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BLUE-COLLAR CRIME AND FINANCE

TESIS PARA OPTAR AL GRADO DE
MAGÍSTER EN ECONOMÍA APLICADA

MEMORIA PARA OPTAR AL TÍTULO DE
INGENIERO CIVIL INDUSTRIAL

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RESUMEN DE LA MEMORIA PARA OPTAR
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Se presentan datos de tipo panel o series de tiempo para 13 economías del Caribe precedentes del Banco Interamericano de Desarrollo, Compete Caribbean y del Banco Mundial para examinar por primera vez las consecuencias financieras para diversos tipos de empresas, principalmente privadas, que son víctimas del crimen tipo Blue-Collar. Los datos indican que el 23 % de las empresas de la muestra fueron víctimas de delitos, incluidos actos como robo, vandalismo o algo peor. Los datos indican que el crimen tiene un costo real y sustancial en los resultados financieros de las empresas. En un período de 3 años posterior a ser objeto de un acto criminal de tipo Blue-Collar, las empresas reciben préstamos sustancialmente más pequeños, mayores tasas de interés sobre préstamos, terminan financiando un mayor porcentaje de capital de trabajo internamente y también un porcentaje menor de activos fijos a través del uso de fondos internos. Estos hallazgos son robustos a los problemas relacionados con causalidad, muestras combinadas y a los efectos de selección de Heckman, entre otras cosas.

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We introduce time series data across 13 Caribbean countries sourced by the Inter-American Development Bank, Compete Caribbean and the World Bank to examine for the first time the financial consequences for diverse types of companies, principally privately-held that are the victim of a blue-collar criminal act. The data indicate 23% of companies in the sample were subjected to crime, including acts such as theft and vandalism or worse. The data indicate crime has a real and substantial cost on financing outcomes. In the 3-year period subsequent to being the target of a blue-collar criminal act, companies receive substantially smaller loans, higher interest rates on loans, and end up financing a higher percentage of working capital and a lower percentage of fixed assets through the use of internal funds. These findings are robust to issues related to causality, matched samples, and Heckman selection effects, among other things.

A mi familia y amigos

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1. Introduction

The finance literature made significant advances through quantifying the role of legal institutions to assess their impact on various stock market (La Porta et al., 1997, 1998, 2002, 2006) and debt market outcomes (Qi et al., 2011, 2017; Qian and Strahan, 2007; Qian et al., 2017). Part of this literature emphasizes the role of enforcement (La Porta et al., 1998) and expenditures on enforcement (Jackson and Roe, 2009), which includes but is not limited to market surveillance technology (Comerton-Forde and Rydger, 2006; Cumming and Johan, 2008; Cumming, Johan and Li, 2011). A related literature examines the causes and consequences of actual misconduct in financial markets (“white-collar crime”) including conduct such as insider trading and other securities violations (Karpoff et al., 2008a,b, 2017; Karpoff and Lou, 2010).

In this paper, we bring forward a different type of analysis that is in the spirit of this literature on institutions, misconduct and finance, but one that has not received attention in the past. Specifically, we examine the effect of “blue-collar crime” (such as theft, burglary, vandalism, arson, extortion, and related offenses) on the availability and cost of external finance. Also our analysis departs from traditional studies of publicly traded companies on stock exchanges. Most companies around the world are privately-held (sometimes labeled as “entrepreneurial”) companies, and to this end, our focus is principally on the typical company that has not achieved a listing on a stock exchange, in our data, less than the 1 We ask the following questions. First, if a company is the victim of blue-collar crime, does this company have a lower probability of subsequently obtaining a bank loan within the subsequent 3 years? Second, if a company is the victim of blue-collar crime and they are able to obtain a bank

loan in the subsequent 3 years, does this company have to pay a higher interest rate on the bank loan? Third, if a company is the victim of blue-collar crime, does the company adjust its financing of working capital and fixed assets with a greater proportion of internal funds in the subsequent 3 years?

Our analysis is based on a large sample of detailed data from the Inter-American Development Bank (IDB), Compete Caribbean and the World Bank (WB). Prior work has made use of similar World Bank Enterprise Surveys (e.g., Kuntchev et al., 2012) to examine the characteristics of firms that are credit-constrained, albeit without an analysis of the role of blue-collar crime. Our sample covers 13 Caribbean economies: Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad Tobago. We observe crime statistics (the presence of crime and the cost of the crime) in 2009, and examine financing outcomes, that are loan amounts and interest rates of loans from 2010 to 2013 granted by the financial institutions.

The data indicate that crime is quite common: 23 % of the 1324 firms in our sample experienced crime in 2009. In our sample, a typical firm has a median of 18 employees, and the average cost of crime from all those type of companies is \$6,372. But if we see only companies that faced or experienced crime, the total cost on average reaches to \$28,675 per year for each company, so the financial damage can be quite a lot for a small and medium size company. Our regression evidence indicates that a 1-standard deviation increase in crime divided by sales has on average a 1.9 % reduction in the size of loans obtained in the subsequent years, a 2.6 % increase in interest rates relative to the average 10.56 % interest rate on these loans. Estimated differently as a dummy variable, the presence of crime gives rise to an 8.7 % increase in interest rates on loans relative to the average 10.56 % interest rate on loans in the sample. A 1-standard deviation increase in the cost of crime divided by sales further increases the percentage of working capital that are financed by internal funds by 3.0 % on average, and reduces the percentage of fixed assets that are financed by internal funds by 5.5 %. These

estimates control for other things being equal, and are robust to concerns regarding selection effects and other considerations discussed herein.

This paper is organized as follows. Section 2 discusses related literature on crime and other economic outcomes. The data and univariate tests are introduced in section 3. Section 4 provides multivariate tests. The final section offers concluding remarks and suggestions for future research.

2. Related Literature on the Economic and Financial Consequences of Crime

Prior work on the economic consequences of crime can be categorized into four types of studies: (1) the role of property rights in financial markets, (2) the impact of bribes and corruption on finance, (3) the effect of regional institutional stability on financial markets, and (4) the effect of white-collar crime on publicly traded firms. In this section, we briefly discuss each in turn.

First, it has been well established that strong protection and enforcement of property rights are important for well-functioning financial markets (La Porta et al., 1998). For example, Cull and Xu (2005), among others, have shown that secure property rights and the absence of risk of government expropriation are a key determinant of investment and access to bank loans. Qi et al. (2011, 2017) and Qian and Strahan (2007) show that creditor rights enhance in particular the size and quality of debt markets. Qian et al. (2017) confirm that legal institutions are particularly important in developing countries.

Second, prior work has established that bribes and corruption have large consequences for financial markets. For example, Asiedu and Freeman (2009) show that corruption has an adverse effect on investment growth for transition countries. Zeume (2017) argues that bribes facilitate firms doing business in some countries, and provides evidence that rules that prohibit this activity are a cost on firms.

Third, there is a large body of work on the importance of regional institutional stability on financial market outcomes. Ayyagari, Demirgüç-Kunt, and Maksimovic (2008) present

evidence using World Bank data that financial sector and firm growth depend critically on policy stability and keeping crime under control. Bonaccorsi di Patti (2009) shows that regions with higher crime rates in Italy are associated with lower quality credit markets in terms of companies paying higher interest rates and less access to debt finance. Fatoki and Odeyemi (2010), Fernandes (2008), Gaviria (2001), and Hallward-Driemeier, Wallsten, and Xu (2006) argue that regional institutional quality and crime go hand-in-hand, whereby regions with weak institutions have fewer banks and more crime. Similarly, Jones and Kutan (2004) argue economic volatility and high interest rates cause higher crime rates. Mahofa et al. (2016) show that crime in a region is associated with fewer entrepreneurial firms starting up in that region. Similarly, Montoya (2016) and Pshisva and Suarez (2004) show that crime and violence in a region causes subsequent declines in economic activity and investment in that region.

