Private Sector Development in Conflict Affected States

A Report to the UK Department for International Development

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Contents

Executive Summary **6**

1 Introduction **7**

2 Literature Review **11**
2.1 Academic Literature 12
2.2 Policy Analysis 20

3 The Economies and Private Sectors of Afghanistan, Pakistan and Iraq **26**
3.1 The Afghan Economy and Private Sector 28
3.2 Afghanistan's Private Sector 33
3.3 Pakistan's Economy and Private Sector 43
3.4 Pakistan's Private Sector 47
3.5 The Economy of Iraq and Private Sector 56
3.6 Iraq's Private Sector 60

4 Cross-Country Comparisons **70**
4.1 Afghanistan, Iraq, and Pakistan in Regional Comparison 70
4.2 Broad Cross-National Comparison 82
4.2.1 Methodology 82
4.2.2 Growth and Conflict 82
4.2.3 Credit and Conflict 83
4.2.4 Exports and Conflict 83
4.2.5 Obstacles to Business and Conflict 85
4.2.6 Summary of Cross-National Results 88

5 Policy Implications and Suggestions for Further Research **89**
5.1 Policy Implications 90
5.2 Suggestions for Future Policy-Relevant Research 92

Bibliography **94**

A Abbreviation List 100

B Country Lists 101

C Footnote on Enterprise Surveys Methodology 104

D Data Feasibility 105

List of Figures

3.1 Afghanistan: Fatalities, 2000–2016 29
3.2 Afghanistan: Fatalities in Regional Perspective, 2000–2016 29
3.3 Afghanistan: Distribution of Violence, 2017 30
3.4 Afghanistan: GDP Growth, 2003–2016 31
3.5 Afghanistan: GDP per Capita, 2000–2016 31
3.6 Afghanistan: Exports as a % of GDP, 2003–2016 32
3.7 Afghanistan: Obstacles to Business, 2014 35
3.8 Afghanistan: Credit to the Private sector, 2006–2016 36
3.9 Afghanistan: Private Investment, 2003–2016 36
3.10 Afghanistan: Firm Distribution by Sector 37
3.11 Afghanistan: Employment Distribution, 2014 38
3.12 Afghanistan: Female Employment, 2014 39
3.13 Afghanistan: Percent of Firms with Top Female Manager, 2014 39
3.14 Afghanistan: Investment by Sector, 2014 40
3.15 Afghanistan: Security Payment by Firm Size & Sector, 2014 41
3.16 Pakistan: Fatalities, 2000–2016 44
3.17 Pakistan: Fatalities in Regional Perspective, 2000–2016 44
3.18 Pakistan: Distribution of Violence, 2017 45
3.19 Pakistan: GDP Growth, 2000–2016 45
3.20 Pakistan: GDP per Capita, 2000–2016 46
3.21 Pakistan: Exports as a % of GDP, 2000–2016 46
3.22 Pakistan: Obstacles to Business, 2013 47
3.23 Pakistan: Credit to the Private Sector, 2000–2016 49
3.24 Pakistan: Private Investment, 2000–2016 50
3.25 Pakistan: Firm Distribution by Sector, 2013 51
3.26 Pakistan: Employment Distribution, 2013 52
3.27 Pakistan: Female Employment, 2013 52
3.28 Pakistan: Percent of Firms With Top Female Manager, 2013 53
3.29 Pakistan: Investment by Sector, 2013 54
3.30 Pakistan: Security Payment by Firm Size & Sector, 2013 55

3.31 Iraq: Fatalities, 2000–2016 57
3.32 Iraq: Fatalities in Regional Perspective, 2000–2016 57
3.33 Iraq: Distribution of Violence, 2017 58
3.34 Iraq: GDP Growth, 2000–2016 59
3.35 Iraq: GDP per Capita, 2000–2016 59
3.36 Iraq: Credit to the Private Sector, 2004–2015 60
3.37 Iraq: Private Investment, 2000–2016 61
3.38 Iraq: Obstacles to Business, 2011 62
3.39 Iraq: Firm Distribution by Sector, 2011 64
3.40 Iraq: Employment Distribution, 2011 65
3.41 Iraq: Female Employment, 2011 65
3.42 Iraq: Percent of Firms With Top Female Manager, 20111 66
3.43 Iraq: Investment by Sector, 2011 67
3.44 Iraq: Security Payments by Firm Size & Sector, 2011 68

4.1 Cross-Country: Fatalities, 2000–2016 71
4.2 Cross-Country: Credit to the Private Sector, 2000–2016 72
4.3 Cross-Country: Private Investment, 2000–2016 72
4.4 Cross-Country: Sectoralization 73
4.5 Cross-Country: Proportion of Firms Reporting Fixed Asset Investment 74
4.6 Cross-Country: Government Effectiveness 75
4.7 Cross-Country: Political Stability 75
4.8 Cross-Country: Private Investment vs. Political Stability in DFID Fragile States, 2000–2016 . . 77
4.9 Cross-Country: Credit to the Private Sector vs. Political Stability in IDA-Eligible Countries, 2000–2016 77
4.10 Cross-Country: Security Paid by Firm Size 78
4.11 Cross-Country: Security Payments by Firm Size 79
4.12 Cross-Country: Biggest Obstacles to Business, 2008–2014 80
4.13 Cross-Country: GDP Per Capita (PPP), 2005, 2010, 2015 83
4.14 Cross-Country: Credit to the Private Sector, 2005, 2010, 2015 84
4.15 Cross-Country: Exports and Conflict, 2006–2016 84
4.16 Cross-Country: Average Share of Sales Paid in Security Payments 85
4.17 Cross-Country: Share of Firms by Country Citing 'Crime, Theft and Disorder' as Biggest Obstacle 86
4.18 Cross-Country: Share of Firms by Country Citing 'Political Instability' as Biggest Obstacle . . 87
4.19 Cross-Country: Share of Firms by Size Citing "Crime, Theft and Disorder" and "Political Instability" as Biggest Obstacle 87

List of Tables

3.1 World Bank Enterprise Survey Statistics: AFG, IRQ, PAK 27
3.2 Afghanistan: Firms by Sector, Size and Region, 2014 38
3.3 Iraq: Private Sector Shares in Generation of GDP, Fixed Capital Formation and Rate of Employment, 1974–2012 (Iraq: Prime Minister's Advisory Commission 2014, 42) 62
3.4 Iraq: Employment by Type of Employer, 2004 63

Executive Summary

This Report presents evidence on the relationship between violent conflict and the industrial organization of firms and entrepreneurial decision-making in fragile states. The Report examines several conflict-affected countries using firm-level data, with an emphasis on Afghanistan, Pakistan and Iraq, and relevant regions (e.g. MENA and South Asia), to generate and test hypotheses about the systemic forces acting upon the private sector. Major findings include: (1) the presence of violence stunts the private sector through several different channels, including low investment, a misallocation of resources, and constraints on where firms can operate; (2) almost all large firms in conflict-affected countries pay for security but there is no clear correlation between conflict intensity and the share of revenues paid for security; (3) insecurity and violence reduce access to credit, consistent with creditors fearing political instability and the associated weak property rights; (4) the effects of violence are persistent, continuing to reduce private sector activity even after violence has abated.

Chapter 1

Introduction

Private sector development (PSD) has become the object of growing attention from the foreign assistance community in recent years, given its role in generating jobs and tax revenues and in promoting innovation. Academic research and policy experience, however, suggest that the barriers to private sector development can prove daunting in some country settings (Hallward-Driemeier and Pritchett 2015). Beyond the small size of the market that characterizes many developing countries, and the various domestic and international barriers that still impede participation in the global economy, companies may face such political-economic impediments as clientelism or "crony capitalism," capital market failures, judicial shortcomings, and the ever-present threats of corruption and predatory behavior (which may be especially prevalent in resource-rich economies).

In conflict-affected states, the challenges to the private sector are likely to be even more acute, starting with threats to security and property rights, which may influence not only the investment decisions of entrepreneurs but also the geographic scope of business activity and the allocation of labor. However, very little empirical research exists on firm behavior in this setting. *The purpose of this Report is to use the best data available in order to provide insights into how violent conflict affects the decision making and industrial organization*

of firms, and what the implications of this are for foreign assistance programming that seeks to encourage private sector development.

Among the questions the Report examines are the following: How does violent conflict influence the level and type of private sector activity? Which firms and sectors benefit from conflict and which are hurt by it? How does conflict shape the industrial organization of firms (e.g. the size of firms and the sectors where they operate), and what are the consequences of this industrial organization for competition and growth? How does conflict impinge on finance to the private sector? Do violent settings provide women with relatively more or fewer employment opportunities, as men tend to be more intensively used in the production of violence? Where can foreign assistance programming aimed at private sector development yield its greatest impact?

In order to answer these questions, the Report aims to do the following: first, it examines the relevant firm-level data with respect to several conflict-affected countries, with a focus on Afghanistan, Pakistan, and Iraq, per DFID's request; second, it compares these data with those obtained from a larger sample of DFID's fragile and conflict-affected states (FCS) and regional groupings of developing countries in order to make some preliminary inferences about how conflict influences market and sectoral structure; and finally, it provides policy recommendations to DFID in an effort to inform its future research and programming in this area. In reviewing the state of the private sector, the Report emphasizes a number of key indicators which shed light on its operations, including levels of violence in each country; changes in gross domestic product; reported obstacles to business; payments for security by firms; numbers of firms and sectors in which they are active; credit to the private sector; levels of investment; and employment (including female employment).

It is also important to emphasize what the Report does not seek to do. Among these, it does not consider the role of the private sector in promoting (or undermining) peace agreements, although we will discuss how conflicts might profit some firms and sectors over others. We do not emphasize donor programs whose explicit purpose is to encourage foreign direct investment (FDI); instead, the focus here is firmly

on domestic firms. That oversight is worth noting for two reasons: first, FDI, especially in countries that are rich in natural resources, has often been associated with conflict (Bannon and Collier 2003); second, and conversely, FDI has been encouraged by some donor organizations (in fact, article 2 of the World Bank's Articles of Agreement calls upon the Bank to "promote foreign direct investment") as a way of boosting technology transfer, exports (and thus foreign exchange earnings), tax revenues, and "good" jobs in developing countries (Asiedu 2013). Moreover, we emphasize the formal instead of the informal sector of the economy, despite our recognition that the informal sector likely employs more people in the places we examine (in developing countries in general, the vast majority of workers tend to be "self-employed"). The reason stems from the fact that the formal sector is likely to be the major driver of growth, innovation and productivity gains, along with being a major contributor to tax revenues. Along these lines, most donor programs focus on the formal sector or schemes to formalize informal firms.

We also do *not* discuss in detail the many macroeconomic issues that may shape or incentivize entrepreneurs to invest (or withhold investment) in private enterprise. These include monetary and fiscal policy, and trade policy. While these will necessarily be touched upon in the economic overview sections of each country study, they are not the main focus of analysis or of policy recommendations. This is not to minimize their contribution to PSD as they are foundational to the "investment climate"; as such, the design of appropriate macro policies have been at the core of some development agencies, notably the International Monetary Fund (IMF), and donor programs. *Indeed, donor policies must be coherent, ensuring that the macroeconomic policies they advocate do not undermine private sector development.* An over-valued exchange rate, for example, can undermine the competitiveness of local businesses, as markets become flooded with "cheap" imports.

Relatedly, we do not provide an extensive analysis of the renewed debate over the role of the state in shaping industrial policy, although, of course, the state's role in motivating or suppressing private investment is considered.[1] Finally, we do not attempt to quantify the opportunity cost of "lost" private sector

1. See Rodrik (2008) for positive arguments regarding industrial policy, and for a case study of post-conflict Cambodia's "industrial policy" (in this case aimed at reinvigorating the agricultural sector), see Turner, Korm, and Veara (2017).

investment on the economy as a whole or for long-run growth.[2] Again, our emphasis here is on the question of how conflict shapes industrial organization and what the consequences of that are for the economy. An important area for future research, however, concerns the long-run effects of conflict on industrial organization; more on this in the concluding part of the Report.

This Report is in five sections. In the following section, we review the relevant academic and policy literature. Next, by way of context or scene setting, we provide some brief background on the economic trajectories of Afghanistan, Iraq, and Pakistan, before summarizing what we know about the private sector in each of these economies, making extensive use of the World Bank Enterprise Surveys (which, we argue, is an under-utilized resource by researchers and donors), administrative data, and other sources. Next, we compare the private sectors in these conflict-affected economies to a much larger set of FCS and developing countries, with a focus on the Middle East and North Africa (MENA) and South Asia (SA). We conclude with recommendations for further research and for development policy in conflict-affected states.

2. Though, as we will see in a later sub-section, the Government of Pakistan does provide such estimates; for an academic analysis see Besley and Mueller (2018).

Chapter 2

Literature Review

The topic of private sector development has been the focus of a growing body of both academic literature and policy analysis, though neither has traditionally emphasized the particular circumstances facing entrepreneurs and investors in conflict-affected states (in fact, the private sector was not a prominent interest of development economists until relatively recently). As we will see in this section, academic research on the private sector in developing economies has tended to highlight the impediments to investment, entrepreneurship, and firm growth that are specific to these settings (Hallward-Driemeier and Pritchett 2015). Beyond the small markets at home and the international trade barriers (both tariff and non-tariff) they face, firms must also overcome such additional hurdles as clientelism, capital market failures, policy uncertainty, "institutional voids"—including judicial shortcomings and weak property rights, and corruption and rent-seeking, especially in resource-rich economies. Shortages of key inputs, like electricity, are often cited as another barrier (often the main barrier, in fact) by entrepreneurs, as reported in the World Bank *Enterprise Surveys.*

Very few studies to date explicitly address the particular circumstances facing conflict-affected states. Given the lack of high-quality and high-frequency data, especially in conflict-affected states, a relatively new line of academic research leverages new sources of "big data," such as mobile phone and nightlights

data, as proxy measures for studying private sector development in developing countries. Some of these approaches, which will be discussed here, hold promise for deepening our understanding of industrial organization and private sector behavior.

For its part, the policy literature has naturally focused on the experiences of donor programming with respect to PSD, and it tends to be based on case study research undertaken in a small number of settings. This literature makes only limited reference to academic findings and it suggests that PSD in fragile and conflict-affected countries has been powerfully shaped by the ideas and priorities of donors in non-violent, developing world settings; in both cases, for example, an emphasis is placed on capital market failures. This literature has also noted that donor programs with respect to PSD are notable by their absence of rigorous monitoring and evaluation (M&E). In the following two sub-sections we examine the academic scholarship and policy research respectively in order to provide context for our discussion of the specific cases of Afghanistan, Iraq, and Pakistan, and then turn to FCS economies in MENA and SA more generally.

2.1 Academic Literature

This Report is informed by four strands of academic literature within economics, alongside the relevant policy analysis. The first strand stems from the foundational work of Douglass North on the role of institutions and institutional quality in promoting or stifling economic growth, and in particular his emphasis on property rights regimes. The second concerns the small but growing literature on firms in conflict zones specifically, while the third examines various aspects of the private sector in emerging and frontier economies overall. The fourth is the methodological literature on using "big data" in economic research.

North's (1990) Nobel Prize-winning work provides a good place to start, given his effort to locate the root cause of differing growth rates around the world in a nation's institutions. Unlike the earlier generation of development economists who emphasized the need to mobilize domestic and foreign savings in order to promote new investment, North instead posited that the foundations for growth derived from

the quality of national institutions, and in particular the government's adherence to strong property rights regimes. During periods of political instability and violent conflict, governments may find it costly to enforce property rights, especially in regions that are beyond their military control. Governments may also actively erode a firm's property rights and profits through their own corrupt and predatory practices. In fact, the conflict itself may be, at least in part, about which group gets to define and enforce the property rights regime (North, Wallis, and Weingast 2009; Kapstein 2017).

Following North, a number of studies have examined the relationship between political instability and policy uncertainty on investment and growth. Svensson (1998) shows that country characteristics like political instability and weak property rights were strongly associated with lower rates of private investment, and that the lower rates of private investment is largely driven by the quality of the property rights regime. From a political economy perspective, Svensson posits that "in-groups" might lack the incentive to create strong property rights regimes, which are a public good. By essentially privatizing property rights protection, only the group capable of providing this good could profit from it. This work is also consistent with findings that ethnic fractionalization is associated with lower rates of growth and public goods provision (Alesina and Ferrara 2005). This political economy argument has important policy implications in that it suggests that efforts (e.g. by international donors) to strengthen local property rights may not be universally welcomed.

We argue in this Report that the property rights channel is of crucial importance to policy-makers in the context of conflict-affected states. As we will see below, much of the international community's private sector development work to date, for example, has focused on capital market failures, with foreign assistance programming aimed at capital market "deepening" through assistance to the banking sector and venture capital investments. While this may be appropriate in some settings, the underlying problem that capital markets face, especially in conflict-affected states, may be non-existent or weakly enforced property rights. If firms lack secure collateral in the first place, then they will be unable to obtain credit irrespective of its availability. The fundamental policy issue, then, is not the lack of credit but rather the lack of property rights.

The problem that all entrepreneurs must face when starting a business is the "irreversible" nature of their investment decisions. Simply stated, once the entrepreneur builds, say, a factory, the money spent is a "sunk cost" which can only be recuperated through the plant's (profitable) operations. As New York University's David Stasavage (2002) has written, "when one assumes that investments are irreversible, firms can be prompted to delay or forego investments out of the fear that the economic environment might change for the worse." When property rights are insecure, firms and households are less likely to make productive investments. Moreover, for firms that are already operating, labor will be "misallocated" from production to protection of assets and human capital; the net result is that output will fall (Besley and Mueller 2018).

Regarding the specific literature on the private sector in conflict zones, much of the work done to date has tried to understand and isolate the impact of violence on investment decisions (after all, there could be other reasons beyond conflict that stymie investment, such as poverty, weak infrastructure, and an absence of good business opportunities; of course, all of these could be exacerbated by the presence of violence). One direct impact on firms operating in FCS might be on their *levels* of investment, as entrepreneurs are wary of putting too much capital at risk. Further, it may not only be just the level of investment but the *type* of investment also that is influenced by political instability and violence. As Fielding (2003) points out, "In risky environments the demand for non-traded capital goods (buildings and other construction works) may be particularly low, because these are not geographically mobile and cannot be shipped out to another area if there is a major breakdown in civil society. Some [...] goods [...]are more mobile, and therefore less of a risk. *So an increase in political instability (an increase in the threat of war) may reduce construction investment more than machinery and equipment investment*" (160, emphasis added). Taking the case of Israel, Fielding (2003, 177, emphasis added) finds that it is both levels of aggregate investment and types of investment that are affected by violence (in this case, the Palestinian uprisings or intifada), leading to his conclusion that "*violence of all kinds depresses investment demand*."

Subsequent research has also found that political instability in the form of violence discourages private investment. As Le (2004, 592) summarizes the empirical findings, "SPI [socio-political instability] destroys

physical capital and displaces human capital [...] disrupting personal savings, hence lowering investment." Le further notes that SPI "leads investors to shift their assets from fixed capital stocks to more liquid [...] forms [...] " Overall, his analysis of a panel of developing countries shows that violent conflict in particular (as opposed to instability that takes the form of nonviolent protest) "has a large, negative impact on private investment" (593).

In turn, violence might also be expected to affect the size of firms. Large, productive firms, for example, are likely to be both the targets of "predation" (by the government and rebel forces alike, not to mention bandits) and the most capable of devoting resources to protection (Blumenstock et al. 2018). Small firms, in contrast, might strive to stay "below the radar screen" of the predators; indeed, this might be one reason for widespread informality in FCS. Given the possibility of a bimodal distribution of firms, one could hypothesize that the entrepreneurs who are most likely to suffer are those who seek to build a Small or Medium-Sized Enterprise (SME), as they are "caught in the middle." They have neither sufficient assets to devote a substantial share to protection nor are they so small that they can evade predation. In short, the "missing middle" which has been so frequently observed across the developing world, might be particularly intractable in FCS because of the predatory setting (note that large firms may be "missing" as well in many FCS; on this point, see Hsieh and Olken 2014). Relatedly, conflict may influence the locations where firms operate. In nearly all countries, even the most violent ones, some regions tend to be safer than others. The distribution of violence in Afghanistan and Iraq, for example, is not evenly spread out across the country. In particular, we could hypothesize that firms are less likely to be present in violent areas (or they may have been present only to leave such areas when violence erupts) and we would expect them to employ fewer workers in such regions. Based on mobile phone data, we will show in a later sub-section of the Report that this result holds in the case of Afghanistan. This also raises an interesting issue for donors in term of PSD programming: do they focus their attention on the peaceful areas that already enjoy private sector activity, or do they instead try to work in more violent regions in the hope that economic development and job creation might mitigate at least some of the underlying drivers of conflict?

Firms may further need to reallocate labor in conflict-affected countries from production to protection. In a paper that makes use of the World Bank Enterprise Surveys, Besley and Mueller (2018) focus on the costs of protection that firms incur in insecure environments. Firms in such countries face the risk of predation and as a consequence reduce investment and (mis)allocate labor to the provision of security, suffering output losses as a result. They find that "large firms appear to be more susceptible to predation," a finding also consistent with that of Crost, Felter, and Johnston (2016), who examine rebel predation of banana plantations in southern Philippines during periods when the price of export bananas rose. These papers do not, however, seek to explain the evolution of industrial organization in such countries, although implicit in both is the argument that large firms with more assets are better equipped to cope with the costs associated with predation.

In addition to its impacts on investment, output and firm size, labor allocation, and potential "bunkering" or focusing of firm operations in safe areas, asset prices may also change in conflict zones, sending signals about the future value of a given investment. In their paper on Northern Ireland, for example, Besley and Mueller (2012)tracked changes in housing prices during its internecine conflict, showing that violence dampened housing prices and that expectations of peace caused these prices to rise (they use a Markov switching model to frame this change). Overall, the "peace dividend" had large and widespread welfare effects, since many people in Northern Ireland held a significant share of their assets in real estate. While not directly related to the issue of industrial organization, their finding is suggestive of the classic microeconomic hypothesis that changes in asset prices will motivate changes in levels and types of investment.

While much of the relevant academic literature has unsurprisingly focused on the downsides of conflict for an economy, some agents are likely to be more capable than others to survive or even thrive in such environments, owing either to the lack of competition or their ability to channel violence to profitable ends (an analogy is provided by organized crime syndicates and gangs operating in urban settings). As noted previously, large, established firms might hire security guards to protect their plants and workers. For example, mines, oil wells, and other capital-intensive operations, often managed by multinational en-

terprises, can continue to function even in the heat of violent conflict, as they seem capable of establishing "zones of peace" around the firm.[1] In short, *firms that are able to protect themselves in conflict zones can earn rents from their unique ability to manage in such environments* (Guidolin and La Ferrara 2007). Drawing on the case of Liberia, McDougal (2017, chap. 3) finds that some firms are more adept than others' at adjusting their supply chains in response to violence. They have deep networks that enable them to change suppliers quickly, thus maintaining their ability to function.

This literature is suggestive of the work in business strategy that shows how some firms (often from developing countries) build capabilities that enable them to navigate the "institutional voids" that exist in emerging and frontier markets better than those from the west; indeed, such firms derive a competitive advantage from this capability (Khanna and Palepu 1997). Firms overcome these institutional voids in a variety of ways. As Gao et al. (2017, 2150) summarize the literature:

> Strategy research [...] has focused primarily on uncovering the drivers of short-term competitive advantage. One body of research has argued that when institutions are incomplete, incumbents, including business groups, dominate [...] although there is debate regarding whether this advantage is driven by value creation [...] or value extraction such as [...] corruption. A related body of work has argued that dominant incumbents can gain competitive advantage through non-market actions that can mitigate political hazards, including lobbying [...] .

More recently, Gao et al. (2017, 2150) have emphasized the role of a firm's *reputation* as providing it with a competitive advantage in weakly institutionalized settings. Essentially, a firm's reputation enables it to reduce the transaction costs that consumers and suppliers face in doing business, especially in regions with weak property rights. A firm that has a reputation for making timely payments to suppliers, for example, will have an advantage over firms that do not. These reputational benefits are built up over long periods of time, and Gao et al. (2017) note that some of the dominant firms in emerging markets have indeed operated for many decades, successfully navigating political upheaval and change.

The next strand of literature focuses on industrial organization and the determinants of firm survival in developing countries; the findings from this work are only now being applied to fragile and conflict-affected

1. For a fascinating case study, see Lund (2018), on the French-based global cement company Lafarge's operations in Syria.

states (see, for example Blumenstock et al. 2018). Research on "the survival of formal firms has important implications for development strategies. In order for the private sector to act as an 'engine of growth' and advance the development process it is necessary for firms to survive and grow" (Klapper and Richmond 2011, S33). As just noted, while generally not written specifically in the context of conflict settings, the theories and findings of research in industrial organization can help generate hypotheses regarding the structure of firms in such environments (for a recent review, see Li and Rama 2015). As Cefis and Marsili (2006, 626) put it, the "growth and survival of firms will depend on their ability to successfully adapt their strategies to changing environments" and this is no less true in places that become violent.

The determinants of the industrial organization and size distribution of firms are of potential importance to the competitiveness and even growth of a nation's economy. As noted in the Introduction to this Report, one of the main claims that scholars have made in this regard is with respect to the so-called "missing middle" in firm size across the developing world (see Tybout 2000).Development agencies have generally accepted the existence of a missing middle and have devoted much of their programming to overcome it. As Beck, Demirguc-Kunt, and Levine (2005) point out in the developing world context, bilateral and multilateral aid agencies have sought to promote the Small and Medium-Sized Enterprise (SME) sector through various programs and subsidies for three, inter-related reasons: first, SMEs contribute to competition and innovation; second, SMEs are often more productive than large (particularly state-owned) firms; third, SMEs generate employment (Li and Rama 2015). For these reasons, SMEs can also contribute to growth and poverty reduction (for a view that donors should target large firms as well, see Hsieh and Olken 2014). While Beck, Demirguc-Kunt, and Levine (2005) find a strong correlation between economic growth and the size of the SME sector in cross-country regressions, they do not find causal evidence in support of a poverty-reducing role. However, they do note that in specific country cases SMEs may have that effect.

While not directly related to the issue of firm size (though this would make for a nice extension of their research), Hallward-Driemeier and Pritchett (2015) find a substantial difference between "fast" and "slow" firms in developing countries in terms of the time it takes them to overcome various regulatory

hurdles, such as getting a construction permit. They interpret these results to infer that some firms are "favored" over others, due to "political connections, family ties, influence activities, or corruption." Such considerations are likely more acute in violent settings where the issues at stake could be the very existence of the firm and the lives of its owners and employees.

In short, the literature on the private sector in the developing world has highlighted the "missing middle" and the reasons for its existence. Despite the absence of an academic consensus on why the missing middle truly exists, donors have seemingly accepted the idea that it is driven by capital market failures, and donors have devoted a large share of their private sector development activities to the deepening of financial markets. As the debate over the missing middle suggests, however, there is still a great deal that scholars have yet to learn about industrial organization and private sector behavior in developing countries.

Finally, with respect to economic methodology, scholars have made great progress in recent years in integrating new sources of large-scale digital data in empirical social science research (e.g. Einav and Levin 2014; King 2011). While the vast majority of this work has focused on industrialized economies where internet and social media proliferate, a more recent strand in this literature attempts to adapt these insights to the context of developing and conflict-affected countries (Blumenstock 2016; Blumenstock et al. 2018). In these environments, fewer sources of "big data" exist, but that is rapidly changing.

Nightlights and cell phone metadata, for example, are increasingly being used by scholars as proxy measures of economic activity. For instance, some of the first studies to use mobile phone data showed that regional patterns of phone use correlated closely with regional demographic data (Eagle, Macy, and Claxton 2010; Frias-Martinez et al. 2012). Recent advances have shown how phone data can be used to reconstruct accurate, fine-grained estimates of poverty and wealth (Blumenstock, Cadamuro, and On 2015). Blumenstock et al. (2018) use cell phone data to explore private sector activity in Afghanistan, interacting these data with the available violence data from that country to assess how violent activity influences firm behavior; more on this in a following section. While promising, this line of research is still nascent, and the

existing literature only explores the surface of potential applications. Still, in this Report we will highlight the possible contributions of such data to the donor community.

To summarize, the academic literature posits several channels through which violence may influence firm behavior. While the literature tends to emphasize the damaging effects of conflict on firm growth, some of it also points to the competitive advantage that certain firms may have in conflict settings. Naturally, there is interplay between these two, with potentially important consequences for long-run development and growth. If some firms emerge from conflict with quasi-monopolistic positions in the economy, then it may prove more difficult for entrepreneurs to enter the market as the environment becomes more politically benign.

The academic research also suggests a number of hypotheses that we will examine in the empirical sections of this paper, as follows:

- ***H1***: The greater the violent conflict, the lesser the capital investment.
- ***H2***: The greater the violent conflict, the lesser the availability of credit to the private sector.
- ***H3***: The greater the violent conflict, the lesser the share of SMEs in the private sector.

2.2 Policy Analysis

The international donor community is devoting more attention and resources to fragile and conflict-affected states. DFID's 2015 National Security Strategy and Strategic Defence and Security Review and a subsequent repetition in the 2018 National Security Capability Review, for example, state the government will: "invest at least 50% of the Department for International Development's budget in fragile states and regions" (UK Department for International Development 2015, 11). Similarly, USAID is devoting an increasing share of its resources to fragile states; Afghanistan is the largest single recipient of American foreign aid, and the Middle East and North Africa overall the largest region.

Yet a 2013 report by the World Bank's Independent Evaluation Group (IEG) tells a cautionary tale about such spending. At least in the case of the Bank's operations, it found that "The World Bank Group lacks a realistic framework for inclusive growth and jobs that is based on [...] constraints in fragile and conflict-affected states [...] " (Independent Evaluation Group 2014, xiii). A report for UK DFID on support for infrastructure in FCS puts the issue more directly; it argues that it is possible for poorly designed or implemented infrastructure programs to "do harm" in a fragile context in several ways, including by "encouraging corruption or raising expectations that are subsequently disappointed" (Jones and Howarth 2012, 37). In this section, we review some of the policy literature on private sector development in fragile states, and examine to what extent it has been informed by academic research and the findings to date of the donor community.

