Private Equity as a Canary in a Coal Mine: Building the Ecosystem for Effective Global Financial Integration
Private Equity as Canary in a Coal Mine: Building the Ecosystem for Effective Global Financial Integration

Stephen J. Mezias*

Prodyumna Goutam**

Revised version of 2012/102/EFE

Forthcoming in Managerial and Decision Economics

This research was undertaken when Prodyumna Goutam worked as a Research Associate at the Centre for Public Policy at the Indian Institute of Management, Bangalore. He has since left to pursue graduate studies. We would like to thank seminar participants at IIM, Bangalore and the University of Nairobi, and at two conferences, SuperReturns Berlin and Private Equity International Istanbul, for comments and suggestions. All remaining errors are our own.

* Professor of Entrepreneurship and Family Enterprise at INSEAD, Abu Dhabi Campus, Muroor Road – Street n° 4 P. O. Box 48049 Abu Dhabi, UAE. Email: Stephen.mezias@insead.edu Corresponding author

** Research Associate at Indian Institute of Management, Bannerghatta Road, Bangalore, India. Email: goutamprodyumna@gmail.com

This working paper was developed using funds made available through the Abu Dhabi Education Council, whose support is gratefully acknowledged.

A Working Paper is the author’s intellectual property. It is intended as a means to promote research to interested readers. Its content should not be copied or hosted on any server without written permission from publications.fb@insead.edu

Find more INSEAD papers at http://www.insead.edu/facultyresearch/research/search_papers.cfm
Abstract

A burgeoning private equity (PE) industry provides investment capital to build the capacity of an economy for innovation and entrepreneurial growth. We argue that for PE to contribute to this capacity building requires effective systems for allocation of financial capital to the private sector and an ecosystem of supportive organizations. To illustrate these claims, we review the recent history of PE in the MENA region to contrast the PE industry in MENA, which stagnated after the financial crisis, with the industry in Turkey, which recovered quickly from a brief pause after the crisis and has thrived since 2008.

Keywords: Private Equity; Organizational Forms; Middle East and North Africa.
Introduction

As the recent financial crises have made clear, the many benefits of globalization, more specifically integration with global financial markets, can be accompanied by significant risks (Agenor, 2003). For a variety of reasons, not least the complexities of the multiple issues involved, research on this topic has been relatively sparse. In hopes of making progress in the face of these apparent difficulties, we will concentrate on only one piece of the global financial integration puzzle, but one that we believe is particularly important. More specifically, we focus on the capability of an economy to allocate capital effectively to the private sector and private equity (PE) investments as a lead indicator of this capability. In particular, we argue that because it offers the possibility of much greater involvement by the investor, PE is an important indicator for how integration with global financial markets can create economic value. This can range from the transfer of managerial knowledge to guide effective organizational practices in nascent firms to the development of products to tap into latent demand in frontier markets. However, our analysis suggests that the value creation that differentiates private equity from other investments does not occur only at the firm level, investment by investment. Rather, successful PE investments should be regarded as part of a much larger pattern of activities that allow an economy to derive benefits from global financial integration. To frame these arguments, we will review the travails of the PE industry in the Middle East-North Africa (MENA) region during the recent past.¹ We interpret this recent history to suggest that the creation of an ecosystem to support PE investments can be regarded as an important signal of the capability and capacity of an economy for effective integration into the global finance system.

This is the rationale for the metaphor suggested by our title comparing PE with a canary in a coalmine. In the years before more sophisticated technologies became available, miners would keep canaries in the coal mine as an early warning against the presence of poisonous gasses. As long as

¹ MENA countries are Algeria, Djibouti, Egypt, Iran, Iraq, Jordan, Lebanon, Libya, Malta, Morocco, Syria, Tunisia, West Bank and Gaza, Yemen, Bahrain, Oman, Qatar, United Arab Emirates, Kuwait, and Saudi Arabia.
the canaries remained healthy, the miners would remain below ground and productive activity would continue. Similarly, we view the situation where the level of private equity investments remains steady or even grows, as a sign that the economy as a whole has in place the ecosystems to turn financial capital into sustained economic growth. Equally important to our thesis is the opposite situation, when the canaries are falling sick or dying; this was the sign to the miners that it was time to exit. Similarly, when PE investments fail on a wide scale, this becomes a sign that effective global financial integration is not happening, and financial capital will exit the economy, unlikely to reenter in the near term.