Fourth, there is work that has shown large consequences of managerial misconduct such as “cooking the books” (more generally, “white-collar crime”) in terms of punishment and share price effects (Karpoff et al., 2008a,b). When caught, companies face large long term reputational costs that are reflected in permanent reductions in their share prices.

Our analysis differs from these important studies by examining the impact of actual incidents of blue-collar crime (theft, burglary, vandalism, arson, extortion, and related offenses) on companies that are the victims of such crime. That is, we examine the subsequent access to external finance. As far as we are aware, the paper represents a first-ever look at data that relates acts of blue-collar criminal crime on companies to their subsequent financing outcomes.

3. Data

Description and Summary Statistics

The data we use come from two detailed surveys, the World Bank Enterprise Survey (WBES) and the PROductivity, TEchnology and INnovation Survey (PROTEqIN). The latter implemented by the Inter-American Development Bank (IDB) and Compete Caribbean. The WBES collected information corresponding to year 2009; while PROTEqIN collected information corresponding to year 2012 from the same firms included in the WBES.

Those surveys collected information about productivity, technology, finance, innovation, crime and prevention, among others, from firms of thirteen Caribbean countries, these economies are Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad Tobago. As the indicated surveys collected information from two different periods (2009 and 2012), we merged them at the firm level to make it both comparable and use it as a panel. Our final data set consist of 1324 firms observed for two periods.

Our panel database is quite different and unique in comparison with the cross-sectional WBES, especially for Caribbean economies, for two reasons: (1) on the WBES there is no complete information about cost of finance, specifically about the interest rate and the duration of the loans granted by financial institutions. (2) on the WBES, for Caribbean economies, there is only one period (2009) published in 2010, the same that we use here in this study. So thanks to the PROTEqIN survey, we could fill those gaps, since it asks about the cost of

finance, specifically about the interest rate, and interviewed the same companies that were interviewed by the WBES, so could match the data to turn it into a panel.

The sampling strategy of the surveys consisted in identifying by country and service or manufacturing sector's, firms that were strong (weak) performers, measured by sales per worker above (below) the median. So, per country and sector, companies were ranked (from the lowest to the largest) on sales per worker and then selected to be interviewed. For instance, in Jamaica, were selected to be interviewed the first 50 lowest performing manufacturing and the last 50 highest performing manufacturing companies.

Summary statistics for the complete data set, as well as the conditional for companies who received at least one event of crime are shown in Tables 1 and 2. Each table is divided in three parts, studying the dependents, independents and firm controls variables. Table 1 indicates that there were 28.3 % (375 of 1324) companies who had a current credit or loan from a financial institution in 2012. The average annual interest rate obtained from the loan/credit was 10.55 %, and the median 10 %. The average amount of the credit/loan was US\$30,151 and the median US\$22,494.

[Table 1 About Here]

Table 1 reports the percentages of internal and external funds used to finance their working capital and fixed assets in the last fiscal year. The data indicate that firms prefer on average to finance their projects with internal funds instead of external finance. It should also be noted that the number of observations between financial outcomes are different because not all companies currently have a credit/loan or financed fixed assets or working capital on the 2012 fiscal year.

Table 1 also reports that there were 23 % (305 of 1324) companies who experienced losses caused by at least one type of crime, among them: theft, robbery, vandalism or arson in 2009. The average of total cost of crime was \$6,372 for all companies in the sample. In the subsample of companies that were subjected to crime, the cost of crime was \$28,675.

Finally, Table 1 also presents 2009 firm characteristics used in the empirical analysis as control variables. The average (median) age of the firms was 17.75 (12.91) years. The median number of employees in the sample in 2009 was 18. About 67% of firms reported having externally audited financial statements, but only 15% have an internationally recognized certificate of quality. On average, 87.5% of firm ownership was concentrated in the main owner; while 80% of firms are managed by males.

Table 2 reports the same variables at Table 1, with the difference that here, the data is conditional to the dummy of crime equal to one. So, we can see that in average when the company has crime, the interest rate obtained from the financial institutions is greater than all companies in 0.557% and the median by 1%. About how they finance their working capital and fixed assets, they tend, in average, to finance it obtaining more external capital by 2.98% and 5.18%, respectively and in the median by 2% and 10%, respectively.

[Table 2 About Here]

Additionally, it's important to note that there are no endogeneity problems with this variables, since the interest rate and amount obtained from the last loan, that can be from 2010 to 2013, and obtaining external finance for 2012 do not have impact on the characteristics of the company in 2009, like the age, number of workers, market attended, among others.

Comparison Tests

Table 3 shows that the average interest rate on loans is 10.38% when firms are not subjected to crime and 11.112% when firms are subjected to crime in the past. Loan amounts are on average \$27,364 for firms that were not subjected to crime and \$41,151 for firms that were subjected to crime in the past. Table 4 presents comparison tests for the median interest rate on loans and the loan amounts (2012 survey) for firms that were and were not subjected to crime (2009 survey). As expected, the data indicate that a significantly higher number of

firms have interest rates above the median when they were subjected to crime in the past, and this different is statistically significant at the 1% level. However, the data further indicate that a significantly higher number of firms have loans amounts above the median when they were subjected to crime in the past, and this different is statistically significant at the 1% level. This loan amount result was not expected, and possibly attributable to the fact that larger firms borrow more and are more likely to be the target of crime, which is a possibility that is explored in the multivariate tests below. Tables 5 and 6 present similar tests that confirm these findings based on the Wilcoxon rank-sum test (Table 4) and the two-sample t-test for means (Table 5).

[Tables 3-6 About Here]

4. Multivariate Analysis

Our multivariate tests are presented in the following order. First, in Tables 7-11 we analyze the determinants of interest rates on loans and loan amounts. Thereafter, in Tables 12-15 we analyze the determinants of the percentage of working capital and fixed assets financed by internal versus external funds.

Table 7 presents a Heckman analysis (conditional on applying for a loan) of the loan amounts and interest rates on loans. We show robustness to including firm control variables that are listed in Table 1, as well as country and sector fixed effects. The key variables of interest, crime/sales and a dummy variable for crime equal to one, show greater economic and statistical significance when all of the control variables are included. The data indicate that a 1-standard deviation increase in crime divided by sales in 2009 has on average a 1.9% reduction in the size of loans obtained in the subsequent 3 years, and 2.6% increase in interest rates relative to the average 10.56% interest rate on these loans.¹

When the crime variable is specified as a dummy variable, the presence of crime gives rise to an 8.7% increase in interest rates on loans relative to the average 10.56% interest rate on loans in the sample. The loan amount is, however, not affected by the dummy variable specification for crime in Table 7. In Table 8, we examine the difference between the interest rate on loans relative to the t-bill rate and find very similar evidence, with the difference that the specification with crime as a dummy variable shows much more robust statistical

¹From Table 1, the standard deviation of crime divided by sales in 2009 was 0.022. From Table 7, the estimated effect on the natural logarithm of the loan amount is -8.807. Therefore, the effect for a 1-standard deviation increase in crime divided by sales is equivalent to $0.022 \times -8.807 = -0.194$. Finally, the average natural logarithm of the loan amount from Table 1 is 10.314. As such, the effect of a 1-standard deviation increase in crime divided by sales with respect to the average loan size is $-0.194/10.314 = -0.019$ or -1.9%

significance than the ratio of crime to sales.

[Tables 7-8 About Here]

Table 9 presents regressions with a propensity score matched sample where crime-firms are matched to non-crime firms on the basis of their firm controls enumerated in Table 1. The results are much stronger than in Tables 7 and 8. The presence of crime causes a 36.7% reduction in loan amounts in the first regression and the effect is significant in 3 of the four regressions, although this effect is marginally insignificant in the second regression with a slight different matching technique using a logit instead of a probit models. The impact on interest rates in the last four regression models in Table 9 is larger, and as high as 14.3% higher interest rates in the sixth regression relative to the average 10.56% rate for all firms in the sample. The effect is statistically significant in all of the specifications for interest rates in Table 9.