Donor commitment to PSD begins with the "broad consensus that creating economic opportunities is critical to addressing fragility and conflict and that economic recovery is a vital aspect of state building" (Avis 2016, 1). As the major generator of jobs and, at least in cases where firms are formalized, tax revenues, the private sector may play a key role in producing not just private goods but the resources needed for public goods as well. Indeed, firms often create public goods themselves through their operations. Training programs, innovation, and infrastructure, among other aspects of ongoing business operations, may contribute not just to the firm's bottom line, but to societal well-being more broadly. Therefore, because of its role in employment, innovation, tax revenues, public goods and, in the case of export-oriented industries, foreign exchange generation, spurring the growth of the private sector seems to be a pre-condition of post-conflict reconstruction. Beyond these economic outcomes, some analysts also believe that the private sector has a crucial, direct role in "supporting the state's peacebuilding efforts" and strengthening "the state's legitimacy [...] "(Avis 2016, 4).

How best to support PSD, however, remains contested within the donor community. Mac Sweeney (2008) usefully distinguishes between two broad approaches that donors have adopted to date, which she labels: "interventionist" and "investment climate". Datzberger and Denison (2013) borrow the economic terms "micro" and "macro" to define these approaches. Interventionist or micro approaches refer to those

programs that provide direct support to entrepreneurs or the business community, including through financing, employment and training programs, the development of business associations, and programs aimed at linking local firms to regional and international markets. Investment climate or macro programming, in contrast, emphasizes such aspects as the quality of the legal and regulatory environments, the strengthening of financial institutions and central banks, and the promotion of foreign direct investment. To be sure, both types of programming are potentially important and in fact complimentary. But which one has proved most effective?

A 2016 study by the International Finance Corporation (IFC) aimed to assess that question (Liu and Harwit 2016). Overall, it found direct interventions to be "most successful," particularly those designed to support small and medium-sized enterprises (SMEs). In contrast, "projects to improve the business environment and support intermediaries in financial sectors had the lowest overall ratings for effectiveness [...] " (Liu and Harwit 2016, 1). Similar findings emerge from a study prepared by Germany's GIZ (Deutsche Gesellschaft fur International Zusammenarbeit GmbH), which finds that "the most promising area for intervention is the micro level [...] micro and small sized businesses do not need a state [...] [these] actors usually continue activities during violent conflict [...] " (Schrade et al. 2017, 26).

Note that these findings are puzzling in some respects, at least at first glance. It would seem very difficult to promote the fortunes of individual businesses if the overall business climate is hostile to entrepreneurship. For example, it is challenging for firms—especially small firms—to succeed if property rights and the legal regime are weak, and/or if the government is corrupt. Larger firms are more capable of handling these challenges.

Part of the puzzle may lie in the definitions of "success" or "effectiveness," and the time horizon over which outcomes are expected to be realized; as the report for GIZ states, results in conflict-affected states tend to be "achieved slowly, and a realistic theory of change and timeline for implementation are needed" (Schrade et al. 2017, 24). A program designed to provide microfinance to women entrepreneurs, for example, may "succeed" in helping to buy sewing machines over the short-run, even if it has little impact on

macro-outcomes over the long-term like poverty reduction (including reducing the poverty of the borrowers). More generally, altering a country's investment climate is a much more complicated task than rolling out a small-scale, targeted program, and surely one that cannot be completed in a similar time-frame.

Yet there is a related problem with much of the case study analysis. It seems to infer that micro projects, if scaled up properly (that is, if only the "right" lessons were drawn from "successful" projects), could make a structural difference to the economy. Such reasoning exemplifies the "fallacy of composition" or what economists would call the problem of "external validity." To take an example, a business development project that works in tribal districts of, say, Iraq, may still not scale-up effectively because of sectarian divisions at the national level. None of the policy literature adequately addresses the barriers to scale-up.

Taking a very different but nonetheless useful approach to success and failure, the GIZ research team emphasizes the *management and implementation* capacities of the donors as being crucial variables. In particular, given the threat of violent conflict, donors must be adaptable and learn to manage projects from a distance if they are to succeed. All-too-often, rigid bureaucratic constraints on operations pose conditions that make it difficult for development implementers on the ground to carry out their programs in light of rapidly changing conditions (Schrade et al. 2017). Realistically—but nonetheless problematically from the perspective of senior management within donor organizations—this report seems to suggest that the definition of a program's success or failure may need to be adjusted in light of such changing conditions.

For its part, a study done on behalf of DFID on PSD in so-called "transition countries"—those that are attaining middle-income status but risk rapid back-sliding because, for example, of a heavy dependence on commodity prices—argues that donors must consider support beyond money. In particular, this study by the Ecorys consultancy forthrightly recommends that donors engage governments directly on political economy issues (something that many have been hesitant to address in the past, perhaps assuming that governments act as social welfare maximizers); that they act as facilitators between foreign multinationals and local enterprises in order to develop synergies between them; and that they engage more across their

own governments both in the interest of seeking relevant expertise (e.g. calling upon agricultural experts housed in that specialized ministry) and the reduction of policy incoherence (Davis 2016).

A "meta-evaluation" of EU development programming in the area of PSD undertaken on behalf of the European Commission's Directorate-General for International Cooperation and Development (Devco) provides an additional perspective that is quite important in the context of donor activities in FCS (Alikhani and Netter 2015). This study observes that some of the policy disagreements over what constitutes effective programming within the EU (e.g. should such programs be "top-down" or "macro" vs. "bottom up" or "micro") are being carried out in the absence of rigorous monitoring and evaluation (M&E) projects which could provide a more solid evidence base for these discussions. This analysis recommends that M&E be incorporated at the design stage of donor programming, a view that is increasingly expressed across the donor community if not always adopted once the costs become apparent. Indeed, uptake of that idea is lagging, not only because of the costs associated with M&E, but also due to the logistical difficulties associated with continuing M&E work once a project is completed and the relevant staff withdrawn.

It is important to emphasize that the policy (and, for that matter, the academic) literatures are generally built on a handful of case studies. The GIZ study just cited, for example, draws its inferences from four cases, and many academic studies offer generalizations based on just a single case. While the IFC evaluation cited earlier is based on many more cases, it is hard to know how "representative" of all donor PSD programs these cases are. As already noted, this raises the question of the "external validity" or robustness of the generalizations made to date. Appropriate case study methodology requires the use of "hard" cases or cases that are most likely to disprove one's arguments. The studies to date, however, generally lack any explicit methodological discussion. From that perspective, both officials and academics should be circumspect with regard to the conclusions they draw from the existing body of scholarship and policy analysis.

This description of the policy literature should not end, however, without making reference to the World Bank *Enterprise Surveys,* which provide a rich (and under-utilized—by both academics and policy-makers)

source of data about the private sector across the developing world, including in many fragile and conflict-affected settings. As we will see in the following sections, we make intensive use of these Surveys in this Report. Analyzing these Surveys should be a priority of both donors and scholars who wish to go beyond case study analysis and examine a broader panel of countries (for a notable example of such research, see Besley and Mueller 2018).

Chapter 3

The Economies and Private Sectors of Afghanistan, Pakistan and Iraq

This study focuses on the formal economy in FCS, with an emphasis on three DFID priority countries: Afghanistan, Pakistan, and Iraq. While the formal sector struggles to grow in many developing countries, it is still an economically significant player in most places, including in FCS. As Klapper and Richmond (2011) argue, formal sector industrial firms are key drivers of long-run economic growth, innovation, and employment creation. Informal firms, which may constitute half or more of the economy, are generally less productive, and make fewer investments in human capital and new production techniques. To put this in other words, understanding the entry and exit of formal firms might reveal broader trends in the economy that are stifling long-run development and growth. In this section we examine the formal sector using the available administrative data and World Bank *Enterprise Surveys.*

The country studies that follow revolve around the set of key questions that inform this Report. How large is the private sector, and how does the political-economic environment influence the decisions of investors and entrepreneurs? What is the size distribution of firms and in what economic sectors are they

active? What are the major obstacles to business development and how much do firms spend on security? What role do women play in the private sector, especially in management roles, and are women more-or-less likely to be prominent in the private sector of FCS? We will then ask these questions of a broader panel of fragile states and developing countries.

We first describe the private sector in the DFID selected conflict-affected countries: Afghanistan, Iraq, and Pakistan. For this analysis, we primarily utilize the World Bank *Enterprise Surveys,* World Development Indicators (World Bank 2018c), World Governance Indicators (World Bank 2018d), and Doing Business Surveys (World Bank 2018a) as well as national economic tables and administrative data. Afghanistan, Pakistan and Iraq are all included in the World Bank *Enterprise Surveys.* Different from the World Bank Doing Business reports, which survey the obstacles to business across the firm life-cycle among small and medium enterprises (SMEs), the Enterprise Surveys provide firm-level data on the composition and relative severity of different types of obstacles to firm operation, as well as firm characteristics, among firms of all sizes. Additionally, the Enterprise Surveys are designed to be nationally representative of the formal non-agricultural sector. The table below summarizes the rich World Bank data for Afghanistan, Pakistan, and Iraq.

Table 3.1: World Bank Enterprise Survey Statistics: AFG, IRQ, PAK

Country	Year	Fiscal Year	# Regions	Fieldwork Duration	Firms Surveyed	Firms Universe
Afghanistan	2008	2007/2008	6	10/2008 - 12/2008	535	-
	2014	2012/2013	5	5/2013 - 7/2014	410	9512
Iraq	2011	2010	10	3/2011 - 10/2011	784	22902
Pakistan	2007	2005/2006	13	9/2006 - 6/2007	935	25427
	2013	2011/2012	5	5/2013 - 5/2015	1247	14651

For each survey the only geographic identifier provided is which of the statistical regions the firm was in. In Afghanistan, the regions were centered around the largest cities. Regional stratification in Iraq was defined by 10 sub-national locations (governorates) in Iraq. Regional stratification for Pakistan was defined in five regions: Punjab, Sindh, KPK, Balochistan, and Islamabad. The average number of firms surveyed across 156 countries for which Enterprise Surveys are available is 1,555.

Following the individual country statistics, the industrial organization of these three countries is contextualized by a larger cross-country study which includes the MENA region (to which Iraq belongs in World Bank categorization), and South Asia (to which Afghanistan and Pakistan are categorized). We have further restricted our focus to the countries within these regions which are targeted by IDA and IBRD funding, effectively comparing countries which receive development assistance within the two regions, and excluding

upper middle- to high-income countries which are not comparable in terms of income level or private sector. The cross-country and regional analysis is directed by comparable geographic and income-level status, but also reflects countries with similar patterns of conflict. In particular, the countries and regions selected are affected by interstate conflicts.

3.1 The Afghan Economy and Private Sector

The World Bank defines Afghanistan as a "deeply fragile and conflict-affected state" (World Bank 2016a, 1), and DFID categorizes the country in its "high fragility" basket. Indeed, after an apparent lull in fighting in 2010–2011, violence is tragically reaching new heights, as seen by the wave of Taliban attacks carried out during the winter of 2018. While these attacks are widely unpopular, they also represent an effort to telegraph the ineptitude of the Government and its security forces. Figure 3.1 charts Afghan fatalities since 2001 while Figure 3.2 places those fatalities in comparative, regional perspective. Figure 3.3 shows that violence in Afghanistan is relatively concentrated, as tends to be the case in most conflict-affected countries. This pattern, for example, will re-emerge in both Pakistan and Iraq, where violence is relatively localized (this raises the important question of the geographic repercussions of violence; are entrepreneurs in district or province A influenced by violence in district or province B?).

From an economic perspective, "GDP per capita is among the lowest in the world, poverty is deep and widespread, and social indicators are still at very low levels" (World Bank 2016a, 1). The World Bank estimates that GDP per capita in Afghanistan in 2016 amounted to $1,802 in 2011 adjusted purchasing power parity terms (World Bank 2018c). This despite the fact that Afghanistan has been the world's single largest recipient of official development assistance (ODA) for many years, receiving $3.4 billion in 2016.

Growth in Afghanistan has been, according to the World Bank, "rapid and volatile" over the past decade, owing to changes in inflows of ODA, changes in agriculture (including opium) prices, and changes in military spending. For a decade or more following the 2001 military actions undertaken by the United

Figure 3.1: Afghanistan: Fatalities, 2000–2016

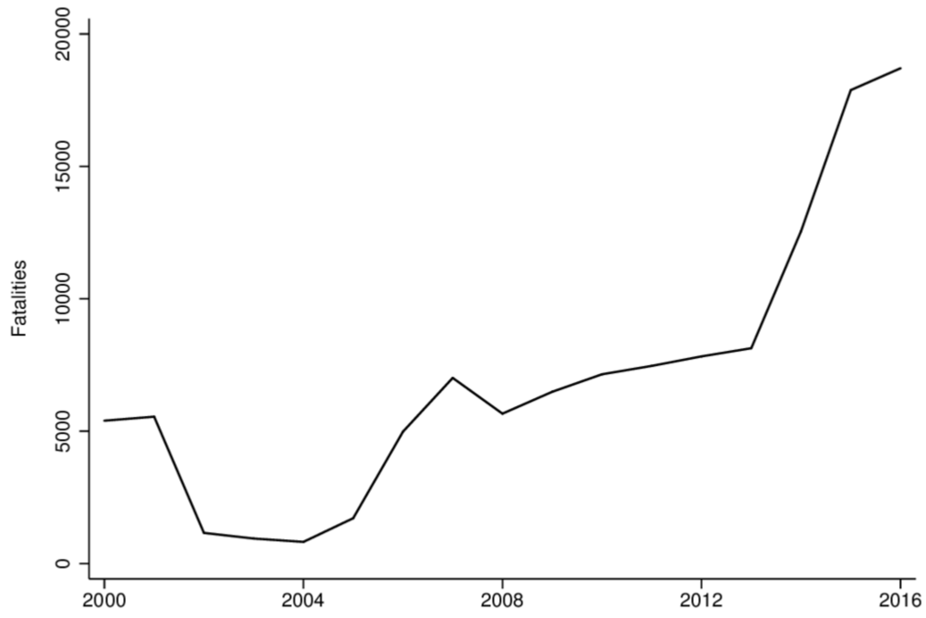


Figure 3.2: Afghanistan: Fatalities in Regional Perspective, 2000–2016

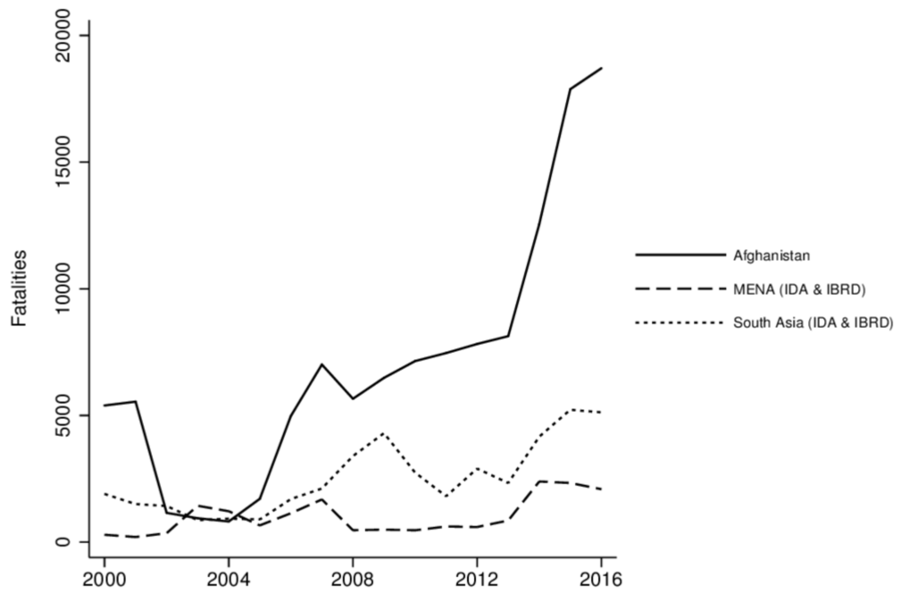
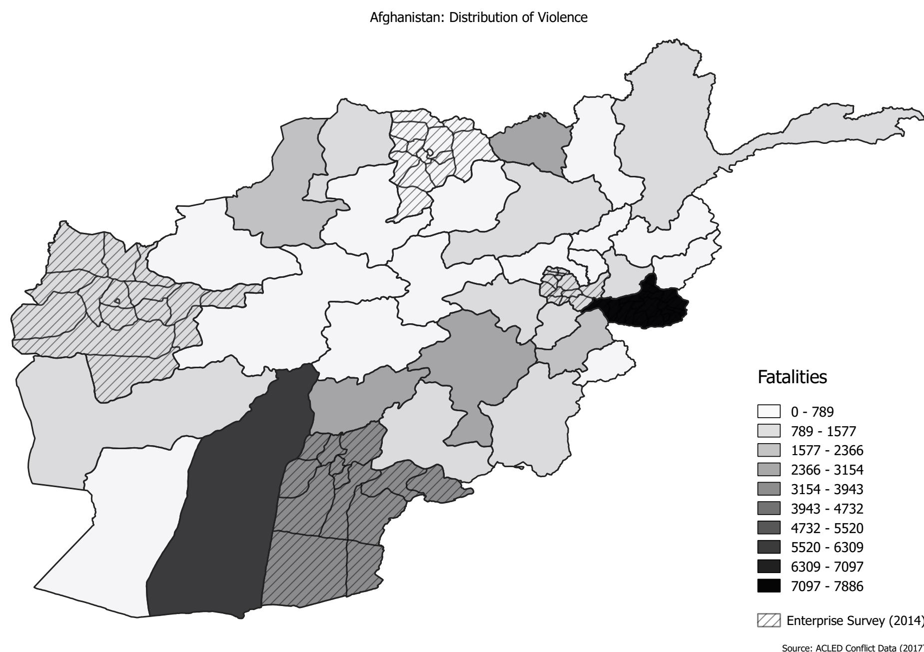


Figure 3.3: Afghanistan: Distribution of Violence, 2017



States and its allies to remove the Taliban from power and eliminate Al Qaeda as a terrorist threat, growth averaged levels of 9 percent per annum. Figure 3.4 provides data on GDP growth in Afghanistan over the decade 2003–2013, in comparison to MENA countries and, as an example of another poor, conflict-affected state, the Democratic Republic of Congo (DRC). Figure 3.5 provides GDP per capita in Afghanistan against the DRC with regional comparison to MENA.

However, as Floreani, Lopez-Acevedo, and Rama (2016) point out, this growth has not translated into a durable reduction in poverty. To be sure, poverty levels did fall in those regions, like Kandahar and Helmand, which saw the most intense fighting, but this was due to the spillover effects from military spending. With the withdrawal of military forces, much of that effect has evaporated, and poverty levels are again climbing.

International trade has similarly not benefited from the period of economic growth. Trade as a share of GDP has been falling since 2003, due to an overvalued exchange rate and the lack of international competitiveness of Afghan firms. Further, Afghan companies that have the capability of servicing the needs

Figure 3.4: Afghanistan: GDP Growth, 2003–2016

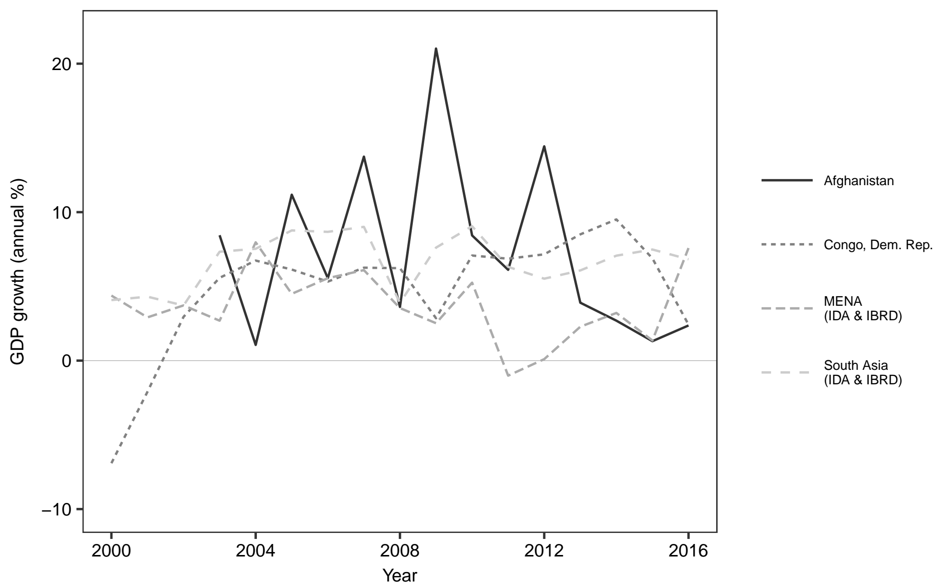
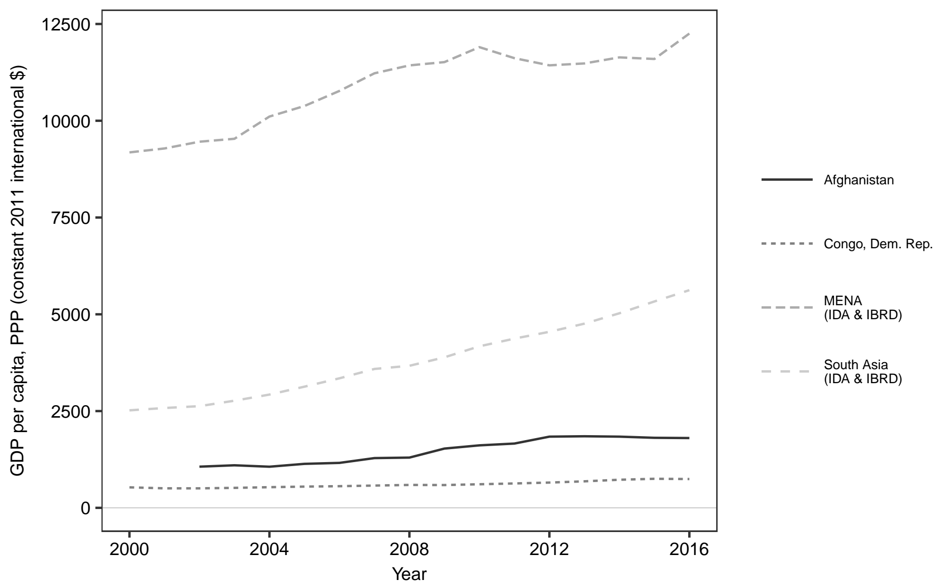
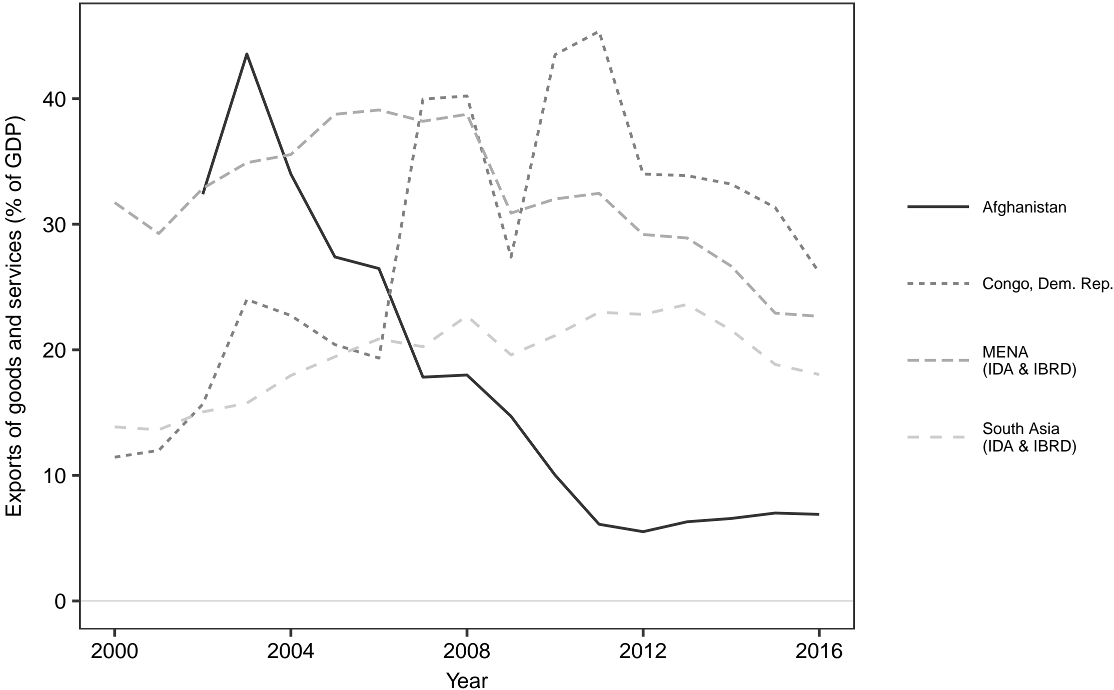


Figure 3.5: Afghanistan: GDP per Capita, 2000–2016



of the foreign aid and military sectors have focused their activities on these markets. At the present time, only three economic sectors (outside opium) are actively exporting their products: mining, carpets, and dry fruits. Figure 3.6 provides data on Afghan exports. According to the 2014 World Bank Enterprise Survey in Afghanistan, 98% of formal firms reported not to export at all. When including indirect and direct exports, the share of firms exporting at least 1 percent of sales increases to only 6.5%, leaving 94% of firms not involved in either indirect or direct export activity. Therefore, it is only very few firms in the formal economy which are driving export activity.

Figure 3.6: Afghanistan: Exports as a % of GDP, 2003–2016



Source: World Bank (2018)

To be sure, there are many bright spots in the Afghan picture that should not be overlooked; tremendous economic progress has been made on several fronts. According to a report by the Stockholm International Peace Research Institute (SIPRI), for example, "vehicles on the road have increased from under 200,000 in 2003 to nearly one million. The telecom and media sectors, led by private corporations, have seen tremendous growth. From two telephones for every 1000 Afghans in 2002, there were over 20 million mobile subscriptions in 2012" (Ghiasy, Zhou, and Hallgren 2015, 6). These are indicators of modernization and

better economic conditions for many thousands of people. Afghanistan has also made great strides in areas closely related to both individual well-being and economic growth, including improvements to health and education, where the situation is far superior to that found in the not-too-distant past.

From a sectoral perspective, the CIA World Factbook estimates that agriculture (including illegal opium production) constitutes 24 percent of GDP (but 50 percent of employment), industry is equal to 21 percent, and services dominate with 55 percent. According to Ghiasy, Zhou, and Hallgren (2015, 14), the vast majority of firms are small and informal: "The Federation of Afghanistan Craftsmen and Traders (FACT) for instance, has 75,000 members, many of them [...] informal businesses, organized in some 1000 *senfs* [guilds]." We take a deeper look at the industrial organization of the formal private sector in the following sub-section.

In sum, after a long period of near double-digit growth, and massive inflows of foreign aid and military expenditure, the country has yet to find a sustainable growth path. Further, poverty levels remain stubbornly high. Continuing political uncertainty, coupled with ongoing violence and corruption, are among the factors that are impeding Afghanistan from achieving sustainable growth along with private sector development and durable poverty reduction.

3.2 Afghanistan's Private Sector

One might believe that the large influx of military and foreign aid spending into Afghanistan would fuel a boom in private sector activity, but the business environment in the country is generally a difficult one. Beyond the country's widespread poverty and lack of purchasing power, a study prepared for USAID states that "corruption [...] is a significant and growing problem across Afghanistan that undermines security, state and democracy building, and development [...] corruption has become pervasive, entrenched, systemic and by all accounts now unprecedented in scale and reach" (Leonardo and Robertson 2009, 14). In 2014, the country ranked 164 (out of 189) in the World Bank's "Doing Business" rankings and 175 (of 177)

on Transparency International's 2013 Corruption Index. According to a 2017 Investment Climate Statement prepared by the U.S. Department of State (2017),

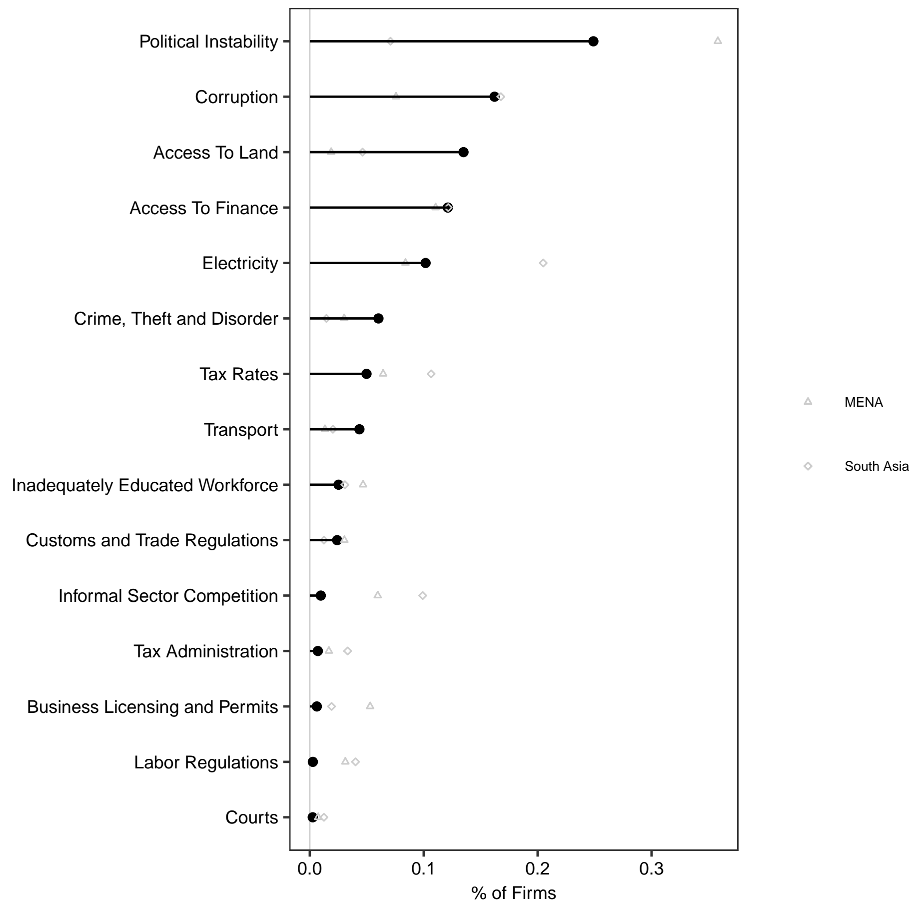
> Investment has declined in recent years, and what remains is largely financed by donors and the public sector [...] New firm registrations tailed off dramatically in 2014, with half as many new firms registered in 2014 compared to 2013. That reduced level has remained relatively constant through 2016. Afghanistan has a small formal financial services sector and domestic credit remains tight. Challenges to business in Afghanistan center around a still-developing legal environment, security, varying interpretations of tax law, and the impact of corruption on administration.

