Cartels and Capital:

Sectoral Effects of Organized Crime on Foreign Direct Investment in Mexico

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Abstract

The Mexican drug war fundamentally altered the structure of organized crime, fragmenting cartels and raising the number of competing criminal groups rather than reducing it. This paper examines how that change has shaped foreign direct investment at the sector level, a margin that aggregate estimates conceal. The analysis combines a state-by-industry series on Mexican FDI inflows from 2000 to 2018 with a dataset on the count of criminal groups as a proxy for the intensity of organized crime in a given state. The model is a two-way fixed-effects panel that isolates within-state, year-to-year variation, and the same specification is then re-estimated for reinvestment of earnings to compare its response with that of new FDI. The marginal effect of an additional criminal group is highly heterogeneous: new FDI flows into finance and real estate, information, and transport sectors decline by approximately 7 to 13 per cent, as they are most exposed to institutional risk and route insecurity. Flows into construction and retail rise modestly, and the remaining sectors show no significant effects. Additional tests suggest an offsetting money-laundering channel that drives the positive construction coefficient, while for retail the results are ambiguous. Reinvestment of earnings reacts more weakly than new FDI across most sectors, consistent with a sunk-cost interpretation of established subsidiaries. The results highlight the importance of accounting for sectoral exposure when designing security strategies that combat organized crime while preserving the foundations of economic growth.

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Resumo

A guerra mexicana contra a droga alterou a estrutura do crime organizado, fragmentando os cartéis e aumentando, em vez de reduzir, o número de grupos criminosos. Esta dissertação analisa o seu efeito no investimento direto estrangeiro ao nível setorial, uma margem que as estimativas agregadas ocultam. Combina uma série de fluxos de IDE para o México, por estado e indústria entre 2000 e 2018, com a contagem de grupos criminosos como proxy da intensidade do crime organizado. Um painel de efeitos fixos a dois sentidos isola a variação intraestadual ano a ano; a mesma especificação é re-estimada para o reinvestimento de lucros, comparando a sua resposta com a do novo IDE. O efeito marginal de um grupo adicional é fortemente heterogéneo: o novo IDE em Finanças e Imobiliário, Informação e Transportes diminui cerca de 7 a 13 por cento — os setores mais expostos ao risco institucional e à insegurança das rotas. A Construção e o Comércio a retalho registam aumentos modestos; os restantes setores não apresentam efeitos significativos. Testes adicionais sugerem um canal compensatório de branqueamento de capitais por detrás do coeficiente positivo da Construção; para o Comércio a retalho, os resultados são ambíguos. O reinvestimento de lucros reage mais ténue do que o novo IDE na maioria dos setores, consistente com os custos irrecuperáveis das subsidiárias estabelecidas. Os resultados sublinham a importância da exposição setorial na conceção de estratégias de segurança que combatam o crime organizado sem sacrificar o crescimento económico.

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Palavras-chave: Investimento direto estrangeiro; crime organizado; México; heterogeneidade setorial; branqueamento de capitais; reinvestimento dos lucros.

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1 Introduction

In December 2006, the newly elected Mexican president Felipe Calderón declared the War on Drugs and deployed more than 6 500 soldiers to the state of Michoacán to combat drug cartels and the violence surrounding them. The military intervention expanded the following year, when over 20 000 soldiers were sent to different parts of the country as part of Calderón's drug war. Violence surged rather than receded as a consequence of the military intervention. A main reason for the sharp increase is that the direct confrontation with cartels and the capture of their leaders did not merely weaken them but fundamentally altered their internal structure. This triggered fights over succession within criminal groups and incentivized rival organizations to seize the weakened factions' territory (Calderón et al., 2015; Durante & Gutierrez, 2015). Consequently, the number of criminal groups did not fall — it rose, and the share of casualties attributable to fighting between groups increased accordingly (Atuesta & Ponce, 2017). Apart from the enormous social cost — more than 200 000 lives lost across Mexico — the war imposed a financial burden of approximately 9 billion USD annually, nearly as much as the federal government spent on social development in the same period (Dell, 2015). This figure, however, does not account for the indirect economic cost the war has generated, such as a reduction in foreign direct investment, which this thesis sets out to unpack.

The fragmentation of cartels and the consequent rise in inter-group violence fundamentally reshape the investment climate under which firms operate, raising operating costs through extortion, disrupting supply chains, and undermining investor confidence in the long-term stability of the host country. The likely response is a reduction in FDI inflows into the affected regions. This in turn feeds back into the very conditions that drive the conflict: as foreign firms postpone new projects or scale back ongoing operations, local labor demand contracts and wages decline, lowering the opportunity cost of joining a criminal group further (Rozo, 2018). For long-term capital flows such as FDI, the response is arguably even more pronounced, as investment decisions are made over long horizons, are typically reversible only at a cost, and depend heavily on investor confidence in the institutional environment of the host country (Lipsey, 2006). This bidirectional relationship motivates particular care in identification and additional robustness tests to support causal interpretation.

A body of work has examined the relationship between organized crime and FDI in cross-country and country-specific contexts. Evidence from southern Italy has shown that mafia-style organizations deter foreign capital, particularly in sectors exposed to extortion (Daniele & Marani, 2011). For Mexico, Garriga and Phillips (2023) document a negative effect of the presence of competing criminal groups on FDI inflows and argue that the number of criminal groups is a more direct proxy for organized crime than homicide rates, as a substantial share of Mexican homicides is unrelated to

cartel activity. However, existing studies for Mexico have either analyzed aggregate FDI inflows or, when accounting for sector heterogeneity, relied on a short pre-2010 sample and on homicide rates as the violence proxy (Ashby & Ramos, 2013; Cabral et al., 2019). An important gap remains: the sector-specific effects of organized crime on FDI in Mexico, identified with a measure that targets cartel activity rather than overall violence, have not been systematically estimated.

This paper seeks to fill that gap by leveraging variation in the number of criminal groups across Mexican states and years to estimate the impact of organized crime on sectoral FDI inflows during the period 2000 to 2018, the years framing the escalation and entrenchment of the drug war. The treatment variable is the count of criminal groups in a given state and year, drawn from the dataset assembled by Garriga and Phillips (2023). The dependent variable is sectoral FDI, taken from a recently published state-by-industry release of the Mexican Ministry of Economy that was not available to earlier studies (INEGI, 2025). The empirical strategy is a fixed-effects OLS regression to capture within-state variation of new FDI flows into Mexico. The second part repeats the exercise for reinvestment of earnings, which represents an investor's decision to redeploy profits already inside Mexico rather than to enter the market in the first place. The distinction matters, as the two types of FDI capture different margins of investor sensitivity: new entrants face the full institutional environment of the host country, while reinvested earnings reflect ongoing operations whose physical assets are already in place (Zélity, 2025).

The results indicate that the marginal effect of organized crime on new FDI is highly heterogeneous across sectors. Across all model specifications, an additional criminal group is associated with an approximately 11 to 13 per cent decrease in new FDI inflows in the information and the finance and real estate sectors, and a 7 per cent decrease in the transport sector. Construction and retail, by contrast, show small positive coefficients, with the retail results exhibiting some ambiguity across different specifications. For the remaining sectors - mining and oil, tourism and culture, non-financial services, and manufacturing - no statistically significant effect can be found. When the same specification is applied to reinvestment of earnings, the coefficients move in the same direction but are generally attenuated.

These patterns map onto how industries differ in their exposure to insecurity. Finance and real estate depend heavily on institutional trust, the credibility of contracts, and cash-intensive operations, while information depends on contract enforcement and skilled personnel — features that deteriorate first when organized crime intensifies. Transport is highly exposed to road insecurity and cargo theft. The remaining sectors appear largely insulated, as their location decisions are driven by labor-cost arbitrage, integration into global value chains, and market access in destination markets rather than by local conditions. Export-oriented manufacturing is further buffered by distant supply markets, physical security, and low cash exposure (Mühlen & Escobar, 2020; Waldkirch, 2010).

The positive coefficients on construction and retail run against this deterrence story and instead suggest an offsetting laundering channel: both sectors are widely identified as preferred laundering vehicles through vague valuations, cash-intensive transactions, and large land purchases (Mirenda et al., 2022; Scognamiglio, 2018). Follow-up tests reinforce this interpretation for construction, while no conclusive evidence emerges for retail.

This paper contributes in three ways. Firstly, it provides the first sector-level estimate of organized crime's effect on FDI in Mexico using a direct measure of criminal-group presence rather than homicide rates. Secondly, it distinguishes between new FDI and reinvestment of earnings, isolating the sector in which reinvestment responds more strongly than new FDI. Finally, yet importantly, by extending the analysis to 2000–2018, it captures both the pre-drug-war baseline and the full arc of the conflict, offering a longer-run perspective than earlier sector-level studies. The results highlight the importance of accounting for sectoral exposure when designing strategies that combat organized crime while preserving the foundations of economic growth.

The remainder of this paper is structured as follows: Section 2 reviews the relevant literature on organized crime, FDI, and the Mexican drug war. Section 3 describes the data and the empirical strategy. Section 4 presents the main results, the robustness checks, and the comparison between new FDI and reinvestment of earnings. Section 5 discusses the mechanisms and the policy implications. Section 6 concludes.

2 Literature Review

2.1 The Mexican Drug War and the fragmentation of criminal groups

The escalation of violence in Mexico after 2006 has been attributed to the security strategy launched by President Felipe Calderón, in which the federal government deployed military forces against the largest drug-trafficking organizations and prioritized the capture or elimination of cartel leaders. The strategy succeeded in dismantling several established cartels but is widely understood to have reshaped the internal structure of the criminal market, fragmenting existing organizations and incentivizing rival groups to seize the contested territory (Atuesta & Pérez-Dávila, 2018). Calderón, Robles, Díaz-Cayeros, and Magaloni (2015) find, using municipal-level data, that the elimination of cartel leaders is followed by a sharp rise in homicides both in the municipality of capture and in other municipalities where the affected organization operates, consistent with destabilization propagating along the cartel's network. Lindo and Padilla-Romo (2018) replicate the result with a different identification strategy and confirm that kingpin captures generate large and persistent increases in local violence.

Durante and Gutierrez (2015) develop the same logic through the lens of inter-cartel competition and show that the entry of a new criminal organization into a territory previously dominated by a single group is associated with a substantial increase in violence, as the incumbent and entrant fight for control of trafficking routes. Atuesta and Ponce (2017) document that, after 2006, the share of homicides attributable to fighting between criminal groups, rather than between criminal groups and the state, increased sharply. Dell (2015) provides additional evidence by using close electoral victories of PAN-aligned mayors, who were more likely to cooperate with the federal anti-drug effort, as an instrument for local exposure to the security strategy. Affected municipalities saw higher homicide rates and a displacement of trafficking activity to surrounding areas, where violence subsequently increased. These findings imply that the post-2006 increase in violence cannot be treated as exogenous to the security policy and that the number of criminal groups, rather than the homicide rate alone, captures the dimension of organized crime most directly relevant to the investment climate.

A further channel ties the surge in violence back to economic conditions and closes the loop with the FDI literature. Dell, Feigenberg, and Teshima (2019) exploit the manufacturing employment shock generated by Chinese import competition and show that municipalities experiencing a sharper decline in formal employment also saw a steeper increase in drug-related violence, consistent with a Becker-style model of crime in which lower opportunity costs from worsening economic conditions expand the pool of cartel recruits (Becker, 1968). These results indicate that the determinants of FDI

and the determinants of cartel violence are interrelated rather than separable, motivating particular care in the identification strategy and additional robustness checks for reverse causality, as discussed in Section 4.2.