[Table 9 About Here]

Tables 10 and 11 present an analysis of the subsample of only those firms that obtained loans for the loan amounts and interest rates on loans, respectively. The findings are consistent with those presented in Table 7.

[Tables 10-11 About Here]

Tables 12-15 present regression models that examine the impact of crime on the percentage of working capital and fixed assets financed with internal versus external funds. First, in Table 12, the regressions examine the impact of crime on working capital financed by internal funds. For firms in with an above median number of employees, a 1-standard deviation increase in the cost of crime divided by sales increases the percentage of working capital that are financed by internal funds by 3.0% on average. The effect is not statistically significant for the firms in below the median number of employees, and not statistically significant for specifications using the crime dummy variable in Tables 12.

[Tables 12-15 About Here]

Table 13 presents regressions for the percentage of fixed assets financed by internal funds. The data indicate a 1-standard deviation increase in crime/sales causes a 5.5% reduction (based on the second regression) in the percentage of fixed assets divided by sales relative to the average amount in the sample. This effect is observed for the full sample, and there is not a significant different between firms with differing numbers of employees. Also, the effect is marginally significant at the 10% level or insignificant with the dummy variable for crime depending on the specification.

Taken together, Tables 12 and 13 show there is a substitution from the use of internal funds to finance working capital needs after crime events, and there is less internal investment in fixed assets due to crime. If external capital is available then it is tied to fixed assets as lenders would be able to take a lien on those assets. Such security is relatively more important for lenders lending to riskier companies that have been subject to crime. The evidence in Tables 14 and 15 is consistent, and shows robustness with alternative specifications on subsets of firms that have been the subject of crime.

5. Robustness Checks and Future Research

Future research could examine additional topics that extend our analysis in a number of ways. First, with additional data in future years, one could examine whether the differential access to credit affects future crime events, consistent with some theoretical models such as Di Gennaro and Marsellib (2013).

Second, other countries and other time periods could be examined. Third, other financing outcomes and managerial strategic decisions subsequent to crime could be examined. Finally, the analysis could be extended to compare impacts of crime on privately-held versus publicly traded companies.

6. Conclusion

This paper presented new data that enabled for the first time a direct causal look at the impact of blue-collar crime on external finance for mainly privately held companies. The data indicate crime is associated with a reduction in the availability of external finance, an increase in the cost of finance, and a substitution in the use of internal funds to finance working capital and not fixed assets. These estimates are statistically and economically significant, controlled for other things being equal, and are robust to concerns regarding selection effects and other considerations discussed herein.

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Appendix A: Thesis Tables

Table 1: Summary Statistics.

This table contains statistics of all variables and for all companies used in this study. We separated the variables into three parts, the Financial Outcomes observed in 2012, Crime Incidence observed in 2009 and Firm Characteristics observed in 2009.

VARIABLES	Description	Mean	Median	SD	Min	Max	N
Financial Outcomes observed in 2012							
intratelloan	Average annual interest rate obtained from the loan/credit	10.555	10	3.165	5	20	375
logamountloan	The logarithm of the amount obtained from the most recent loan/credit that is still current	10.314	10.021	1.71	6.67	16.629	375
intfn_wc	% of Working Capital financed by Internal Funds on the 2012 Last Fiscal Year	58.816	62	26.618	0	100	1313
extfn_wc	% of Working Capital financed by External Funds on the 2012 Last Fiscal Year	40.944	38	26.547	0	100	1313
intfn_fa	% of Fixed Assets financed by Internal Funds on the 2012 Last Fiscal Year	64.732	60	33.24	0	100	466
extfn_fa	% of Fixed Assets financed by External Funds on the 2012 Last Fiscal Year	35.268	40	33.24	0	100	466
monthsloan	Total duration (term) in months of the loan/credit	43.184	37	24.631	12	144	375
institutionloan	An ordered variable about the type of financial institution granted the line of credit or the loan, 1 if Private commercial banks, 2 if State-owned banks, 3 if Non-Bank financial institutions and 4 Other	2.04	1	1.337	1	4	375
Crime Incidence observed in 2009							
pdummycrime	Dummy equals to 1 if the company received crime in 2009	0.23	0	0.421	0	1	1324
pcrime_sales	Total crime received divided in total sales of the company in 2009	0.006	0	0.022	0	0.25	1324
Firm Characteristics observed in 2009							
psize	An ordered variable about the size of the company, 1 if small (between 5 and 19 workers), 2 if medium (20-99) and 3 if large (100+)	1.597	1	0.691	1	3	1324
plocality	An ordered variable about the size of the company locality, 1 if capital city, 3 if over 250,000 to 1million, 4 if 50,000 to 250,000 and 5 if less than 50,000 population	4.165	5	1.383	1	5	1322

Table 1 continued from previous page

VARIABLES	Description	Mean	Median	SD	Min	Max	N
page	Age of the firm in 2009	17.747	14	12.911	1	59	1324
pworkers	Numbers of workers (full time equivalent) in the firm in 2009	44.05	18	84.433	5	1312.5	1324
market	Main market attended by the firm: 1 if it's local, 2 if it's national, 3 if it's international	1.609	2	0.638	1	3	1324
Rate of change of workers in the company							
legalstatus	An ordered variable about the legal status of the firm equal to 2 if it's a private or public shareholding company, 3 if it's a sole proprietorship, 4 if it is a partnership, 5 if it's a limited partnership and 6 if it is other	2.989	3	0.988	2	6	1324
paudited	A dummy variable equals to 1 if the firm have its annuals statements checked and certified by an external auditor in 2009	0.668	1	0.471	0	1	1324
pcorporation	A dummy variable equals to 1 for incorporated firms in 2009	0.124	0	0.33	0	1	1324
plargerowners	percentage of the largest owner own in 2009	87.479	100	23.54	2	100	1324
pgender	The gender of the firm's top manager, 1=male, 0=female	0.8	1	0.4	0	1	1324
pqualitycert	A dummy variable equals to 1 if the firm has a recognized international certificate of quality	0.15	0	0.358	0	1	1324
psecurity	A dummy variable equals to 1 if the firm have spent money on security/insurance in 2009	0.627	1	0.484	0	1	1324
pmanagerexp	Years of top manager's experience in the industry	17.41	15	11.431	1	50	1324
pbuyer	An ordered variable about the principal buyer to the main product/service of the firm equals to 1 if it's parent companies, 2 if it's private firms, 3 if it's individuals, 4 if it's government and 5 if it's other	2.711	3	1.08	1	5	1324
dummyobstacle	A dummy variable equals to 1 if the firm report crime as a severe obstacle to operate	0.129	0	0.335	0	1	1324
psecurity_sales	Total security (insurance, equipment, personnel, service) spent divided in total sales of the company in 2009	0.012	0.0067	0.022	0	0.35	1324

Table 2: Conditional Summary Statistics for firms subjected to crime.

This table contains statistics of all variables and subjected for only companies that reported some kind of crime. We separated the variables into three parts, the dependent variables, the independents and the firm controls.