These rankings and statements seem to be borne out by what Afghan entrepreneurs themselves say about their country's economic environment. The World Bank Enterprise Survey in 2014, for example, reported that "Political Instability" was the most frequently cited "obstacle to business" among entrepreneurs. Other top obstacles included corruption and crime, theft and disorder. These are indicative of an insecure investment climate. Figure 3.7 provides the Obstacles to Business rankings. Yet another obstacle cited by the business community is access to finance; indeed it appears in fourth place. Overall, 12% of Afghan firms cite access to finance as the largest obstacle to their operations and funding from internal sources provides the primary access to credit for 93% of firms. As shown in Figure 3.8 credit to the private sector is low in Afghanistan when compared to MENA countries overall; indeed, the DRC business community enjoys more credit (as a share of GDP) than does the Afghan private sector. Private investment as a share of GDP, as shown in Figure 3.9, however, is about the same in both countries, and also well below MENA levels.

Perhaps because of the difficulties associated with financing operations, the Government of Afghanistan (GoA) plays a large role in the industrial sector, albeit one that is not generally known outside the country; the extent to which this crowds out private sector opportunities given the absence of domestic credit is unclear. Again, according to the U.S. Department of State (2017),

> The Government of Afghanistan operates over 30 active state-owned enterprises (SOEs), almost all of which are wholly-owned. About 11,000 people are employed, in sectors including public security, construction, transport, agriculture, and extractives. Net income for all the SOEs is around USD 13M; few are profitable. All SOEs are overseen and regulated by the Ministry of Finance and directly operated by specific ministries depending on the nature of the operations [...] . The Afghan government is also a stakeholder in 13 state-owned corporations (SOCs),

Figure 3.7: Afghanistan: Obstacles to Business, 2014



Source: World Bank (2014)

Figure 3.8: Afghanistan: Credit to the Private sector, 2006–2016

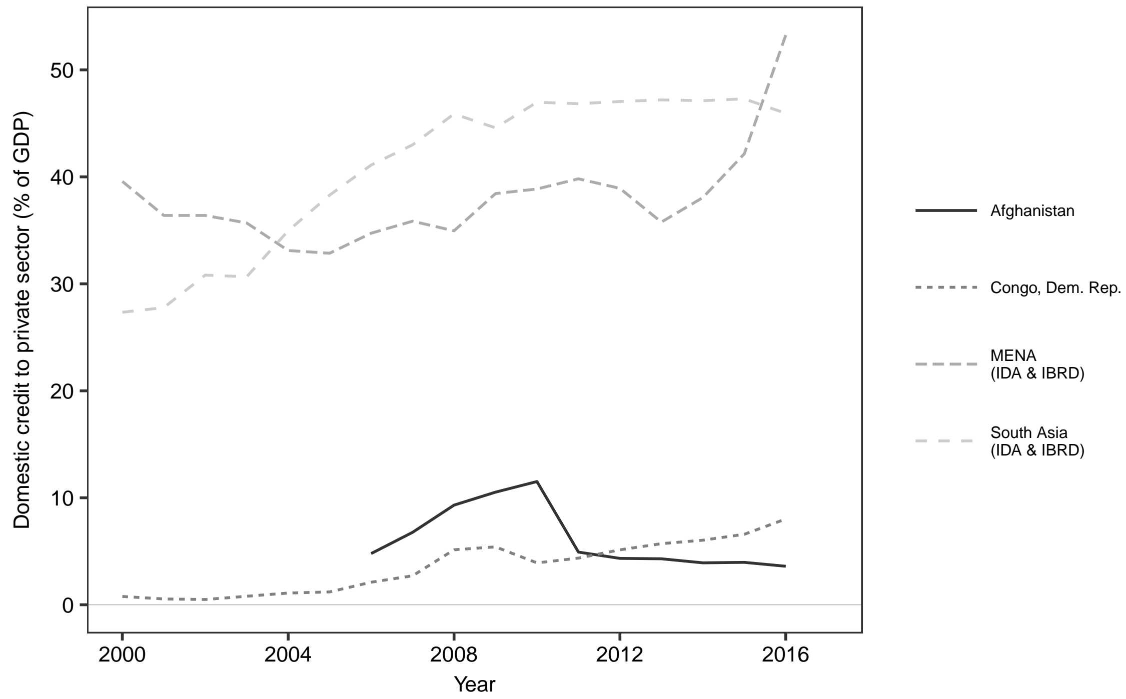
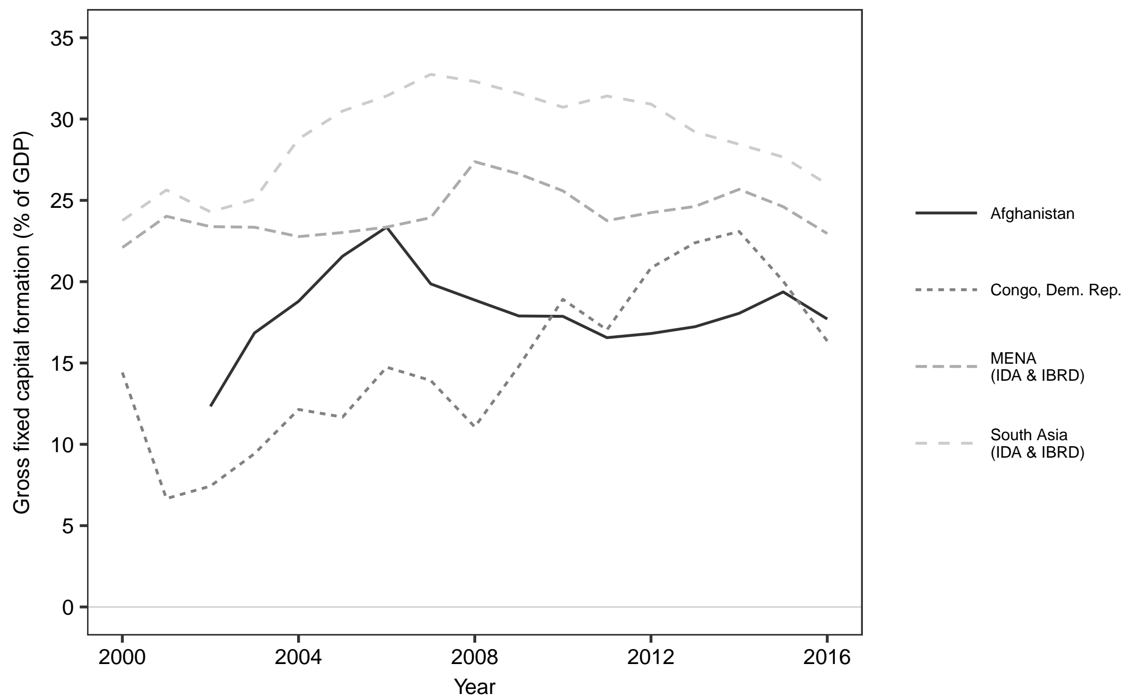


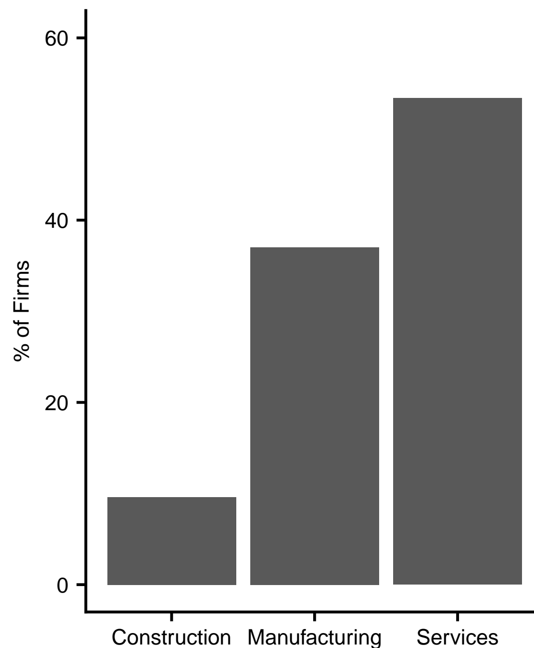
Figure 3.9: Afghanistan: Private Investment, 2003–2016



entities that have independent boards and are not operated or directly supervised by the government. SOEs and SOCs make up a small share of overall economic activity, although a few SOCs have significant market share in their sectors, including Afghan Telecom (Aftel), Ariana Afghan Airlines, and the electrical utility DABS (Da Afghanistan Breshna Sherkat).

The World Bank Enterprise Survey (last conducted for Afghanistan in 2014) reports that formal firms in Afghanistan are found mainly in manufacturing and construction, and the vast majority are "small;" of the 500 firms surveyed (out of a population estimate of 9,512 formal firms in the economy), about 70% of firms are characterized as such, with fewer than 19 employees. Most of these firms are active in the retail and trade sectors, or in manufacturing and construction (see Figures 3.10 and 3.11 and Table 3.2). Women are not active in the workforce, as shown in Figures 3.12 and 3.13. Less than 5% of firms report having a "top female manager," (4.7% in 2014), which is less than the MENA and South Asian regional average. Only countries such as Iraq, reporting 2.3% of firms, have fewer female managers.

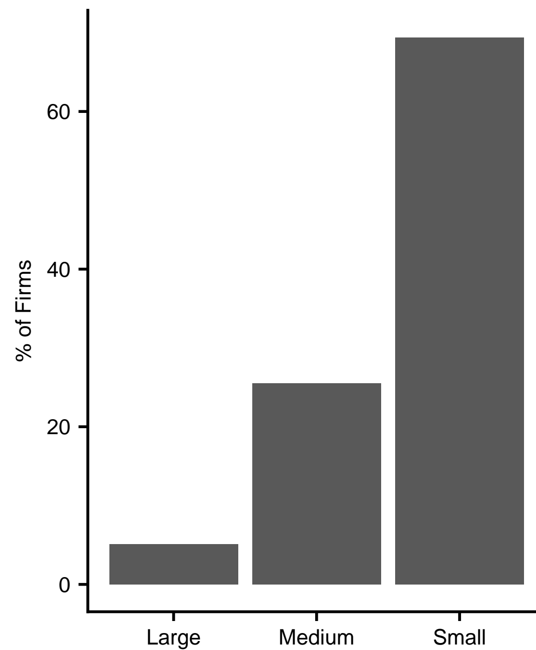
Figure 3.10: Afghanistan: Firm Distribution by Sector



Source: World Bank Enterprise Surveys (2014)

An intriguing data point discovered by the Enterprise Survey is that, despite reporting that they are operating at near full capacity, Afghan firms are much less likely than their counterparts elsewhere to invest

Figure 3.11: Afghanistan: Employment Distribution, 2014



Source: World Bank Enterprise Surveys (2014)

Table 3.2: Afghanistan: Firms by Sector, Size and Region, 2014

Region	Employees	Manufacturing	Construction	Retail	Other Services	Grand Total
Kabul	Small (5–19)	1,326	221	1,372	830	3,749
	Medium (20–99)	22	27	2	16	67
	Large (100+)	16	3	0	2	21
	Total	1,364	251	1,374	848	3,837
Hirat	Small (5–19)	623	104	644	390	1,761
	Medium (20–99)	10	13	1	8	32
	Large (100+)	7	1	0	0	8
	Total	640	118	645	398	1,801
Kandahar	Small (5–19)	401	67	415	251	1,134
	Medium (20–99)	7	11	1	5	24
	Large (100+)	0	1	0	0	1
	Total	408	79	416	256	1,159
Balkh (Mazar-e-Sharif)	Small (5-19)	434	72	449	272	1,227
	Medium (20–99)	7	11	0	5	23
	Large (100+)	5	0	0	1	6
	Total	446	83	449	278	1,256
Nangarhar (Jalalabad)	Small (5-19)	505	84	522	316	1,427
	Medium (20–99)	8	10	2	6	26
	Large (100+)	6	0	0	0	6
	Total	519	94	524	322	1,459
Grand Total		3,377	625	3,408	2,102	9,512

Figure 3.12: Afghanistan: Female Employment, 2014

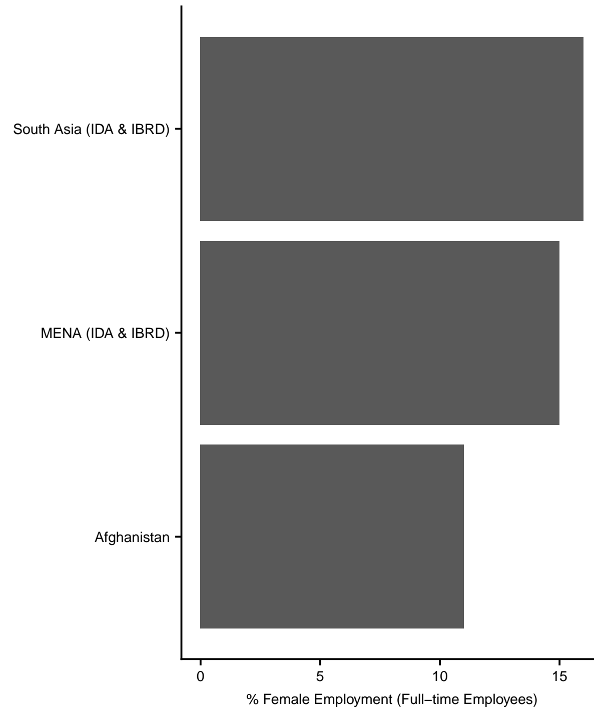
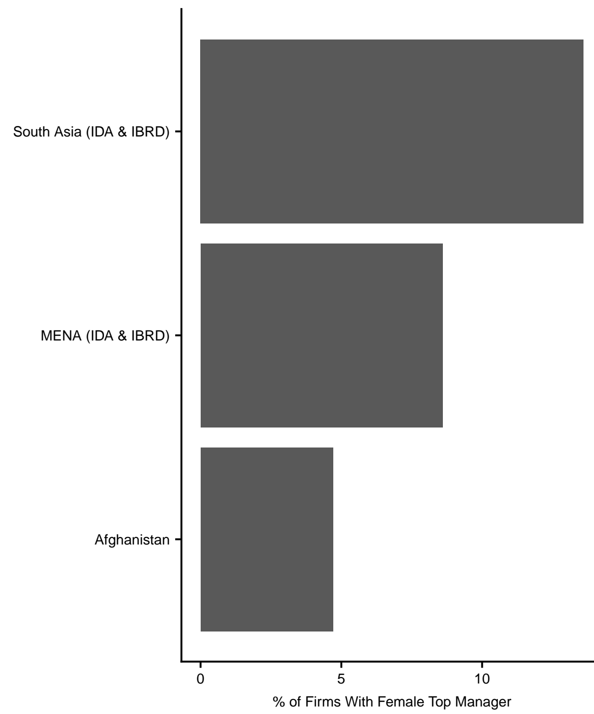
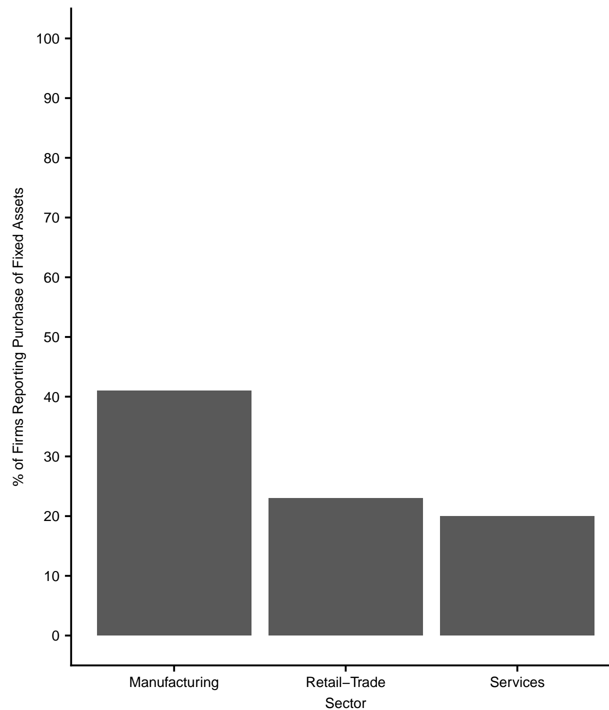


Figure 3.13: Afghanistan: Percent of Firms with Top Female Manager, 2014



in new fixed assets. In Afghanistan, only 28% of entrepreneurs reported in investing in fixed assets, against an Enterprise Survey average of 38%. Again, this points towards our hypothesis H1, that firms that operate in areas of violent conflict are less likely to invest.

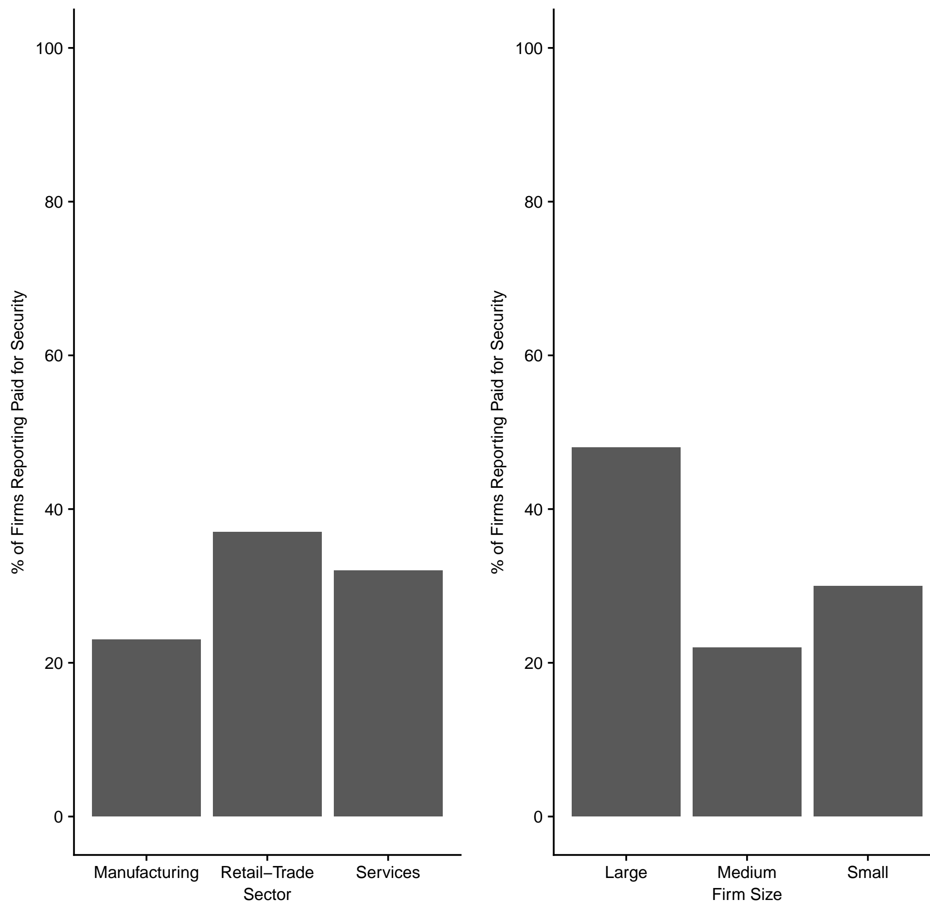
Figure 3.14: Afghanistan: Investment by Sector, 2014



One of our hypotheses (***H2***) is that security affects firms differently, according to their size. Figure 3.15 below shows that large firms are most likely to pay for security; these firms are also the most likely, according to the Enterprise Survey, to be targeted by corrupt government officials and criminals. Large firms in Afghanistan pay the highest percentage of their annual sales in security costs, amounting to 3.2% of annual sales in 2014. There are also sectoral differences in who pays for security; manufacturing, for instance, seems less affected than other sectors.

Additional insights into Afghanistan's private sector is provided by a pioneering study that makes use of mobile phone data, in combination with violence data, at the district level (Blumenstock et al. 2018). In this study, Blumenstock et al. (2018) use the mobile phone data of some 2,000 Afghan firms as a proxy for where they do business, how many employees they have, and how violent attacks near the firms influence

Figure 3.15: Afghanistan: Security Payment by Firm Size & Sector, 2014



their decisions about where to operate. The results generated from this research are not surprising, but they do point to the promise of using new sources of big data to track the private sector in countries where administrative data, including industrial censuses, are lacking; in the concluding section of this Report we discuss the implications of new sources of big data for donor programs.

Blumenstock et al. (2018) generate three crucial findings from their research: first, that fewer firms are active in more violent districts; there is a strong cross-sectional negative relationship between the number of active firms in a district and lag violent events per capita. Specifically, each violent incident per 100,000 population leads to a reduction of 0.56 active firms. Second, firms have fewer employees in violent districts; there is a strong cross-sectional negative relationship between the number of active business subscribers in a district and lag violence per capita. Each violent event per 100,000 population leads to 1.78 fewer subscribers. Third, the mobile phone data suggest that firms react to violent incidents by changing their operations. Specifically, in cases where the violence is sustained, as was the case in Kunduz during the autumn of 2015, they leave the city, only to return when the situation is stabilized. Violence can thus cause a cessation in business activity, but it is important to note that businesses return when the violence subsides. When violence is more sporadic and at some distance from corporate headquarters, firms appear to engage in "bunkering" behavior, bringing workers in from conflict-affected districts.

Overall, the evidence from Afghanistan reveals a private sector that continues to function, despite the many impediments that exist to its flourishing. However, one issue that is uncertain is the extent to which that private sector is a manifestation of the billions of dollars of military spending and foreign aid that have poured into the country. Here, again, is an example of where good, time series data are of crucial importance. Given that we have some sources of data on the private sector during the height of the international military intervention, it is imperative to track changes in its size and composition should the conflict wind down. It would be a terrible irony if the end of violence in Afghanistan—and the international spending that conflict brought in its wake—also spelled a sharp decline in the country's private sector.

3.3 Pakistan's Economy and Private Sector

Pakistan is classified as a state of "high fragility" by DFID, though violent conflict has fallen since its recent peak in 2008 and has always been quite geographically concentrated. In fact, Pakistan is one of the few countries in the world that attempts to estimate the costs to the economy that result from violence, especially from the impact of terrorism and terrorist attacks. According to the Ministry of Finance (2017), the economy suffered losses of over US$10 billion between 2015–2017 due to the presence of terrorist organizations and the violence they committed in Pakistan. These include lost export revenues, destroyed physical infrastructure, the fall in industrial output and tax collection, the "cost of uncertainty" which deters investment, budgetary overruns for security-related expenditures, and the lack of foreign investment and successful privatizations. Over the 16-year period from 2001-2017, the Ministry of Finance estimates losses to the economy from terrorism of some $123 billion. Notably, these estimates do not include the high costs associated with hosting refugees, principally from Afghanistan (some of these refugees, of course, are themselves leaders or members of terrorist organizations now based in Pakistan). Figures 3.16–3.18 provide data on violent conflict in Pakistan through 2016.

Nonetheless, in recent years Pakistan has experienced relatively strong economic growth, spurred largely by domestic consumption. This followed the conclusion of a successful International Monetary Fund (IMF) program in 2016 aimed at righting the country's macroeconomic imbalances and catalyzing a wide-ranging reform program, including improved public sector management and tax collection. A more robust international economic environment and generous investments by China in Pakistan's infrastructure has also helped spur higher levels of growth. Figures 3.19–3.20 outline Pakistan's growth trajectory since 2012.

Despite this progress, the international development community has highlighted a number of continuing challenges faced by the country's economy. The sustainability of growth stemmed from these programs and investments remains unclear. Elections in 2018 are a source of political uncertainty, while deep-seated structural issues including weaknesses in the education system and in skills training impede the growth of

the labor market and its productivity. Savings rates and, as a consequence, investment levels are falling, raising questions about the long-run sustainability of recent growth trends (World Bank 2017a, 3).