Of course, the economic benefits of private equity do not occur simply because stakes in the firm are sold privately rather than listed on public markets. Instead, we argue that private equity investors adopt an inherently longer time frame in assessing their investment targets and act to enhance the long-run value of the firms in which they have taken stakes. Although the evidence is mixed regarding the short-run impact of PE investments, research has demonstrated that PE investments increase levels of employment and wages in the longer run (Wright et al., 2007; Work Foundation, 2007; Cressy, Munari, and Malipiero, 2007). With regard to growth and investment strategies, Davis et al. (2008) found that firms that received PE investments were more effective with value added strategies, were more likely to broaden their market focus than other new ventures, and made more effective investments in product development. Similarly, Bruining and Wright (2002) and Lerner, Sørensen and Stromberg (2008) found that PE investment was associated with more effective research and development. For example, firms that had PE backed buyouts focused their patent portfolios to yield increased patent citations with no reduction in the quantity of patents. Cao and Lerner (2007) found that firms that had received PE investments yielded better than average market returns for years after the investments. In a study of middle market transactions across nineteen industries, Chapman and Klein (2009: 24) found that PE investments were associated with
growth, the ultimate driver of wealth creation for smaller companies. For over three quarters of their sample, revenues, operating profits, and total employment increased; they concluded that PE investments were a catalyst for exploiting scale and scope economies and providing operating leverage. A similar conclusion is suggested by the finding of Wilson, Wright and Scholes (2011: 2) linking PE investments with more resilient performance following the 2008 financial crisis and recession. Their research showed that private-equity backed buyouts had better economic performance in the period before and during the recent recession than a matched sample of private companies and listed companies. In fact, the performance of the firms experiencing private equity-backed buyouts actually showed a higher return on assets, greater ability to cover the interest payments on their debt, and higher gross margin in the recession period than before it.

In the remainder of this study we elaborate these points by presenting some suggestive comparisons using a variety of measures of the financial system of the MENA region. This region is a particularly appropriate setting for our arguments for at least three reasons. First, the financial integration of economies in this region, especially in terms of share of foreign direct investment, has remained low given both the size of the population and the levels of GDP (Khoury and Wagner, 2009). Second, there were huge increases in flows of financial capital to the region in the years before the financial crisis, particularly through alternative investments such as private equity. To assess the impact of these monies, we use two kinds of data to provide a rough assessment of the relationship between financial capital and sustainable economic growth: measures of how capital has been allocated in these economies and the flow of investment capital. The latter is specifically relevant to our claim that PE investments and the ecosystem that support them are lead indicators of effective global financial integration. Third and related, the region offers the opportunity for a comparison that informs our thesis: not all countries fared badly in the wake of the collapse of investment inflows in 2008. Indeed, while PE investments in the rest of the region have stagnated,
the industry in Turkey recovered quickly from a brief pause after the crisis and has thrived since 2008.

In the remainder of this study, we compare Turkey with the MENA countries in terms of capital allocation, the quantity and success of PE deals, and the ecosystem for supporting PE investments. We interpret these comparisons to inform our thesis concerning the emergence and growth of the ecosystem in these geographies to support economic value creation through private equity investments. A burgeoning PE industry can play an important role in attracting investment into the domestic productive capacity of emerging markets, fostering the creation of new firms and industries that develop and diversify economies. In the rest of the paper, we proceed as follows. First, we review the readiness of economies to use PE money effectively by investigating their success at allocating financial capital to the private sector. Second, we extend our argument about the allocation of credit to the private sector by elaborating the notion of an ecosystem to support private investment, including PE investments. Then, we integrate our findings about allocation of capital to the private sector and the ecosystem to support private investment by linking them with quantity of deals in MENA and Turkey as well as the comparative success of PE funds with investments in Turkey. We close by discussing some implications of our findings and outlining the key conclusions.