VARIABLES	Description	Mean	Median	SD	Min	Max	N
<i>Financial Outcomes observed in 2012</i>							
intratelloan	Average annual interest rate obtained from the loan/credit	11.112	11	3.043	6	19	89
logamountloan	The logarithm of the amount obtained from the most recent loan/credit that is still current	10.625	10.446	1.8873	6.666	15.53	89
intfn_wc	% of Working Capital financed by Internal Funds on the 2012 Last Fiscal Year	55.94	60	27.8547	0	100	300
extfn_wc	% of Working Capital financed by External Funds on the 2012 Last Fiscal Year	43.927	40	27.7415	0	100	300
intfn_fa	% of Fixed Assets financed by Internal Funds on the 2012 Last Fiscal Year	59.548	50	33.7393	0	100	115
extfn_fa	% of Fixed Assets financed by External Funds on the 2012 Last Fiscal Year	40.452	50	33.7393	0	100	115
monthsloan	Total duration (term) in months of the loan/credit	43.978	37	24.478	12	120	89
institutionloan	An ordered variable about the type of financial institution granted the line of credit or the loan, 1 if Private commercial banks, 2 if State-owned banks, 3 if Non-Bank financial institutions and 4 Other	1.978	1	1.373	1	4	89
<i>Crime Incidence observed in 2009</i>							
pcrime_sales	Total crime received divided in total sales of the company in 2009	0.026	0.01	0.0408	0	0.25	305
<i>Firm Characteristics observed in 2009</i>							
psize	An ordered variable about the size of the company, 1 if small (between 5 and 19 workers), 2 if medium (20-99) and 3 if large (100+)	1.711	2	0.7359	1	3	305
plocality	An ordered variable about the size of the company locality, 1 if capital city, 3 if over 250,000 to 1million, 4 if 50,000 to 250,000 and 5 if less than 50,000 population	4.069	5	1.3688	1	5	305

Table 2 continued from previous page

VARIABLES	Description	Mean	Median	SD	Min	Max	N
page	Age of the firm in 2009	21.292	18	14.3184	1	59	305
pworkers	Numbers of workers in the firm in 2009	61.3	23.333	118.342	5	1312.5	305
market	Main market attended by the firm: 1 if it's local, 2 if it's national, 3 if it's international	1.57	2	0.5756	1	3	305
Rate of change of workers in the company							
legalstatus	An ordered variable about the legal status of the firm equal to 2 if it's a private or public shareholding company, 3 if it's a sole proprietorship, 4 if it is a partnership, 5 if it's a limited partnership and 6 if it is other	3.02	3	1.0728	2	5	305
paudited	A dummy variable equals to 1 if the firm have its annuals statements checked and certified by an external auditor in 2009	0.757	1	0.4294	0	1	305
pcorporation	A dummy variable equals to 1 for incorporated firms in 2009	0.193	0	0.3956	0	1	305
plargerowners	percentage of the largest owner own in 2009	84.544	100	25.7488	2	100	305
pgender	The gender of the firm's top manager, 1=male, 0=female	0.761	1	0.4274	0	1	305
pqualitycert	A dummy variable equals to 1 if the firm has a recognized international certificate of quality	0.249	0	0.4332	0	1	305
psecurity	A dummy variable equals to 1 if the firm have spent money on security/insurance in 2009	0.784	1	0.4125	0	1	305
pmanagerexp	Years of top manager's experience in the industry	21.774	20	12.1121	2	50	305
pbuyer	An ordered variable about the principal buyer to the main product/service of the firm equals to 1 if it's parent companies, 2 if it's private firms, 3 if it's individuals, 4 if it's government and 5 if it's other	2.761	3	1.0995	1	5	305
dummyobstacle	A dummy variable equals to 1 if the firm report crime as a severe obstacle to operate	0.239	0	0.4274	0	1	305
psecurity_sales	Total security (insurance, equipment, personnel, service) spent divided in total sales of the company in 2009	0.016	0.01	0.0256	0	0.2	305

Table 3: Comparison between means and medians of intrateloan and logamountloan if the firm presents crime events or not.

This table reports a complete sight about the interest rate and amount granted by the financial institutions in the Caribbean, depending on whether the company reported having had crime in the 2009 period and for the complete data set of companies who currently have loan prior the 2009 period. “pdummycrime” equals to 0 means the company did not experience crime and equals to one it did.

pdummycrime	Variable	Mean	Median	SD	Min	Max	N
0	intrateloan	10.381	10	3.187	5	20	286
	logamountloan	10.217	9.932	1.642	7.35	16.629	286
1	intrateloan	11.112	11	3.043	6	19	89
	logamountloan	10.625	10.446	1.887	6.666	15.53	89
Total	intrateloan	10.555	10	3.165	5	20	375
	logamountloan	10.314	10.021	1.71	6.666	16.629	375

Table 4: Median test for intrateloan and logamountloan.

This table reports a median test for the interest rate (left) and for the amount (right) of the loan granted by the financial institution. Here the data is tabulated in four parts, first if the company is above or below the median of the variable to study (interest rate or loan amount) and if the firm experienced crime in 2009 or not. With those inputs we run the median test obtaining that there is a significantly higher number of firms have interest rates above the median when they were subjected to crime in the past, and this different is statistically significant at the 1% level and also there is a higher number of firms that have loans amounts above the median when they were subjected to crime in the past, and this different is statistically significant at the 5% level.

Median test intrateloan				Median test logamount			
Greater than the median	pdummycrime		Total	Greater than the median	pdummycrime		Total
	0	1			0	1	
No	162	36	198	No	153	36	189
Yes	124	53	177	Yes	133	53	186
Total	286	89	375	Total	286	89	375

Pearson chi2(1) = 7.143 Pr = 0.008

Pearson chi2(1) = 4.622 Pr = 0.032

Continuity corrected:

Continuity corrected:

Pearson chi2(1) = 6.508 Pr = 0.011

Pearson chi2(1) = 4.115 Pr = 0.043

Table 5: **Two-Sample Wilcoxon rank-sum (Mann-Whitney) test for intrateloan and logamountloan.**

This table reports the Wilcoxon rank-sum test comparing the difference of interest rate and loans amounts whether the company faced crime or not. This non-parametric test is based on the order in which the observations appears in the data. We find that exists a difference in the loan interest rate and amounts between companies that faced crime or not statistically significant at 3% and 6.7% respectively.

Two-Sample Wilcoxon rank-sum (Mann-Whitney)
test for intrateloan

pdummycrime	obs	rank sum	expected
0	286	51838.5	53768
1	89	18661.5	16732
combined	375	70500	70500
unadjusted variance			
		797558.67	
adjustment for ties			
		-7444.09	
adjusted variance			
		790114.57	

Ho: logamount(crime==0) = logamount(crime==1)

$$z = -2.171$$

$$\text{Prob } > |z| = 0.03$$

Two-Sample Wilcoxon rank-sum (Mann-Whitney)
test for logamount

pdummycrime	obs	rank sum	expected
0	286	52131	53768
1	89	18369	16732
combined	375	70500	70500
unadjusted variance			
		797558.67	
adjustment for ties			
		-397.37	
adjusted variance			
		797161.29	

Ho: logamount(crime==0) = logamount(crime==1)

$$z = -1.833$$

$$\text{Prob } > |z| = 0.0667$$

Table 6: **Two-sample t test for intrateloan and logamountloan.**

This table reports the results of the two-sample t test for the loan interest rate (Panel A) and amount (Panel B), testing the mean difference, between companies that experienced crime or not in 2009. The results are similar to the prior tables. The data indicates that there exist differences on the means of the interest rate and loan amounts. The null hypothesis indicating $\text{diff} < 0$ (i.e. difference of means of interest rate and loan amount between non-crime companies and crime companies is greater for non-crime companies) can be rejected at 5 % level on both cases and the difference different of zero at 10 % level for the interest rate and 5 % level for the loan amount.

Panel A

Two-sample t test with equal variances for intrateloan						
Group	Obs	Mean	Std. Err.	Std. Dev.	[95 % Conf. Interval]	
0	286	10.38112	0.1884748	3.187397	10.01014	10.7521
1	89	11.11236	0.3225593	3.043018	10.47134	11.75338
combined	375	10.55467	0.163444	3.165079	10.23328	10.87605
diff		-0.7312407	0.3828157		-1.483988	0.0215068
diff= mean(0) - mean (1)			t = -1.9102			
Ho: diff = 0			degrees of freedom = 373			
Ha: diff < 0		Ha: diff != 0		Ha: diff > 0		
Pr(T < t) = 0.0284		Pr(T > t) = 0.0569		Pr(T > t) = 0.9716		

Panel B

Two-sample t test with equal variances for logamount						
Group	Obs	Mean	Std. Err.	Std. Dev.	[95 % Conf. Interval]	
0	286	10.21707	0.0970859	1.641871	10.02597	10.40817
1	89	10.62497	0.2000502	1.88727	10.22741	11.02253
combined	375	10.31388	0.008828	1.709534	10.14029	10.48747
diff		-0.4079034	0.2067004		-0.8143477	-0.0014592
diff= mean(0) - mean (1)			t = -1.9734			
Ho: diff = 0			degrees of freedom = 373			
Ha: diff < 0		Ha: diff != 0		Ha: diff > 0		
Pr(T < t) = 0.0246		Pr(T > t) = 0.0492		Pr(T > t) = 0.9754		

Table 7: Heckman Analysis of Amounts and Interest Rate Obtained from External Finance.