Figure 3.16: Pakistan: Fatalities, 2000–2016

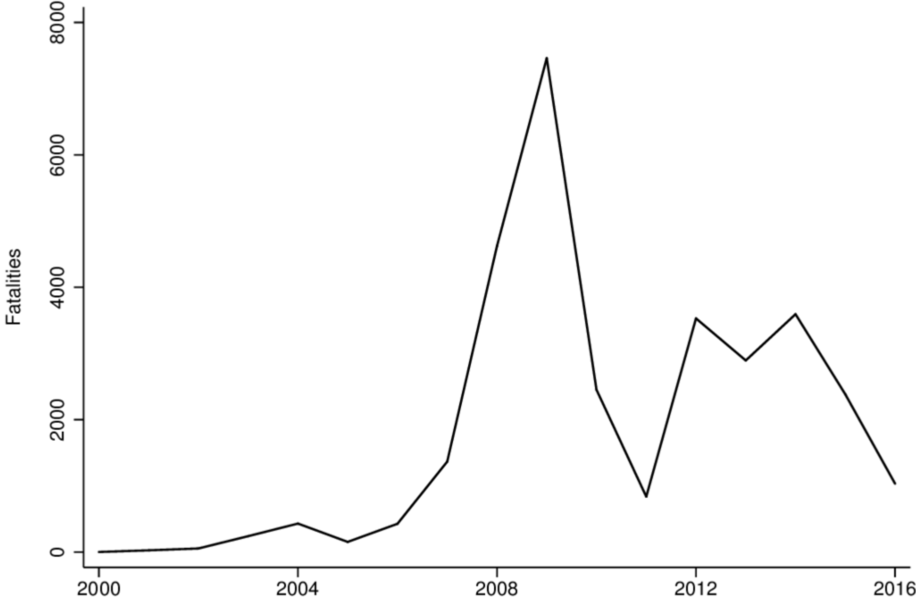


Figure 3.17: Pakistan: Fatalities in Regional Perspective, 2000–2016

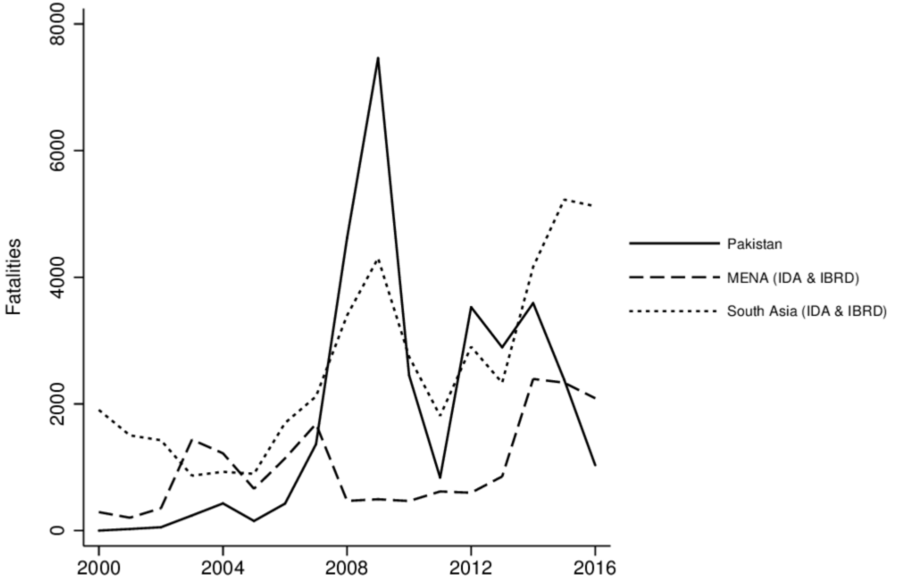


Figure 3.18: Pakistan: Distribution of Violence, 2017

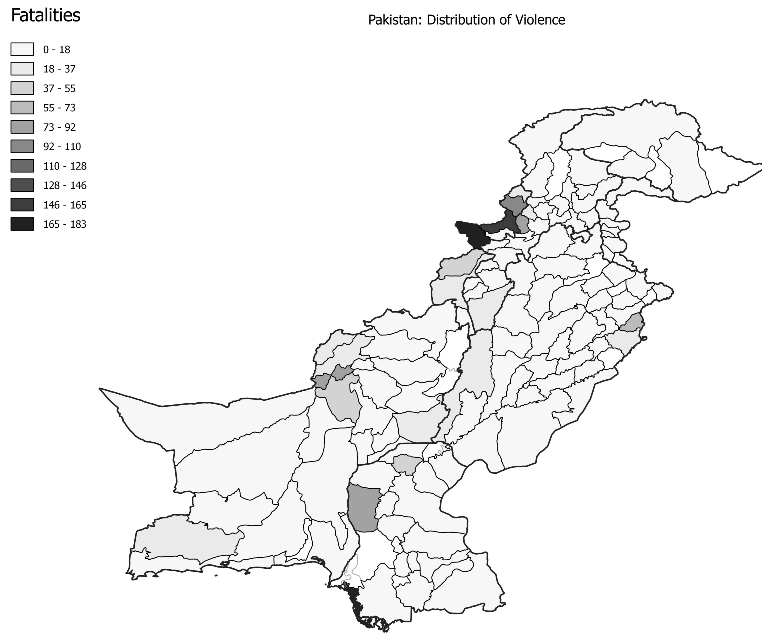


Figure 3.19: Pakistan: GDP Growth, 2000–2016

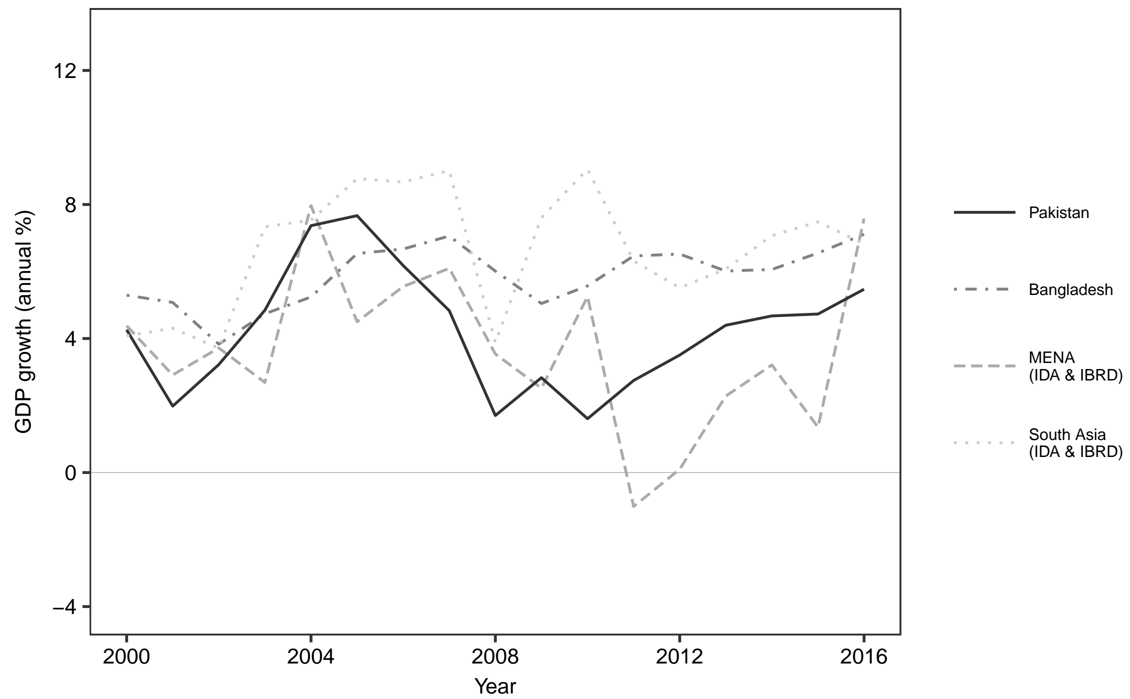


Figure 3.20: Pakistan: GDP per Capita, 2000–2016

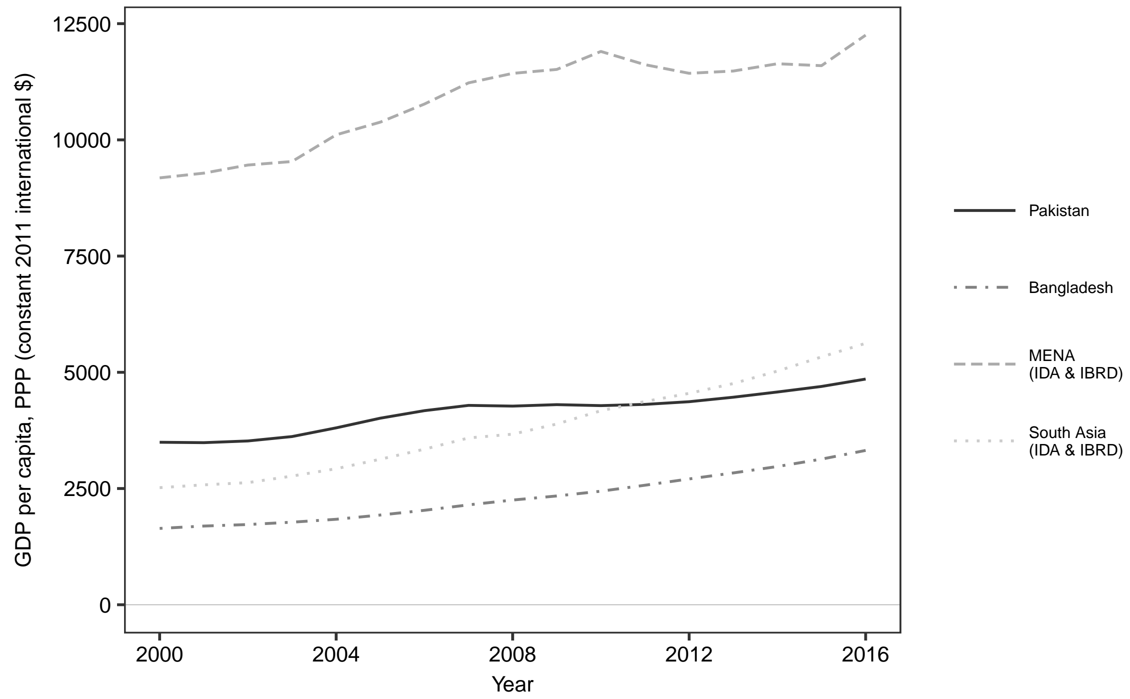
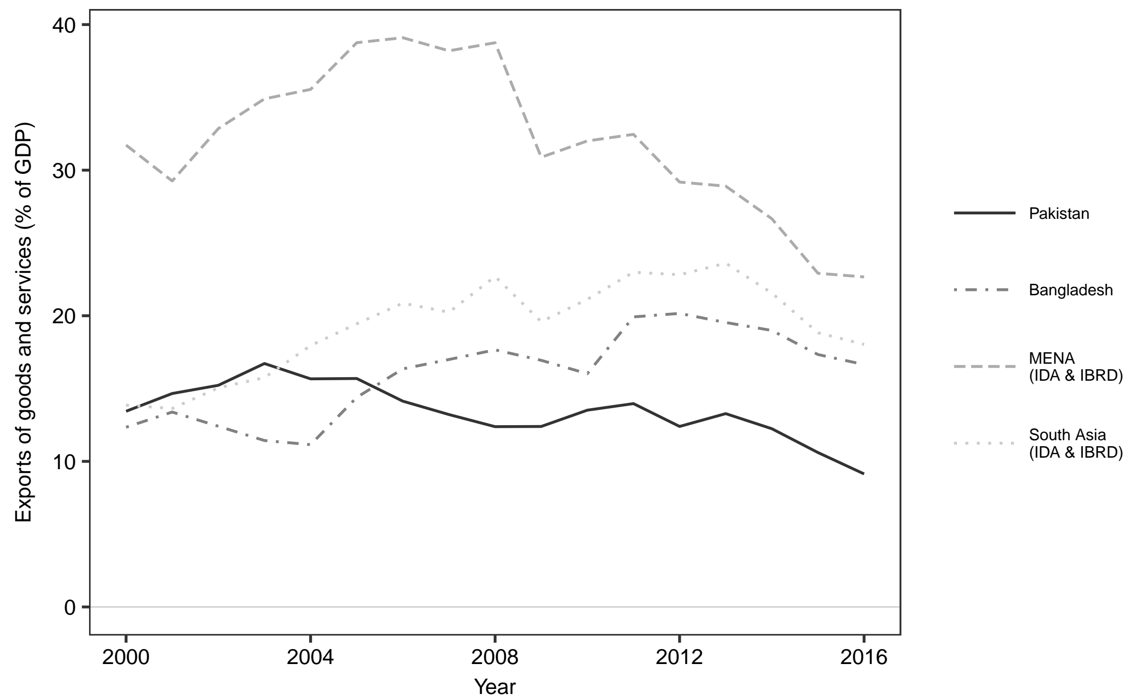


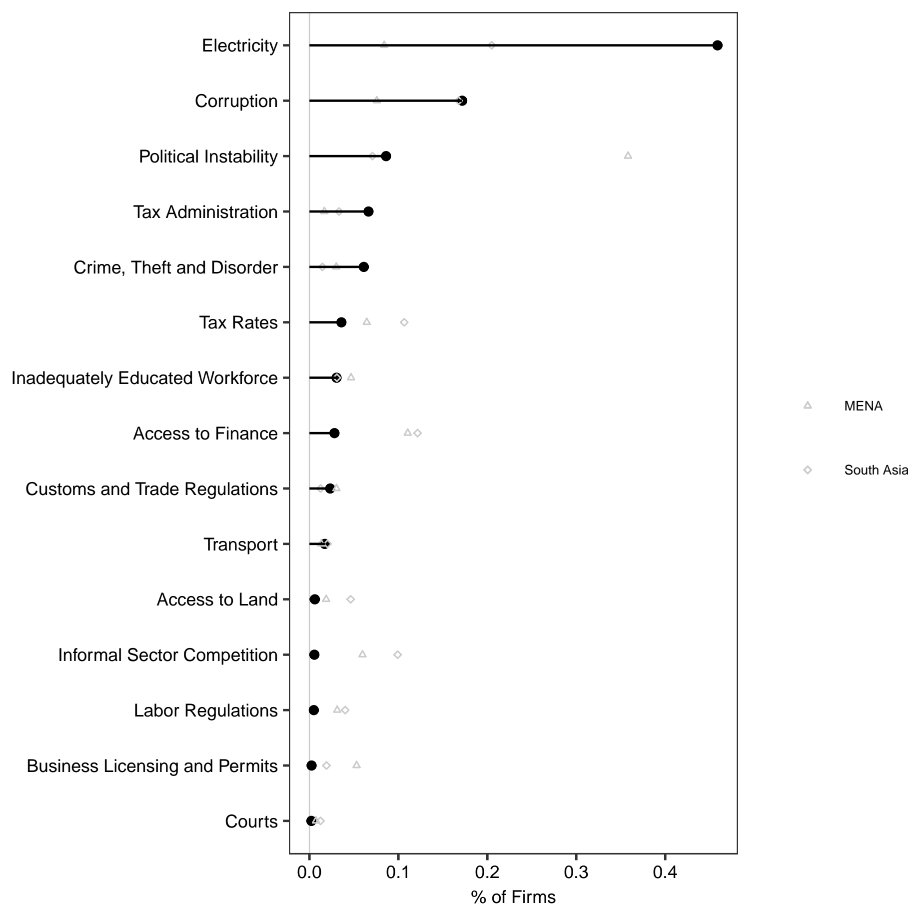
Figure 3.21: Pakistan: Exports as a % of GDP, 2000–2016



3.4 Pakistan's Private Sector

As the Ministry of Finance notes, violence has impacted private sector development in Pakistan. Yet that is not the only issue facing would-be entrepreneurs. According to the Central Intelligence Agency (2016), "Decades of internal political disputes and low levels of foreign investment have led to underdevelopment in Pakistan [...] A challenging security environment, electricity shortages, and a burdensome investment climate have deterred investors." Figure 3.22 provides the World Bank's "Obstacles to Business" list for Pakistan, and these indicate the prominence that entrepreneurs give to lack of infrastructure, coupled with political instability, corruption, and theft, in shaping the private sector.

Figure 3.22: Pakistan: Obstacles to Business, 2013



Understanding the structure of industrial activity in Pakistan is hampered by the lack of recent data. The last manufacturing survey conducted by the government, for example, was carried out in 2005–2006 (the latest World Bank Enterprise Survey, however, was carried out more recently, in 2013). At the time of that earlier survey, nearly 1 million people were employed in manufacturing, almost half of whom were in the textile industry. Food products came in a distant second with 122,000 employees, about a quarter of the level found in textiles. In terms of value-added (that is, the combination of wages, taxes paid, and profits), textiles, food products, and chemicals were the dominant sectors (Pakistan Bureau of Statistics 2005).

At various times over its history, the issue of concentrated economic power has become deeply politicized in Pakistan, one of the issues over which elections, for example, have been fought (White 1974). Presidents have nationalized and privatized industries at various times, with both policies executed in the name of attempting to diffuse economic power. Despite these efforts, historically the industrial sector in the country has been dominated by a very few families and very few sectors.

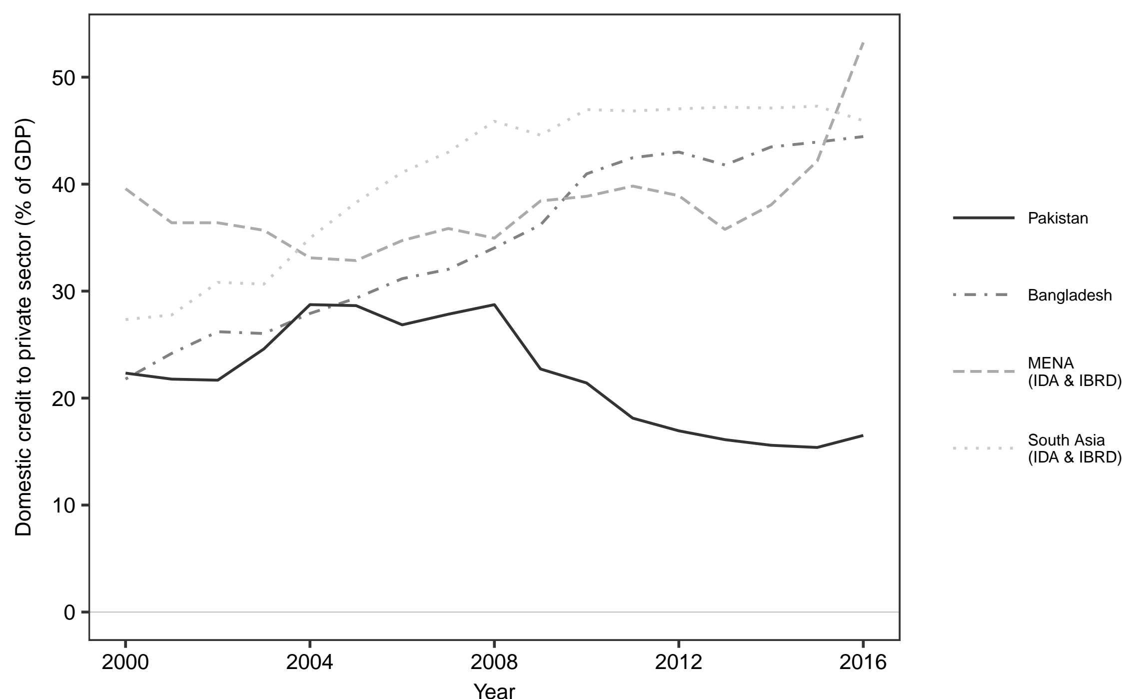
That still seems to be the case. In a study based on 2011 data collected from the Karachi Stock Exchange (KSE)-traded firms, Baig (2014) reports a "persistent high concentration ratio" in most sectors of the economy. In recent years, only transportation and communications have seen increased competition (albeit from a very high level of concentration; the top three firms in that combined sector still controlled 84 percent of the market at the time of his study). Of particular interest to this Report, Baig (2014) cites "deteriorating law and order" as one of the reasons for his findings. As we have already argued, firms in unstable environments need to invest in security, allocating labor from production to protection (Besley and Mueller 2018). This may help larger firms, which are more able to allocate resources to that purpose; on the other hand, larger firms are also more likely to be targets of predation, whether from government or rebel forces.

Ullah, Ghan, and Javed (2013) find similar results in their study of 100 listed firms on the KSE. Their approach, however, is somewhat different from Baig's (2014), in that they examine firm profitability. Their findings support the hypothesis, *the higher the level of industrial concentration, the higher the firm's profits*. Notably, import "competition" does not appear to dent domestic firm profitability. They posit this is because

many of the largest firms import intermediate inputs from abroad under favorable terms with suppliers (e.g. under exclusive license). This suggests the limits of trade policy as a tool for boosting domestic competition.

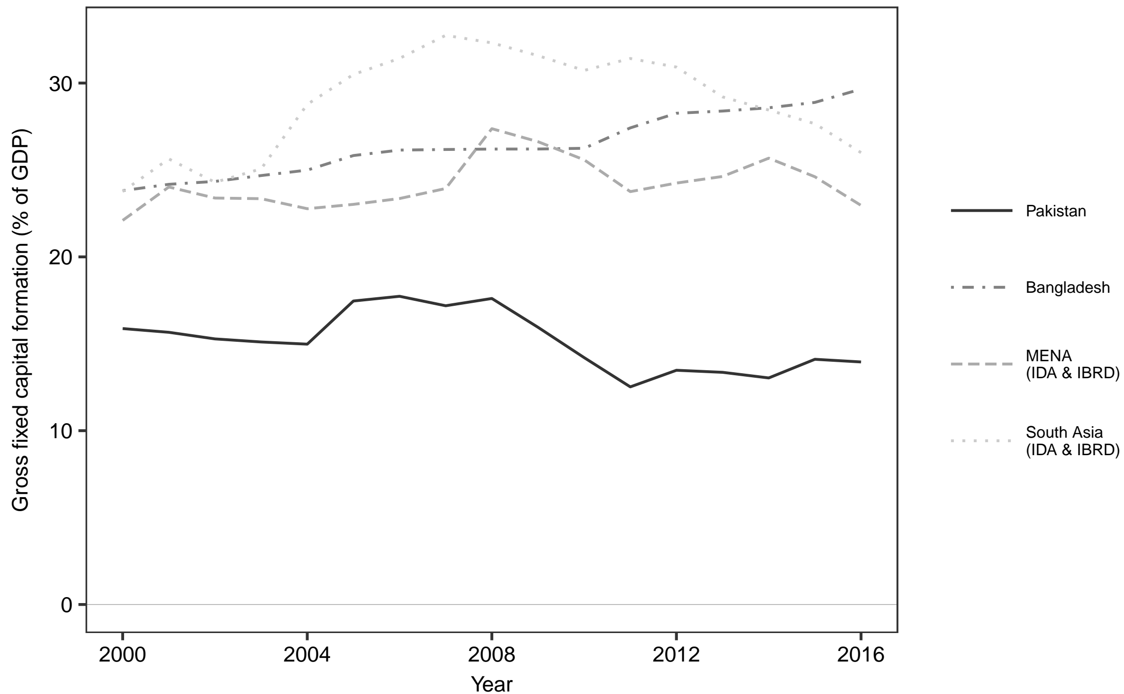
The data would seem to support these findings. Perhaps most worrisome, the private sector's access to credit and business investment have been falling for some time; indeed, as a percentage of GDP, these figures are lower than those of neighboring Bangladesh (see Figures 3.23 and 3.24). Note that the Bank adds the role of State Owned Enterprises (SOEs) to its mix of concerns, crowding out private sector investment in the markets in which they could be active.

Figure 3.23: Pakistan: Credit to the Private Sector, 2000–2016



Further, the Bank highlights the role of insecurity; indeed, it reports that: "Security challenges are deepening: militancy, sectarian, and ethnic violence alongside rising crime undermine the state's writ. More than 50,000 citizens, including members of the armed forces, civilian law enforcement agencies, and paramilitary organizations have been killed in the last seven years."

Figure 3.24: Pakistan: Private Investment, 2000–2016



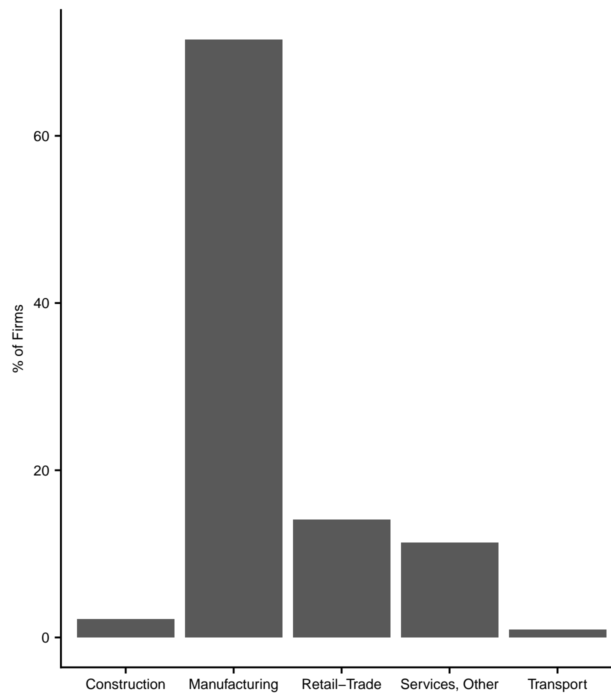
Source: World Bank (2018)

Insecurity also has important implications for the economy, as the Ministry of Finance admits in the report previously cited. According to the Bank, its recent estimates show the annual costs of conflict in Pakistan at no less than 2 percent of GDP. "The perception that Pakistan is a high-risk country," the Bank says, "discourages private and foreign investment" and thus growth and job creation. The Bank also argues that "Violence is correlated with poverty as well as inequitable growth: provinces with the highest conflict intensity have higher poverty rates" (World Bank 2016b). Note that insecurity—and the prospect of violent conflict—can also reduce investments in human capital. The more that individuals discount their future, the less likely they are to invest in it.

All that being said, Pakistan does have a large and vibrant private sector (see Figure 3.25). Still, as noted in the earlier section, it is heavily concentrated in a few industries—textiles account for about 50% of all industrial employment, if only about 10% of all firms—and the industries themselves are further concentrated (as measured by the Herfindahl index) in terms of ownership and market share. Retail and wholesale trade account for 40% of firm activity, as estimated by the recent 2013 Enterprise Survey (World

Bank 2018b). As Figure 3.26 reveals, the vast majority of firms are small, employing only a handful of workers. Figures 3.27 and 3.28 show that workforce participation by women is very limited in Pakistan, even by MENA and South Asian (SA) standards.

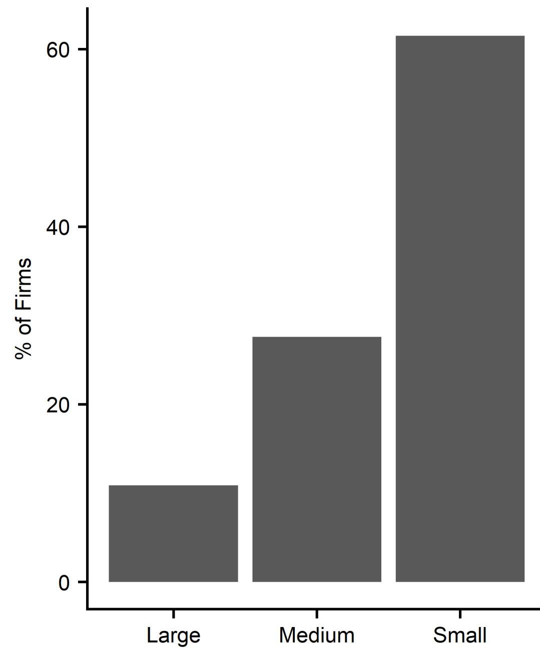
Figure 3.25: Pakistan: Firm Distribution by Sector, 2013



The fact that many industries in Pakistan are concentrated is suggestive of the hypothesis that larger firms are more capable of operating in dangerous and predatory environments, as they are better able to internalize their security costs. Indeed, in Pakistan, large firms are more likely to pay for security and pay a higher percentage of annual sales to secure operations, as revealed in Figure 3.30; an astonishing 70% of large firms report paying for security.

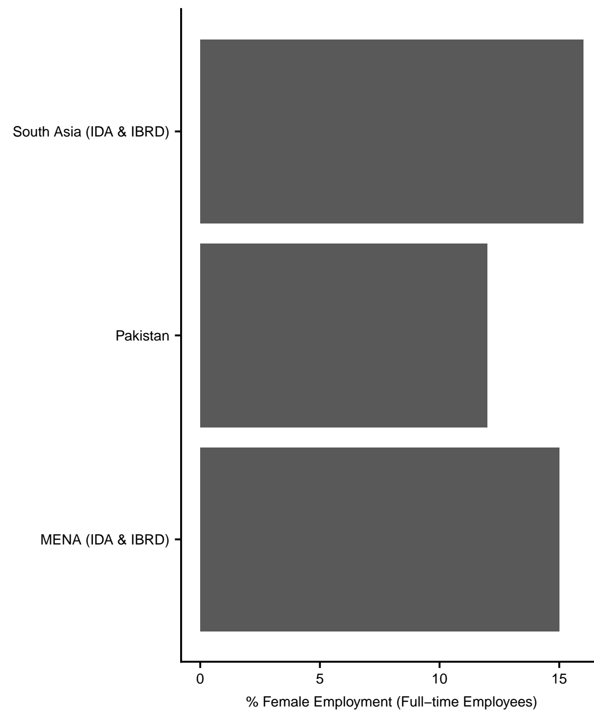
In terms of sectors, it is the firms in "other manufacturing" that are most likely to pay for security. Note that garment manufacturers, which are often large firms, are among the least likely to pay for security. This may suggest the proximity of the textile industry to Pakistan's security apparatus; their location in zones of relative stability; or the difficulty of predating off that sector as opposed to others.

Figure 3.26: Pakistan: Employment Distribution, 2013



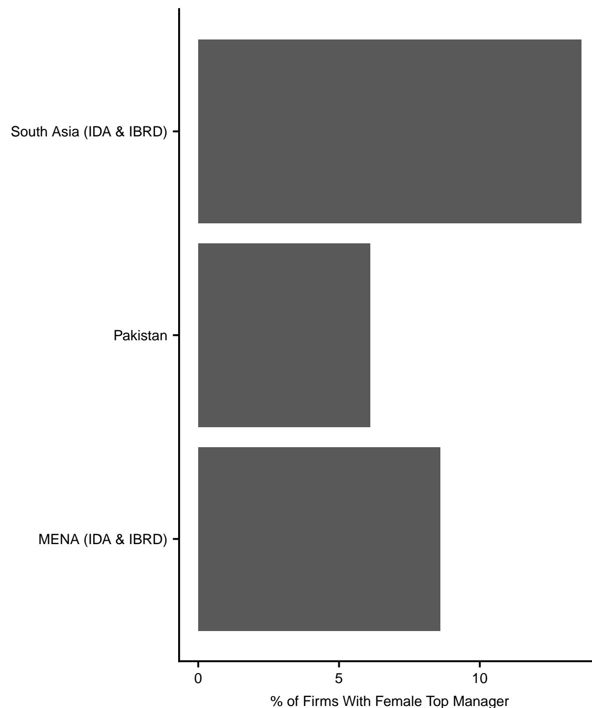
Source: World Bank Enterprise Surveys (2013)

Figure 3.27: Pakistan: Female Employment, 2013



Source: World Bank Enterprise Surveys (2013)

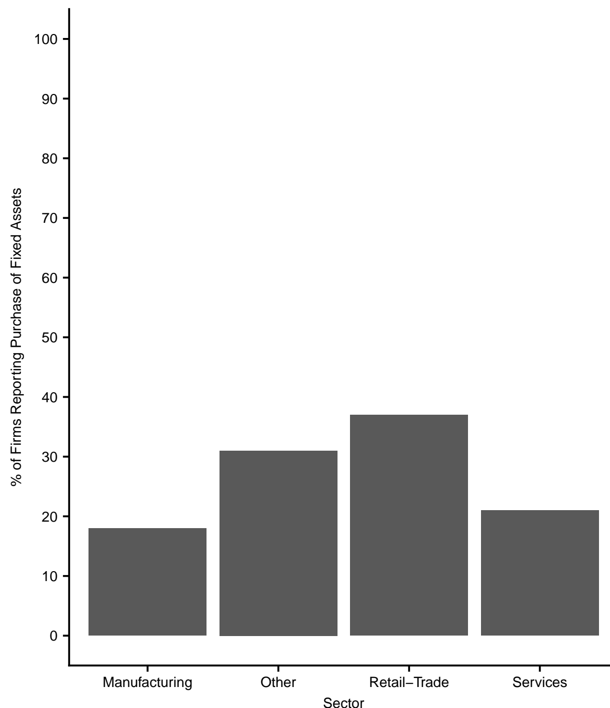
Figure 3.28: Pakistan: Percent of Firms With Top Female Manager, 2013



Conversely, firms are unlikely to make lumpy capital investments, as discussed earlier. Figure 3.29 shows the small number of firms that report making capital investments; only 18% of all manufacturing firms, for example, make such investments.

Given its prominence in the economy on the one hand and its weak performance on the other, it is unsurprising that the World Bank has placed private sector development as one of its key "result areas" for Pakistan. Specifically, the Bank states that "*it is critical for the WBG to help Pakistan change the trajectory of growth with greater private sector development*" (World Bank 2016b). How does it presume to do that? By focusing "on policy reforms at the federal and provincial levels to enhance the enabling environment, including legal framework and unlock constraints on the private sector participation [...] The Bank and IFC along with MIGA support will help Pakistan attract and mobilize private investment. The WBG will also focus on improving competitiveness and productivity of farms, small businesses, and key economic sectors—which account for the bulk of the country's GDP and employment—as well as enhance skills, especially for youth and women in Balochistan, KPK and FATA."

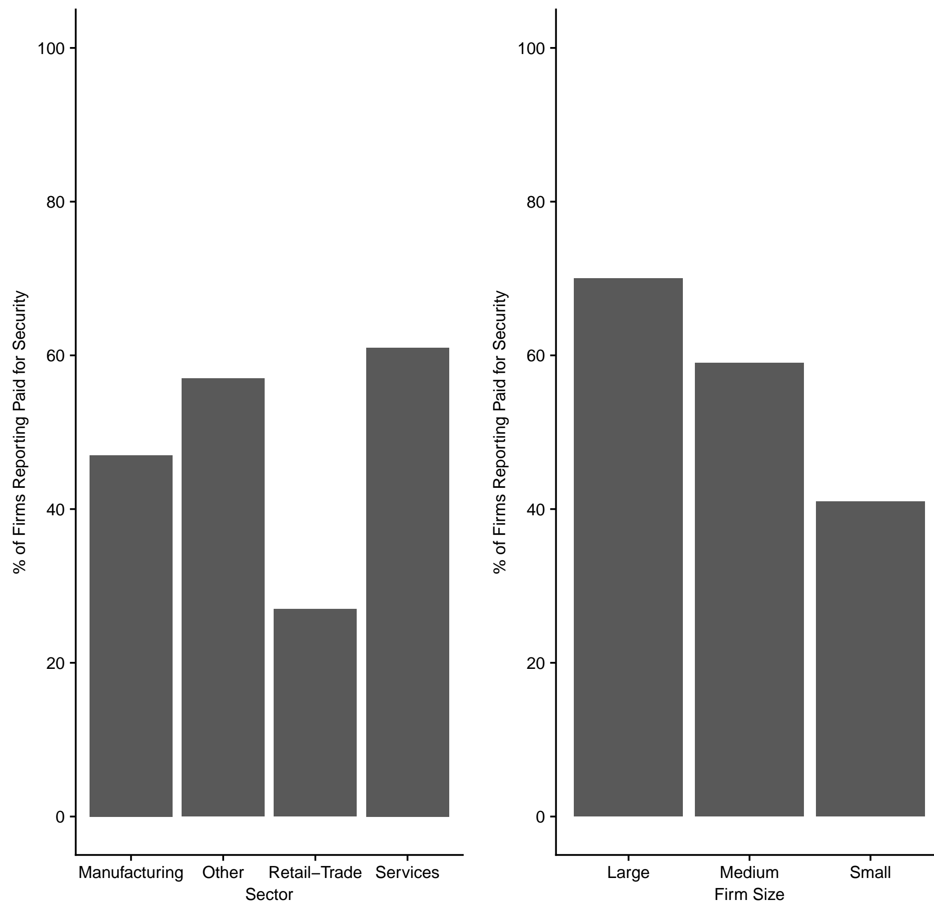
Figure 3.29: Pakistan: Investment by Sector, 2013



The Bank also believes that *"raising private investment is crucial for the government's ambitions to accelerate growth."* This requires increasing confidence in the institutional setting, which the Bank believes will be facilitated by improving the country's Doing Business ranking (but for a skeptical view of the value of these rankings, which at various times have generated substantial controversy, see Hallward-Driemeier and Pritchett 2015). Required actions include "federal actions to improve power access, streamline tax payments, setting up a One-Stop Shop for business registration, and approving the credit information law [...] At the local level, provincial governments are creating new courts to resolve commercial disputes with support from IFC [...] The Bank and IFC will work together to improve competitiveness including focusing on (i) labor-intensive manufacturing by rehabilitating and developing industrial estates (e.g. Punjab Apparel Park); (ii) reforming regulations and procedures for construction permits; and (iii) attracting strategic investors into the agribusiness sector to support conversion to high value-added export" (World Bank 2016b).