2.2 Foreign direct investment and organized crime

Foreign direct investment plays a crucial role in the long-run development trajectory of emerging economies, channeling capital, technology, and managerial expertise into host markets (Freckleton et al., 2012). Furthermore, foreign firms, which tend to be larger and more productive, pay higher wages on average than domestic firms (Malchow-Møller et al., 2013). Beyond the direct contribution to capital formation, FDI into developing countries generates productivity spillovers for upstream domestic suppliers through the transfer of process and management know-how from multinationals (Javorcik, 2004). For Mexico in particular, FDI inflows have been linked to structural transformation, shifting employment to more productive sectors, although the effect concentrates in sectors closely integrated into North American value chains rather than in non-tradable industries (Waldkirch, 2010).

FDI is shaped by a mix of profit-related factors, such as market size, factor costs, trade openness, and institutional settings (Saini & Singhania, 2018). FDI is seen as partially irreversible and therefore especially vulnerable to changes in the institutional landscape, which organized crime can alter drastically (Hayat, 2019). The literature identifies higher costs for international firms as the main channel through which organized crime exerts a detrimental effect on FDI (Hallward-Driemeier & Stewart, 2004). Security expenditures, high insurance premiums and extortion payments function as a quasi-tax on revenue rather than as a one-off cost, creating continuous costs of doing business in the host country (Jensen & Young, 2008). Multinational firms consequently respond to these circumstances by discounting expected returns by an explicit risk premium, leading to capital being reallocated towards safer host environments (Abadie & Gardeazabal, 2008).

The existing literature on the specific relationship between organized crime and FDI has concentrated mostly on Italy and Mexico. Daniele and Marani (2011) show, using Italian provincial data, that mafia-style organizations deter foreign capital inflows and account for a substantial share of the cross-regional variation in FDI inflows within Italy. For Mexico, Garriga and Phillips (2023) document a negative effect of competing criminal groups on aggregate FDI inflows, with the effect strengthening when several groups operate in the same territory. They use a state-by-year dataset of criminal-group presence, arguing that the count of criminal groups is a more direct measure of organized crime than the homicide rate. Their case rests on the observation that even during the drug war a large share of Mexican homicides is unrelated to cartel activity — estimated between 25

and 80 per cent — so that homicide-based proxies introduce attenuation bias of unknown magnitude (Dittmar, 2018).

2.3 Sectoral heterogeneity and the laundering channel

The literature broadly documents significant heterogeneity across FDI sectors (Lipsey, 2006; Pečarić et al., 2021). Ashby and Ramos (2013) provide one of the first sector-level analyses for the Mexican context. They find that the relationship between organized crime and FDI varies significantly across industries, with finance and real estate, agriculture, commerce, and transport showing negative effects, while for manufacturing, historically the largest sector, and construction no significant impact could be found. Mining is the only sector exhibiting a positive effect. Their identification strategy nonetheless relies on a short pre-2010 sample and on homicide rates as the violence proxy, leaving the post-fragmentation period and an organized crime-specific measure uncovered. Blanco, Ruiz, and Wooster (2019) document a similar heterogeneous pattern for Latin America and the Caribbean over the period 1996 to 2010, decomposing inflows into primary, secondary and tertiary activities, and contrasting three measures of violence — homicide rates, crime victimization, and organized-crime presence. They find that organized crime only has a deterrent effect on the tertiary sector, while homicide rates mainly decrease FDI flows into the secondary sector.

Previous findings suggest that the effect on a sector depends on its exposure to extortion, dependence on institutional trust, and cash and capital intensity. Finance, real estate, and information services rely heavily on contract enforcement, reputation, and the credibility of long-term commitments, all of which deteriorate when criminal organizations operate openly (Ashby & Ramos, 2013; Bénassy-Quéré et al., 2007). By contrast, capital-heavy industries such as manufacturing, mining and oil are partly insulated, as they supply distant markets and their location decisions are driven by labor-cost arbitrage, proximity to destination markets, and the location of mineral and oil deposits. Similarly, investment location decisions in tourism are tied to the geography of coastal stretches and cultural-heritage sites (Crouch, 2011; Mühlen & Escobar, 2020). Additionally, as they do not have to interact with local consumer markets, providing security for their staff and assets may be easier, and oil companies in particular tend to have experience operating in violent environments (Spich & Grosse, 2005).

The construction and retail sectors occupy a distinct position in the literature, because deterrent factors may be offset by a laundering channel through which criminal capital flows into the sector rather than away from it. Perez, Brada and Drabek (2012) estimate that more than 20 per cent of FDI flowing into potential money-laundering destinations is of illicit origin. Mexico has been identified

as a prime destination for those flows, as cartels seek to repatriate proceeds generated principally in the United States (Farfán-Méndez, 2019; Ferragut, 2012). Within this broader pattern, construction has been identified as the canonical laundering vehicle in the Italian mafia literature, with parallel evidence pointing to retail trade as a conceptually similar candidate. Scognamiglio (2018) shows that construction firms in mafia-affected areas expand revenues following infiltration despite a deterioration in measured productivity, consistent with the use of inflated project valuations to funnel criminal proceeds. Mirenda, Mocetti, and Rizzica (2022) document the same pattern at the firm level and identify construction and retail trade as among the legitimate sectors most heavily penetrated by criminal capital. The features that facilitate laundering — cash-intensive transactions, ambiguous valuations, and large land purchases — are common to both construction and retail trade across institutional settings. The Italian evidence therefore translates with some plausibility to the Mexican context, though it remains an empirical question and testing this prediction is one of the contributions of the present analysis.

2.4 Reinvestment of earnings as a distinct margin

Reinvestment of earnings represents an analytically distinct component of FDI, defined by the IMF as the share of the subsidiary's retained earnings. Unlike greenfield investment, which records the cross-border movement of new capital, reinvestment captures the choice of the parent company to leave profits inside the host country rather than repatriate them, and can take negative values when the subsidiary records losses or when dividend payouts exceed net earnings in a given period. The reinvestment decision is shaped by a set of determinants distinct from those that drive greenfield entry, such as the ongoing profitability of the subsidiary and tax differentials between host and home country, which motivates a separate analysis in this study (Kosztowniak, 2021; Lundan, 2006; Zélity, 2025).

Garriga and Phillips (2023) provide evidence consistent with this intuition, finding no negative impact of organized crime on aggregate reinvestments. Existing literature, however, also suggests heterogeneity across sectors for this FDI flow. For most sectors, reinvestment is expected to react less strongly than greenfield investment to an increased presence of organized crime, as the physical assets, local relationships, and accumulated knowledge of the existing operation function as sunk costs and accumulated experience that raise the threshold for capital withdrawal (Coughlin & Segev, 2000). On the other hand, the laundering channel mentioned for greenfield investments is unlikely to operate symmetrically through reinvestment. Laundering depends on the ability of criminal organizations to inflate recorded inflows into a country — through over-valued project valuations, large land transactions, or cash-intensive procurement — which is more easily executed at the point

of initial capital entry rather than through the accounting of retained earnings (Mirenda et al., 2022; Scognamiglio, 2018). The empirical implication is testable: if the laundering interpretation of the greenfield coefficients is correct and the channel does not extend to retained earnings, the reinvestment coefficients on construction and retail should be less positive than those on greenfield, and may turn negative if the deterrence channel dominates in the absence of the laundering offset.

The cumulative case for treating reinvestment as a separate dependent variable therefore rests on three points: the determinants of the reinvestment decision differ from those of greenfield entry, the negative-value margin available to reinvestment is unavailable to greenfield by construction, and the laundering channel is unlikely to impact the two margins symmetrically. Finally, yet importantly, the existing literature has not jointly examined sectoral heterogeneity, criminal-group counts as the violence measure, the impact of the laundering channel, and the distinction between new FDI and reinvestment in a single Mexican panel — the gap that the remainder of this paper seeks to fill.

3 Empirical Framework

This chapter uses a Fixed-effects OLS regression to estimate the impact of organized crime – approximated by the number of criminal groups in a state per year – on new FDI inflows by sector and state. Section 3.1 describes the dataset while Section 3.2 sets out the baseline specification, the marginal-effects procedure, four alternative model specifications, and the additional robustness exercises that support a causal reading of the coefficients.

3.1 Data

The empirical analysis assembles a panel that varies along four dimensions — state j, origin country u, industry i, and year t — and covers the period 2000 to 2018. The window provides six pre-treatment years before the start of Calderón's drug war in December 2006 and closes in the year President Andrés Manuel López Obrador took office and reoriented the federal security strategy (Dell, 2015). The contribution of the present panel relative to the existing literature is twofold: it exploits a novel dataset on sector-level FDI from the Mexican statistical authority, available across the full pre- and post-fragmentation window, and it pairs this data with the criminal-group count of Garriga and Phillips (2023), which has not previously been combined with sector-level investment data.

The geographic unit of analysis is the state, a choice driven by data availability as municipality-level data on most variables is unavailable. All variables that vary at the Mexican state-year level are sourced from the Instituto Nacional de Estadística y Geografía (INEGI). The set includes the homicide rate, sector-specific GDP at constant 2018 prices, average expected years of schooling[1], state GDP and population which enter in specifications without state fixed effects, and the dependent variable FDI, broken down by destination state, source country, and economic activity.

Two time-invariant political indicators capture the local institutional environment in which FDI decisions are taken. The first records whether the governor of the state between 2005 and 2009 — the period overlapping the launch of the drug war — was affiliated with the Partido Acción Nacional (PAN), the party of President Calderón, following the findings of Dell (2015) and Durante and Gutierrez (2015). The second records whether the state had transitioned away from continuous rule by the Partido Revolucionario Institucional (PRI) before 2014. The PRI was in power for 72 years before losing the 2000 presidential election, a period often described as a one-party dictatorship (Vaughan, 2018). In some states the PRI never lost power; the dummy therefore functions as an indicator of democratic transition in a given state (Przeworski, 2000). Both indicators vary only

[1] The schooling series is reported intermittently, and missing intermediate years are linearly interpolated within state.

across states and not over time, and accordingly enter only those specifications that omit state fixed effects.

3.1.1 Foreign Direct Investment data

The dependent variable is the dollar value of FDI inflows into Mexico from INEGI, reported separately for new FDI — which captures greenfield projects and acquisitions of existing assets — and for reinvestment of earnings, which records profits retained by foreign affiliates and channeled back into the local operation rather than repatriated. The distinction matters for the present analysis because new FDI reflects the decision of an investor encountering the host country's institutional environment for the first time, while reinvestment reflects an existing margin that is partially insulated from short-run institutional shocks and influenced by the subsidiary's profit. The distribution of the variable is zero-inflated and heavily right-tailed, as FDI inflows tend to be bulky. Reinvestments additionally include some negative disinvestment cells, although of minor magnitude. Table A1 shows the summary statistics of the two variables at the sector-level, including the percentage of zero- and negative investment cells. To accommodate negative values without dropping them and to bring extreme observations into a comparable range, the dependent variable is transformed following Ashby and Ramos[2] (2013). Additionally, robustness checks include an inverse-hyperbolic-sine transformation.

Figure 1 shows the distribution of new FDI across the industries included in the dataset. Manufacturing and Finance and Real Estate are the top recipients of FDI, with a sharp drop-off across the remaining sectors. The three groups with the lowest cumulative FDI — agriculture, utilities, and education and healthcare — are dropped from the estimation panel on the grounds that they receive less than one per cent of total inflows[3] and would add mostly noise to the sectoral estimates.

As shown in Table 1, the sector composition varies systematically by state, highlighting the need for State fixed effects. Finance and Real Estate is anchored in Mexico City, manufacturing dominates the northern and central states, and tourism is clustered in Quintana Roo and Baja California Sur. In general, FDI inflows are heavily concentrated in Mexico City and in a small number of northern and central states, with the federal capital alone accounting for approximately one fourth of total new FDI across the sample, implying the need for a Mexico City dummy in models without state fixed effects.

[2] $Ln(FDI_{iuj,t}+1)$ if $FDI_{iuj,t} \geq 0$; $-Ln|FDI_{iuj,t}|$ otherwise

[3] Utilities receives 1.5 per cent of total FDI, however, the utility sector in Mexico is heavily controlled by the government as they for instance have a monopoly on electricity, therefore estimates may be biased.