This table presents a Heckman analysis, conditional on applying for a loan, estimating the external finance obtained measured by the natural logarithm of the loan amount and the loan interest rate granted by the financial institution. We run two different types of analysis, one being the key variable the total cost of crime divided by total sales in 2009, and the other one the dummy of presence of crime in the company. We show robustness to including firm control variables that are listed in Table 1, as well as country and sector fixed effects. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad & Tobago. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively.

VARIABLES	logamountloan	logamountloan	logamountloan	logamountloan	intrateloan	intrateloan	intrateloan	intrateloan
pcrime_sales	-3.115 (4.334)	-8.807** (3.441)			19.11 (11.63)	12.69* (7.033)		
pdummycrime			0.216 (0.251)	-0.191 (0.261)			0.920** (0.414)	0.711** (0.326)
Constant	17.50*** (1.235)	9.578*** (2.51)	17.24*** (1.717)	9.680*** (2.524)	4.242 (5.449)	6.158* (3.532)	2.857 (5.362)	5.989* (3.506)
Observations	1306	1305	1306	1305	1306	1305	1306	1305
FirmControl	NO	YES	NO	YES	NO	YES	NO	YES
Country FE	NO	YES	NO	YES	NO	YES	NO	YES
Sector FE	NO	YES	NO	YES	NO	YES	NO	YES

Table 8: Heckman Analysis of ratiointrateloan and diffintrateloan, comparison between t-bill rate.

This table presents a Heckman analysis, conditional on applying for a loan, examining the differences between the interest rate on loans relative to the t-bill rate of the respective country and year that the loan was granted to the company. The t-bill rates were obtained from the World Bank’s website and can be found at “Lending interest rate (%)”. We again run two different types of analysis, one being the key variable the total cost of crime divided by total sales in 2009, and the other one the dummy of presence of crime in the company. We show robustness to including firm control variables that are listed in Table 1, as well as country and sector fixed effects. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad & Tobago. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively.

VARIABLES	ratio	ratio	ratio	ratio	diff	diff	diff	diff
	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan
pcrime_sales	1.353 (1.015)	0.716 (0.686)			16.04 (10.37)	11.25* (6.599)		
pdummycrime			0.198*** (0.0747)	0.0593* (0.036)			1.516*** (0.555)	0.643* (0.343)
Constant	0.0116 (0.608)	-0.918** (0.411)	-0.264 (0.556)	-0.928** (0.405)	-2.316 (6.215)	-11.70*** (3.766)	-4.471 (5.668)	-11.85*** (3.73)
Observations	1305	1305	1305	1305	1305	1305	1305	1305
FirmControl	NO	YES	NO	YES	NO	YES	NO	YES
Country FE	NO	YES	NO	YES	NO	YES	NO	YES
Sector FE	NO	YES	NO	YES	NO	YES	NO	YES

Table 9: Propensity Score Matching Analysis of Amount and Interest Rate Obtained.

This table presents regressions with a propensity score matched sample where crime-firms are matched to non-crime firms on the basis of their firm controls enumerated in Table 1. We run the regressions using two different matching techniques, one with probit and the other one with logit, also each one with two different specifications of neighbors for robustness. We test the impact of crime through crime divided by sales and the presence of crime in 2009 on the loan amount and the it's interest rate. Robust standard errors in parentheses. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively.

VARIABLES	logamount/loan	logamount/loan	logamount/loan	logamount/loan	intrate/loan	intrate/loan	intrate/loan	intrate/loan
r1vs0.pdummycrime	-0.430** (0.181)	-0.22 (0.173)	-0.348* (0.204)	-0.380*** (0.0763)	1.348*** (0.462)	1.511*** (0.492)	0.868*** (0.274)	0.695* (0.389)
Observations	374	374	374	374	374	374	374	374
Type	Probit	Logit	Probit	Logit	Probit	Logit	Probit	Logit
Neighbors	1	1	10	10	1	1	10	10

Table 10: **Regression Analysis of Amount of the Credit/Loan.**

This table presents an OLS analysis of the subsample of only those firms that obtained loans. We examine the impact of crime through crime divided by sales and the presence of crime in 2009 on the logarithm of the loan amount granted by the financial institution. We test three types of regressions, one without country and sector, fixed effects and without firm controls, the second with country and sector fixed effects and the last one with country, sector fixed effects and firm controls. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad & Tobago. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively.

VARIABLES	logamountloan	logamountloan	logamountloan	logamountloan	logamountloan	logamountloan
pcrime_sales	-4.358 (4.63)	-9.419** (4.471)	-7.546** (3.346)			
pdummycrime				0.408 (0.299)	0.374 (0.303)	-0.154 (0.26)
Constant	10.34*** (0.182)	10.58*** (0.314)	8.891*** (0.854)	10.22*** (0.19)	10.48*** (0.268)	8.822*** (0.869)
Observations	375	375	374	375	375	374
R-squared	0.002	0.215	0.485	0.01	0.211	0.48
Country FE	NO	YES	YES	NO	YES	YES
Sector FE	NO	YES	YES	NO	YES	YES
FirmControl	NO	NO	YES	NO	NO	YES

Table 11: **Regression Analysis of Interest Rate of the Credit/Loan.**

This table presents an OLS analysis of the subsample of only those firms that obtained loans. We examine the impact of crime through crime divided by sales and the presence of crime in 2009 on the interest rate of the loan granted by the financial institution. We test three types of regressions, one without country and sector, fixed effects and without firm controls, the second with country and sector fixed effects and the last one with country, sector fixed effects and firm controls. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad & Tobago. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively.

VARIABLES	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan
pcrime_sales	20.40*	15.93**	14.16			
	(11.33)	(7.561)	(8.738)			
pdummycrime				0.731	0.616*	0.778**
				(0.447)	(0.361)	(0.374)
Constant	10.45***	16.13***	16.56***	10.38***	16.09***	16.57***
	(0.428)	(0.424)	(1.631)	(0.478)	(0.438)	(1.569)
Observations	375	375	374	375	375	374
R-squared	0.016	0.48	0.521	0.01	0.477	0.522
Country FE	NO	YES	YES	NO	YES	YES
Sector FE	NO	YES	YES	NO	YES	YES
FirmControl	NO	NO	YES	NO	NO	YES

Table 12: **Regression Analysis of % of Working Capital financed by Internal Funds.**

This table presents an OLS regressions models that examine the impact of crime on the percentage of working capital financed by internal funds. We study the full sample and then we separate the data into two subsamples according the number of employees, one subsample below the median and the other one above the median. For robustness, we run the regressions with country and sector fixed effects and other one with country and sector fixed effects and firm controls for each studied sample. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad Tobago. ***, **, * denote significance at 1%, 5% and 10%, respectively. °°, °°, ° denote significance at 1%, 5% and 10%, respectively, for the Wald test comparing regression coefficients across subsamples.