As noted, State Owned Enterprises continue to play a significant role in Pakistan's economy. The Bank is, therefore, seeking to encourage a major privatization program to remove these assets from state hands.

Figure 3.30: Pakistan: Security Payment by Firm Size & Sector, 2013



As it does in most places, it is also advocating for greater access to financing by the private sector, in part by building up credit bureaus and other parts of the country's "financial infrastructure."

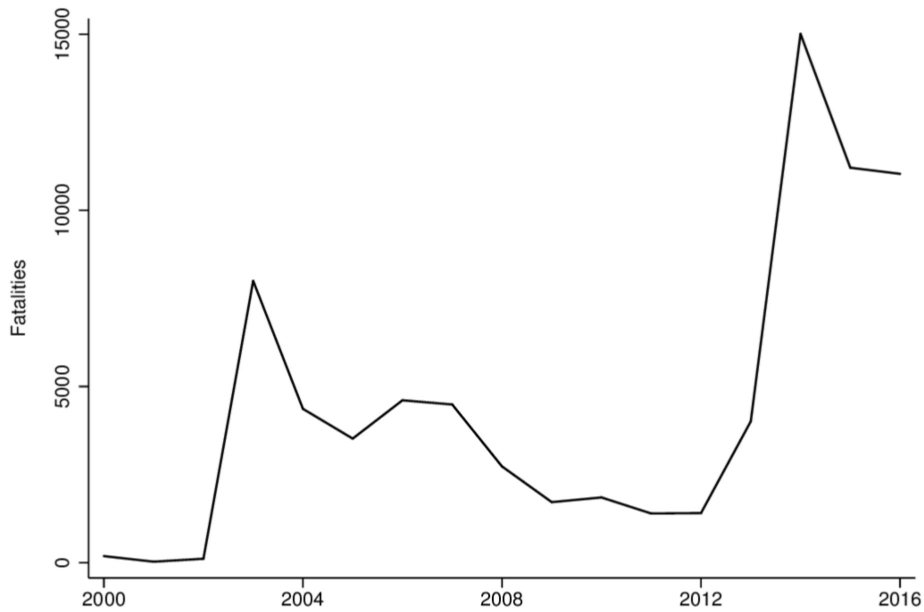
This long evocation of Bank plans and programs for private sector development is used to raise the question: how does the Bank plan to address the issue of insecurity and violence, which it has pointed to as an impediment to private sector development? How might its interventions address problems of predation, corruption, and rent-seeking? How will they change the discount rate of entrepreneurs and workers who must decide whether to invest in capital improvements (both physical and human)? These questions suggest a weakness in donors' abilities to grapple with these issues—a shortcoming that the Bank's Independent Evaluation Group already pointed out in its report cited earlier in this study. We address the question of how donors might confront issues of violence and insecurity in the concluding section.

3.5 The Economy of Iraq and Private Sector

Iraq is a state of "high fragility" according to DFID, but with per capita GDP of some $17,000 (adjusted in terms of purchasing power parity) it is the wealthiest of the three countries examined in this Report. The country remains a violent place, and in fact, fatalities have again been spiking in recent years; it is far more violent than other MENA and SA countries on average (see Figures 3.31–3.33). According to the World Bank (2017b), "the Iraqi state is currently unable to guarantee security for its citizens [...]."

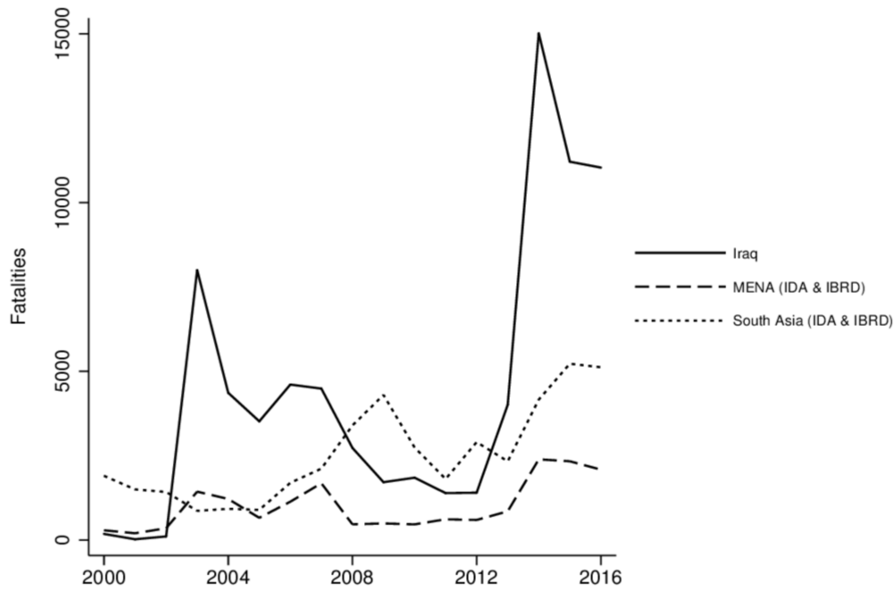
The Bank cites numerous social and economic ills that stem from this insecurity, including the lack of business development. As the Bank writes, "Insecurity takes a severe toll on Iraqis trying to carry on their daily business and diverts public and private resources into maintaining security. There is the constant risk that violence as well as crime could wipe out years of investment. This discourages long-term investments, thus resulting in only short-term ventures that are more easily adaptable to uncertain and changing conditions"; more on this in the following sub-section.

Figure 3.31: Iraq: Fatalities, 2000–2016



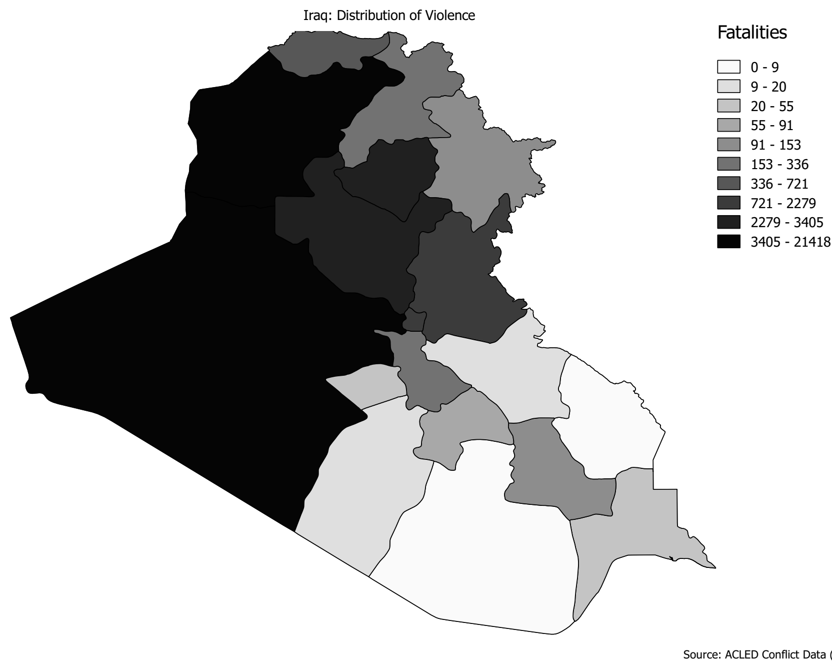
Source: UCDP (2018)

Figure 3.32: Iraq: Fatalities in Regional Perspective, 2000–2016



Note: MENA and South Asia regional averages reported.
Source: UCDP (2018)

Figure 3.33: Iraq: Distribution of Violence, 2017

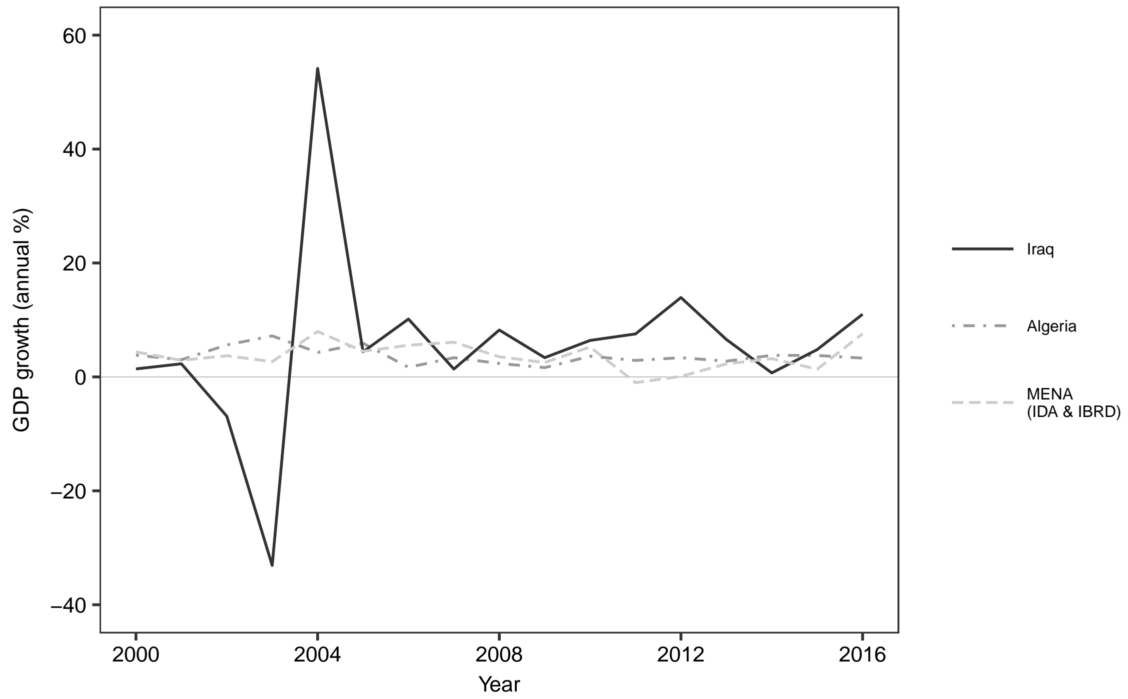


Despite ongoing conflict, Iraq is, as noted, a middle-income country. Still, nearly one-quarter of the population lives below the poverty line, and the economy revolves around the oil sector, which provides 90% of government revenue. Oil prices, then, are a driving force behind Iraq's GDP performance, and the recent spate of global economic growth following the "great recession" of 2008–2010, with the higher oil prices it brings, has helped propel the economy. Related, Iraq's economy is state-dominated; according to the IMF, government spending exceeds 40% of GDP, and the public sector employs close to 3 million people, "representing approximately 42 percent of all jobs. Adding state-owned enterprise (SOE) employees would bring total employment in the public sector to 3.5 million, close to one-half of all jobs in the country" (International Monetary Fund 2017). As a consequence, the private sector has been largely "crowded out" of economic activity. Figures 3.34 and 3.35 provide an overview of Iraq's GDP growth.

The structure of the Iraq economy has been distorted by decades of authoritarian rule alongside years of sanctions and near-constant conflict. According to a World Bank (2017b) study,

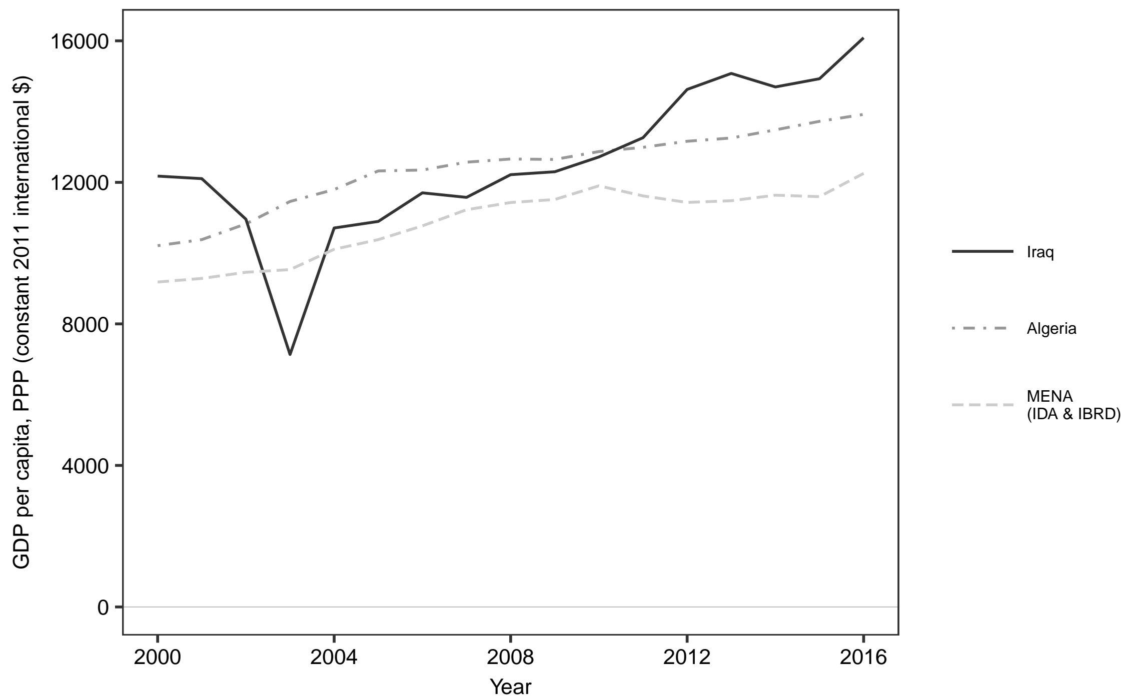
> The economic wreckage of wars and sanctions, combined with the dissolution of the country's key institutions, meant that growing oil revenues in the post-2003 period reinforced the status

Figure 3.34: Iraq: GDP Growth, 2000–2016



Source: World Bank (2018)

Figure 3.35: Iraq: GDP per Capita, 2000–2016

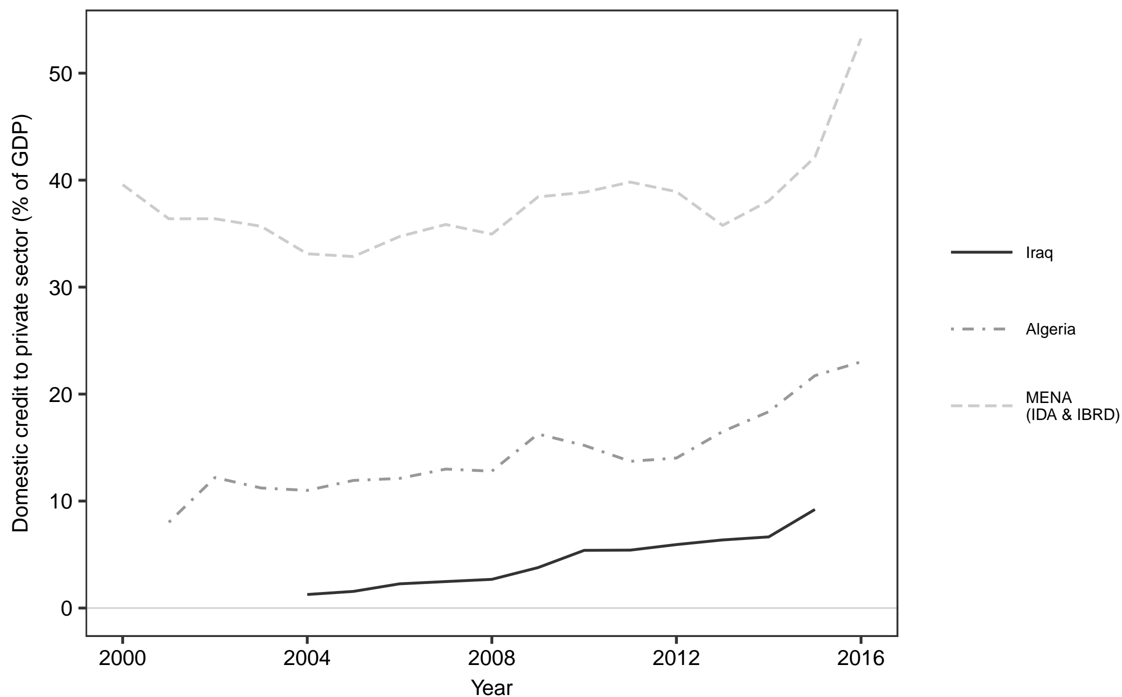


Source: World Bank (2018)

> quo rather than becoming an impetus for reform. The central government alone has expanded to 44 percent of GDP today, and the public sector is by far the largest formal sector employer. Public sector jobs were one of the few reliable instruments for distributing oil wealth that the post-2003 government had at its disposal, and public sector jobs as well as wages have continued to grow over the past 13 years. Likewise, the dominance of SOEs was strengthened as the state had no incentives to restructure them. Aside from their value as a means of economic control, they provided jobs for many Iraqis. State dominance of the financial sector continued as the insolvency of the system made reform difficult, and banks expanded as their government business grew.

As a consequence, credit to the private sector and private investment are very low by MENA standards, as seen in Figures 3.36 and 3.37.

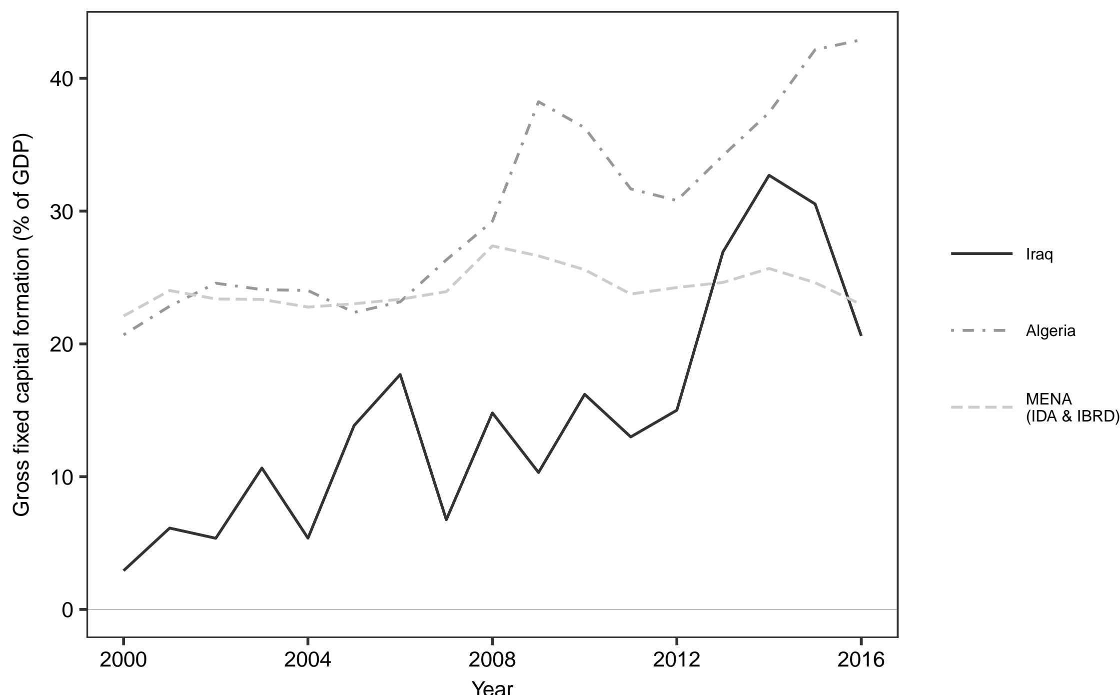
Figure 3.36: Iraq: Credit to the Private Sector, 2004–2015



3.6 Iraq's Private Sector

Despite being classified as an upper-middle income economy by the World Bank, Iraq is also rated as one of the most difficult countries in the world in which to do business; in the MENA region, it ranks below

Figure 3.37: Iraq: Private Investment, 2000–2016

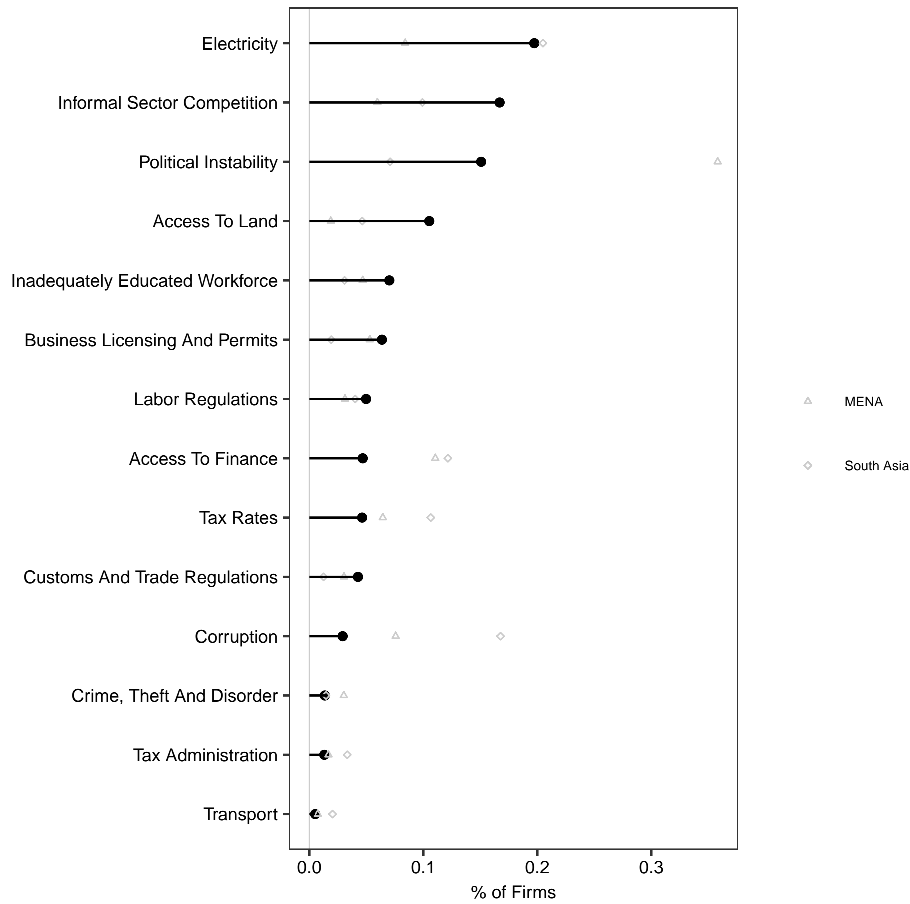


Source: World Bank (2018)

only three other countries, all of which are also conflict-affected: Libya, Yemen, and Syria. While the Bank's Doing Business rankings do not explicitly ask firms about such impediments to growth as violence and corruption, problems in the institutional environment can be inferred from the questions that are asked by the enumerators. For example, Doing Business asks entrepreneurs about such factors as the quality of property rights and the judiciary; in both areas, Iraq ranks quite low. And as revealed in Figure 3.38, political instability is the second most frequently cited "obstacle to business" by entrepreneurs responding to the Enterprise Survey.

As noted in a previous section, the private sector constitutes a relatively small share of Iraq's economy; about 30 percent according to the Government (see Table 3.3). Further, the data show that private sector capital formation is negligible, suggesting that entrepreneurs are not investing in new plant and equipment. These figures are perhaps unsurprising in light of the country's modern history.

Figure 3.38: Iraq: Obstacles to Business, 2011



Source: World Bank (2011)

Table 3.3: Iraq: Private Sector Shares in Generation of GDP, Fixed Capital Formation and Rate of Employment, 1974–2012 (Iraq: Prime Minister's Advisory Commission 2014, 42)

	Private Sector Share of Total GDP	Private Sector Share of Non-Oil GDP (% of GDP)	Private Sector Fixed Capital Formation (% of GDP)	Private Sector Employment (% of Full-Time Workers)	Private Sector Employment (% of Part-Time Workers)
1974	19.2	74.8	2.5	———	———
1980	22	48.4	4.7	———	———
1990	34.6	59.7	5	———	———
1995	25	92.6	0.4	———	———
2002	25.3	83.9	1.2	———	———
2003	30.9	79.3	———	21	28
2004	32.8	72.9	1	24	34.6
2005	29.7	76.8	0.8	26.6	32
2006	30.9	66.1	1.1	33.4	16
2007	26.7	65.3	0.7	33.4	14.6
2008	33	60.5	0.6	25	22
2009	33.8	59.3	0.6	———	———
2010	30.3	59.7	1.5	———	———
2011	30.5	62.1	0.9	———	———
2012		60.9	———	———	———

To be sure, the Iraq data also need to be treated with care. An ILO survey in 2004, for example, found much higher rates of private sector employment than those reported in the previous table, as shown in Table 3.3. There are also a paucity of more recent data and the websites of relevant government (e.g. Central Statistics Office) and private sector organizations (e.g. the Iraqi Federation of Industries) often do not work or function properly.

Table 3.4: Iraq: Employment by Type of Employer, 2004

	Per Cent Total	Millions
Local or central Government inc SOEs	29.7	1.794
Private companies	49.2	2.974
Cooperative or joint sector	2.9	0.177
Iraqi army	0.7	0.043
Family business	12.2	0.738
NGOs	3.7	0.222
Private households & others	1.7	0.101
Source: ILO 2004.		

According to the Government of Iraq, the private sector today is composed of mainly small firms operating "in retail and trade, construction and transportation services as well as in light industry. The majority of businesses are owned by sole proprietors, with most of the remainder being family partnerships. Iraq possesses few large, typically family-owned and run multi-industry conglomerates, active in retail, domestic trade, and construction. However, large private businesses are emerging in Iraq in ICT (information and communications technology), particularly mobile communications, in technical services for oil and gas, and in manufacturing" (Iraq: Prime Minister's Advisory Commission 2014). The manufacturing sector in Iraq is still very small in regional and income category comparison and could stand to grow outside the primary sectors of mining and agriculture. Structurally, the number of private industrial SMEs increased from 10,339 to 11,181 while the number of large enterprises increased from 412 to 420 in the period 2009–2010.

A 2012 survey of 950 MSME provided some useful information on the sectoral distribution of small firms. These were found in agriculture (5.6% of firms), manufacturing (8.6%), construction (19.2%), trade and retail (54.6%), and other services (12%). The government concludes from this review that "activity-wise, the private sector dominates in agriculture, wholesale and retail trade, hotels and tourism, ownership of dwellings and personal and social services [...] " (Iraq: Prime Minister's Advisory Commission 2014).

With respect to manufacturing alone, the government report notes that the manufacturing industry accounts for about 17,500 production facilities formed by public companies (1.5%), mixed companies (0.2%) and private companies (98.3%), distributed among the food sector (2,463, 14.2%), textiles (2,919, 16.8%), chemicals (2,251, 12.9%), construction materials (6,327, 35.8%) and metal processing (3,526, 20.3%) industries (these numbers, it should be noted, seem high when compared to other data). In terms of new business development, "*In the period 2008-2010, the Ministry of Industry and Minerals (MoIM) licensed about 1,400 new industrial projects (with a peak of 500 reached in 2010). Actual performance is not monitored or recorded, but it is estimated that not more than 20 - 25% of the private manufacturing industry firms are still operating or in business*" (Iraq: Prime Minister's Advisory Commission 2014, emphasis added).

Employment in Iraq's private sector resembles that found in our other two country cases. Most employment is in very small firms and women are under-represented in the workforce; again, they are less likely to work and appear as top managers than in other MENA or SA economies. Figures 3.39–3.40 provide evidence from 2011 on patterns of employment.

