A4** | Robustness tests: Two-step Heckman equations (Alternative selection variable).

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| | Total | | Manufacturing | | Services | | Commerce | | Mining and oil | |
| Dep. var. *Foreign direct investment* | 1st step | 2nd step | 1st step | 2nd step | 1st step | 2nd step | 1st step | 2nd step | 1st step | 2nd step |
| High-profile criminal attacks (HPAs) | 0.05661 | −0.1632 | 0.143 | −0.1224 | 0.2043** | 0.3655 | 0.2016*** | 0.3451** | 0.4372*** | −36.22 |
| | (0.078) | (0.142) | (0.091) | (0.227) | (0.099) | (0.226) | (0.074) | (0.139) | (0.141) | (102.737) |
| Homicide rate | 0.6204*** | 0.6539*** | 0.09503 | 0.7251 | 0.357*** | 1.271* | 0.507*** | 0.2048 | 0.3371** | −26.55 |
| | (0.068) | (0.162) | (0.131) | (0.550) | (0.132) | (0.689) | (0.061) | (0.217) | (0.148) | (102.839) |
| HPAs * Homicide rate | −0.3253*** | −0.01726 | −0.05858 | −0.106 | −0.1039 | −0.3728 | −0.4056*** | −0.3816** | −0.3227* | 22.31 |
| | (0.090) | (0.168) | (0.132) | (0.275) | (0.140) | (0.281) | (0.088) | (0.174) | (0.181) | (71.593) |
| Political party juxtaposition | −0.06176*** | −0.02833 | −0.04253*** | −0.01803 | −0.04854** | 0.05729 | −0.04272*** | −0.05046* | −0.07221* | 6.907 |
| | (0.010) | (0.027) | (0.014) | (0.053) | (0.020) | (0.058) | (0.010) | (0.027) | (0.040) | (23.392) |
| Public prosecutor offices | 4.256*** | −0.02195 | −0.7982 | −6.381** | 5.755*** | 4.087 | 3.843*** | 4.727*** | 3.58*** | −222.9 |
| | (0.451) | (1.322) | (0.845) | (2.939) | (0.962) | (3.140) | (0.490) | (1.607) | (1.150) | (930.596) |
| Tax revenue | 0.04118*** | 0.07537*** | 0.03177*** | −0.01858 | 0.07137*** | 0.2162*** | 0.03366*** | 0.08863*** | 0.01548 | −1.361 |
| | (0.005) | (0.008) | (0.004) | (0.017) | (0.005) | (0.020) | (0.004) | (0.009) | (0.011) | (4.283) |
| Gross Value Added | 0.6271*** | 1.725*** | 0.6676*** | 0.7559*** | 0.4009*** | 1.757*** | 0.444*** | 1.883*** | 0.06624 | −19.27 |
| | (0.026) | (0.069) | (0.039) | (0.239) | (0.058) | (0.225) | (0.028) | (0.093) | (0.108) | (63.630) |
| Average wages | −0.02712*** | −0.06192*** | −0.01329** | 0.02086 | −0.02176** | −0.1451*** | −0.0313*** | −0.1403*** | 0.01777 | −0.5128 |
| | (0.004) | (0.010) | (0.005) | (0.019) | (0.009) | (0.030) | (0.005) | (0.013) | (0.014) | (2.999) |
| *Total Population* | *0.2969**** | | *0.006249* | | *0.5556**** | | *0.3749**** | | *0.2624** | |
| | *(0.035)* | | *(0.048)* | | *(0.074)* | | *(0.039)* | | *(0.153)* | |
| Mills Ratio | | 0.2126 | | −1.411** | | 1.37*** | | 1.014*** | | −100.4 |
| | | (0.183) | | (0.620) | | (0.430) | | (0.230) | | (301.148) |
| Observations | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 | 11,481 |
| Selected observations | — | 2,425 | — | 922 | — | 575 | — | 1,718 | — | 29 |
| Log likelihood | −2315.6186 | — | −1,225.0051 | — | −667.39401 | — | −2,160.8572 | — | −129.83737 | — |
| Pseudo $R^2$ | 0.6088 | — | 0.6183 | — | 0.7075 | — | 0.5541 | — | 0.3586 | — |
| Wald $\chi^2$ | — | 1,513.52 | — | 95.34 | — | 168.00 | — | 1,228.60 | — | 0.27 |
| Year dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

*Note:* In 1st step regressions, the dependent variable is a dichotomous variable equal to 1 if there is foreign direct investment, and equal to 0 otherwise. In 2nd step regressions, the dependent variable is foreign direct investment measured as the total variation in the value of total assets in companies with foreign ownership. In both steps, the main independent variable is the accumulated count of high-profile criminal attacks. Total population is used here as an alternative selection variable as a robustness test of the model specification. Clustered standard errors at the municipality level are in parentheses. Wald $\chi^2$ with 13° of freedom. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

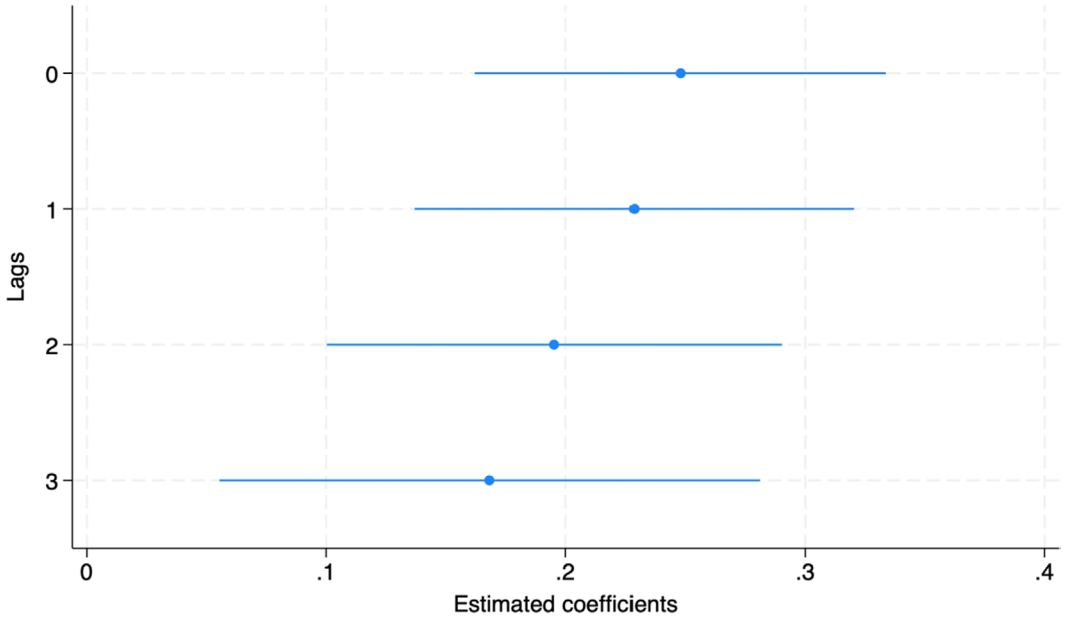


**FIGURE A1** | Lag structure for main independent variable: HPA on FDI. [Colour figure can be viewed at wileyonlinelibrary.com]