Table 1: Distribution of New FDI Inflows by State and Industry (2000–2018)

State	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Total FDI
Aguascalientes	1.8	0.5	0.7	3.0	0.0	0.8	0.0	0.1	0.0	1.6
Baja California	1.4	2.2	4.0	2.7	0.5	2.6	1.6	9.8	11.6	3.3
Baja California Sur	1.6	1.2	1.0	0.1	0.0	0.2	1.0	29.5	0.2	3.1
Campeche	0.5	0.2	0.9	0.1	6.8	0.2	0.0	0.1	0.0	0.4
Chiapas	0.1	0.6	1.6	0.3	1.7	0.4	0.1	0.2	0.2	0.5
Chihuahua	0.6	2.7	3.0	4.3	4.7	1.0	4.3	0.8	2.2	3.2
Ciudad de Mexico	27.6	50.3	19.2	16.8	8.6	44.7	52.3	7.6	15.8	27.1
Coahuila de Zaragoza	0.2	1.2	3.3	6.8	2.4	1.5	1.0	0.1	2.2	3.6
Colima	0.0	0.2	0.8	0.1	0.0	0.1	-0.0	0.4	0.4	0.2
Durango	0.1	0.3	1.0	0.3	14.1	0.6	0.0	0.0	0.1	0.8
Estado de Mexico	30.0	4.7	12.5	12.8	0.0	15.3	6.5	0.3	10.0	10.0
Guanajuato	0.8	2.0	4.0	5.9	-0.1	2.8	2.5	0.3	8.5	3.7
Guerrero	0.0	0.6	1.1	0.2	6.9	0.8	0.0	1.6	0.5	0.7
Hidalgo	0.0	0.6	1.6	0.3	0.0	0.3	-0.1	0.0	1.1	0.4
Jalisco	14.3	5.0	10.3	6.1	1.0	5.9	4.5	9.3	2.8	6.4
Michoacan de Ocampo	0.0	1.1	2.0	2.2	0.0	1.0	0.1	0.0	1.3	1.4
Morelos	0.0	0.6	1.1	0.7	0.0	0.6	0.1	0.1	0.0	0.6
Nayarit	0.1	0.3	1.1	0.4	0.0	-0.0	0.0	8.0	0.0	1.0
Nuevo Leon	4.1	8.5	7.3	15.2	0.4	8.1	12.6	0.3	3.4	10.1
Oaxaca	0.1	0.5	1.0	0.2	0.2	-0.0	0.1	0.6	0.3	0.3
Puebla	0.9	2.4	2.9	4.4	0.0	2.6	1.4	0.0	0.1	2.9
Queretaro	1.1	3.6	1.9	4.0	0.0	2.9	2.2	0.0	5.0	3.1
Quintana Roo	7.2	1.9	1.2	0.2	0.0	1.6	2.4	20.9	1.1	2.9
San Luis Potosi	0.1	0.8	1.4	2.5	1.1	1.3	0.8	0.0	12.3	1.8
Sinaloa	0.2	0.7	1.1	0.3	0.6	0.5	0.7	2.0	1.0	0.6
Sonora	0.9	1.5	2.7	1.8	2.5	0.8	0.8	4.7	13.3	2.2
Tabasco	0.2	0.7	1.7	0.6	2.5	0.6	0.3	0.3	0.2	0.7
Tamaulipas	3.0	1.7	4.0	2.0	3.1	1.0	2.1	1.6	2.1	2.0
Tlaxcala	0.4	0.1	0.4	0.8	0.0	-0.0	0.0	0.0	0.0	0.4
Veracruz de Ignacio de la Llave	1.8	2.3	3.3	2.2	1.1	1.3	2.2	0.3	3.7	2.0
Yucatan	0.9	0.7	1.3	0.3	0.0	0.6	0.4	1.0	0.7	0.6
Zacatecas	0.0	0.2	0.7	2.2	41.8	-0.1	0.0	0.0	0.0	2.4
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note: Industry mapping: (1) Construction; (2) Finance and Real Estate; (3) Information; (4) Manufacturing; (5) Mining and Oil; (6) Retail; (7) non-financial Services; (8) Tourism and Culture; (9) Transport. Source: INEGI.

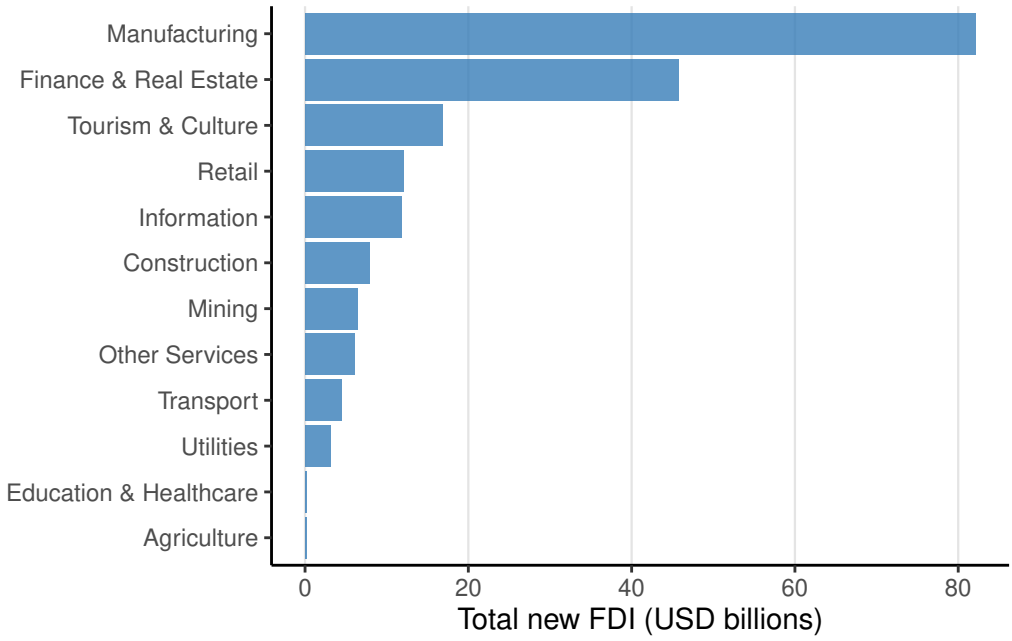

Figure 1: Total new FDI between 2000-2018 grouped by Industry

At the aggregate level, the time path of FDI is non-monotonic, with a sharp contraction in 2008–2009 driven by the global financial crisis and a partial recovery thereafter. The path of criminal-group counts displays a clear acceleration from 2007 onward, partially overlapping in time with the global financial crisis, as shown in Figure 2. The implication for identification is that the year fixed effects in the baseline specification must absorb any time-varying common factor, including the financial crisis, leaving the within-state, across-time variation in criminal-group counts as the source of identifying variation.

3.1.2 Organized crime: criminal group counts

The treatment variable is the count of distinct criminal organizations operating in each state j and year t, drawn from the dataset constructed by Garriga and Phillips (2023), which extends the earlier coding of Phillips (2015). The dataset is built from Mexican news reports, government reports, and STRATFOR mapping records, with each source independently triangulated to identify the geographic territory in which a given criminal group is active. The resulting series provides a direct measure of organized-crime presence and proxies the dimension of competition between criminal organizations, which have been systematically linked to violent territorial conflict (Atuesta & Ponce, 2017; Dell, 2015; Durante & Gutierrez, 2015).

Furthermore, a substantial share of Mexican homicides is unrelated to cartel activity and especially

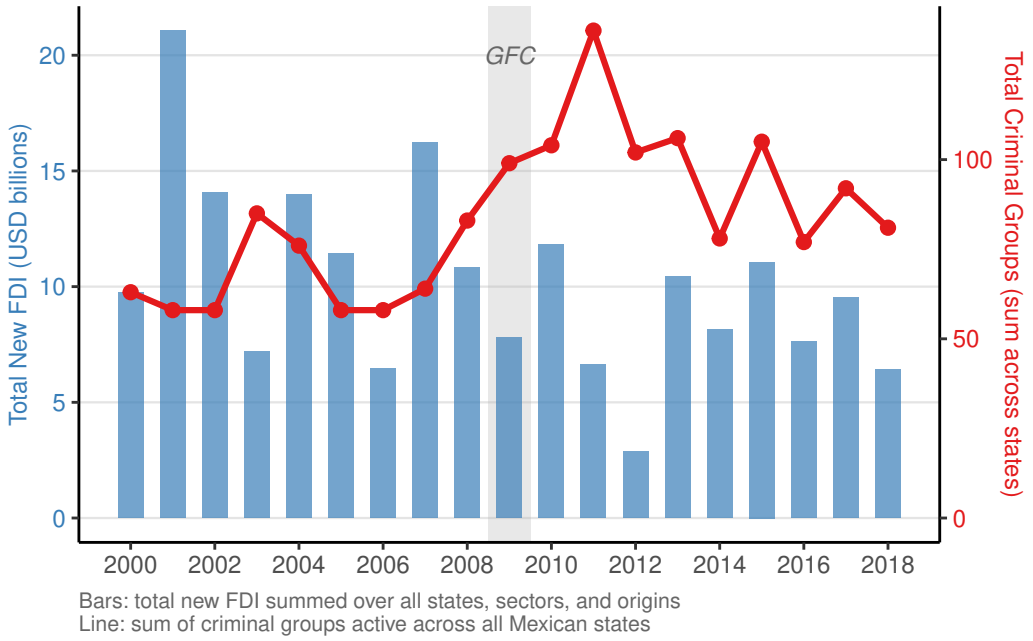

Figure 2: Total new FDI and Criminal Group Activity in Mexico (2000-2018)

drug-related homicides are notoriously underreported[4], so homicide-based proxies introduce attenuation bias of unknown magnitude (Human Rights Watch, 2025). The within-panel correlation between the count of groups and the homicide rate is approximately 0.39, indicating that the two series capture related but distinct phenomena, and supporting their joint inclusion. The homicide rate is therefore retained as a state-level control in the baseline specification, on the rationale that some of the deterrent effect of insecurity operates through the level of violence that residents and investors perceive directly, irrespective of its institutional source.

Figure 2 shows that the aggregate number of criminal groups roughly doubles between the start of the panel and the end of Calderón's term in 2012, a period marked by intense military intervention. The spatial distribution is highly uneven, with northern border states and the Pacific corridor accounting for most of the variation, while several southern and Gulf-coast states retain a small and stable number of groups across the full sample, summarized in Table A2. This combination of temporal and spatial variation underlines the use of two-way fixed effects: the year dimension absorbs the common-shock component of the trend, while the state dimension absorbs the time-invariant level differences across destinations, leaving the within-state, year-to-year change in groups as the source of identifying variation.

[4]Since 2007, more than 94 000 people have been reported as missing, compared with 450 000 homicides in that period.

3.1.3 Origin country covariates and the laundering indicator

Origin country covariates capture the supply side of bilateral FDI and consist of the logarithm of source-country GDP at constant prices, drawn from the World Bank development indicators; the distance between the center of the source-country and Mexico City, computed using the Haversine formula; and an indicator for Spanish as the first language of the source country. The first two capture the standard gravity determinants of bilateral capital flows, while the language indicator represents the cultural and informational proximity that has been shown to play a significant role in foreign investment decisions (Bhardwaj et al., 2007; Fiorini et al., 2021).

A key origin-country control is the Laundering indicator, a dichotomous variable flagging investing countries that are identified as money-laundering entities of "primary concern" in the annual International Narcotics Control Strategy Report (INCSR) of the United States Department of State. The construction follows Perez, Brada, and Drabek (2012), who use the same classification to test the impact of illicit money flows on bilateral FDI. The variable enters the second specification (Model 2) and the Construction-sector laundering analysis described in Section 3.2.2, and its expected sign is positive, especially for sectors whose features facilitate the conversion of illicit revenue into legitimate assets.