**Allocating Financial Capital to the Private Sector**

We begin by investigating country level data for a series of measures that we interpret as indicators of effective allocation of capital to the private sector. The primary conclusion from all these measures is that Turkey succeeded in creating a robust conduit for allocating capital to the private sector through both the banking system and the equity markets. Of course, more fine-grained data tracking actual credit flows and investments would be preferable, but gathering such longitudinal data for multiple countries would be extremely difficult. Further, since our
investigation is explicitly exploratory, we believe that there is some value in assessing rough indicators of allocation of capital to the private sector, particularly because we believe it is very relevant to the issue of successful integration of emerging markets into global financial markets. The question of what constitutes successful integration, although difficult to answer, is important, particularly in light of fundamental change in global investment patterns. Specifically, financial flows between emerging markets, such as the MENA region and Turkey, and global financial centers in the developed world have increased rapidly in recent decades (Lane and Milesi-Ferretti, 2001; 2003; 2008).

In his review of the potential benefits and costs of global financial integration, Agenor (2003: 1092) focused on the importance of expanding access to credit for the private sector in emerging economies. He began his argument with the observation that the capacity to save in many developing economies is constrained by low levels of income; yet these economies need considerable financial investment to fund their growth. By his logic, the key parameter is whether the marginal rate of return from investment in an emerging economy is at least equal to cost of (borrowed) capital. When this is true, “… net foreign resource inflows can supplement domestic saving, increase levels of physical capital per worker, and help the recipient country raise its economic growth and improve living standards.” Based on this argument, we examine credit provision to private sector participants in the MENA region and in Turkey. Specifically, we take the credit extended to the private sector by deposit money banks and other financial institutions to be our primary measure of credit provision. This indicator has been widely used in the international economics literature to capture the private sector’s access to capital pools. For example, Levine, Loayza, and Beck (2000: 10) underscore the usefulness of the measure in capturing the extent to which savings are translated into credit for private sector projects. According to their argument, this measure is superior to measures of the size of the financial sector because it separates credit issued to
the private sector from credit issued to governments, government agencies, and public enterprises. Figure 1 charts the annual growth in the ratio of private sector credit provision to GDP from 1991 to 2009; for the MENA region, this is calculated by taking the average of year-on-year growth rates for individual countries, which is compared with the year-on-year growth rate for Turkey.²

**Insert Figure 1 about here.**

From 1991 to 2000, private sector credit provision in Turkey was extremely volatile; 1996 marked the pinnacle with a growth rate of 0.245, and 1998 marking the nadir with a growth rate of negative -0.22. On the other hand, MENA countries – on average – maintained largely positive rates with the exception of 1992 and 2000. Both the MENA region and Turkey saw sharp decreases in growth rates between 2000 and 2002. Beginning in 2002, growth in private sector credit for Turkey has remained ahead of the MENA region. Although a downturn for Turkey in 2005 had the result that the rate was almost equal with that of the MENA average by 2007, 2008 marked a distinct deceleration for the MENA region while the rate for Turkey has remained more or less the same. Thus, this data reveals two trends in private sector credit allocation. First, there has been a generally positive trend for Turkey since 2002. Second, the rate in Turkey was hardly affected by the financial crisis of 2008 while the rate in MENA suffered a considerable decline.