VARIABLES	Full Sample			Lower Half #Workers2009 Subsample			Upper Half #Workers2009 Subsample			Full Sample			Lower Half #Workers2009 Subsample			Upper Half #Workers2009 Subsample			
	intfin	intfin	WC	intfin	intfin	WC	intfin	intfin	WC	intfin	intfin	WC	intfin	intfin	WC	intfin	intfin	WC	
pcrime_sales	39.2 (32.61)	42.18 (34.58)		-0.686° (33.56)	15.77 (53.05)		79.65**°,° (32.09)	80.38** (34.89)		-1.465 (2.317)	-0.0863 (2.195)		-3.422 (2.858)	-3.194 (3.101)		-0.91 (3.356)	1.234 (2.954)		
pdummycrime																			
Constant	57.54*** (2.431)	72.13*** (7.704)		63.88*** (2.251)	67.09*** (15.9)		50.07*** (3.375)	74.66*** (10.4)		57.98*** (2.417)	72.19*** (7.729)		64.40*** (2.265)	67.23*** (16.02)		50.82*** (3.407)	75.55*** (10.36)		
Observations	1,313	1,311		664	662		649	649		1,313	1,311		664	662		649	649		
R-squared	0.108	0.154		0.115	0.177		0.163	0.229		0.107	0.153		0.117	0.179		0.159	0.226		
Country FE	YES	YES		YES	YES		YES	YES		YES	YES		YES	YES		YES	YES		
Sector FE	YES	YES		YES	YES		YES	YES		YES	YES		YES	YES		YES	YES		
FirmControl	NO	YES		NO	YES		NO	YES		NO	YES		NO	YES		NO	YES		

Table 13: **Regression Analysis of % of Fixed Assets financed by Internal Funds.**

This table presents an OLS regressions models that examine the impact of crime on the percentage of fixed assets financed by internal funds. We study the full sample and then we separate the data into two subsamples according the number of employees, one subsample below the median and the other one above the median. For robustness, we run the regressions with country and sector fixed effects and other one with country and sector fixed effects and firm controls for each studied sample. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad & Tobago. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively. ^{ooo}, ^{oo}, ^o denote significance at 1 %, 5 % and 10 %, respectively, for the Wald test comparing regression coefficients across subsamples.

VARIABLES	Full Sample			Lower Half #Workers2009 Subsample			Upper Half #Workers2009 Subsample			Full Sample			Lower Half #Workers2009 Subsample			Upper Half #Workers2009 Subsample			
	intfn	intfn	fa	intfn	intfn	fa	intfn	intfn	fa	intfn	intfn	fa	intfn	intfn	fa	intfn	intfn	fa	
pcrime_sales	-162.9** (63.65)	-177.6** (78.35)		-149.8 (129.5)	-246.8 (151.2)		-122.4 (80.7)	-95.61 (116.8)		-7.093* (3.929)	-5.452 (4.197)		0.645 (6.548)	-2.937 (7.047)		-9.95 (6.494)	-6.008 (7.651)		
pdummycrime																			
Constant	34.65*** (3.005)	34.21** (14.38)		41.94*** (5.266)	63.16** (21.25)		30.67*** (4.551)	10.04 (26.05)		35.68*** (3.224)	34.42** (14.11)		40.41*** (5.918)	59.51** (21.45)		33.37*** (5.498)	8.434 (25.45)		
Observations	466	465		222	221		244	244		466	465		222	221		244	244		
R-squared	0.171	0.226		0.211	0.317		0.254	0.323		0.168	0.219		0.202	0.299		0.261	0.324		
Country FE	YES	YES		YES	YES		YES	YES		YES	YES		YES	YES		YES	YES		
Sector FE	YES	YES		YES	YES		YES	YES		YES	YES		YES	YES		YES	YES		
FirmControl	NO	YES		NO	YES		NO	YES		NO	YES		NO	YES		NO	YES		

Table 14: **Regression Analysis of % of Working Capital financed by Internal Funds, conditional in that the firm have crime events.**

This table presents an OLS regressions models for firms that were subjected to crime and we examine the impact of crime on the percentage of working capital financed by internal funds. We study the full sample (of only crime firms) and then we separate the data into two subsamples according the number of employees, one subsample below the median and the other one above the median. For robustness, we run the regressions with country and sector fixed effects and other one with country and sector fixed effects and firm controls for each studied sample. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad & Tobago. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively. ^{ooo}, ^{oo}, ^o denote significance at 1 %, 5 % and 10 %, respectively, for the Wald test comparing regression coefficients across subsamples.

VARIABLES	Full Sample			Lower Half #Workers2009 Subsample			Upper Half #Workers2009 Subsample			Full Sample			Lower Half #Workers2009 Subsample			Upper Half #Workers2009 Subsample		
	intfin	intfin	WC	intfin	intfin	WC	intfin	intfin	WC	intfin	intfin	WC	intfin	intfin	WC	intfin	intfin	WC
pcrime_sales	52.36*	45.83		76.18**	106.9		86.79*	49.08		-50.75	-44.24		-72.60*	-102.8		-86.06*	-48.5	
	(31.18)	(35.25)		(32.84)	(74.47)		(45.49)	(60.06)		(31.36)	(35.53)		(33.37)	(75.02)		(45.42)	(60.18)	
Constant	48.66***	77.97***		63.81***	72.82*		35.39***	104.5***		51.38***	22.71		36.20**	26.88		64.68***	-4.049	
	(8.623)	(19.24)		(12.65)	(36.33)		(12.95)	(25.51)		(8.622)	(18.96)		(12.55)	(36.09)		(12.96)	(25.57)	
Observations	300	300		132	132		168	168		300	300		132	132		168	168	
R-squared	0.188	0.263		0.239	0.342		0.33	0.491		0.188	0.261		0.235	0.329		0.33	0.49	
Country FE	YES	YES		YES	YES		YES	YES		YES	YES		YES	YES		YES	YES	
Sector FE	YES	YES		YES	YES		YES	YES		YES	YES		YES	YES		YES	YES	
FirmControl	NO	YES		NO	YES		NO	YES		NO	YES		NO	YES		NO	YES	

Table 15: Regression Analysis of % of Fixed Assets financed by Internal Funds, conditional in that the firm have crime events.

This table presents an OLS regressions models for firms that were subjected to crime and we examine the impact of crime on the percentage of fixed assets financed by internal funds. In this case we study only the full sample due the small quantity of firms that experienced some type of crime and financed fixed assets on the 2012 fiscal year. For robustness, we run the regressions with country and sector fixed effects and other one with country and sector fixed effects and firm controls for each studied sample. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad & Tobago. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively.

VARIABLES	Full Sample		Full Sample	
	intfn	fa	intfn	fa
pcrime_sales	-158.1* (82.28)	-326.2** (134.1)	158.1* (82.28)	326.2** (134.1)
Constant	40.68*** (10.09)	63.13* (36.55)	59.32*** (10.09)	36.87 (36.55)
Observations	115	115	115	115
R-squared	0.288	0.477	0.288	0.477
Country FE	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES
FirmControl	NO	YES	NO	YES

Appendix B: Robustness Checks Tables

Table 16: Mean, Standard Deviation and p-values with and without Country and Sector Fixed Effects to explore orthogonality on firm controls in relation to crime in the companies.

This table explores the orthogonality of firm characteristics in 2009 in comparison with the firm outcomes of the 2012. In the first two columns we explore the Mean (Std Dev) for firms, on the first column we include the companies that experienced at least 1 % of crime over sales and in the second one for firms that didn't crime over sales in 2009. In the third and fourth column, we report the p-value of the coefficient of the regression of each variable in function of the presence of crime (defined by 1 % of total cost of crime over sales or more) in 2009. On the third one we don't control with anything and in the fourth one we add country and sector fixed effects.