3.2 Empirical Strategy

The study uses a two-way fixed-effects regression to investigate whether an increase in organized crime in a state — proxied by the number of criminal groups — is associated with a change in sectoral foreign direct investment. The specification exploits within-state variation in organized crime after 2006, while simultaneously accounting for baseline differences between states and common macroeconomic shocks.

3.2.1 Baseline specification

The baseline model includes the lagged count of criminal groups in a state which is interacted with the industries, and various state-level and origin-country controls, all lagged by a year. The estimating equation is:

$$\begin{aligned} log(FDI_{ioj,t}) = \beta_0 + \beta_1 Criminalgroups_{j,t-1} \times \sum Industry_i + \beta_2 Criminalgroups_{j,t-1} \\ + \beta_3 X_{j,t-1} + \beta_4 W_{o,t-1} + \delta_j + \lambda_t + \epsilon_{s,t} \end{aligned} \tag{1}$$

where i indexes the nine industry groups, o indexes origin countries, j indexes Mexican states, and t indexes years between 2000 and 2018. The one-year lag of Criminal Groups enters both as a main effect and interacted with the full set of sectoral indicators, with Construction serving as the omitted reference category. The sum $\beta_1 + \beta_2 \times Industry_i$ accordingly yields the sector-specific marginal effect, with deviations from Construction measured by $\beta_2 \times Industry_i$.

The vector $X_{j,t-1}$ collects the lagged state-level controls: the homicide rate, the average years of schooling, the lagged dependent variable, and the log of sector-specific GDP. A lag of the dependent variable is included to capture the persistence in foreign investment decisions documented in the prior literature (Mody et al., 2003). $X_{o,t-1}$ collects the lagged log of origin-country GDP, the log of geodesic distance to Mexico City, and the Spanish-language indicator. The state fixed effects δ_j absorb time-invariant heterogeneity across destinations, including the institutional differences that characterize Mexican federalism and the distance to the United States border; the year fixed effects λ_t absorb aggregate shocks common to all states, including the global financial crisis and changes in international commodity prices. Results of Hausman tests validate the model choice, as random effects produce inconsistent estimates.

The rationale behind entering the treatment and controls with a one-year lag is twofold. First, the FDI decision is forward-looking but operationally slow: project planning, due-diligence procedures, and capital deployment typically span more than twelve months, so the lagged treatment matches more closely the timing at which institutional conditions enter the investor's calculation. Second, the lag mitigates the simultaneity that would otherwise arise if contemporaneous criminal-group counts were partly determined by the same local economic conditions that drive contemporaneous FDI decisions (Dell et al., 2019).

Statistical inference is based on cluster-robust standard errors. The headline specification adopts three-way clustering at the State–Year–Sector level, the most conservative of the available cluster structures and the only one that simultaneously accommodates within-state, within-year, and within-sector residual correlation (Cameron et al., 2011; Colin Cameron & Miller, 2015). The choice is motivated by the few-clusters concern on the sector dimension, which could lead to a downward bias in the standard errors (Cameron et al., 2008). Adopting the three-way structure at the baseline guards against this bias by combining residual covariance across all three dimensions rather than relying on two-way clustering alone. As a robustness exercise, two-way clustering at the State–Year level — which drops the sector dimension entirely and is therefore unaffected by the few-clusters bias on that dimension — is reported in the appendix, and the comparison reveals whether the inclusion of sector-level covariance materially shifts the inference.

3.2.2 Additional model specifications

The baseline specification is supplemented by three alternative model variants, each modifying one dimension of the model while preserving the rest. Model 2 adds the time-invariant INCSR money-laundering indicator of the source country. Model 3 adds origin-country fixed effects, absorbing all time-invariant bilateral heterogeneity. Model 4 excludes state and origin-country fixed effects and replaces them with the time-invariant political indicators — the PRI-loss and PAN-governance variables described in Section 3.1 — and time-varying data on state GDP and population, to verify that the sectoral pattern is not a product of within-state demeaning.

Beyond the alternative specifications, additional robustness checks probe timing of treatment and functional form: a dynamic-lag specification extends Equation 1 by entering the criminal-group count at one-, two-, and three-year lags simultaneously. The exercise tests whether the response of FDI to organized crime persists beyond a single year and validates the choice of a one-year lag in the baseline against the alternative of a distributed-lag structure. The event-study specification supplements the dynamic-lag model with two leads of the criminal-group count, $Groups_{j,t+1}$ and $Groups_{j,t+2}$, to test the no-anticipation assumption central to a causal reading of the lag coefficients. The specification is run at both the aggregate and the sector level. Any pattern of pre-treatment correlation between future criminal-group counts and current FDI would point to anticipation or to a reverse-causality channel unaccounted for in the baseline specification. The functional-form check augments the baseline with a quadratic term in the lagged criminal-group count and its interaction with each of the nine sectoral indicators. A joint F-test on the full set of quadratic interactions tests linearity against a sector-specific non-monotone alternative.

The laundering check for Construction and Retail proceeds in two complementary steps. First, the baseline specification is re-estimated on the Construction and Retail sub-samples separately to verify that the positive sector-specific coefficients survive the loss of cross-sector identifying variation. Second, the lagged criminal-group count is interacted with the time-invariant INCSR money-laundering indicator of the source country, and the marginal effect of an additional criminal group on sectoral FDI is computed separately for flagged and non-flagged source countries. The interaction is also re-estimated excluding the United States — which alone accounts for approximately 40 per cent of construction and 70 per cent of retail inflows and is itself classified as a primary-concern jurisdiction — to verify that the differential is not driven by a single dominant source (Perez et al., 2012).

4 Results

This chapter presents the empirical results of the fixed-effects specification described in Section 3.2, organized in four subsections. Section 4.1 walks through the sector-specific marginal effects across the alternative model specifications and the controls, Section 4.2 reports the pre-trend, dynamic-lag, and functional-form checks that support a causal reading of the coefficients, Section 4.3 introduces the sector-specific tests that bear on the construction coefficient, and Section 4.4 compares the results across new FDI and reinvestment of earnings.

4.1 Regression results and the sector-specific pattern

Table 2 reports the marginal effect of an additional criminal group on signed-log FDI for each of the nine sectoral aggregates, computed with cluster-robust standard errors at the State–Sector-Year level. The pattern is highly heterogeneous: the coefficients vary in sign, in magnitude, and in statistical significance across sectors, supporting the rationale behind the interaction term and consistent with the prior expectation that the response of FDI to organized crime depends on the sector's institutional exposure (Ashby & Ramos, 2013; Blanco et al., 2019).

Three sectors record statistically significant negative coefficients. The largest declines are in finance and real estate and in information, with marginal effects of -0.113 and -0.123 in the baseline specification, corresponding to approximately 12 and 13 per cent declines in new FDI per additional criminal group, both significant at the one-per-cent level in all four specifications. Transport records a smaller negative response of approximately -0.066, corresponding to approximately a 7 per cent decline, and is significant at the five-per-cent level in Columns (1), (2), and (4), but loses statistical significance once origin-country fixed effects are absorbed in Column (3).

Two sectors record statistically significant positive coefficients. Construction, the omitted reference category, has a marginal effect of approximately 0.057, corresponding to approximately a 6 per cent increase, and is significant at the one-per-cent level in Columns (1) and (3) and at the five-per-cent level in Columns (2) and (4). Retail records a smaller positive coefficient of approximately 0.043, corresponding to approximately a 4 per cent increase, significant at the five-per-cent level in Columns (1) through (3) and at the ten-per-cent level in Column (4), once state fixed effects are excluded from the model.

The remaining four sectors — manufacturing, mining and oil, non-financial services, and tourism and culture — return coefficients that are economically small and statistically indistinguishable from zero across all four specifications. The only borderline case is mining and oil in Column (4),

Table 2: Regression Results: Impact of an additional criminal group on new FDI between 2000-2018 grouped by Industry

	Coefficients (standard errors)			
Variables	(1)	(2)	(3)	(4)
Marginal Effect of Criminal Groups on log(FDI), by Sector				
Construction (ref.)	0.057***	0.057***	0.061***	0.066***
	(0.020)	(0.021)	(0.015)	(0.023)
Finance & Real Estate	-0.113***	-0.114***	-0.123***	-0.107***
	(0.024)	(0.025)	(0.027)	(0.026)
Information	-0.123***	-0.123***	-0.111***	-0.119***
	(0.015)	(0.014)	(0.021)	(0.021)
Manufacturing	-0.004	-0.005	-0.011	0.006
	(0.014)	(0.014)	(0.017)	(0.019)
Mining & Oil	0.045	0.046	0.052	0.066
	(0.037)	(0.038)	(0.037)	(0.050)
Retail	0.043**	0.043**	0.046**	0.050*
	(0.018)	(0.019)	(0.021)	(0.030)
non-financial Services	0.002	0.002	-0.006	0.006
	(0.016)	(0.016)	(0.014)	(0.019)
Tourism & Culture	0.003	0.003	0.012	0.003
	(0.039)	(0.039)	(0.048)	(0.034)
Transport	-0.066**	-0.067**	-0.051	-0.061*
	(0.029)	(0.030)	(0.034)	(0.033)
Control Variables				
Schooling	0.304	0.302	0.386**	0.214***
	(0.238)	(0.237)	(0.189)	(0.059)
FDI (lag)	0.332***	0.332***	0.275***	0.334***
	(0.048)	(0.048)	(0.048)	(0.048)
Homicide Rate	-0.001***	-0.001***	-0.001	-0.001
	(0.000)	(0.000)	(0.001)	(0.001)
Sector GDP (log)	0.239***	0.240***	0.223***	0.261***
	(0.064)	(0.064)	(0.063)	(0.077)
Origin country GDP (log)	0.460***	0.448***	0.664**	0.437***
	(0.057)	(0.054)	(0.313)	(0.055)
Origin country distance (log)	-0.083	-0.074		-0.069
	(0.126)	(0.129)		(0.127)
Spanish-speaking	0.460**	0.460**		0.444*
	(0.231)	(0.230)		(0.231)
Money Laundering		0.079		0.072
		(0.099)		(0.097)
Distance to US border				0.001***
				(0.000)
Democracy (PRI Lost)				-0.124
				(0.082)
Mexico City Dummy				0.650***
				(0.112)
State GDP (log, lag)				-0.206*
				(0.120)
State Population (log, lag)				0.193*
				(0.104)
Constant	-16.384***	-16.190***	-22.449***	-15.824***
	(3.579)	(3.483)	(6.045)	(2.510)
Adjusted R^2	0.197	0.197	0.229	0.196
State FE	Y	Y	Y	N
Year FE	Y	Y	Y	Y
Origin FE	N	N	Y	N
Observations	70515	70515	70515	70515

Note: State + Year + Sector clustered SE. *** p < 0.01, ** p < 0.05, * p < 0.1.

which crosses the ten-per-cent threshold once the state fixed effects are replaced with time-invariant state-level controls.

The state-level controls enter with the expected signs and largely stable magnitudes. The lagged dependent variable and the log of sector-specific GDP both enter positive and significant at the one-per-cent level in all four specifications, consistent with the persistence documented in the prior literature on foreign investment decisions (Mody et al., 2003). The homicide rate enters negatively and is significant at the one-per-cent level in Columns (1) and (2), although its magnitude is small (0.001). Average years of schooling enter positively across all columns but reach significance only in Columns (3) and (4).