Figure 3.39: Iraq: Firm Distribution by Sector, 2011

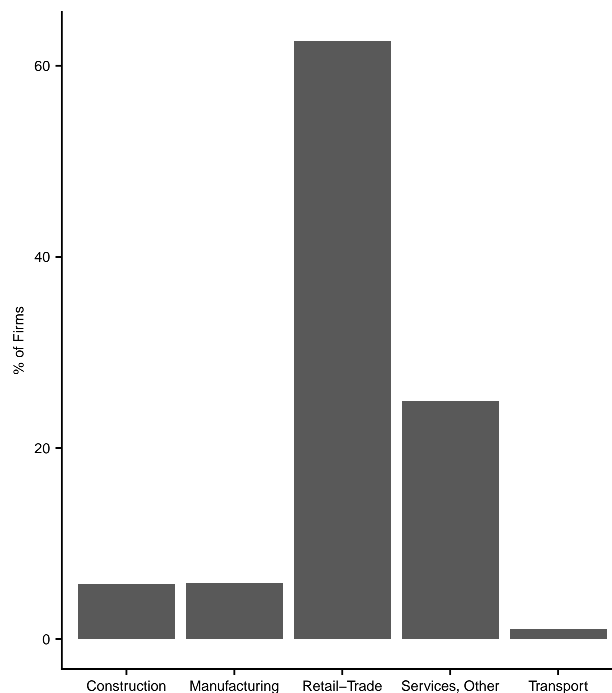
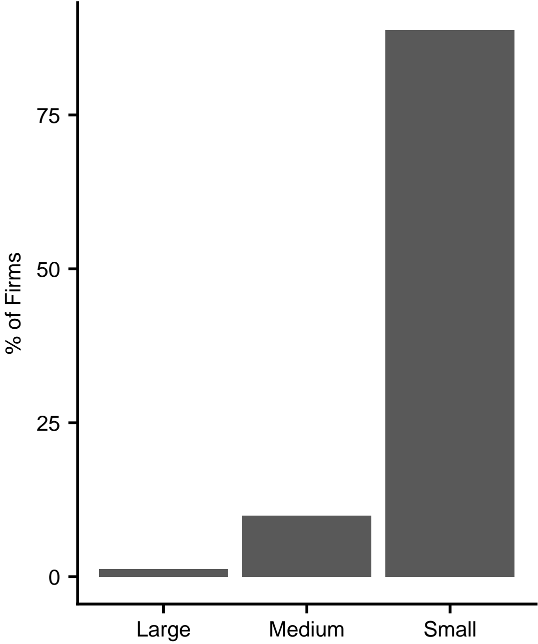
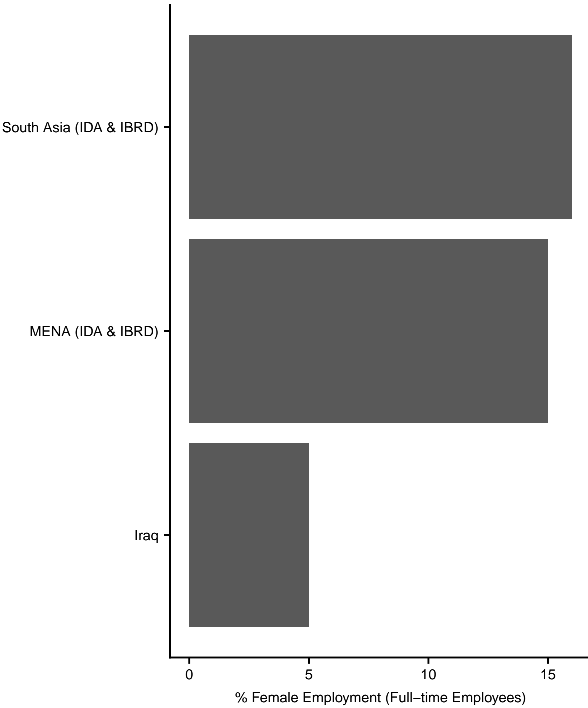


Figure 3.40: Iraq: Employment Distribution, 2011



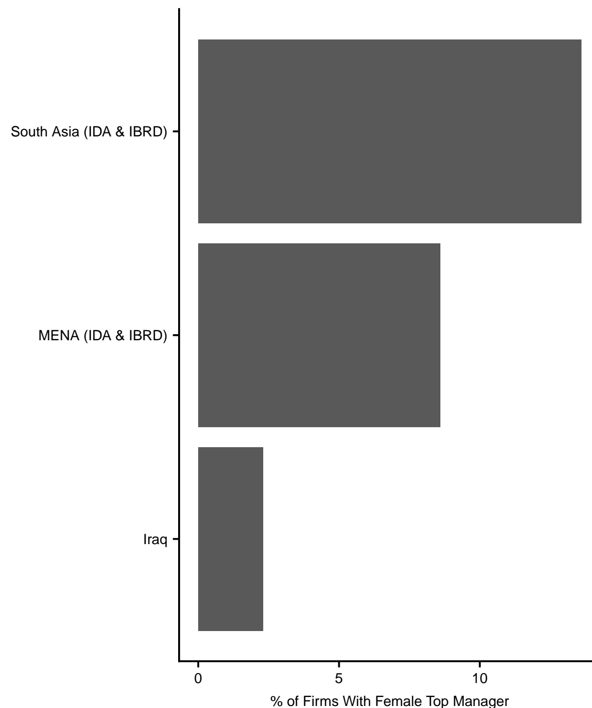
Source: World Bank Enterprise Surveys (2011)

Figure 3.41: Iraq: Female Employment, 2011



Source: World Bank Enterprise Surveys (2011)

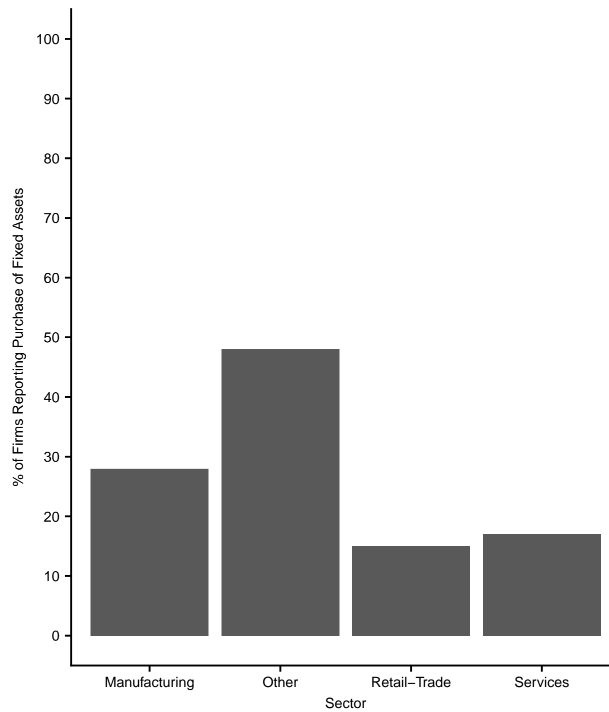
Figure 3.42: Iraq: Percent of Firms With Top Female Manager, 20111



The presence of rampant insecurity is suggested by the large number of firms—particularly large firms, as in our previous country cases—reporting payments for security. While large firms are most likely to respond "positively" to having paid for security, in Iraq, medium-sized firms rather than large firms pay the highest share of annual sales towards securing operations. The sectors most affected by insecurity are services and manufacturing; services paying almost as much as manufacturing firms as a percentage of annual sales in protecting operations from insecurity (see Figure 3.44).

Costantini (2017) highlights a number of structural and political-economic issues that deter business development in Iraq, despite the efforts of the donor community to catalyze PSD in the wake of the invasion whose aim was to "liberate" the country from the clenched fist of Saddam Hussein. From a structural perspective, she notes that Iraq remains an oil-based economy, and it suffers from many of the symptoms of the "natural resources curse." For interest groups and the public officials who represent them this means an emphasis on controlling the spigot rather than investing in the real economy, and it leads the bulk of

Figure 3.43: Iraq: Investment by Sector, 2011

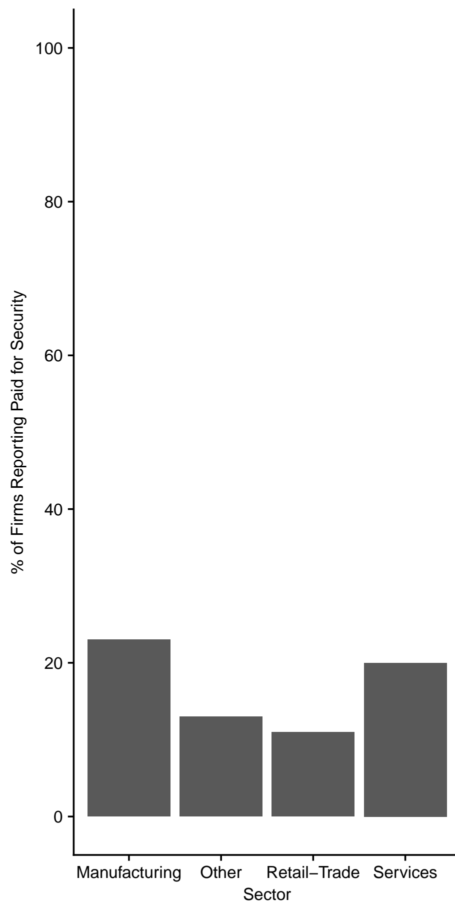


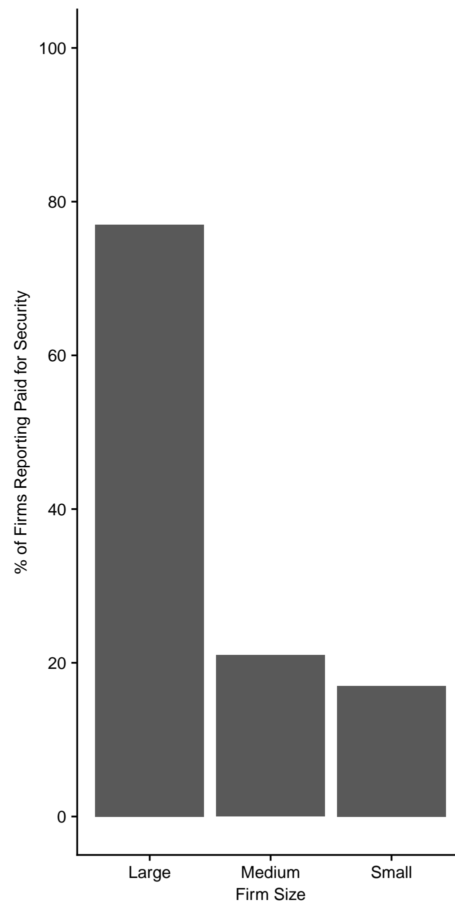
capital (both financial and human) to flow to the oil sector—a model of the "Dutch Disease," in which capital flows to the new, resource sector, undermining traditional manufacturing in the process.

From a political-economic perspective, Costantini (2017) notes many other impediments facing entrepreneurs. During Saddam's reign, the business sector was largely populated by those friendly to the regime, who were given opportunities to profit, especially during the sanctions era. This created a negative image of entrepreneurs among the population at large, and thus the motivation to launch a business fell. She claims this hangover or distrust of business executives remains to the present day.

Further, the private sector has proved unable to create anything resembling a united front when it comes to advocating for certain government policies. Again to cite Costantini (2017), "business organizations have not only suffered from poor internal representation, they have also been hindered by the lack of a common agenda. After 2003, the entry of a number of new representative entities in competition with the existing professional organizations and trade unions contributed to the fragmentation of business representation."

Figure 3.44: Iraq: Security Payments by Firm Size & Sector, 2011





From this description it appears that firms and their associations are competing for rents rather than trying to establish a "common agenda."

Costantini's (2017) analysis raises several important points about donor efforts to engage in post-conflict PSD. First, the structural circumstances of the economy will set the background against which private sector development is carried out. Economies that are essentially mono-cultures, for example, will have different opportunities and constraints for PSD than those which are more diversified. Second, the pre-war "reputation" of business matters. If the private sector is associated with the former (unpopular) regime, or with high levels of rent-seeking a corruption, then efforts to rebuild much less subsidize it may not be met with popular acclaim. Finally, businesses themselves may well see donor efforts at PSD as a potential rent, and they will invest in capturing that rent as opposed to investing in the real sector. These points will be developed in the policy section of this report.

Chapter 4

Cross-Country Comparisons

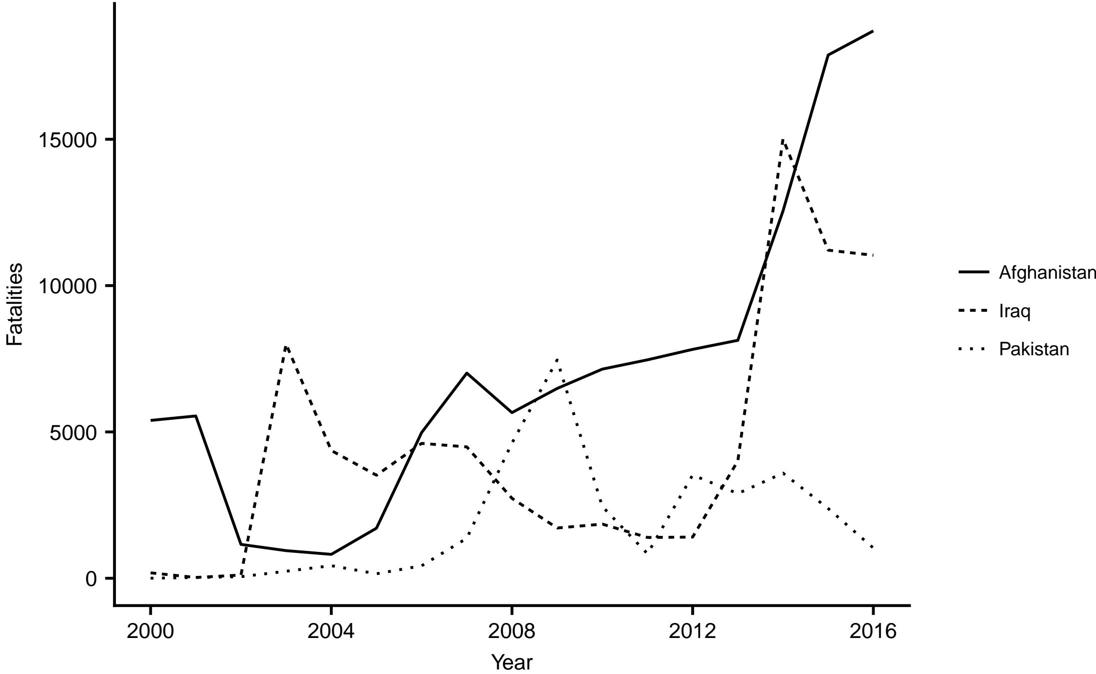
The following sections extend and compare the findings from the individual country sections by first analysing Afghanistan, Iraq, and Pakistan in regional context against other MENA and South Asian countries, then expanding to a broad cross-national analysis of 33 countries which have experienced conflict during the period 2001 to 2011. Building on the findings drawn in the earlier sections we focus on the burden of conflict by firm size and summarize macroeconomic indicators before investigating the micro data available.

4.1 Afghanistan, Iraq, and Pakistan in Regional Comparison

Afghanistan, Pakistan, and Iraq are all relatively violent countries, and each is situated in a "bad neighborhood" in which regional conflicts have spillover effects. Conflicts between and within Afghanistan and Pakistan can be difficult to distinguish, and Iraq is also enmeshed in local conflicts with Syria and between Turkey and the Kurds. As the International Crisis Group recently reports, "A bird's eye view of MENA suggests a region with violent conflicts raging almost everywhere, crossing natural and human-

made boundaries, slicing up countries, ravaging cities, killing countless people, generating population flows and drawing in new—panicked and/or opportunistic—actors" (International Crisis Group 2017). Most of the victims of this ongoing violence are civilians; Figure 4.1 shows the numbers of fatalities in each of our priority countries.

Figure 4.1: Cross-Country: Fatalities, 2000–2016



While violence remains high and even on the rise in Afghanistan, both Iraq and, even more so, Pakistan, have seen some drops over the past year. Still, the effects of long-standing conflict continue to deter private sector investment across these countries and, more broadly, across the MENA region. The International Monetary Fund (2018) points out that "persistent conflicts and their regional spillovers, security concerns, weaker-than-anticipated public investment (Afghanistan, Jordan), delays in implementation or completion of structural reforms (Jordan, Morocco, Pakistan, Tunisia), and political and policy uncertainty (Lebanon, Pakistan) continue to weigh on growth" on the region's economies. In addition to improving the security environment, "generating broad-based growth that benefits all will require an acceleration of structural reforms that improve the business climate and boost productivity. The need for sustained fiscal consol-

idation that protects much-needed social spending and investment while ensuring stability also persists [...] ." (International Monetary Fund 2018). These findings have also been echoed by a recent World Bank report on private sector development in the MENA region, which similarly emphasizes the deterrent effect of political instability on investment.

Figure 4.2: Cross-Country: Credit to the Private Sector, 2000–2016

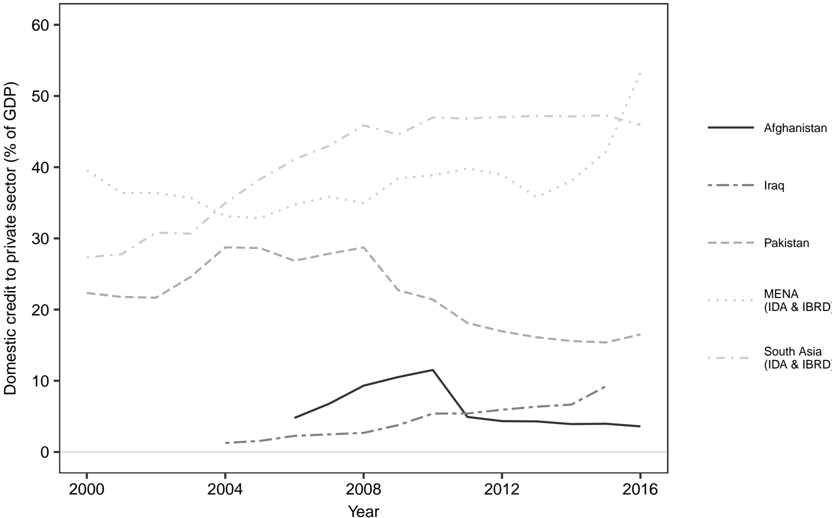
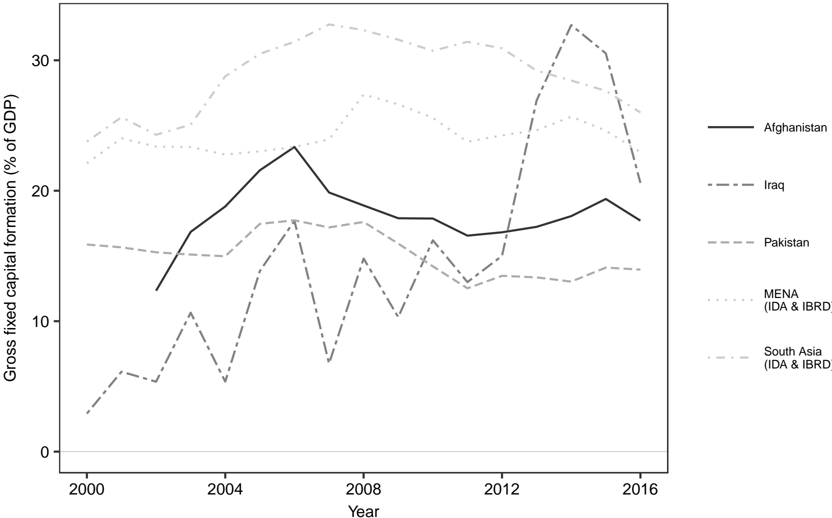


Figure 4.3: Cross-Country: Private Investment, 2000–2016

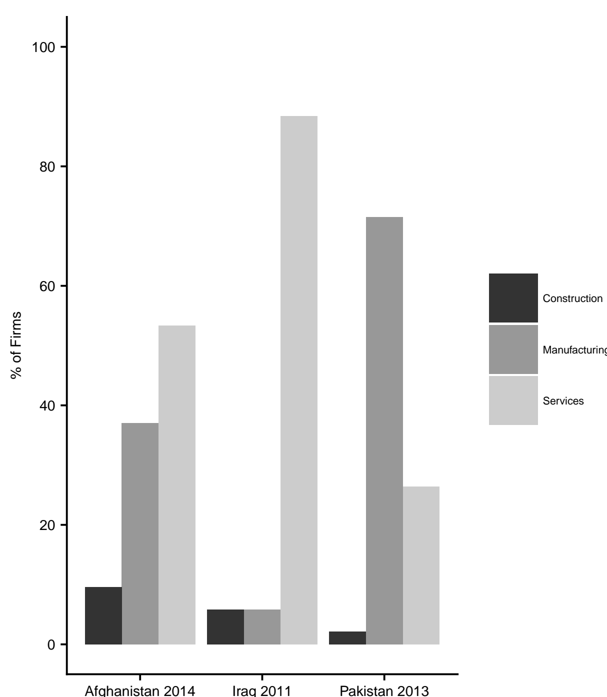


It should be pointed out, however, that conflict tends to be localized in most fragile states, including Pakistan and Iraq—less so Afghanistan, but even there some regions witness much higher levels of violence

than others. This raises important questions that have not been much discussed in the policy literature concerning private sector development. Should donors only operate in peaceful regions, supporting ongoing firms there, or should they seek to invest in more difficult places in the hope that such investments are "peace-building" if not "peace-making"? These issues will be further discussed in the concluding section of this Report.

The breakdown of sectoralization in Afghanistan, Iraq, and Pakistan is presented in Figure 4.4. The formal sector is dominated by services in all three countries. The manufacturing sector in Pakistan is primarily textiles and food manufacturing. The construction sector in Afghanistan composes a relatively high share of formal activity.

Figure 4.4: Cross-Country: Sectoralization

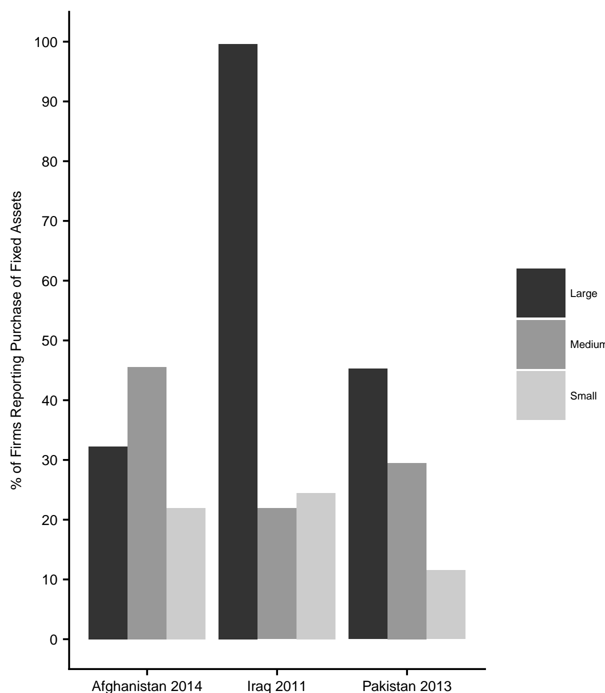


Source: World Bank Enterprise Surveys (2011, 2013, 2014)

The firm-level data in the Enterprise Surveys for the share of firms reporting investment supports the low levels of investment seen in the aggregate figures for gross fixed capital formation (see Figures 4.5 and 4.3, respectively). Excluding large firms in Iraq, firms of all sizes report low rates of fixed asset investment over the last fiscal year, ranging from 10 to 45 percent across all size bins. All large firms in Iraq report

fixed asset investment. With the exception of the large Iraqi firms, companies in all three countries are less likely to invest than their peers in other MENA countries.

Figure 4.5: Cross-Country: Proportion of Firms Reporting Fixed Asset Investment



Afghanistan, Iraq, and Pakistan all score near the bottom half on a variety of World Governance Indicators in comparison with other MENA countries. Their rankings on political instability and government effectiveness are particularly poor (see Figures 4.6 and 4.7). And as Figures 4.2 and 4.3 reveal, political instability appears to undermine the very foundations of private sector development, as exemplified by the lack of credit and investment. These tables, which compare credit to the private sector with broader regional groupings, point to a crucial issue: that bolstering credit through the donor firehose may not solve the underlying problem that prevents the sustainable financing of private firms. Further, the absence of property rights and political stability forces firms to invest in their own security. Among lower middle-income countries, the amount spent on security as a percentage of sales has increased during the 2011–2016 period, with South Asian countries (notably Afghanistan) squeezed even more than those in the MENA region.

Figure 4.6: Cross-Country: Government Effectiveness

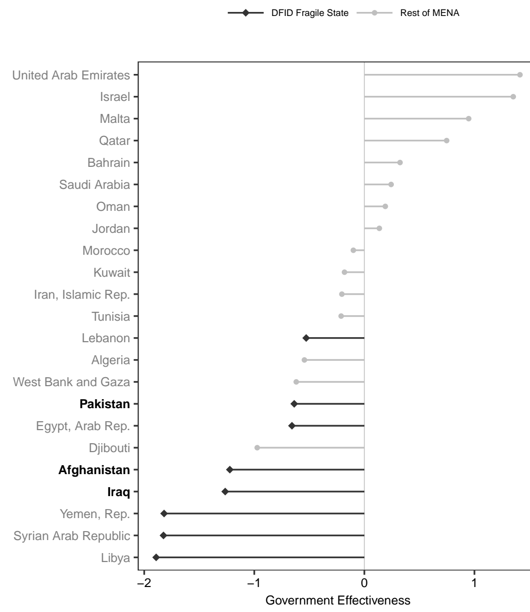
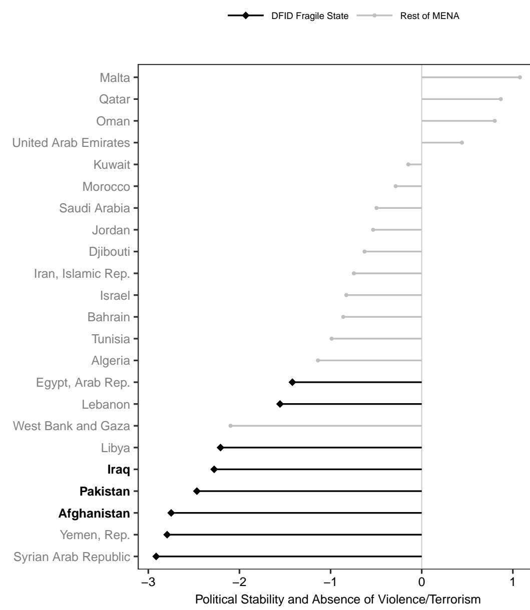


Figure 4.7: Cross-Country: Political Stability



When investigating the correlation between private credit and governance by fragility, it becomes clearest that stable governance is correlated with higher credit to the private sector over time. Figures 4.8 and 4.9 plot domestic credit to the private sector for years 2000 to 2016 against World Bank World Governance Indicators political stability and government effectiveness, by DFID fragility and out of group countries receiving development assistance. Figure 4.8 shows that a one-point increase in the political stability index is associated with 2.27 percentage points' increase in gross fixed capital formation as a share of GDP. As an illustrative example, in 2016, if Iraq (estimated political stability index = -2.28) was as politically stable as Bangladesh (estimated political stability index = -1.24), Iraq could have additional gross fixed capital formation that is worth US$4 billion. Related to other countries which receive international development assistance, DFID fragile countries exhibit clearly lower average levels of private credit available measured as a share of GDP, and lower political stability on average, as seen in Figure 4.9. Only one country-year observation among DFID fragile states reports over 50% private credit as a share of GDP, the remaining all fall under 50% and the majority under 25%. Figure 4.9 highlights Afghanistan and Iraq among countries with the lowest levels of credit and stability among all DFID fragile states. Pakistan stands distinctly from Afghanistan and Iraq clustered together, reporting higher credit than the average among fragile states, but still lower than low-middle income MENA countries included among the DFID fragile states and IDA countries.

In terms of private sector payments for security, the burdens of violence are most felt by largest and middle-sized firms (see Figure 4.10). Figure 4.10 reports the percentage of firms reporting paying for security, and Figure 4.11 the percentage of revenues paid for these services. In Pakistan, large firms pay the most for protection as a percentage of annual sales, while in Afghanistan and Iraq medium-sized firms pay more (see Figure 4.11). This may be due to the fact that in Iraq the largest firms are entirely government owned.

Almost all large firms pay for security as seen in Figure 4.11. It is among large firms that extraction and the security vacuum is most revealing. Aside from the similar cost and frequency of security payments made across firm sizes in Pakistan (as discussed in the previous section on Pakistan's private sector), the

Figure 4.8: Cross-Country: Private Investment vs. Political Stability in DFID Fragile States, 2000–2016

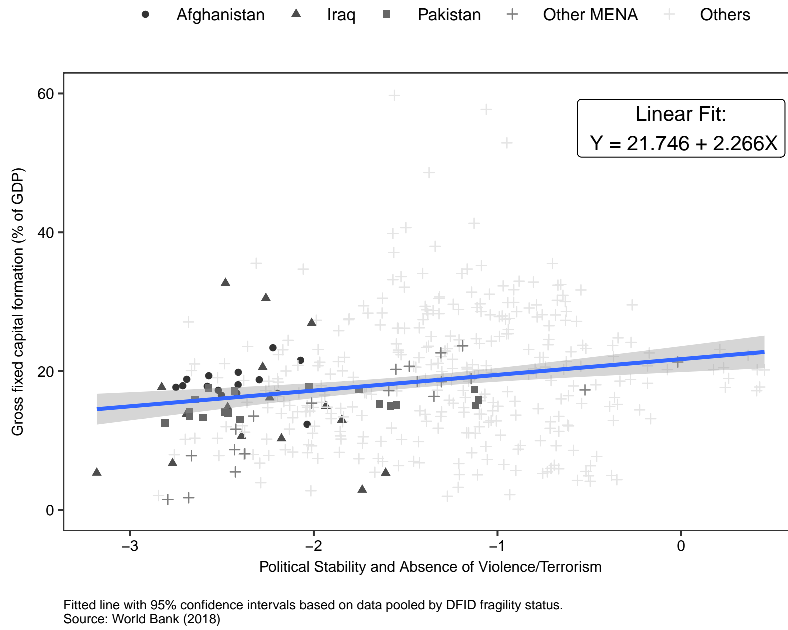
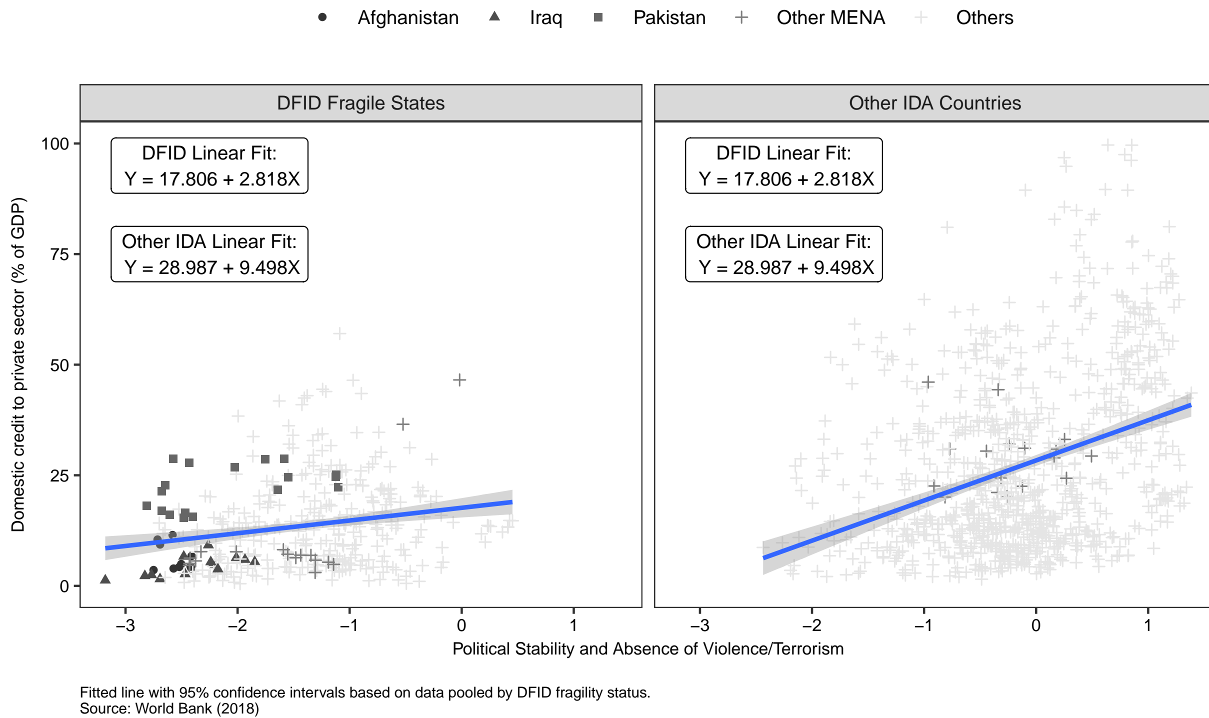


Figure 4.9: Cross-Country: Credit to the Private Sector vs. Political Stability in IDA-Eligible Countries, 2000–2016



only other distinction seems to be that smaller firms report paying for security less frequently. However, this distinction is not conclusive, or even particularly informative, given that small firms may not have the capacity to pay for security or may be too small of targets to be relevant for extracting rents. Overall Figures 4.10 and 4.11, show the security burden, despite uneven, is broad.