VARIABLES	Mean (Std Dev) for firms that experienced crime	Mean (Std Dev) for firms that didn't experience crime	pvalue WITHOUT Country and Sector fixed effect	pvalue WITH Country and Sector fixed effect
psize1	0.5467 (0.499)	0.5165 (0.4999)	0.640	0.0705
psize2	0.3349 (0.4731)	0.3648 (0.4816)	0.602	0.153
psize3	0.1182 (0.3236)	0.1186 (0.3235)	0.988	0.564
plocality1	0.1625 (0.3698)	0.1394 (0.3465)	0.493	0.878
plocality2	0.0246 (0.1553)	0.0294 (0.1692)	0.705	0.457
plocality3	0.813 (0.391)	0.831 (0.375)	0.622	0.887
page	20.1231 (14.2279)	17.3166 (12.6169)	0.0227	0.203
pworkers	45.5837 (85.9548)	43.7725 (84.1899)	0.832	0.560
market1	0.4926 (0.5011)	0.4727 (0.4994)	0.661	0.116
market2	0.507 (0.5011)	0.527 (0.4994)	0.661	0.116
legalstatus1	0.3645 (0.4824)	0.3452 (0.4756)	0.644	0.476
legalstatus2	0.3300 (0.4713)	0.4237 (0.4943)	0.0297	0.0559
legalstatus3	0.1428 (0.3507)	0.1150 (0.3192)	0.319	0.0432
legalstatus4	0.1625 (0.3698)	0.1150 (0.3192)	0.0521	0.198

Table 16 continued from previous page

VARIABLES	Mean (Std Dev) for firms that experienced crime	Mean (Std Dev) for firms that didn't experience crime	pvalue WITHOUT Country and Sector fixed effect	pvalue WITH Country and Sector fixed effect
legalstatus5	0.0000 (0)	0.0008 (0.0298)	0.308	0.257
paudited	0.7142 (0.4528)	0.6601 (0.4738)	0.159	0.564
pcorporation	0.1724 (0.3786)	0.1150 (0.3192)	0.0564	0.413
plargerowners	84.5369 (25.4743)	88.0115 (23.1442)	0.0887	0.0509
pgender	0.7389 (0.4403)	0.8108 (0.3917)	0.0369	0.0755
pqualitycert	0.2315 (0.4228)	0.1355 (0.3425)	0.00569	0.316
psecurity	0.7438 (0.4375)	0.6057 (0.4889)	0.00198	0.00680
pmanagerexp	21.3004 (12.0421)	16.7056 (11.1778)	7.54e-05	0.110
pbuyer1	0.0985 (0.2987)	0.0909 (0.2877)	0.756	0.940
pbuyer2	0.3842 (0.4876)	0.4005 (0.4902)	0.581	0.278
pbuyer3	0.2955 (0.4574)	0.3122 (0.4636)	0.602	0.467
pbuyer4	0.1280 (0.335)	0.1025 (0.3035)	0.358	0.258
pbuyer5	0.0935 (0.2919)	0.0936 (0.2914)	0.998	0.637
dummyobstacle	0.2758 (0.448)	0.1025 (0.3035)	0.000106	3.84e-05
psecurity_sales	0.0183 (0.0287)	0.0105 (0.0105)	0.000134	0.00924

Appendix C: Mechanisms

Table 17: Heckman Analysis of Interest Rate, in function of top manager's years of experience.

This table presents a Heckman analysis, conditional on applying for a loan, estimating the loan interest rate granted by the financial institution, depending on the top manager's years of experience. Specifically, we divide the data in two parts, below and above the median (15 years of experience). We run two different types of analysis, one being the key variable the total cost of crime divided by total sales in 2009, and the other one the dummy of presence of crime in the company. We show robustness to including firm control variables that are listed in Table 1, as well as with country and sector fixed effects. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad & Tobago. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively.

VARIABLES	Lower Half: equal or less than 15 years of top manager's experience Subsample		Upper Half: more than 15 years of top manager's experience Subsample		Lower Half: equal or less than 15 years of top manager's experience Subsample		Upper Half: more than 15 years of top manager's experience Subsample	
	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan
pcrime_sales	37.06*** (9.711)	36.14*** (10)	9.962 (6.37)	7.354 (6.782)	1.072** (0.522)	1.118* (0.574)	0.553 (0.431)	0.47 (0.435)
pdummycrime					15.83*** (1.968)	15.92*** (3.378)	9.899*** (2.219)	11.15*** (2.499)
Constant	16.04*** (1.874)	15.01*** (3.07)	10.24*** (2.202)	10.91*** (2.562)				
Observations	704	704	602	602	704	704	602	602
FirmControl	NO	YES	NO	YES	NO	YES	NO	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES	YES	YES

Table 18: **Regression Analysis of Interest Rate, in function of top manager's years of experience.**

This table presents an OLS analysis estimating the loan interest rate granted by the financial institution, depending on the top manager's years of experience. Specifically, we divide the data into two subsamples, below and above the median (15 years of experience). We examine the impact of crime through crime divided by sales and the other one the dummy of presence of crime in the company in 2009. We test two types of regressions, one with country and sector fixed effects and the second one with country, sector fixed effects and firm controls. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad & Tobago. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively. ^{ooo}, ^{oo}, ^o denote significance at 1 %, 5 % and 10 %, respectively, for the Wald test comparing regression coefficients across subsamples.

VARIABLES	Lower Half: equal or less than 15 years of top manager's experience Subsample		Upper Half: more than 15 years of top manager's experience Subsample		Lower Half: equal or less than 15 years of top manager's experience Subsample		Upper Half: more than 15 years of top manager's experience Subsample	
	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan
pcrime_sales	38.16***,oo (10.98)	40.19**,oo (15.72)	11.08 ^{oo} (7.65)	5.809 ^{oo} (8.383)	1.163** (0.573)	1.208 (0.762)	0.453 (0.462)	0.497 (0.614)
pdummycrime					17.15*** (0.49)	17.79*** (2.891)	15.65*** (0.502)	18.25*** (2.042)
Constant	17.21*** (0.475)	17.73*** (2.816)	15.68*** (0.487)	18.29*** (2.07)				
Observations	183	183	192	191	183	183	192	191
R-squared	0.532	0.625	0.542	0.603	0.523	0.614	0.54	0.605
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES	YES	YES
FirmControl	NO	YES	NO	YES	NO	YES	NO	YES

Table 19: Heckman Analysis of Interest Rate, in function of the size of the locality in terms of population where the company is located.

This table presents a Heckman analysis, conditional on applying for a loan, estimating the loan interest rate granted by the financial institution, depending on the size of the locality where the company is located. Specifically, we divide the data into two subsamples, one if the company is located on a small town, where the population is less than 50,000 and the other one if the population is more than 50,000. We run two different types of analysis, one being the key variable the total cost of crime divided by total sales in 2009, and the other one the dummy of presence of crime in the company. We show robustness to including firm control variables that are listed in Table 1, as well as with country and sector fixed effects. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad & Tobago. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively.

VARIABLES	Small Town		Big Town		Small Town		Big Town	
	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan
pcrime_sales	16.9 (11.4)	12.12 (10.56)	12.45 (10.05)	15.91 (10.33)				
pdummycrime					1.672*** (0.449)	1.627*** (0.442)	-0.319 (0.308)	-0.106 (0.499)
Constant	7.534*** (2.093)	-1.117 (5.742)	10.68*** (2.021)	12.68*** (3.474)	6.258*** (1.929)	-4.037 (5.673)	11.01*** (2.06)	12.93*** (3.342)
Observations	806	806	500	500	806	806	500	500
FirmControl	NO	YES	NO	YES	YES	YES	NO	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES	YES	YES

Table 20: **Regression Analysis of Interest Rate, in function of the size of the locality in terms of population where the company is located.**

This table presents an OLS analysis estimating the loan interest rate granted by the financial institution, depending on the size of the locality where the company is located. Specifically, we divide the data into two subsamples, one if the company is located on a small town, where the population is less than 50,000 and the other one if the population is more than 50,000. We examine the impact of crime through crime divided by sales and the other one the dummy of presence of crime in the company in 2009. We test two types of regressions, one with country and sector fixed effects and the second one with country, sector fixed effects and firm controls. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad & Tobago. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively. ^{ooo}, ^{oo}, ^o denote significance at 1 %, 5 % and 10 %, respectively, for the Wald test comparing regression coefficients across subsamples.