The origin-country controls behave in line with the initial intuition. The log of source-country GDP enters positive and significant at the one-per-cent level across all four specifications. The Spanish-language indicator is positive and significant at the five-per-cent level in Column (1) but loses significance once additional controls or fixed effects are introduced. The log of the distance to Mexico City is insignificant in the baseline specification but turns sharply negative and significant once the laundering indicator or alternative state-level controls are imposed in Columns (2) and (4). Three coefficients from the alternative specifications warrant brief mention. The INCSR money-laundering indicator added in Column (2) is itself close to zero and insignificant at the all-sector aggregate, foreshadowing the sector-specific test developed in Section 4.3. Column (4), which replaces the state fixed effects with the time-invariant political controls, returns a sectoral pattern indistinguishable from the baseline. The Mexico City dummy entered in Column (4) is large, positive, and significant at the one-per-cent level, consistent with the concentration of FDI in the federal capital noted in Section 3.1.

A robustness exercise re-estimates the same four specifications with State–Year two-way clustered standard errors, reported in Table A3 of the Appendix. The point estimates are unchanged by construction, and the qualitative ranking of the sectors is preserved. Two differences in inference emerge, as retail and transport both lose statistical significance under the two-way clustering. The pattern aligns with the few-clusters concern that motivated the three-way clustering choice in Section 3.2.1: with only nine sectoral groups, dropping the sector dimension from the cluster-robust variance estimator widens the confidence intervals on the sector-specific coefficients. Finance and real estate, information, and construction retain at least five-per-cent significance across all four columns under both clustering schemes, and are accordingly the most robust elements of the sectoral pattern; the retail and transport results survive in direction and magnitude but should be read as weaker. A second robustness exercise re-estimates the same four specifications with the inverse-hyperbolic-sine transformation of the dependent variable in place of the signed-log transformation, reported in Table A4. The point estimates and the qualitative sectoral pattern are preserved across

both transformations.

4.2 Pre-trends, dynamics, and functional form

A causal reading of the coefficients rests on the absence of a pre-trend in the treatment, on the stability of the lag structure assumed in the baseline, and on the appropriateness of the linear functional form. This section reports the three corresponding checks documented in Section 3.2.2: an event study including two leads of the criminal-group count, a dynamic specification including the lag at $t-1$, $t-2$, and $t-3$, and a quadratic specification testing for non-linearity.

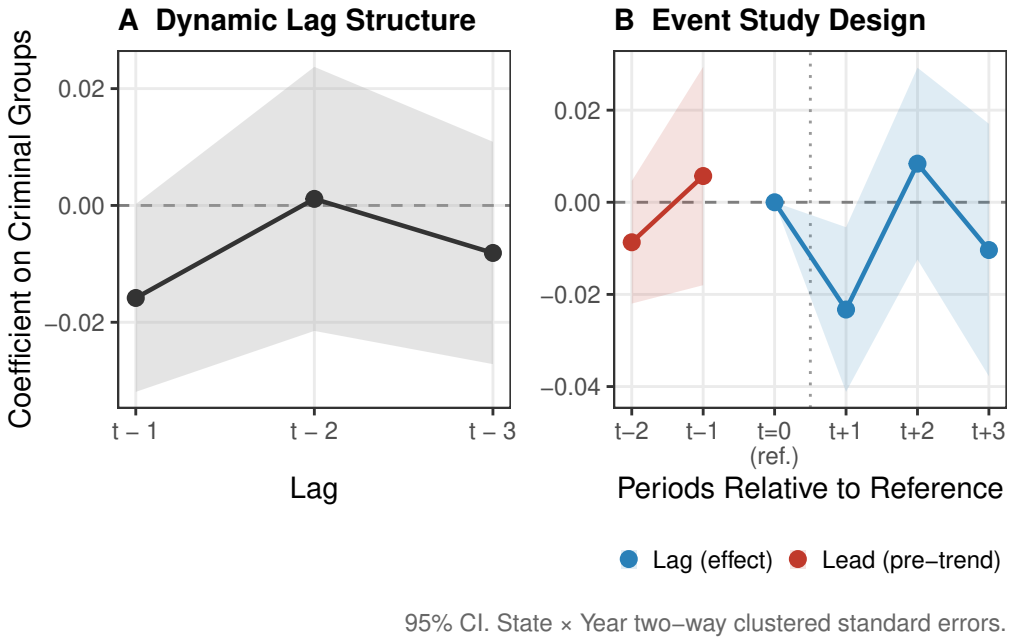

Figure 3: Criminal Groups and FDI: Dynamic Lag Structure and Event Study Design

The dynamic-lag specification shown in Figure 3 (full coefficients reported in Table A7) extends the baseline by entering the criminal-group count at three lags simultaneously. Only the one-year lag retains explanatory power, with a coefficient close to the baseline and a p-value of 0.054, while the two- and three-year lags are economically small and statistically insignificant. The pattern indicates that the response of foreign investors to changes in the security environment materializes within one year and does not persist after that, consistent with an investment-climate channel in which the decision to enter is driven by the current rather than the historical level of insecurity. The result also validates the choice of a single one-year lag in the baseline rather than a distributed-lag structure.

The event study reproduces the baseline specification with two leads and two additional lags of the criminal-group count, allowing future values of the treatment to enter alongside the contemporane-

Table 3: Sector-Level Pre-trend Test: Event Study Leads (State+Year Clustered SE)

Sector	Anticipation Leads		Joint Pre-trend Test		
	Criminal Groups (lead 2)	Criminal Groups (lead 1)	F	p-value	N
Construction	-0.029	-0.069	0.880	0.415	5,278
	(0.035)	(0.070)			
Finance & Real Estate	-0.030***	0.003	4.057	0.017**	9,204
	(0.010)	(0.030)			
Information	-0.047	0.117	0.931	0.394	4,758
	(0.062)	(0.087)			
Manufacturing	0.012	0.062	1.804	0.165	8,944
	(0.042)	(0.040)			
Mining & Oil	-0.134***	0.011	4.609	0.010**	3,536
	(0.044)	(0.038)			
Retail	0.036	-0.028	0.878	0.416	9,243
	(0.035)	(0.021)			
non-financial Services	0.004	0.012	1.072	0.342	8,489
	(0.019)	(0.012)			
Tourism & Culture	-0.001	-0.026	0.284	0.753	8,281
	(0.010)	(0.041)			
Transport	-0.023	-0.008	0.534	0.586	3,380
	(0.024)	(0.039)			

Note: Each row reports a sector-specific OLS regression with the same specification as the aggregate event study. Standard errors (in parentheses) are clustered by State + Year. Joint test: F-test of $H_0 : \beta_{\text{lead2}} = \beta_{\text{lead1}} = 0$. *** p < 0.01, ** p < 0.05, * p < 0.1.

ous and lagged values. Figure 3 shows that the two lead coefficients are economically small and statistically indistinguishable from zero and a joint F-test confirms that the leads are simultaneously zero ($F = 1.21$, $p = 0.299$). The negative effect materializes only at $t + 1$, which is precisely where the lagged-treatment specification of Equation 1 captures it, with the two other lags being jointly zero as well. The result supports the identification strategy and provides evidence against reverse causality, in which current FDI levels could predetermine the future number of criminal groups.

At the sector level, reported in Table 3, seven of nine sectors pass the joint pre-trends test at conventional thresholds. Finance and real estate and mining and oil reject at the nominal five-per-cent level ($p = 0.017$ and $p = 0.010$ respectively), but the rejection pattern is non-monotonic in both cases: the two-period-ahead lead carries the rejection while the one-period-ahead lead is essentially zero, which is inconsistent with the build-up that a classical anticipation story would predict. Additionally, under a Bonferroni adjustment for the nine simultaneous tests neither sector rejects the null. As a direct robustness check, the baseline specification was re-estimated with the two leads included as additional regressors, reported in Table 4. The Lag 1 coefficients on criminal groups

Table 4: Finance & Real Estate and Mining & Oil: Marginal Effect of Criminal Groups with and without Anticipation Lead Controls

	Marginal effect of Criminal Groups (lag)	
Specification	Finance & Real Estate	Mining & Oil
Original	-0.113***	0.045
	(0.024)	(0.037)
With leads	-0.135***	0.038
	(0.022)	(0.045)

Note:
Sector-level marginal effects of $Groups_{lag}$ from the baseline specification, with and without anticipation lead controls ($Groups_{lead1}$, $Groups_{lead2}$). 3-way cluster-robust standard errors *** p $<$ 0.01, ** p $<$ 0.05, * p $<$ 0.1.

are almost identical in magnitude to those in the baseline specification. The finance and real estate coefficient in fact becomes marginally more negative, while the mining and oil coefficient remains insignificant. The results shown in Table 4 therefore demonstrate that the sector-specific pre-trends do not contaminate the baseline estimates.

With the lag structure and the no-anticipation assumption established, a quadratic specification is estimated to test whether the linear form imposed in Equation 1 misses non-monotone behavior. A joint F-test of the nine sector-specific quadratic terms returns $F = 1.41$ ($p = 0.175$), and the null that the quadratic terms are simultaneously zero cannot be rejected. The linear specification is therefore appropriate for the all-sector test. Individually, however, Table A6 identifies construction as a sector with a significant quadratic term at the five-per-cent level, with retail and tourism and culture significant only at the ten-per-cent level. The construction non-linearity is developed further in Section 4.3 as part of the laundering-channel evidence.

4.3 Construction, retail and the laundering channel: preliminary evidence

To further investigate the positive coefficients for construction and retail, two additional checks probe whether the positive coefficients are consistent with the laundering channel that the literature on Italian mafia infiltration has identified (Mirenda et al., 2022; Scognamiglio, 2018). Full interpretation is developed in Section 5; this subsection reports the empirical results for each sector in turn, beginning with construction, for which the additional checks point in a consistent direction, and continuing with retail, for which the picture is more ambiguous.

First, to test non-linearity a sector-specific quadratic specification for construction alone is estimated. It returns an individually significant quadratic term with an inverted-U shape that peaks at approximately 4.6 criminal groups — compared to a median of 2.8 criminal groups per state –

showing that the initial positive effect is attenuated at higher levels of criminal groups in a state and is plotted in Figure 4. A second test interacts the lagged criminal-group count with the INCSR laundering indicator at the sector level. The marginal effect of an additional criminal group on construction FDI is positive and significant for investors from INCSR-flagged source countries and is statistically indistinguishable from zero for investors from non-flagged source countries, as shown in Table 5. Excluding the United States, which is classified as an INCSR-flagged country and contributes 40 per cent of total construction FDI, still yields the positive effect. However, even by excluding the United States, approximately 94 per cent of construction FDI in the sample originates from countries flagged as INCSR primary-concern jurisdictions, so the counterfactual rests on a thin set of observations and the test is supporting evidence rather than decisive proof.