Regionally, large firms across the MENA region have the highest propensity for reporting security payments. Small firms in South Asia pay more as a percentage of sales for security, South Asian firms pay roughly 2.5 times more for security as a percentage of sales relative to the MENA region. Within MENA, Iraq pays among the top quartile of average security payments in terms of sales. Medium-sized firms in Iraq pay the most, sacrificing 14 percent of annual sales towards security on average, compared to an average of 7.5 percent of sales in Afghanistan and Pakistan. That such payments are so high in Pakistan is particularly notable given the significantly fewer annual casualties observed relative to Iraq and Afghanistan since 2013, and the geographic concentration of conflict in Pakistan compared to more widespread fragility observed in Iraq and Afghanistan.

Figure 4.10: Cross-Country: Security Paid by Firm Size

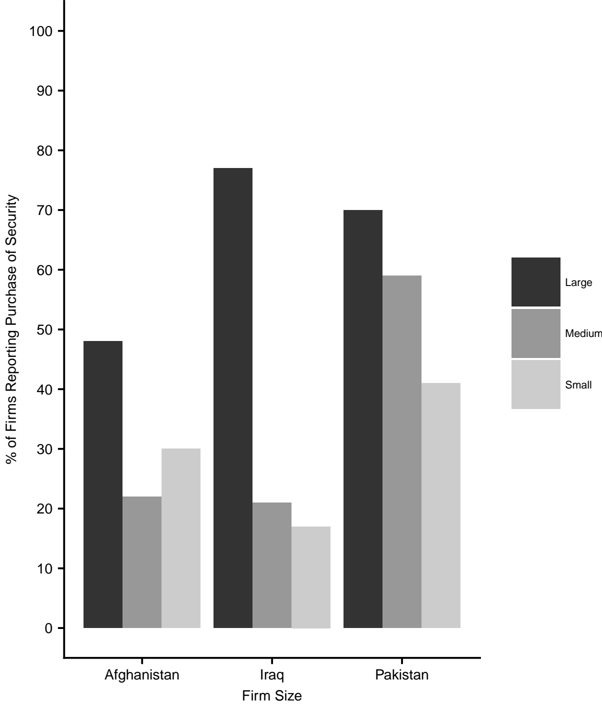
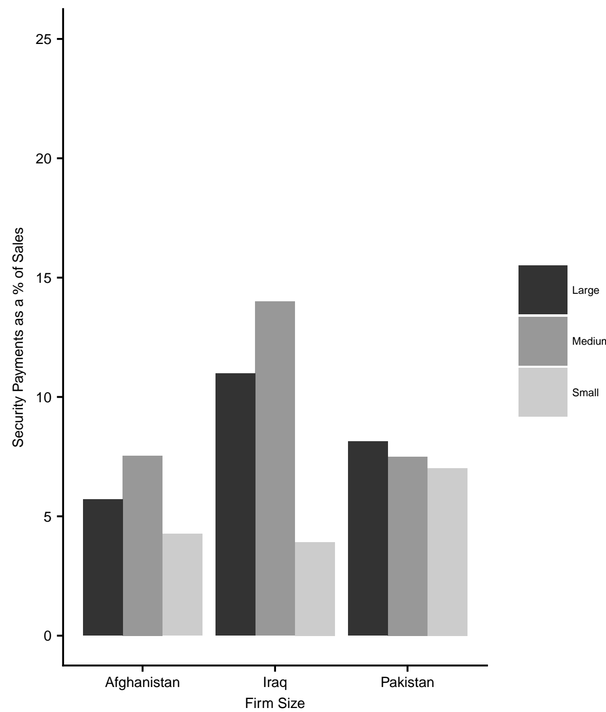


Figure 4.11: Cross-Country: Security Payments by Firm Size

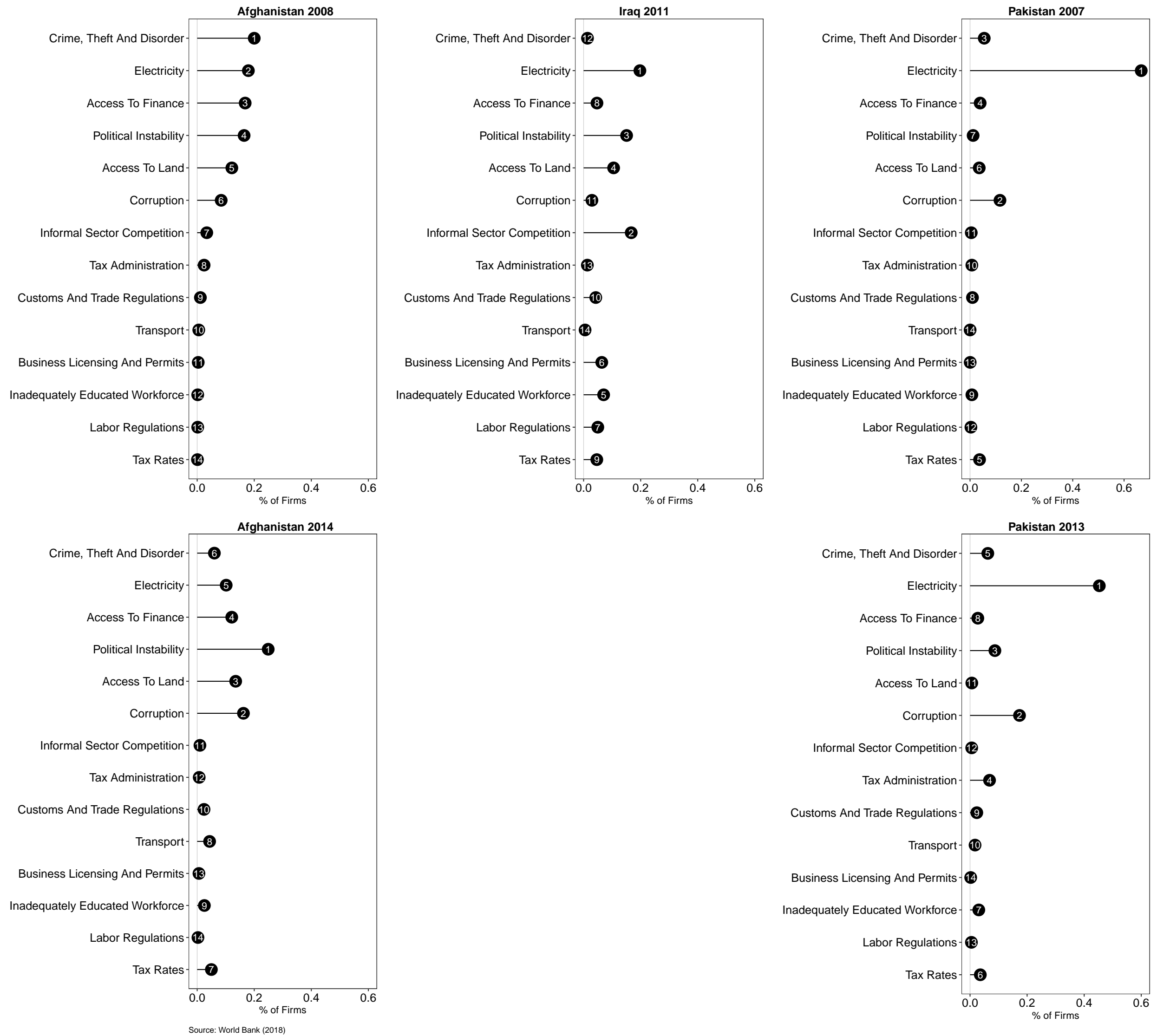


Source: World Bank Enterprise Surveys (2011, 2013, 2014)

Across Afghanistan, Iraq, and Pakistan political instability has risen over time (see Figure 4.12). This trend is common to South Asian countries in general, as according to the World Bank Enterprise Surveys other South Asian countries such as Bangladesh and Nepal also list political instability as the most severe obstacle to business in 2013. Bangladesh observes an increase in the share of firms citing this obstacle as most severe between 2007 and 2013, while the share of firms reporting this as the top obstacle in Nepal stays roughly the same. Political instability is also the top cited obstacle across the MENA region in 2011. Other factors vary tremendously, with informal sector competition being a major concern in Iraq, corruption and access to land in Afghanistan, and electricity and corruption dominating in Pakistan.

The geographic distribution, intensity, and duration of conflict in Afghanistan, Iraq, and Pakistan are very different, however, there are common effects of violence on the economy observed. Firms in these countries pay between 4 to 14 percent of annual sales on security, a significant deterrence of economic production to combating the threat of conflict. Given that the firms sampled in the Enterprise Surveys represent firms located in regions with high rates of formal economic activity, the majority of these businesses face

Figure 4.12: Cross-Country: Biggest Obstacles to Business, 2008–2014



lower levels of direct conflict, and represent a lower bound for the direct impact of conflict while revealing the indirect effect of conflict on business activity. Pakistan presents an example where although the nature of the conflict in Pakistan is the most geographically concentrated, firms of all sizes pay roughly equal amounts for security and report paying more often than Afghanistan and Iraq. Access to credit is limited and firms in these countries are less likely to invest. The private sector also faces obstacles common to other countries within the regions of South Asia and MENA.

4.2 Broad Cross-National Comparison

In the following section, we examine the broader correlation between violence and business activity, in a cross-national sample of 33 countries. The 33 countries, of which Afghanistan, Pakistan, and Iraq are included, represent countries which both have experienced an episode of civil conflict during 2001-2011 and have Enterprise Survey data available. With these countries we investigate business activity after violent episodes, focusing on obstacles to business, access to credit, export activity and labor market conditions for females. Though this setup does not facilitate causal inference, the large sample of firms and rich panel data available allow analysis into the correlations and trends observed. We first describe the setup for the analysis, as well as macroeconomic context for the countries examined, then break down the findings for exports, gender and business activity for the countries selected, elaborating on the findings for Afghanistan, Iraq, and Pakistan when applicable.

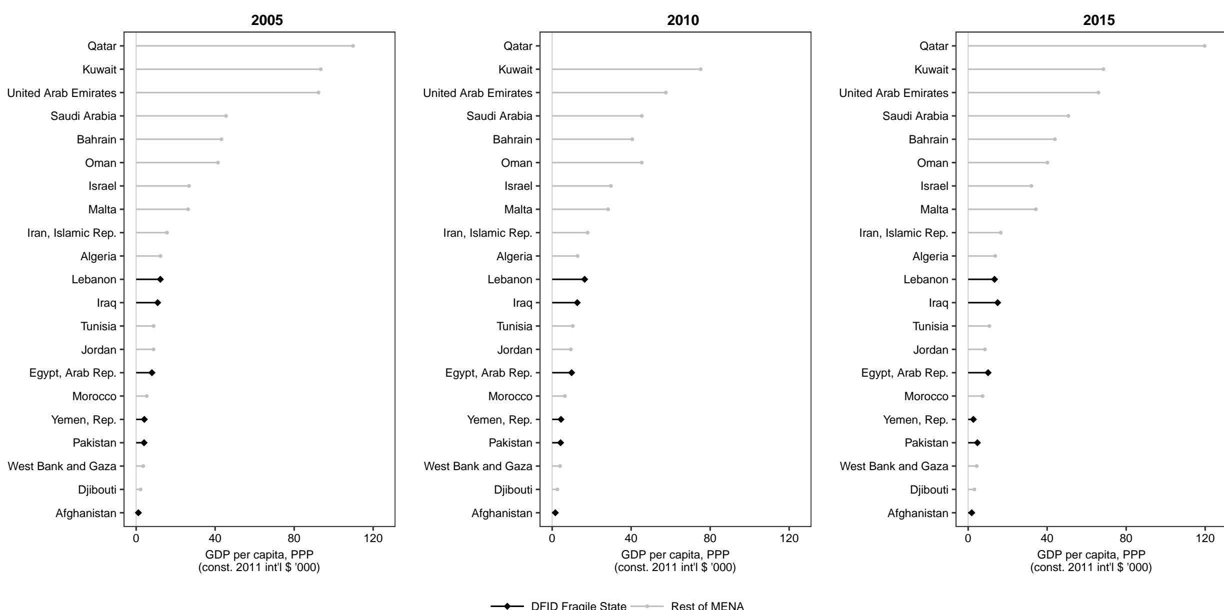
4.2.1 Methodology

We assemble annual combat casualties, using the UCDP dataset which covers all countries and conflict events from 1946 to 2016. To proxy conflict intensity, we aggregate annual casualties in the 5 years preceding the country's Enterprise Survey. 33 countries have at least one Enterprise Survey between 2006-2016 and experienced civil conflict during the 5 years preceding the survey (for the list of countries see Appendix: Country List – Cross-National). Because conflict intensity is highly skewed we plot the relationship in terms of the log of total casualties over the preceding 5-year period (results are similar to using casualties per capita). Whenever possible, we exploit panel data available within the Enterprise Surveys and focus on firm-level outcomes.

4.2.2 Growth and Conflict

When examining GDP growth measured in per capita terms, no clear relationship emerges between economic growth and conflict, shown in Figure 4.13. While Afghanistan, Iraq, and Pakistan all see slight improvements in growth, there is no general trend relating conflict and GDP growth specifically.

Figure 4.13: Cross-Country: GDP Per Capita (PPP), 2005, 2010, 2015



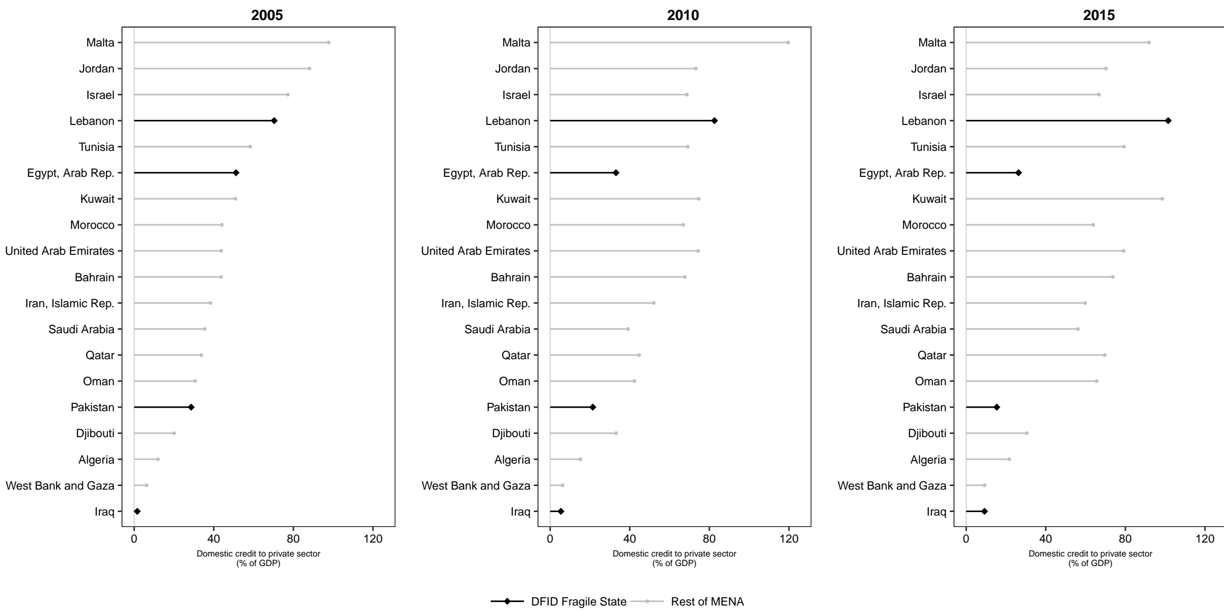
4.2.3 Credit and Conflict

The share of credit to the private sector, however, does reinforce earlier findings in which access to credit is strained among conflict-affected countries. Looking at Figure 4.14, Pakistan, Jordan, Israel, and Egypt are among the countries where the amount of credit extended to the private sector dropped between 2005 and 2015. This relationship can confound demand for credit and supply; Lebanon and Iraq, for example, expand credit to the private sector during the same period, a decade in which both saw extensive conflict and refugee flows. Investigating cited reasons for not applying for a loan against fixed asset investment yielded no clear results.

4.2.4 Exports and Conflict

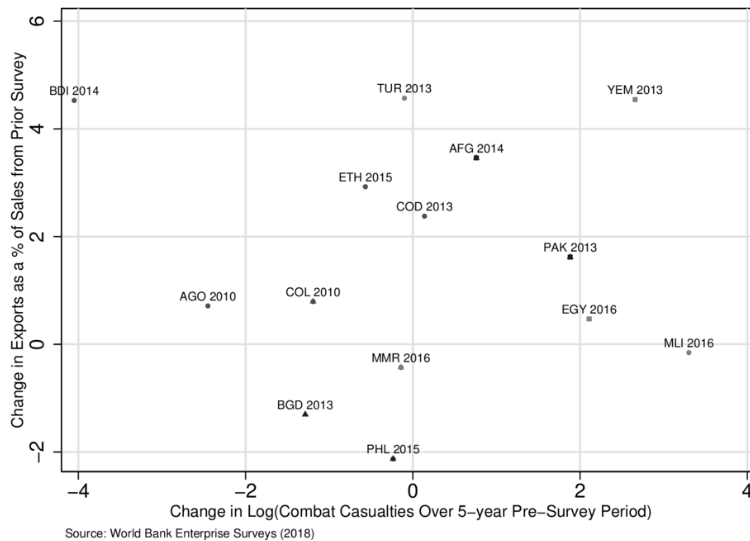
Export activity and conflict were also examined across the 33 countries named, taking the change in exports among exporting firms with panel data available, against conflict intensity. If domestic markets are failing, or conflict causes a reduction in demand, we would expect exports to increase when conflict intensifies. Conversely if conflict intensifies such that firms become less competitive and face other restrictions from

Figure 4.14: Cross-Country: Credit to the Private Sector, 2005, 2010, 2015



exporting abroad, we would see a reduction in exports across conflict intensity. As observed in figure 4.15 however, no clear evidence of shifting sales outside the domestic market across conflict intensity emerges.

Figure 4.15: Cross-Country: Exports and Conflict, 2006–2016

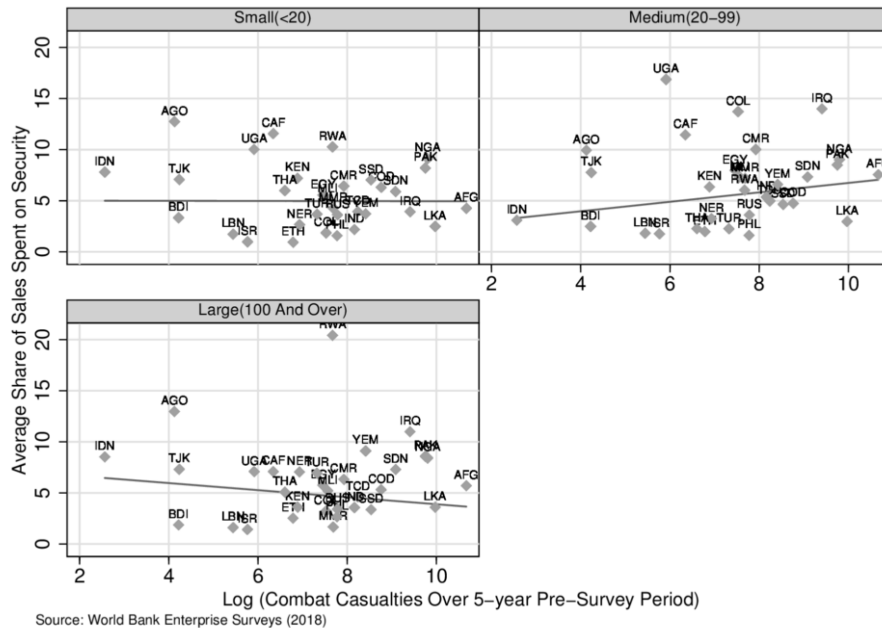


Note: Change reported for 14 countries with multiple Enterprise Survey years, 2006–2016. Most recent survey year reported in plot. Surveys are observed 6 years apart on average. 3 outlier countries which meet these criteria are dropped from plot for readability: Kenya, Nigeria and Russia.

4.2.5 Obstacles to Business and Conflict

Across countries, there is no consistent relationship between the intensity of conflict and the share of sales spent on security or markers of business activity. In general, the intensity of conflict is uncorrelated with firm-level responses on obstacles to business (Figures 4.16, 4.17, 4.18 and 4.19). The plots below do not show a relationship be,tween predation losses or security payments and conflict intensity. Payment for security is uneven but widespread. All firms, across firm sizes, pay for security and report high security payments as a percentage of sales in general (see Figure 4.16). These results suggest two possibilities. First, firms may simply be located in peaceful regions of countries that have limited areas suffering political violence (e.g. Nigeria). Second, firms may be able to work around political violence such that other factors are more significant challenges (e.g. lack of electricity in Pakistan).

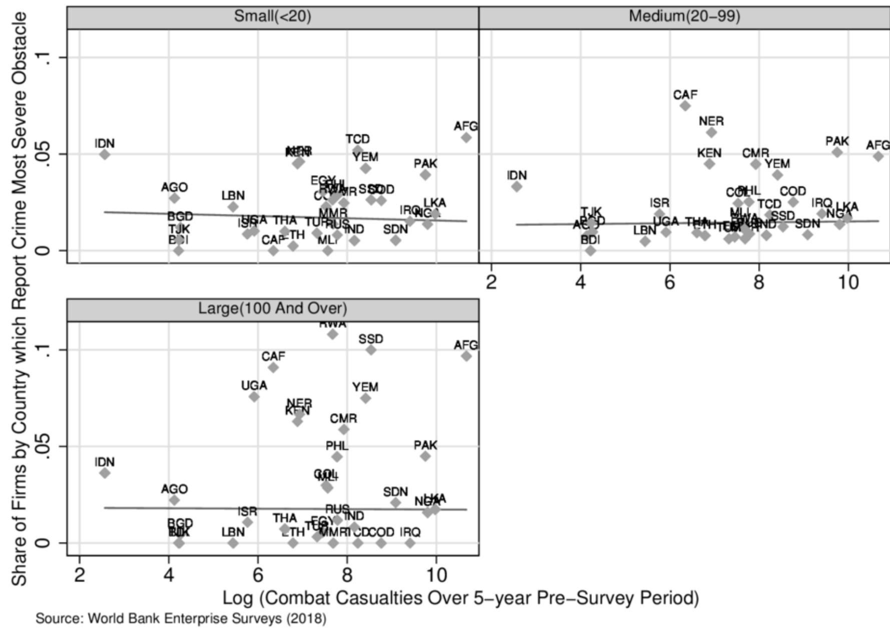
Figure 4.16: Cross-Country: Average Share of Sales Paid in Security Payments



Note: 33 countries with at least one civil conflict episode between 2001 and 2011, see Appendix - Country Lists for countries included. Enterprise Survey data from the more recent survey for each country is used, survey years used span 2006 to 2016.

Small firms appear to fear predation and crime while larger firms are more concerned with political instability, consistent with security spending by large firms insulating them from criminal activity (see Fig-

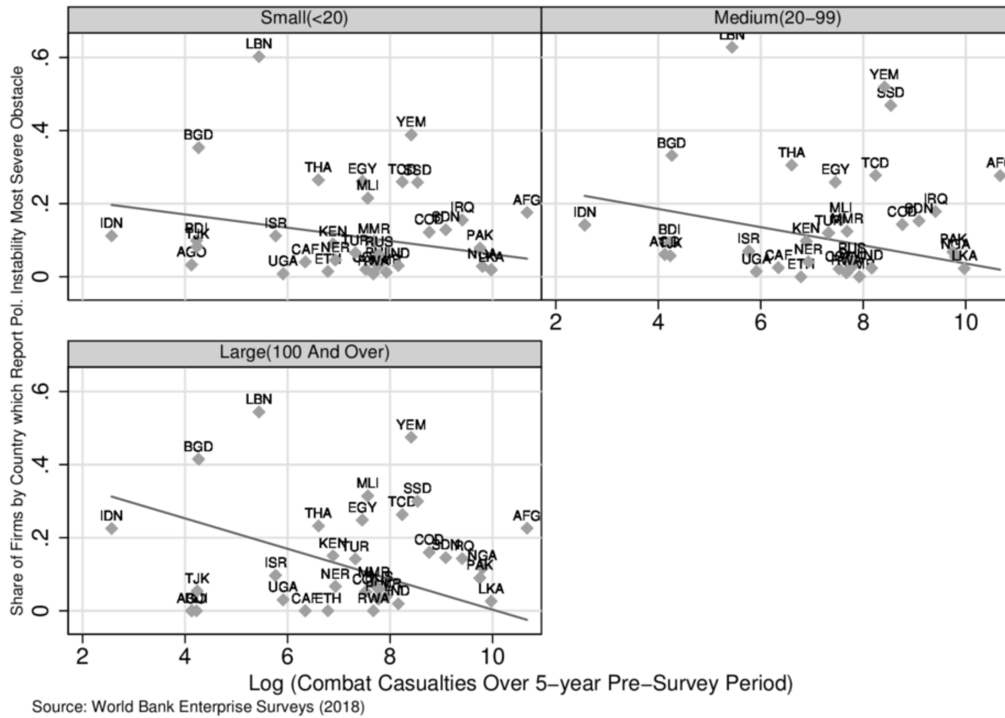
Figure 4.17: Cross-Country: Share of Firms by Country Citing 'Crime, Theft and Disorder' as Biggest Obstacle



Note: 33 countries with at least one civil conflict episode between 2001 and 2011, see Appendix - Country Lists for countries included. Enterprise Survey data from the more recent survey for each country is used, survey years used span 2006 to 2016.

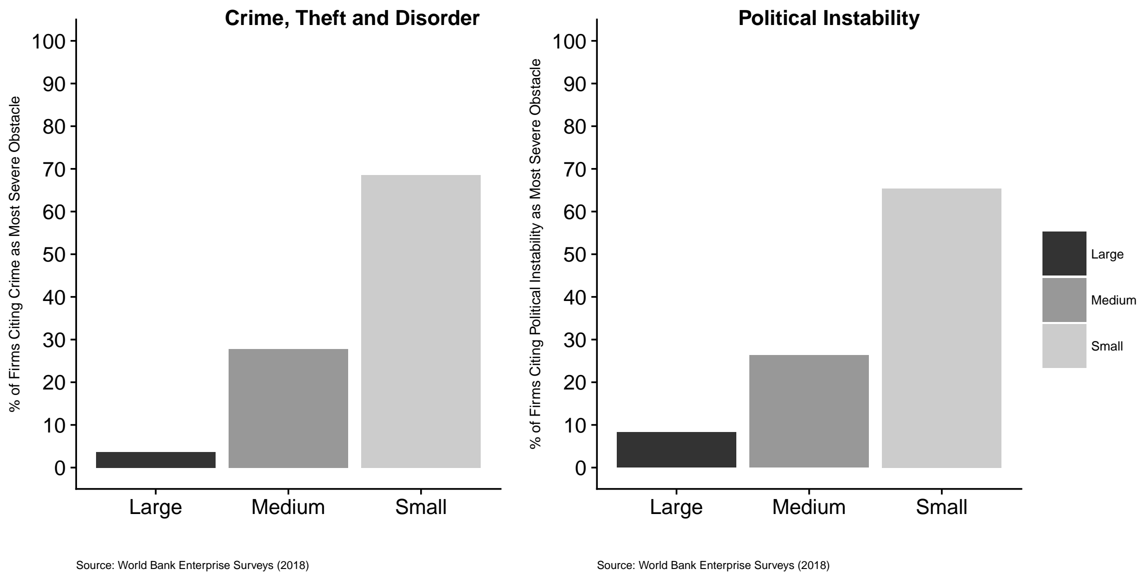
ure 4.19. Within conflict-affected countries, political instability has become more of an obstacle to business since the late 2000s. Afghanistan in 2014 ranks political instability as the most severe obstacle to business across all firms, while Pakistan records a large increase in the share of firms citing this as the most severe obstacle between 2007 and 2013. Crime, theft, and disorder are also prevalent among conflict countries, roughly 2% of firms in our 33-country sample report crime to be the most severe obstacle to business, of these, 70% are small firms (see Figure 4.19). In Afghanistan, Iraq, and Pakistan, this percentage is nearly double, at 3.8% of firms citing crime, theft and disorder as the most severe obstacle to operations. Taken collectively, Figures 4.16, 4.17, and 4.18 point to the indirect mechanism of conflict on firm activity.

Figure 4.18: Cross-Country: Share of Firms by Country Citing 'Political Instability' as Biggest Obstacle



Note: 33 countries with at least one civil conflict episode between 2001 and 2011, see Appendix - Country Lists for countries included. Enterprise Survey data from the more recent survey for each country is used, survey years used span 2006 to 2016.

Figure 4.19: Cross-Country: Share of Firms by Size Citing "Crime, Theft and Disorder" and "Political Instability" as Biggest Obstacle



Note: 33 countries with at least one civil conflict episode between 2001 and 2011, see Appendix - Country Lists for countries included. Enterprise Survey data from the more recent survey for each country is used, survey years used span 2006 to 2016.

4.2.6 Summary of Cross-National Results

Among conflict-affected countries, a few common findings emerge. Firms in conflict-affected countries are less likely to invest, and access to credit presents a challenge. Firms of all sizes face the burden of conflict through payment for security and fear of predation. Across the fragile countries included in the analysis, large firms have the highest incidence of paying for security. Overall, all firms indicate high propensity to report security payments. Firms are vulnerable to predation across all countries in the set and are hit in losses due to theft and sales diverted to security. Medium-sized firms pay the highest share of sales for securing operations, but their costs are only weakly increasing in conflict intensity. These patterns are consistent with the possibility that the existence of conflict creates new opportunities for predation, but the conflict itself is very localized and thus only impacts few firms. Exporting firms do not seem to respond, or do not seem to be able to respond to conflict by increasing sales abroad. The constraints to business cited by firms vary greatly across firm size and country, with political instability weighing most heavily on small and medium firms in Afghanistan and Iraq, and large firms in the cross-national sample overall. The other obstacle to business most severe across large firms is access to finance.

In addition to impacting business activities directly, conflict episodes within countries appear to create corruption and opportunities for predation and rent-seeking, effectively placing a tax on business activity. The indirect effect of conflict is that its presence, even at distance, affects businesses through predatory or extortionist activity and reduced access to credit.

Chapter 5

Policy Implications and Suggestions for Further Research

While recognizing their important differences, this study points to a number of empirical regularities that distinguish Afghanistan, Pakistan and Iraq from other less violent fragile states. In particular, violence and the absence of political stability and secure property rights appear to undermine private sector development, through several different channels. First, violence seems to reduce firms' access to finance, plausibly through the absence of secure property rights. Second, and perhaps related, violence reduces investment in fixed capital. Third, violence causes firms to pay for their security, requiring them to channel funds for unproductive purposes. We further note that past violence, as in Pakistan, seems to have persistent effects on entrepreneurs, who continue to pay for security while foregoing capital investment even as violence abates. In this concluding part of the Report we address our findings in terms of their policy implications and possible directions for future research.