VARIABLES	Small Town		Big Town		Small Town		Big Town	
	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan
pcrime_sales	17.72 (12.69)	14.66 (13.89)	11.32 (12.72)	15.21 (11.62)	1.673***,ooo (0.503)	1.595***,oo (0.590)	-0.453 ^{ooo} (0.333)	-0.146 ^{oo} (0.625)
pdummycrime					12.97*** (0.543)	10.65*** (2.259)	16.66*** (0.371)	17.19*** (2.150)
Constant	12.92*** (0.557)	10.97*** (2.587)	16.54*** (0.391)	16.95*** (2.107)				
Observations	217	217	158	157	217	217	158	157
R-squared	0.207	0.284	0.634	0.720	0.239	0.308	0.634	0.717
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES	YES	YES
FirmControl	NO	YES	NO	YES	NO	YES	NO	YES

Table 21: Heckman Analysis of Interest Rate, in function on the average level of education of the managers in the company.

This table presents a Heckman analysis, conditional on applying for a loan, estimating the loan interest rate granted by the financial institution, depending on the average level of education of the managers in the company. Specifically, we divide the data into two subsamples, one if the average of education is less than university graduate or post-graduate (Masters, Ph.D.), this can be completed primary school, secondary school, started but did not completed college and completed college; and the other one if the average level of education of the managers is university graduate or post-graduate. We run two different types of analysis, one being the key variable the total cost of crime divided by total sales in 2009, and the other one the dummy of presence of crime in the company. We show robustness to including firm control variables that are listed in Table 1, as well as with country and sector fixed effects. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Nevis, Suriname, The Bahamas and Trinidad & Tobago. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively.

VARIABLES	Lower level of Education		Higher level of Education		Lower level of Education		Higher level of Education	
	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan
pcrime_sales	24.96*** (6.580)	21.15** (9.947)	9.007 (7.463)	6.669 (5.690)	0.433 (0.395)	0.672* (0.390)	0.624 (0.436)	0.378 (0.392)
pdummycrime					14.05*** (1.769)	21.03*** (5.049)	13.36*** (2.228)	10.84*** (3.193)
Constant	551 NO	551 YES	755 NO	755 YES	551 NO	551 YES	755 NO	755 YES
Observations	YES	YES	YES	YES	YES	YES	YES	YES
FirmControl	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES	YES	YES

Table 22: **Regression Analysis of Interest Rate, in function on the average level of education of the managers in the company.**

This table presents an OLS analysis estimating the loan interest rate granted by the financial institution, depending on the average level of education of the managers in the company. Specifically, we divide the data into two subsamples, one if the average of education is less than university graduate or post-graduate (Masters, Ph.D.), this can be completed primary school, secondary school, started but did not completed college and completed college; and the other one if the average level of education of the managers is university graduate or post-graduate. We examine the impact of crime through crime divided by sales and the other one the dummy of presence of crime in the company in 2009. We test two types of regressions, one with country and sector fixed effects and the second one with country, sector fixed effects and firm controls. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Antigua-Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St Kitts and Nevis, St Vincent and Grenadines, Suriname, The Bahamas and Trinidad & Tobago. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively. ^{ooo}, ^{oo}, ^o denote significance at 1 %, 5 % and 10 %, respectively, for the Wald test comparing regression coefficients across subsamples.

VARIABLES	Lower level of Education		Higher level of Education		Lower level of Education		Higher level of Education	
	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan	intrateloan
pcrime_sales	24.80*** (7.280)	16.96 (11.07)	9.604 (8.149)	10.73 (9.830)	0.367 (0.410)	0.421 (0.541)	0.596 (0.455)	0.646 (0.532)
pdummycrime					16.18*** (0.386)	14.46*** (2.118)	15.66*** (0.788)	15.50*** (3.506)
Constant					171	170	204	204
Observations					0.687	0.756	0.341	0.430
R-squared					YES	YES	YES	YES
Country FE					YES	YES	YES	YES
Sector FE					NO	YES	NO	YES
FirmControl								

Appendix D: World Bank's Robustness Checks Tables

Table 23: Heckman Analysis of Amounts Obtained from External Finance.

This table presents a Heckman analysis, conditional on applying for a loan, estimating the external finance obtained measured by the natural logarithm of the loan amount granted by the financial institution for firms whose countries are similar to the LACES ones, in terms of income and regulatory governance. We run two different types of analysis, one being the key variable the total cost of crime divided by total sales and the other one the dummy of presence of crime in the company, both obtained from the first time that the firm was interviewed on the WBES. We show robustness to including firm control variables that are listed in Table 1, as well as country and sector fixed effects. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Angola, Argentina, Azerbaijan, Belarus, Botswana, Dominican Republic, Ecuador, Mongolia, Paraguay, Peru, Turkey and Uruguay. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively.

VARIABLES	logamountloan	logamountloan	logamountloan	logamountloan
dummysales	-0.124 (0.148)	-0.219* (0.127)	-5.482*** (1.850)	-2.894** (1.233)
crime_sales			14.37*** (0.533)	12.20*** (0.512)
Constant	14.39*** (0.536)	12.22*** (0.518)		
Observations	2196	2196	2196	2196
FirmControl	NO	YES	NO	YES
Country FE	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES

Table 24: Propensity Score Matching Analysis of Loan Amount Obtained.

This table presents regressions with a propensity score matched sample where crime-firms are matched to non-crime firms on the basis of their firm controls enumerated in Table 1 and on the level of income of the country who the firm is located, specifically on the high and upper middle income level. We run the regressions using two different matching techniques, one with probit and the other one with logit, also each one with two different specifications of neighbors for robustness. We test the impact of crime through crime divided by sales and the presence of crime obtained at the first time that the firm was interviewed on the WBES. Robust standard errors in parentheses. Country considers Angola, Argentina, Azerbaijan, Belarus, Botswana, Dominican Republic, Ecuador, Mongolia, Paraguay, Peru, Turkey and Uruguay. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively.

VARIABLES	logamountloan	logamountloan	logamountloan	logamountloan
r1vs0.dummycrime	-0.435* (0.251)	-0.204*** (0.0596)	-0.329 (0.217)	-0.293 (0.349)
Observations	389	389	389	389
Type	Probit	Logit	Probit	Logit
Neighbors	1	1	10	10

Table 25: **Regression Analysis of Loan Amount Obtained.**

This table presents an OLS analysis of the subsample of only those firms that obtained loans. We examine the impact of crime through crime divided by sales and the presence of crime both variables obtained from the first time that the firm was interviewed on the WBES, on the logarithm of the loan amount granted by the financial institution, obtained on the second time that the firm was interviewed, for firms whose countries are similar to the LACES ones, in terms of income and regulatory governance. We test two types of regressions, one with country and sector fixed effects and the second one with country and sector fixed effects and firm controls. Clustered standard errors in parentheses. Cluster made by size and country of the company. Size consider six groups, 0 to 19 workers, 20 to 39, 40 to 59, 60 to 79, 80 to 99 and up to 100 workers. Country considers Angola, Argentina, Azerbaijan, Belarus, Botswana, Dominican Republic, Ecuador, Mongolia, Paraguay, Peru, Turkey and Uruguay. ***, **, * denote significance at 1 %, 5 % and 10 %, respectively.

VARIABLES	logamountloan	logamountloan	logamountloan	logamountloan
dummysale	-0.0505 (0.143)	-0.199 (0.131)		
crime_salesv			-6.410*** (2.078)	-6.741* (3.721)
Constant	11.28*** (0.161)	12.36*** (0.455)	11.27*** (0.161)	12.32*** (0.462)
Observations	841	752	841	752
R-squared	0.440	0.666	0.443	0.667
Country FE	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES
FirmControl	NO	YES	NO	YES