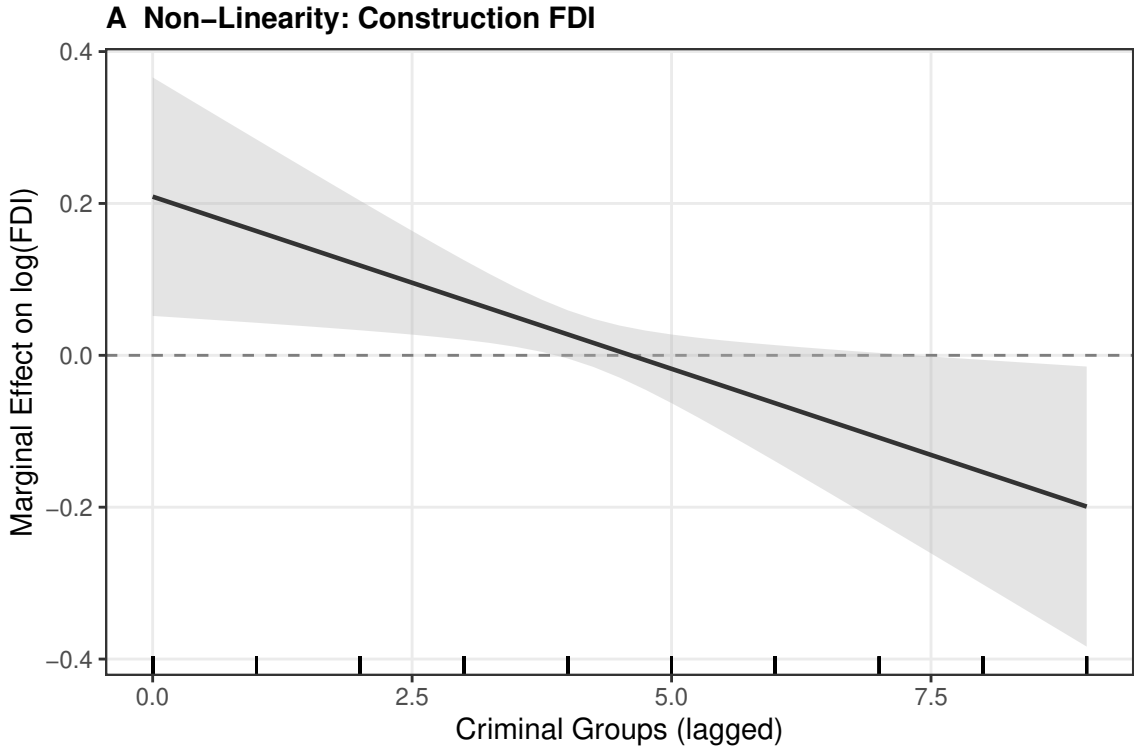

Figure 4: Construction FDI: Non-Linearity in the Criminal-Group Effect

The retail sector paints a more ambiguous picture, with three parallel checks each failing to reproduce the pattern documented for construction. When the baseline specification is re-estimated on the retail subsample alone, the retail coefficient shrinks towards zero and loses statistical significance, suggesting that the positive baseline estimate in Section 4.1 is partly driven by the cross-sector pooled variation rather than by an independent retail-specific effect. The INCSR interaction tells a similar story. The source-country differential shown in Table 5, which supports the laundering interpretation for construction, is attenuated in retail and no statistically significant difference between flagged and non-flagged countries could be found. Additionally, the inverted-U shape observed

Table 5: Laundering Channel: Construction and Retail Subsample Regressions (State+Year Clustered SE)

	Coefficients (standard errors)			
	Construction		Retail	
Variables	Full	excl. USA	Full	excl. USA
Laundering Channel				
Criminal Groups (lag 1)	-0.069	-0.054	-0.066	-0.042
	(0.049)	(0.044)	(0.040)	(0.029)
Laundering Indicator	-0.357*	0.035	-0.315	-0.154
	(0.213)	(0.223)	(0.257)	(0.239)
Criminal Groups × Laundering	0.190***	0.110*	0.137	0.148
	(0.062)	(0.067)	(0.106)	(0.098)
Control Variables				
Schooling	0.830	0.289	-0.233	0.523**
	(0.673)	(0.435)	(0.303)	(0.224)
FDI (lag)	0.341***	0.342***	0.262***	0.251***
	(0.064)	(0.071)	(0.092)	(0.045)
Homicide Rate	0.001	0.003	-0.002**	0.001
	(0.004)	(0.004)	(0.001)	(0.001)
Sector GDP (log)	-0.116	-0.067	0.844***	0.644**
	(0.089)		(0.325)	(0.275)
Origin country GDP (log)	0.256***	0.067	0.443***	0.182**
	(0.071)	(0.051)	(0.113)	(0.089)
Origin country distance (log)	-0.070	0.061	-0.163**	-0.063
	(0.092)	(0.074)	(0.071)	(0.073)
Constant	-11.930*	-4.212	-15.418***	-14.297***
	(6.571)	(3.456)	(2.860)	(4.700)
Adjusted R^2	0.167	0.151	0.178	0.153
State FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Observations	6090	5655	10665	10230

Note: SE for Sector GDP in column (2) is suppressed (NaN due to insufficient within-cluster variation after excluding US observations). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 6: Marginal Effects of Criminal Groups on FDI by Sector and Type

	Marginal Effect (SE)		FDI vs. ReInv
Sector	New FDI	Reinvestments	Wald F
Construction	0.057***	0.030	0.19
	(0.020)	(0.038)	
Finance & Real Estate	-0.113***	-0.006	1.96
	(0.024)	(0.052)	
Information	-0.123***	-0.231***	8.86***
	(0.015)	(0.059)	
Manufacturing	-0.004	0.030	1.33
	(0.014)	(0.026)	
Mining & Oil	0.045	0.090*	0.37
	(0.037)	(0.050)	
Retail	0.043**	-0.043	1.07
	(0.018)	(0.044)	
non-financial Services	0.002	-0.024	0.24
	(0.016)	(0.049)	
Tourism & Culture	0.003	-0.017	0.06
	(0.039)	(0.034)	
Transport	-0.066**	-0.006	0.81
	(0.029)	(0.062)	

New FDI: State + Year + Sector clustered SE. Reinvestments and Wald test: State + Year clustered SE. Significance: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

for construction does not repeat, as a retail-specific quadratic specification returns an insignificant quadratic term at the 5 per cent level, as shown in Table A6.

4.4 Reinvestment of earnings

The same baseline specification is re-estimated with reinvestment of earnings as the dependent variable, allowing the sectoral response to be compared across the two margins of foreign investment. Table 6 reports the marginal effects of an additional criminal group on each margin alongside a sector-by-sector Wald test computed on a stacked model that pools the two outcomes. Inference on the reinvestment column and on the Wald test uses State–Year two-way clustered standard errors, as the number of non-zero observations within a State × Sector × Year combination is too small to support the third clustering dimension and produces undefined standard errors.

Across most sectors the reinvestment coefficient is attenuated relative to the corresponding new-FDI coefficient. Finance and real estate shrinks from approximately -0.113 to approximately -0.006 and is no longer statistically distinguishable from zero; transport follows the same pattern, falling from approximately -0.066 to approximately -0.006. Construction returns a small positive but

insignificant coefficient of approximately 0.030, while retail flips sign across the two margins and, although insignificant, lands at -0.043 on reinvestment. In neither case, however, does the Wald test reject equality. The four sectors with insignificant new-FDI coefficients — manufacturing, mining and oil, non-financial services, and tourism and culture — also return reinvestment coefficients indistinguishable from zero, with the exception of mining and oil at approximately 0.090, significant at the ten-per-cent level.

The information sector is the only case in which the Wald test rejects equality of the two margins ($F = 8.86$, significant at the one-per-cent level), as the reinvestment coefficient of approximately -0.231 is substantially larger in magnitude than the corresponding new-FDI coefficient. A closer look reveals that the negative estimate is driven disproportionately by Mexico City. The federal capital combines the highest mean criminal-group count in the panel (4.16, against 2.46 in the remaining states) with a sparse profile of information reinvestments: only 10 per cent of state-year cells record positive flows, compared with 17 per cent elsewhere. Dropping Mexico City from the sample renders the coefficient statistically indistinguishable from zero ($\beta = -0.088$, $p = 0.221$), and the same exclusion does not materially shift the coefficients of the remaining sectors.

5 Discussion

The empirical pattern documented in Section 4 allows a coherent interpretation of the impact on new FDI in terms of three sector-specific mechanisms that have been identified in the prior literature: a deterrence channel that contracts FDI in institution-sensitive sectors, an insulation channel that leaves export-oriented and capital-intensive sectors largely unresponsive, and a laundering channel that draws criminal capital into the construction sector in the opposite direction. The reinvestment results add a fourth dimension of how an existing subsidiary, as opposed to a new entrant, responds to a marginal change in the security environment. The remainder of this section develops each mechanism in turn and concludes with a brief consideration of the policy implications.

5.1 Deterrence in institution-sensitive sectors

The strongest negative coefficients are estimated for finance and real estate and for information, the two sectors that depend most heavily on the credibility of long-term contracts, on the protection of intellectual and physical property, and on the predictability of regulatory enforcement (Ashby & Ramos, 2013; Bénassy-Quéré et al., 2007). An additional criminal group is associated with approximately a 12 per cent decline in new FDI flows into finance and real estate and approximately a 13 per cent decline into information, magnitudes that are economically substantial and that align with the cross-country evidence on institutional quality as a determinant of bilateral FDI (Luu et al., 2019; Mathur & Singh, 2011).

The mechanism is plausible because the channels through which organized crime operates — extortion, contract intimidation, asset seizure, and deterioration of property rights — fall most heavily on sectors whose value depends on the enforceability of long-horizon claims. Real estate developers and financial intermediaries cannot easily relocate their operations away from the local institutional environment in which they hold their assets, settle contracts, and recover defaulted loans, and therefore react more sensitively to a change in criminal-group presence (Hallward-Driemeier & Stewart, 2004; Jensen & Young, 2008). The implied mechanism is closely related to the quasi-tax interpretation of organized crime, in which a continuous stream of security expenditures, insurance premiums, and extortion payments raises the effective discount rate that foreign investors apply to expected returns (Abadie & Gardeazabal, 2008).

The information-sector coefficient is in line with the same channel but adds a second dimension. Information-sector subsidiaries rely on skilled personnel whose location decisions are themselves sensitive to local security conditions, and the literature indicates that the mobility of high-skilled workers is significantly influenced by the perception of personal security (Shah & Mehmood, 2023).

The combined effect on entry decisions is consistent with the substantial negative coefficient documented in Section 4.1.

Transport occupies an intermediate position in this story. The negative coefficient, while smaller in magnitude than the two leading deterrence sectors, is consistent with the direct operational exposure of road haulage and logistics to extortion, route insecurity, and cargo theft (Hallward-Driemeier & Stewart, 2004). The attenuation of the coefficient in Model 3, once origin-country fixed effects are absorbed, suggests that part of the transport response operates through the composition of source countries rather than through within-state institutional variation alone. Under the more conservative State–Year clustering reported in Table A3, the transport coefficient additionally loses statistical significance, indicating that the result is less robust to the choice of inference framework than the headline deterrence coefficients and should be read as suggestive rather than confirmed.

5.2 Insulation of export-oriented and capital-intensive sectors

Manufacturing, mining and oil, non-financial services, and tourism and culture exhibit coefficients that cannot be distinguished from zero. The pattern, excluding tourism, is consistent with the broad finding in the FDI literature that location decisions in export-oriented sectors are driven primarily by labor-cost arbitrage, integration into global value chains, and proximity to destination markets rather than by conditions in any particular sub-national jurisdiction (Lipsey, 2006; Mühlen & Escobar, 2020).

Manufacturing in Mexico is heavily integrated into North American value chains. Therefore, the choice of location of plants for foreign investors is between Mexico and competing host countries with similar trade access, rather than between Mexican states with different levels of organized crime. As a result, a marginal change in criminal-group presence within a Mexican state is unlikely to dominate the location decision of a manufacturer that has already chosen Mexico for its access to the United States market. Furthermore, manufacturing companies tend to have less cash, as they are usually subsidiaries of foreign companies operating in Mexico, and therefore present less of a target for criminal groups (Ashby & Ramos, 2013).

Mining and oil operate under similar logic. Their location decisions are bound to the geographic distribution of mineral and hydrocarbon deposits and their physical infrastructure is, by construction, immobile. Foreign operators in these sectors have also historically operated in violent environments and have built dedicated security capabilities that absorb part of the externality that organized crime would otherwise impose on a less specialized operator (Spich & Grosse, 2005).

Tourism and culture, while in principle exposed to local security conditions through the demand side, is dominated in Mexico by a small number of coastal hubs whose security environments differ structurally from the state-level averages that enter the panel. Furthermore, similar to mining and oil, location decisions in tourism are partly tied to geography, as the coastal stretches, climatic conditions, and cultural-heritage sites that attract foreign capital are fixed in place and cannot be substituted across destinations within Mexico in response to changes in the security environment. Additionally, evidence suggests that international demand for the established hubs such as Cancun and Cabo San Lucas is resilient, even in periods of elevated state-level violence (Oxford Analytica, 2017). The absence of a measurable effect at the state–sector level is therefore consistent with a geography of investment that is decoupled from the within-state variation in criminal-group presence.