5.1 Policy Implications

Specifying the channels through which violence reduces private sector investment is crucial to donor policy and programming. For example, programs that promote credit to the private sector which fail to recognize the absence of strong property rights and rule of law are unlikely to succeed; this point is emphasized graphically in Figures 4.8 and 4.9, which show the correlation between investment and credit to the private sector with measures of political instability and violence. Unless these macro conditions are fixed, it will be very difficult for donors to have a positive impact on financial deepening. Another channel concerns the sectors most affected by violence. This issue, in turn, may influence donor decisions about private sector targeting. Are some sectors more or less likely to suffer predation or attack? How does donor activity influence their susceptibility? These are crucial issues for donors to consider. Violence may further influence capital/labor trade-offs. Whereas the evidence suggests that conflict tends to reduce capital investment, recent evidence from MENA suggests that capital-labor substitution is ongoing there as in other parts of the world, if only at a much slower rate. Do donors seek to maximize employment or efficiency? This is yet another crucial programming decision.

A further question of importance to donors, as earlier noted, concerns where to invest within fragile states? Research suggests that at least USAID has tended to invest heavily in the most violent parts of fragile states. A study by the United States Senate (2011), for example, showed that the province that received the most USAID funding outside Kabul was Helmand, the site of one of the Taliban's greatest strongholds. This raises the obvious question of whether such funding would be better allocated to more secure regions. The argument for such an allocation rests partly on the idea of a "demonstration effect" on other, more violent regions. The Millennium Challenge Corporation (MCC), for example, argues that its (high) standards for compact countries have had a demonstration effect on other developing world states that seek MCC finance (Hayes-Birchler 2013). Whether the demonstration effect works in more violent settings is a crucial question for policy-makers, and this raises the intriguing possibility of conducting experimental research (e.g. a randomized control trial or quasi-experiment).

Critics might argue that rather than create a demonstration effect, pouring more funds into non-violent regions would simply invite higher levels of predation, either by the government or by violent, non-governmental groups. Clearly, donors would have to be satisfied with the government's commitment to at least maintain security in these donor-funded regions before making this allocation decision. To the extent that government and private sector incentives are more closely aligned in wealthier regions of a country, however, the more likely it is that security will be provided. Besley and Mueller (2012), for example, found that as housing prices began to rise in Northern Ireland as the conflict abated, citizens demanded (and received) higher levels of security, which in turn further bolstered housing prices. Thus, a virtuous circle was created between security and asset values.

As noted in the review of the policy-relevant literature on PSD, one ongoing point of controversy concerns whether donors should support "macro," investment climate-type programs or focus instead on "micro" programs of direct funding to entrepreneurs (or indirect, via banks). While this Report does not provide evidence to answer that question definitively, it does suggest that violence itself is an impediment to PSD, and that micro interventions are unlikely to succeed so long as firms are threatened by predation.

Whether donor support should focus on SMEs, as much of the academic and policy literature in the past has suggested, or on larger firms, is another issue that must be addressed by donors. While the appeal of the SME sector is understandable—after all, it is also the focus of policy interventions within many donor states themselves, the importance of large firms should not be overlooked. They tend to be major employers, sources of innovation, and generators of tax revenue. To be sure, donors must be careful about supporting monopolistic enterprises that crush competition, but large firms also should be considered for donor support, as they may also face constraints on investment owing to, for example, a lack of credit.

Related, conflict differentially affects the ways in which businesses operate and programming should reflect the variety of opportunities and constraints thus imposed on entrepreneurs. Blomberg and Hess (2006), for example, show that terrorist violence has a major impact on global trade flows. Are firms in violent countries less likely to engage in international trade than other firms? If so, how is it that at least

some economic agents seem to be able to move goods across borders even in the midst of severe conflict? What advantages do they possess? Differences among firms in terms of their capacity to deal with violence (indeed, some may profit from it) are also crucial to recognize.

5.2 Suggestions for Future Policy-Relevant Research

Private sector development is of growing interest in the donor community, including with respect to fragile and conflict-affected states. A review of the policy literature, however, suggests that donors have built their programming based on a few case studies, often drawn from non-conflict-affected settings. This raises the possibility that donor programming could be more effective if it is developed in close collaboration with serious academic research on these violent places. As more macro-and microeconomic indicators become available, including through such "big data" as mobile call data and social media, researchers increase their capacity to address fundamental issues about private sector development from an empirical standpoint; more on this below.

One approach to research that has not been pursued in the area of PSD, despite its growing importance across the donor community, is the use of randomized control trials (RCTs) and quasi-experimental designs. In addition to evaluating the effectiveness of a given intervention, RCTs are of greatest value when they identify a key shortcoming or failure of a given policy intervention, including identifying the faulty assumptions that shaped a policy. Along these lines, we propose three potential research ideas.

First, what are the impacts of complementing microfinance lending, which in Afghanistan totaled US$200 million in 2018, with business training? Karlan and Valdivia's (2011) randomized impact study in Peru measured the effects of business training and demonstrated the potential for training to increase participants' assets. The study showed that adding a business training component to an existing lending or financial services program for low-income Peruvian female micro-entrepreneurs increased profits for the treatment groups. Karlan and Valdivia (2011) also saw improvements in the micro-entrepreneurs' cash flows. In par-

ticular, the findings suggest that the trainings helped participants learn and use strategies (e.g. diversifying goods and services, reinvesting profits, and maintaining financial records) to reduce vulnerabilities of their businesses. Second, one could analyze the effects of introducing business training to a potential group of entrepreneurs, such as university students and study whether business training increases the likelihood of starting a business or of business success. Third, following the work of Nick Bloom et al. (2013), one could introduce business training to existing firms to see if it has an impact on their profitability. All these training treatments are based on the underlying idea that PSD intervention are often less successful than hoped because the target audience lacks the skills needed to build and run businesses.

More research is also needed in the area of causal identification or a better understanding of the precise channels through which violence influences private sector investment and economic growth. Different types of violence may have different impacts as well (for example, from an entrepreneur's standpoint, are homicides the same as military-related casualties? Evidence from the economics of criminology might be useful to examine in this context). Among the questions to answer include the following: How does insecurity influence investment decisions and trade-offs between capital and labor? How do business leaders decide how much to invest in security and how much production are they willing to forego in so doing? How do entrepreneurs respond to changes in levels of violence?

To answer these questions, one might conduct surveys of firms in priority countries with a focus on how the threat of violence affects their operations, and how PSD programming can assist these firms. A possible approach, which could be most efficient, would be to try and collaborate with the World Bank Enterprise Survey team to add questions to their ongoing surveys. This would also allow researchers to take advantage of their existing sample fames. To date, much PSD programming reflects donor priorities—instead of those of the targeted entrepreneurs—and is either focused on the "investment climate" at the macro-level or on firm-level interventions, such as access to credit. However, our experience with entrepreneurs in conflict-affected states suggests that some issues are meso-level or regional, where broader "fixes" can help firms across the board. It would be useful to identify the specific needs of entrepreneurs with greater clarity though survey instruments.

Furthermore, as noted above, it is now possible to conduct economic analysis based on remote sensing, among other techniques, in countries where administrative data are lacking or unreliable to evaluate program effectiveness. Big data, including data gathered from mobile phone usage, social media, and nightlights, holds the promise of providing insights into the private sector in countries where surveys and censuses are lacking. To date, few donors have invested heavily in gathering such data in the countries where they are active. Academics and donors could partner to gather and analyze these data and in so doing bring down the costs associated with this effort. Evaluating such data, coupled with careful statistical and case study analysis, could help donors shape more effective interventions in the area of private sector development.

Bibliography

Alesina, Alberto, and Eliana La Ferrara. 2005. "Ethnic Diversity and Economic Performance." *Journal of Economic Literature* 43, no. 3 (September): 762–800. doi:10.1257/002205105774431243.

Alikhani, Iradj, and Jean Michel Netter. 2015. *Capitalisation Exercise (meta-evaluation) on EU Private Sector Development (PSD) Support to Third Countries.* Final report to the European Union. Brussels, Belgium: SACO Consortium, September. https://ec.europa.eu/europeaid/sites/devco/files/meta-evaluation-psd-final-report_en.pdf.

Asiedu, Elizabeth. 2013. *Foreign Direct Investment, Natural Resources and Institution.* Working paper. London: International Growth Centre, London School of Economic and Political Science, March. https://www.theigc.org/wp-content/uploads/2014/09/Asiedu-2013-Working-Paper.pdf.

Avis, William Robert. 2016. *Private Sector Engagement in Fragile and Conflict-Affected Settings.* GSDRC Helpdesk Research Report 1331. Birmingham, UK: GSDRC, University of Birmingham, January 13. http://gsdrc.org/publications/private-sector-engagement-in-fragile-and-conflict-affected-settings/.

Baig, Aqeel. 2014. *Concentration in Pakistan's Manufacturing, Financial and Services Sectors.* Pakistan Business Review, January.

Bannon, Ian, and Paul Collier. 2003. "Natural Resources and Conflict: What We Can Do." Chap. 1 in *Natural Resources and Violent Conflict: Options and Actions,* edited by Ian Bannon and Paul Collier, 1–16. Washington, DC: International Bank for Reconstruction / Development, World Bank.

Beck, Thorsten, Asli Demirguc-Kunt, and Ross Levine. 2005. "SMEs, Growth, and Poverty: Cross-Country Evidence." *Journal of Economic Growth* 10 (3): 199–229. doi:10.1007/s10887-005-3533-5.

Besley, Timothy, and Hannes Mueller. 2012. "Estimating the Peace Dividend: The Impact of Violence on House Prices in Northern Ireland." *American Economic Review* 102 (2): 810–33. doi:10.1257/aer.102.2.810.

———. 2018. "Predation, Protection, and Productivity: A Firm-Level Perspective." *American Economic Journal: Macroeconomics* 10 (2): 184–221. doi:10.1257/mac.20160120.

Blomberg, S. Brock, and Gregory D Hess. 2006. "How Much Does Violence Tax Trade?" *The Review of Economics and Statistics* 88, no. 4 (November 7): 599–612. doi:10.1162/rest.88.4.599.

Bloom, Nicholas, Benn Eifert, Aprajit Mahajan, David McKenzie, and John Roberts. 2013. "Does Management Matter? Evidence from India." *Quarterly Journal of Economics* 128 (1): 1–51. doi:10.1093/qje/qjs044.

Blumenstock, Joshua Evan. 2016. "Fighting poverty with data." *Science* 353 (6301): 753–54. doi:10.1126/science.aah5217.

Blumenstock, Joshua, Gabriel Cadamuro, and Robert On. 2015. "Predicting poverty and wealth from mobile phone metadata." *Science* 350 (6264): 1073–76. doi:10.1126/science.aac4420.

Blumenstock, Joshua, Tarek Ghani, Sylvan Herskowitz, Ethan B. Kapstein, Thomas Scherer, and Ott Toomet. 2018. *Insecurity and Industrial Organization: Evidence from Afghanistan.* Policy research working paper 8301. Washington, DC: World Bank, January. https://openknowledge.worldbank.org/handle/10986/29211.

Cefis, Elena, and Orietta Marsili. 2006. "Survivor: The Role of Innovation in Firmsï¿½' Survival." *Research Policy* 35 (5): 626–41. doi:10.1016/j.respol.2006.02.006.

Central Intelligence Agency. 2016. *The CIA World Factbook 2017.* New York: Skyhorse Publishing.

Costantini, Irene. 2017. "A Neoliberal Rentier System: New Challenges and Past Economic Trajectories in Iraq." *The International Spectator* 52 (1): 61–75. doi:10.1080/03932729.2017.1262502.

Crost, Benjamin, Joseph H. Felter, and Patrick B. Johnston. 2016. "Conditional Cash Transfers, Civil Conflict and Insurgent Influence: Experimental Evidence from the Philippines." *Journal of Development Economics* 118:171–82. doi:10.1016/j.jdeveco.2015.08.005.

Datzberger, Simone, and Mike Denison. 2013. *Private Sector Development in Fragile States.* Helpdesk request. London, UK: Economic, Private Sector Professional, and Applied Knowledge Services to the Department for International Development, September. https://assets.publishing.service.gov.uk/media/57a08a2ced915d622c0005cf/Private_Sector_Development_in_Fragile_States.pdf.

Davis, Peter. 2016. *Private Sector Development in Countries Progressing from Poverty.* Final report to the UK Department for International Development. Rotterdam, The Netherlands: Ecorys, February. https://assets.publishing.service.gov.uk/media/57a0895a40f0b6497400002e/61510_Private-Sector-Development-in-Countries-Progressing-from-Poverty_040416.pdf.

Eagle, Nathan, Michael Macy, and Rob Claxton. 2010. "Network Diversity and Economic Development." *Science* 328 (5981): 1029–31. doi:10.1126/science.1186605.

Einav, Liran, and Jonathan Levin. 2014. "Economics in the Age of Big Data." *Science* 346 (6210): 715–21. doi:10.1126/science.1243089.

Fielding, David. 2003. "Modelling Political Instability and Economic Performance: Israeli Investment during the Intifada." *Economica* 70 (277): 159–86. doi:10.1111/1468-0335.t01-2-00276.

Floreani, Vincent Arthur, Gladys C. Lopez-Acevedo, and Martin G. Rama. 2016. *Conflict and Poverty in Afghanistan's Transition.* Policy research working paper WPS 7864. Washington, DC: World Bank Group, October 17. http://documents.worldbank.org/curated/en/911411476716278238/Conflict-and-Poverty-in-Afghanistans-Transition.

Frias-Martinez, Vanessa, Victor Soto, Jesus Virseda, and Enrique Frias-Martinez. 2012. "Computing Cost-Effective Census Maps from Cell Phone Traces." In *Workshop on Pervasive Urban Applications.* Newcastle, England, June.

Gao, Cheng, Zuzul Tiona, Jones Geoffrey, and Khanna Tarun. 2017. "Overcoming Institutional Voids: A Reputation-Based View of Long-Run Survival." *Strategic Management Journal* 38 (11): 2147–67. doi:10.1002/smj.2649.

Ghiasy, Richard, Jiayi Zhou, and Henrik Hallgren. 2015. *Afghanistan's Private Sector: Status and Ways Forward.* Report. Solna, Sweden: Stockholm International Peace Research Institute, October. https://www.sipri.org/sites/default/files/2016-04/SIPRI_Afghanistans-Private-Sector_Report-2015.pdf.

Guidolin, Massimo, and Eliana La Ferrara. 2007. "Diamonds Are Forever, Wars Are Not: Is Conflict Bad for Private Firms?" *American Economic Review* 97 (5): 1978–93. doi:10.1257/aer.97.5.1978. http://www.aeaweb.org/articles?id=10.1257/aer.97.5.1978.

Hallward-Driemeier, Mary, and Lant Pritchett. 2015. "How Business Is Done in the Developing World: Deals versus Rules." *Journal of Economic Perspectives* 29 (3): 121–40. doi:10.1257/jep.29.3.121.

Hayes-Birchler, Andria. 2013. *The effects of the MCC Effect.* Selection, Eligibility, Department of Policy, and Evaluation, Millenium Challenge Corporation, United States of America, March 1. https://www.mcc.gov/blog/entry/blog-030113-the-effects-of.

Hsieh, Chang-Tai, and Benjamin A. Olken. 2014. "The Missing 'Missing Middle.'" *Journal of Economic Perspectives* 28 (3): 89–108. doi:10.1257/jep.28.3.89.

Independent Evaluation Group. 2014. *World Bank Group Assistance to Low-Income: Fragile and Conflict-Affected States: An Independent Evaluation.* Washington, DC: International Bank for Reconstruction / Development / World Bank. https://openknowledge.worldbank.org/bitstream/handle/10986/16999/9781464802188.pdf.

International Crisis Group. 2017. *Tackling the MENA Region's Intersecting Conflicts.* Brussels, Belgium, December 22. https://www.alnap.org/system/files/content/resource/files/main/tackling-the-mena-region_0.pdf.

International Monetary Fund. 2017. *Iraq: Selected Issues* CR17252. Washington, DC: International Monetary Fund, August 9. https://www.imf.org/~/media/Files/Publications/CR/2017/cr17252.ashx.

———. 2018. *Regional Economic Outlook Update: Middle East and Central Asia.* Washington, DC: International Monetary Fund, May. http://www.imf.org/en/Publications/REO/MECA/Issues/2018/04/24/mreo0518.

Iraq: Prime Minister's Advisory Commission. 2014. *Private Sector Development Strategy.* Baghdad. http://cabinet.iq/uploads/pdf/2015-3/2.pdf.

Jones, Stephen, and Simon Howarth. 2012. *Supporting Infrastructure Development in Fragile and Conflict-Affected States: Learning from Experience.* London: UK Department for International Development, August. https://assets.publishing.service.gov.uk/media/57ebe67de5274a0eba000011/FCAS_infrastructure_final_report_0.pdf.

Kapstein, Ethan B. 2017. *Seeds of Stability: Land Reform and U.S. Foreign Policy.* New York: Cambridge University Press.

Karlan, Dean, and Martin Valdivia. 2011. "Teaching Entrepreneurship: Impact of Business Training on Microfinance Clients and Institutions." *The Review of Economics and Statistics* 93 (2): 510–27. doi:10.1162/REST_a_00074.

Khanna, Tarun, and Krishna Palepu. 1997. "Why Focused Strategies May Be Wrong for Emerging Markets." *Harvard Business Review* 75 (4): 41–51.

King, Gary. 2011. "Ensuring the Data-Rich Future of the Social Sciences." *Science* 331 (6018): 719–21. doi:10.1126/science.1197872.

Klapper, Leora, and Christine Richmond. 2011. "Patterns of Business Creation, Survival and Growth: Evidence from Africa." *Labour Economics* 18:S32–S44. doi:10.1016/j.labeco.2011.09.004.

Le, Quan V. 2004. "Political and Economic Determinants of Private Investment." *Journal of International Development* 16:589–604. doi:10.1002/jid.1109.

Leonardo, Ernest, and Lawrence Robertson. 2009. *Assessment of Corruption in Afghanistan.* Report. Washington, DC: United States Agency for International Development. https://pdf.usaid.gov/pdf_docs/PNADO248.pdf.

Li, Yue, and Martín Rama. 2015. "Firm Dynamics, Productivity Growth, and Job Creation in Developing Countries: The Role of Micro- and Small Enterprises." *World Bank Research Observer* 30 (1): 3–38. doi:10.1093/wbro/lkv002.

Liu, Chaoying, and Emily Harwit. 2016. *The Effectiveness of Private Sector Development Interventions in Fragile and Conflict-Affected Situations: Evidence from Evaluations.* Report. Washington, DC: International Finance Corporation, November. https://openknowledge.worldbank.org/handle/10986/28497.

Lund, Aron. 2018. *The Factory: A Glimpse into Syria's War Economy.* Report. Washington, DC: The Century Foundation, February 21. https://tcf.org/content/report/factory-glimpse-syrias-war-economy/.

Mac Sweeney, Naoise. 2008. *Private Sector Development in Post-Conflict Countries: A Review of Current Literature and Practice.* Cambridge, UK: Donor Committee for Enterprise Development. https://www.enterprise-development.org/wp-content/uploads/PostConflict_PSD_EN.pdf.

McDougal, Topher L. 2017. *The Political Economy of Rural-Urban Conflict: Predation, Production, and Peripheries.* New York: Oxford University Press.

North, Douglass C. 1990. *Institutions, Institutional Change, and Economic Performance.* New York: Cambridge University Press.

North, Douglass C., John Joseph Wallis, and Barry R. Weingast. 2009. *Violence and Social Orders: A Conceptual Framework for Interpreting Recorded Human History.* New York: Cambridge University Press.

Pakistan Bureau of Statistics. 2005. *Census of Manufacturing Industries (CMI).* Database. Government of Pakistan, June.

Pakistan Ministry of Finance. 2017. *Economic Survey, 2016–2017.* Ministry of Finance, Government of Pakistan.

Rodrik, Dani. 2008. *Normalizing Industrial Policy.* Working paper 3. Washington, DC: The International Bank for Reconstruction, Development / The World Bank on behalf of the Commission on Growth, and Development. http://documents.worldbank.org/curated/en/524281468326684286/pdf/577030NWP0Box31UBLIC10gc1wp10031web.pdf.

Schrade, Urs, Birgit Seibel, Christine Weinreich, and Susanne Reichenbach. 2017. *Is there a Case for Private Sector Development Interventions in Contexts of Open and Sustained Violence?* Discussion paper. Bonn, Germany: Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, February. https://www.enterprise-development.org/wp-content/uploads/GIZ-CFAE-PSD-in-Open-Sustained-Violence.pdf.

Stasavage, David. 2002. "Private Investment and Political Institutions." *Economics & Politics* 14 (1): 41–63. doi:10.1111/1468-0343.00099.

Svensson, Jakob. 1998. "Investment, Property Rights and Political Instability: Theory and Evidence." *European Economic Review* 42:1317–41. doi:10.1016/S0014-2921(97)00081-0.

Turner, Mark, Ribaun Korm, and Kim Veara. 2017. "Government Policy and Private Sector Development in Post-conflict States: Growing Cambodia's Rice Production and Export Industries." *The Economic and Labour Relations Review* 28 (2): 252–69. doi:10.1177/1035304617705269.

Tybout, James R. 2000. "Manufacturing Firms in Developing Countries: How Well Do They Do, and Why?" *Journal of Economic Literature* 38 (1): 11–44. doi:10.1257/jel.38.1.11.

U.S. Department of State. 2017. *Afghanistan.* Investment Climate Statements 2017. Kabul, Afghanistan: Bureau of Economic and Business Affairs, U.S. Department of State, June 29. https://www.state.gov/e/eb/rls/othr/ics/2017/sca/270011.htm.

UK Department for International Development. 2015. *National Security Strategy and Strategic Defence and Security Review 2015.* White paper. London: HM Government and Department for International Development, November. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/555607/2015_Strategic_Defence_and_Security_Review.pdf.

Ullah, Akbar, Ejaz Ghan, and Attiya Y. Javed. 2013. *Market Power and Industrial Performance in Pakistan* 88. Islamabad: PIDE Working Papers, Pakistan Institute of Development Economics.

United States Senate. 2011. *Foreign Assistance to Afghanistan.* Report. Washington, DC.

White, Lawrence J. 1974. *Industrial Concentration and Economic Power in Pakistan.* Princeton, NJ: Princeton University Press.

World Bank. 2016a. *Afghanistan: Systematic Country Diagnostic.* Washington, DC: World Bank Group, February 1. http://documents.worldbank.org/curated/en/302911468190767498/Afghanistan-Systematic-country-diagnostic.

———. 2016b. *Afghanistan: Systematic Country Diagnostic.* Washington, DC: World Bank Group, February 1. http://documents.worldbank.org/curated/en/302911468190767498/Afghanistan-Systematic-country-diagnostic.

———. 2017a. *Growth: A Shared Responsibility.* Pakistan development update. Washington, DC: World Bank Group, May 1. http://documents.worldbank.org/curated/en/536431495225444544/Growth-a-shared-responsibility-Pakistan-development-update.

———. 2017b. *Iraq: Systematic Country Diagnostic.* Washington, DC: World Bank Group. http://documents.worldbank.org/curated/en/542811487277729890/Iraq-Systematic-Country-Diagnostic.

———. 2018a. *Doing Business Surveys.* database. World Bank, Washington, DC, October 31. https://datacatalog.worldbank.org/dataset/doing-business.

———. 2018b. *Enterprise Surveys.* Dataset. Washington, DC: Enterprise Analysis Unit, World Bank. http://www.enterprisesurveys.org/.

———. 2018c. *World Development Indicators.* database. World Bank, Washington, DC, May 3. http://data.worldbank.org/data-catalog/world-development-indicators.

———. 2018d. *World Governance Indicators.* database. World Bank, Washington, DC, October 4. https://datacatalog.worldbank.org/dataset/worldwide-governance-indicators.

Appendix A

Abbreviation List

BMZ	German Federal Ministry for Economic Cooperation and Development (BMZ)
Devco	Directorate-General for International Cooperation and Development
DFID	UK Department for International Development
DRC	Democratic Republic of Congo
FCS	Fragile Conflict-affected States
GIZ	Deutsche Gesellschaft fur International Zusammenarbeit (GIZ) GmbH
GoA	Government of Afghanistan
IBRD	International Bank for Reconstruction and Development (World Bank Group)
IDA	International Development Association (World Bank Group)
IEG	Independent Evaluation Group (World Bank Group)
IMF	International Monetary Fund
M&E	Monitoring and Evaluation
MENA	Middle East & North Africa
MIGA	Multilateral Investment Guarantee Agency
MSME	Micro Small Medium Enterprise
ODA	Official Development Assistance
PSD	Private sector development
RCT	Randomized Control Trial SOC
State-Owned Corporations	
SOE	State-Owned Enterprises
SPI	Socio-Political Instability
USAID	United States Agency for International Development
WB (WBG)	The World Bank (Group)

Appendix B

Country Lists

Middle East and North Africa (MENA)

Algeria	DZA
Djibouti	DJI
Egypt, Arab Rep.	EGY
Iran, Islamic Rep.	IRN
Iraq	IRQ
Jordan	JOR
Lebanon	LBN
Libya	LBY
Morocco	MAR
Syrian Arab Republic	SYR
Tunisia	TUN
Yemen, Rep.	YEM

South Asia

Afghanistan	AFG
Bangladesh	BGD
Bhutan	BTN
India	IND
Nepal	NPL
Pakistan	PAK

Note: Regional country lists are based on World Bank classification, IDA & IBRD recipient status and available data.

DFID Priority Countries

Afghanistan	Ethiopia	Nigeria
Bangladesh	Guinea	Somalia
Central African Republic	Guinea-Bissau	Sudan
Chad	Haiti	Syrian Arab Republic
Congo, Dem. Rep.	Iraq	Uganda
Eritrea	Niger	Zimbabwe

DFID Fragility Countries

Neighboring	Low Fragility	Mid-Fragility	High Fragility
Armenia	Belarus	Angola	Afghanistan
Algeria	Cameroon	Azerbaijan	Burundi
Jordan	Congo, Rep.	Bangladesh	Central African Republic
Lao PDR	Colombia	Egypt, Arab Rep.	Congo, Dem. Rep.
Rwanda	Djibouti	Ethiopia	Eritrea
Thailand	Honduras	Guinea	Iraq
Tunisia	Cambodia	Guinea-Bissau	Pakistan
Turkey	Liberia	Haiti	Sudan
Tanzania	Madagascar	Kenya	Somalia
Zambia	Mauritania	Kyrgyz Republic	South Sudan
	Niger	Lebanon	Syrian Arab Republic
	Nepal	Mali	Chad
	Paraguay	Nigeria	Yemen, Rep.
	Sierra Leone	Tajikistan	
	Timor-Leste	Uzbekistan	
	Uganda	Venezuela, RB	
	Ukraine	Zimbabwe	

Note: DFID Priority lists based on DFID categorized lists and available data.

Cross-National Analysis, 33 Countries

Afghanistan	AFG
Angola	AGO
Bangladesh	BGD
Burundi	BDI
Cameroon	CMR
Central African Republic	CAF
Chad	TCD
Colombia	COL
Democratic Republic of Congo	COD
Egypt	EGY
Ethiopia	ETH
India	IND
Indonesia	IDN
Iraq	IRQ
Israel	ISR
Kenya	KEN
Lebanon	LBN
Mali	MLI
Myanmar	MMR
Niger	NER
Nigeria	NGA
Pakistan	PAK
Philippines	PHL
Russia	RUS
Rwanda	RWA
South Sudan	SSD
Sri Lanka	LKA
Sudan	SDN
Tajikistan	TJK
Thailand	THA
Turkey	TUR
Uganda	UGA
Yemen	YEM

Note: Countries selected which experienced at least one civil conflict event between 2001 and 2011 with World Bank Enterprise Survey data available.

Appendix C

Footnote on Enterprise Surveys Methodology

Description of World Bank Enterprise Survey Dataset and Methodology: We use the database on Enterprise Surveys by the World Bank Group for the period 2006–2017. There are 133 countries in this set. We utilize the standardized set for the countries of interest whenever possible, as this dataset has been released more recently and has more complete and comparable variables to apply the survey methodology (e.g. stratification and weights). For Afghanistan, the survey years are 2008 and 2014, we utilize the data from 2014. Pakistan and Iraq survey sets correspond to 2013 and 2011, respectively.

The sample for each country is stratified by industry, firm size, and geographic region. The level of detail of the stratification by industry depends on the size of the economy. Stratification by size follows the three levels presented in the text: small, medium, and large. Regional stratification includes the main economic regions in each country. Through this methodology estimates for the different stratification levels can be calculated on a separate basis while, at the same time, inferences can be made for the non-agricultural private economy as a whole. For more details on the sampling strategy, review the Sampling Note available at `www.enterprisesurveys.org`.

Appendix D

Data Feasibility

Conflict data: A number of sources provide event-level data on conflict around the world. We employ the UCDP Georeferenced Event Dataset (GED) Global version 18.1 (2017). These data cover individual events of organized violence (phenomena of lethal violence occurring at a given time and place) geo-coded down to the level of individual villages. The UCDP data provide the broadest coverage over time and space on conflict events, though for individual conflicts they represent an undercount of total violence as they are based on press reporting.

Firm-level data: We conducted an extensive search to identify potential sources of firm-level data on conflict from the following locations:

- Library data catalogues
- The UC Berkeley Distributed Meta-Aalysis System (DMAS)
- The Inter-university Consortium for Political and Social Research (ICPSR) catalogue
- Various official statistical agencies to include:
- National statistical agencies for Afghanistan, Iraq, and Pakistan
- Country-level indicators such as the WDI, WGI, UNOSAT, and FRED
- WB Enterprise Survey for firm-level outcomes

Aggregate macroeconomic indicators from international agencies (in particular the World Bank) were available from 1997 onward for all countries. The only source of reliable industrial or sectoral data we identified that covered multiple countries over time were the World Bank Enterprise Surveys from 2000-2016. UNSTAT, EUKLEMS, and other ICPSR datasets where industry-level aggregate statistics are available do not cover low- and middle-income countries reliably and have poor coverage for MENA.

We therefore focused on analysis linking firm-level outcomes from the WB enterprise survey (e.g. share of managers who are female) to aggregated conflict data.