5.3 The laundering channel in construction and retail

The positive construction coefficient stands apart from the rest of the sectoral pattern and points to an additional channel that inverts the relationship between organized crime and FDI, one used by criminal organizations to funnel their proceeds made abroad back into Mexico. The interpretation has substantial support in the Italian mafia literature, where construction has been identified as the canonical laundering vehicle through opaque project valuations, cash-intensive procurement, and large land transactions (Mirenda et al., 2022; Scognamiglio, 2018). The two additional tests reported in Section 4.3 are jointly consistent with this interpretation, although neither is conclusive on its own.

The first piece of evidence is the sector-specific quadratic shape, which traces an inverted U with a turning point at approximately 4.6 criminal groups. The shape is consistent with the hypothesis that a moderate number of established criminal organizations may provide the institutional infrastructure needed to channel illicit proceeds through construction projects. Highly fragmented environments with openly violent competition between groups, however, erode the stability and institutional predictability on which such arrangements rely and expose illicit investments to rival groups. The asymmetry between the all-sector quadratic test, which is insignificant, and the construction-specific test, which is individually significant, supports the interpretation that the nonlinearity reflects a sector-specific mechanism rather than a general feature of the data.

The second piece of evidence is the differential response across source countries, with the positive construction effect concentrated among investors from INCSR-flagged jurisdictions ($\beta = +0.125$, $p = 0.002$, computed from Table 5) and absent among investors from non-flagged jurisdictions ($\beta = -0.076$, $p = 0.15$). The findings align closely with the channel proposed by Perez, Brada,

and Drabek (2012). The caveat noted in Section 4.3 that most investments come from flagged countries limits the strength of the counterfactual but does not invalidate the directional pattern, especially because the pattern persists even when excluding the United States, which contributes about 40 per cent of construction FDI.

The retail coefficient, smaller in magnitude and less robust across clustered SE structures than the construction coefficient but similarly positive and significant, is plausibly consistent with the same channel, although the evidence is less conclusive. Literature on the Italian mafia case has identified retail trade as a parallel laundering vehicle whose cash-intensive operations and high transaction volumes facilitate the conversion of illicit proceeds into legitimate revenue (Mirenda et al., 2022). The interpretation should be treated as suggestive rather than conclusive, given the limited additional evidence the present analysis can provide for retail specifically.

A laundering interpretation, if correct, has implications beyond the descriptive coefficients. It indicates that the headline negative effect of organized crime on aggregate FDI, documented for Mexico by Garriga and Phillips (2023), conceals offsetting flows in particular sectors whose composition would not be visible without the sectoral disaggregation pursued in the present analysis. The estimate of the aggregate effect would in this case understate the deterrence channel and overstate the willingness of legitimate investors to commit capital to states with high criminal-group presence.

5.4 Reinvestment and the role of sunk costs and experience

The pattern across the new-FDI and reinvestment margins underlines the distinction between the two decisions and supports the analytical case made in Section 2.4 for treating them as separate dependent variables. The reinvestment coefficients are attenuated relative to the corresponding new-FDI coefficients across most sectors, consistent with the view that the physical assets, accumulated local relationships, and tacit knowledge of an operating subsidiary function as sunk commitments that raise the threshold for capital withdrawal (Coughlin & Segev, 2000). Greenfield investors, by contrast, face no comparable commitment and can redirect capital to safer destinations in response to a marginal increase in country risk.

The exception is information, where the Wald test rejects equality of the new-FDI and reinvestment coefficients at the one-per-cent level, with the reinvestment coefficient substantially larger in absolute value. While the result is surprising, an explanation consistent with the reinvestment literature is that the information sector holds a higher share of intangible assets — software, intellectual property, and skilled personnel — which are more mobile than the physical assets that anchor manufacturing or mining operations in place. Therefore, in the case of deteriorating security conditions,

firms in the information sector can scale down investments faster than firms in capital-intensive sectors, which translates into a more negative reinvestment response (Bavdaž et al., 2023; De Simone et al., 2019). The concentration of the effect in Mexico City documented in Section 4.4 is consistent with the parallel observation that the information sector is itself disproportionately located in the federal capital, so the subsidiaries that drive the coefficient are exposed to the security profile of the capital rather than the national average. Since dropping Mexico City from the analysis yields an insignificant coefficient, the asymmetry is most cleanly interpreted as a feature of the capital rather than as a general property of knowledge-intensive subsidiaries.

Beyond the sunk-cost interpretation, the reinvestment results indirectly support the laundering interpretation developed in Section 5.3. Laundering depends on the ability of criminal organizations to inflate recorded inflows of new capital and cannot operate through retained earnings that are already located within the country (Scognamiglio, 2018). If the construction and retail-specific positive new FDI coefficients were primarily driven by the laundering channel, the reinvestment coefficients should be less positive, which the comparison in Table 6 broadly confirms. The construction coefficient loses significance and shrinks toward zero, while the retail coefficient, although insignificant, flips in sign.

5.5 Policy implications

The pattern of sectoral heterogeneity has direct relevance for the design of security policy and for the assessment of its economic costs. A strategy that succeeds in dismantling criminal organizations but does so at the cost of fragmenting existing criminal group structures may carry costs concentrated in the institution-sensitive sectors of finance and real estate, information, and transport; sectors that channel capital, knowledge-intensive services, and logistical capacity into the broader economy and contribute to the higher-wage employment that foreign firms typically generate (Malchow-Møller et al., 2013).

The laundering channel identified in construction adds a separate dimension. If part of the recorded inflows reflects criminal proceeds rather than productive capital, headline FDI figures may overstate the welfare contribution of foreign investment to states with high criminal-group presence, and strategies to strengthen anti-money-laundering enforcement on cross-border flows into the sector may carry economic benefits beyond the direct objective of disrupting illicit finance (Farfán-Méndez, 2019; Ferragut, 2012).

Finally, yet importantly, the broader balance between battling for safety and preserving future economic growth is one that the empirical pattern documented in this paper informs rather than resolves,

and one that the design of future security strategies will need to address with attention to the sectoral composition of the affected investment environment (Dell et al., 2019).

5.6 Limitations

The first limitation is the spatial unit of analysis. The panel varies at the state–year–sector–origin level, which is the lowest level at which sectoral FDI is reported in the INEGI release, but it conceals heterogeneity at finer geographic scales that is substantively important. For instance, tourism investment is concentrated in Cancún, Tulum and Cabo San Lucas, whose security environments differ structurally from the state averages of Quintana Roo and Baja California Sur, and manufacturing in northern border states is similarly clustered in a small number of industrial parks whose security profile may be decoupled from the state's general security environment.

A second limitation concerns the measurement of organized crime. The criminal-group count of Garriga and Phillips (2023) is preferable to the homicide rate for the reasons developed in Section 3.1.2. However, the data treats a large cartel and a small splinter group as equivalent units, despite the two scenarios implying different shocks to the institutional environment foreign investors face (Atuesta & Pérez-Dávila, 2018).

Furthermore, the baseline specification includes a one-period lag of the dependent variable (LDV) as a state–year control, on the rationale that prior FDI flows are informative for current investor expectations (Mody et al., 2003). This introduces the Nickell (1981) bias, which biases the LDV coefficient downward. The spillover to the criminal-group coefficients depends on their partial correlation with the LDV after within-demeaning and is presumed small in the empirical time-series–cross-section literature (Beck & Katz, 2011). Furthermore, as $T = 19$ in the context of this study, the bias on the LDV is modest in magnitude. The most common robustness check, a Generalized Method of Moments (GMM) estimator, was implemented with the lagged dependent variable instrumented by its own lags at varying depths (Arellano & Bond, 1991). However, as shown in Table A5, every specification attempted fails both the Sargan test of overidentifying restrictions and the Arellano–Bond AR(2) test, indicating that the lagged-levels instruments are correlated with the error term and that the GMM estimates are accordingly biased and inconsistent in an indeterminate direction. The within estimator with cluster-robust standard errors is therefore retained as the headline specification on the grounds that the Nickell bias is bounded in magnitude, known in direction, and concentrated on the LDV coefficient itself.

Finally, yet importantly, the reinvestment-of-earnings dependent variable used in Section 4.4 and Section 5.4 carries measurement features that limit the strength of the comparison between the two

margins. Reinvestment reflects an accounting decision whether to retain or repatriate the profits of an existing subsidiary, and combines investor preference with tax differentials between Mexico and the home country, exchange-rate movements, and corporate-level redeployment decisions that the panel does not separately identify (Lundan, 2006).

6 Conclusion

Leveraging variation in criminal-group counts across Mexican states between 2000 and 2018, this thesis demonstrates the high degree of heterogeneity across sectors in FDI response to organized crime, proxied by the count of criminal groups operating in each state. While the sectors finance and real estate, information, and transport record significant declines in FDI of between approximately 7 and 13 per cent per additional criminal group, manufacturing, mining and oil, non-financial services, and tourism and culture show no significant effect. The findings are consistent with the existing literature, which reports that location decisions in these sectors are driven by global value-chain integration, labor-cost arbitrage, and geographic factors rather than within-state institutional shocks (Mühlen & Escobar, 2020; Waldkirch, 2010).

Construction and retail stand apart with small but positive effects on FDI per additional criminal group. Additional tests for construction indicate a money-laundering channel that inflates measured FDI, which is consistent with findings from the Italian mafia literature (Mirenda et al., 2022). The parallel tests for the retail sector do not point to money laundering and the coefficient is less robust across specifications. For reinvestment-of-earnings, coefficients are attenuated relative to those for new FDI across most sectors, consistent with the sunk-cost interpretation of Coughlin and Segev (2000).

These results contribute to the literature by providing the first sector-level estimate for Mexico that uses a direct measure of criminal-group presence rather than homicide rates and that separates new entry from reinvestment of earnings. They underscore that the aggregate effect documented by Garriga and Phillips (2023) masks substantial sectoral heterogeneity: the deterrence channel is concentrated in institution-sensitive industries rather than uniform across the economy, while the laundering-channel inflows into construction inflate the aggregate and overstate the willingness of legitimate investors to commit capital to high-violence states. This implies that aggregate FDI inflows into high-violence Mexican states should not be read as evidence of investor confidence, as the laundering channel into construction inflates the recorded total and masks the deterrence effect operating across institution-sensitive sectors.

Future research could probe the laundering interpretation directly through firm-level data on construction and retail operations in penetrated states and extend the sample beyond 2018 to test the persistence of the sectoral pattern under the MORENA administration. The broader trade-off between dismantling organized crime and preserving the foundations of foreign investment is one this thesis informs rather than resolves — and one that future security strategies will need to confront with sectoral exposure firmly in view.

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A Appendix

Tables A1 and A2 show additional summary statistics of the FDI and criminal group dataset, while tables A3 to A5 add robustness checks of the headline specification, including State + Year clustered standard errors, using an IHS transformation of the dependent variable, and the diagnostics of the GMM specifications. Table A6 summarizes the results of the non-linearity test, and A7 concludes with the results of the dynamic lag and event-study regressions on aggregate level.

Table A1: Summary Statistics for New FDI and Reinvestment of Earnings by Industry (2000–2018)

	New FDI (USD millions)				Reinvestment of Earnings (USD millions)				
Sector	Mean	SD	% Zero	*N*	Mean	SD	% Zero	% Neg.	*N*
Construction	0.83	17.32	93.4	9,500	1.04	19.28	98.2	0.1	3,400
Finance & Real Estate	2.88	65.89	86.4	15,865	2.99	36.14	87.7	0.9	9,380
Information	1.39	24.16	90.4	8,531	1.59	10.95	83.9	0.0	1,620
Manufacturing	5.09	51.90	86.9	16,131	5.47	34.00	83.6	0.9	10,300
Mining & Oil	1.00	21.49	96.4	6,479	2.32	62.06	98.6	0.1	1,500
Retail	0.72	10.18	90.4	16,682	2.82	17.44	89.2	0.2	5,860
non-financial Services	0.40	7.29	92.7	15,048	0.47	8.68	96.6	0.3	4,160
Tourism & Culture	1.20	13.59	90.7	14,079	0.16	3.04	99.2	0.1	1,660
Transport	0.70	11.08	95.1	6,327	0.48	6.34	97.7	0.2	5,340

Note: % Zero: share of observations equal to zero. % Neg.: share of reinvestment observations below zero (disinvestment);

Table A2: Criminal Group Activity by State (2000–2018)

State	Min	Max	Mean	Median	SD
Northern States					
Baja California	1	6	3.68	4.0	1.25
Baja California Sur	0	4	1.68	1.0	1.16
Chihuahua	2	5	3.05	3.0	0.97
Coahuila de Zaragoza	1	4	2.53	2.0	1.12
Durango	1	5	2.89	3.0	1.24
Nayarit	1	5	2.58	3.0	1.17
Nuevo Leon	1	6	3.16	3.0	1.54
Sinaloa	1	5	3.21	3.0	1.08
Sonora	1	4	2.74	3.0	1.10
Tamaulipas	2	5	3.00	3.0	1.11
Zacatecas	0	4	1.79	2.0	0.92
Central States					
Aguascalientes	0	6	1.68	1.0	1.77
Ciudad de Mexico	1	9	4.42	4.0	2.06
Colima	1	6	3.00	3.0	1.25
Estado de Mexico	1	8	3.37	3.0	2.24
Guanajuato	0	5	2.37	3.0	1.57
Hidalgo	0	3	1.05	1.0	0.91
Jalisco	1	8	4.42	4.0	1.61
Michoacan de Ocampo	2	6	4.26	4.0	0.99
Morelos	0	5	2.58	3.0	1.57
Puebla	0	4	1.63	1.0	1.07
Queretaro	0	4	1.21	1.0	1.18
San Luis Potosi	0	3	1.53	2.0	1.07
Tlaxcala	0	3	0.68	0.0	0.89
Southern States					
Campeche	1	3	1.63	1.0	0.76
Chiapas	0	5	2.79	3.0	1.47
Guerrero	1	8	4.37	4.0	1.95
Oaxaca	0	4	2.37	2.0	1.26
Quintana Roo	1	5	2.79	3.0	1.08
Tabasco	1	3	1.89	2.0	0.66
Veracruz de Ignacio de la Llave	2	5	3.21	3.0	0.98
Yucatan	0	3	1.74	2.0	0.87

Note: SD: within-state standard deviation across years.

Table A3: Table 1 Regression Results: Applying State-Year clustered SE

	Coefficients (standard errors)			
Variables	(1)	(2)	(3)	(4)
Marginal Effect of Criminal Groups on log(FDI), by Sector				
Construction (ref.)	0.057**	0.057**	0.061***	0.066**
	(0.029)	(0.029)	(0.023)	(0.029)
Finance & Real Estate	-0.113***	-0.114***	-0.123***	-0.107***
	(0.039)	(0.039)	(0.041)	(0.039)
Information	-0.123**	-0.123**	-0.111**	-0.119**
	(0.056)	(0.056)	(0.054)	(0.058)
Manufacturing	-0.004	-0.005	-0.011	0.006
	(0.026)	(0.026)	(0.030)	(0.027)
Mining & Oil	0.045	0.046	0.052	0.066
	(0.043)	(0.043)	(0.048)	(0.043)
Retail	0.043	0.043	0.046	0.050
	(0.045)	(0.046)	(0.050)	(0.049)
non-financial Services	0.002	0.002	-0.006	0.006
	(0.020)	(0.019)	(0.019)	(0.021)
Tourism & Culture	0.003	0.003	0.012	0.003
	(0.071)	(0.071)	(0.081)	(0.069)
Transport	-0.066	-0.067	-0.051	-0.061
	(0.046)	(0.047)	(0.046)	(0.046)
Control Variables				
Schooling	0.304	0.302	0.386	0.214***
	(0.227)	(0.228)	(0.237)	(0.055)
FDI (lag)	0.332***	0.332***	0.275***	0.334***
	(0.030)	(0.030)	(0.031)	(0.030)
Homicide Rate	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Sector GDP (log)	0.239***	0.240***	0.223***	0.261***
	(0.047)	(0.047)	(0.048)	(0.047)
Origin country GDP (log)	0.460***	0.448***	0.664***	0.437***
	(0.060)	(0.056)	(0.161)	(0.055)
Origin country distance (log)	-0.083	-0.074		-0.069
	(0.080)	(0.085)		(0.085)
Spanish-speaking	0.460***	0.460***		0.444***
	(0.172)	(0.172)		(0.172)
Money Laundering		0.079		0.072
		(0.100)		(0.099)
Distance to US border				0.001***
				(0.000)
Democracy (PRI Lost)				-0.124
				(0.110)
Mexico City Dummy				0.650***
				(0.127)
State GDP (log, lag)				-0.206***
				(0.079)
State Population (log, lag)				0.193**
				(0.092)
Constant	-16.384***	-16.190***	-22.449***	-15.824***
	(2.585)	(2.546)	(4.475)	(2.230)
Adjusted R^2	0.197	0.197	0.229	0.196
State FE	Y	Y	Y	N
Year FE	Y	Y	Y	Y
Origin FE	N	N	Y	N
Observations	70515	70515	70515	70515

Note: State + Year clustered SE. *** p < 0.01, ** p < 0.05, * p < 0.1.

Table A4: Regression Results: IHS Transformation (3-Way Clustered SE)

	Coefficients (standard errors)			
Variables	(1)	(2)	(3)	(4)
Marginal Effect of Criminal Groups on log(FDI), by Sector				
Construction (ref.)	0.060***	0.060***	0.064***	0.069***
	(0.021)	(0.022)	(0.016)	(0.025)
Finance & Real Estate	-0.120***	-0.120***	-0.130***	-0.113***
	(0.026)	(0.026)	(0.029)	(0.027)
Information	-0.129***	-0.129***	-0.116***	-0.125***
	(0.015)	(0.015)	(0.022)	(0.022)
Manufacturing	-0.005	-0.005	-0.012	0.006
	(0.015)	(0.015)	(0.018)	(0.020)
Mining & Oil	0.048	0.048	0.055	0.070
	(0.039)	(0.040)	(0.039)	(0.052)
Retail	0.044**	0.045**	0.048**	0.052*
	(0.020)	(0.020)	(0.022)	(0.031)
non-financial Services	0.002	0.002	-0.006	0.006
	(0.017)	(0.017)	(0.015)	(0.020)
Tourism & Culture	0.003	0.003	0.012	0.003
	(0.041)	(0.041)	(0.050)	(0.035)
Transport	-0.070**	-0.071**	-0.054	-0.064*
	(0.030)	(0.032)	(0.036)	(0.034)
Control Variables				
Schooling	0.316	0.313	0.402**	0.225***
	(0.252)	(0.251)	(0.200)	(0.062)
IHS FDI (lag)	0.331***	0.331***	0.273***	0.332***
	(0.048)	(0.048)	(0.047)	(0.048)
Homicide Rate	-0.001***	-0.001***	-0.001	-0.001
	(0.000)	(0.000)		(0.001)
Sector GDP (log)	0.251***	0.252***	0.235***	0.274***
	(0.067)	(0.067)	(0.066)	(0.081)
Global GDP (log)	0.482***	0.470***	0.698**	0.458***
	(0.060)	(0.056)	(0.329)	(0.057)
Distance to MX City (log)	-0.088	-0.078		-0.072
	(0.133)	(0.136)		(0.134)
Spanish-speaking	0.483**	0.483**		0.467*
	(0.242)	(0.241)		(0.242)
Money Laundering		0.083		0.076
		(0.104)		(0.103)
Distance				0.001***
				(0.000)
GDP (log, lag)				-0.217*
				(0.126)
Population (log, lag)				0.202*
				(0.110)
Constant	-17.163***	-16.959***	-23.565***	-16.584***
	(3.765)	(3.662)	(6.340)	(2.627)
Adjusted R^2	0.196	0.196	0.229	0.195
State FE	Y	Y	Y	N
Year FE	Y	Y	Y	Y
Origin FE	N	N	Y	N
Observations	70515	70515	70515	70515

Note: Dependent variable is IHS(FDI) = asinh(FDI). *** p < 0.01, ** p < 0.05, * p < 0.1.

Table A5: GMM diagnostics test results

Model	Estimator	Instr. Lags	No. Instruments	Sargan Over-identification Test			AR(1) Test		AR(2) Test	
				χ^2	df	p-value	z	p-value	z	p-value
(1)	Diff-GMM	$t-2$ to $t-4$	15	23.396	2	8.31×10^{-6}	-22.149	$< 2.22 \times 10^{-16}$	3.780	1.57×10^{-4}
(2)	Diff-GMM	$t-3$ to $t-6$	16	25.962	3	9.71×10^{-6}	-8.246	$< 2.22 \times 10^{-16}$	5.991	2.09×10^{-9}
(3)	Sys-GMM	$t-4$ to $t-8$	31	70.128	18	4.30×10^{-8}	-11.203	$< 2.22 \times 10^{-16}$	8.083	6.34×10^{-16}

Note: Two-step GMM with robust (Windmeijer-corrected) standard errors. Sargan test: null hypothesis of instrument validity AR(1)/AR(2): Arellano–Bond tests for first- and second-order serial correlation in residuals; absence of AR(2) is required for instrument validity.

Table A6: Quadratic Specification: Sector-Level Curvature of Criminal Groups (State+Year Clustered SE)

	Quadratic slope on Groups (lag)
Industry	(1)
Quadratic Coefficient of Criminal Groups on log(FDI), by Sector	
Construction (ref.)	-0.023**
	(0.010)
Finance & Real Estate	-0.008
	(0.010)
Information	-0.000
	(0.016)
Manufacturing	-0.002
	(0.002)
Mining & Oil	0.006
	(0.011)
Retail	0.022*
	(0.012)
non-financial Services	-0.010
	(0.010)
Tourism & Culture	-0.029*
	(0.016)
Transport	-0.004
	(0.005)

Note: State + Year two-way clustered SE. *** p $<$ 0.01, ** p $<$ 0.05, * p $<$ 0.1.

Table A7: Dynamic Lag and Event Study Specifications (State+Year Clustered SE)

	Coefficients (standard errors)	
Variables	(1) Dynamic Lag	(2) Event Study
Timing Variables		
Criminal Groups (lead 2)		-0.009
		(0.007)
Criminal Groups (lead 1)		0.006
		(0.012)
Criminal Groups (lag 1)	-0.016*	-0.023**
	(0.008)	(0.009)
Criminal Groups (lag 2)	0.001	0.008
	(0.012)	(0.011)
Criminal Groups (lag 3)	-0.008	-0.010
	(0.010)	(0.014)
Control Variables		
Schooling	0.305	0.506*
	(0.235)	(0.294)
FDI (lag)	0.333***	0.322***
	(0.030)	(0.031)
Homicide Rate	-0.001	-0.001
	(0.001)	(0.001)
Sector GDP (log)	0.221***	0.221***
	(0.051)	(0.052)
Origin country GDP (log)	0.459***	0.482***
	(0.060)	(0.061)
Origin country distance (log)	-0.085	-0.085
	(0.080)	(0.090)
Spanish-speaking	0.454***	0.492***
	(0.170)	(0.186)
Constant	-15.969***	-18.257***
	(2.629)	(3.005)
Adjusted R^2	0.196	0.191
State FE	Y	Y
Year FE	Y	Y
Origin FE	N	N
Observations	70515	61113

Note: Both specifications include industry, state and year fixed effects. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.