The work of Ben Naceur, Ben Khedhiri, and Casu (2011: 5) suggested another measure of the extent to which the economies have been successful at expanding credit allocated to the private sector. Consistent with their study, we consider “… the extent to which banks intermediate savings into private sector credits.” The relevance of their argument and this measure to our interest in effective private sector use of financial capital rests on the meaning of a high credit-to-deposit ratio. They suggest that a ratio less than one indicates that private sector lending is funded with non-deposit sources; given the need for banks to balance liabilities (deposits) and assets (loans), this can

---

² All of the country level data that we use for these comparisons (Figures 1–3) come from the November, 2010 version of the financial structure dataset by Thorsten Beck, Asli Demirgüç-Kunt, and Ross Eric Levine, available at econ.worldbank.org. The countries included in MENA are the same as listed previously. However, the particular countries included in specific years is subject to data availability, and some countries are missing for certain years; for details, please contact the authors.
result in funding instability. Figure 2 presents data on this ratio for MENA and Turkey;\(^3\) while neither Turkey nor the MENA region exhibit a ratio greater than one, only Turkey ever rises significantly above 0.7. Of course, Turkey does exhibit a steep fall from 0.759 in 1997 to 0.358 in 2001; thus, the translation of deposits into private sector credit was severely constrained within this time period. However, the years after 2001 saw a sustained rise in credit to deposit ratio, surpassing the MENA average in 2006 and remaining above that average to end with 0.861 in 2009. The average in the MENA region, by contrast, has remained fairly stable, oscillating between a minimum of 0.64 and a maximum of 0.70. Neither region achieves a ratio greater than one during the time period considered, which suggests caution in being overly optimistic about performance on this metric. Nonetheless, we conclude that the mechanism of allocating deposits to provide credit is more robust in Turkey than in the MENA region.

**Insert Figure 2 about here.**

Having presented two measures linked with the banking sector, we add a measure that we believe is particularly relevant to the effective use of PE investment capital by turning our attention to equity markets. If initial public offerings represent the mode of exit for PE investments that maximizes value (Leeds and Sunderland, 2003: 12), then there should be a close relationship between the extent to which local equity markets provide liquidity and PE activity. Beck, Demirgüç-Kunt, and Levine (1999: 17) argued that that the ratio of “… stock market total value traded to GDP …” is the best measure of the liquidity of the stock market. This measure is defined as total value of shares traded on the stock market exchange divided by GDP, which requires no deflation since both numerator and denominator are flow variables measured over the same time period. This is a better

---

\(^3\) More precisely, this ratio measures the provision of credit to the private sector by deposit money banks as a proportion of three kinds of deposit accounts in money banks: demand, time and savings.
measure of liquidity than total market capitalization, which measures market size more than market turnover. 4

In Figure 3, we compare the average ratio across the MENA countries with the ratio for Turkey between 1990 and 2009 in Figure 3. MENA displays a gradual rise in the total value traded on stock markets from 1990 to 2002, which accelerates from 2002 to 2005. This largely coincides with the development of stock exchanges around the region in places such as Dubai; however, from 2005 onwards, we begin to see a decline in stock market activity. In fact, it is interesting to note that this decline precedes the financial crisis of 2008; this can be interpreted to suggest that even during the height of the financial boom that preceded the crash, investors perceived a lack of depth in MENA equity markets (Harrison and Moore, 2012). The trend for Turkey looks dramatically different: given the fact that the country had a more developed financial system, activity took off much earlier than MENA, that is from 1992 onwards. The major crash in local stock market activity was encountered right at the turn of the century; the ratio of total value traded to GDP fell from 0.67 in 2000 to 0.30, two years later. From this point, however, the Turkish stock market has shown considerable resilience, with activity increasing steadily from 2002 to 2009; even the financial crisis and subsequent global recession did not stop the rise in equity activity relative to GDP.

Insert Figure 3 about here.

All of the measures comparing the allocation of financial capital to the private sector in MENA and Turkey reveal some consistent patterns. From 2002 to the present, Turkey has shown net improvement on all measures, while MENA has not. Indeed, Turkey pulled ahead of MENA on all of these measures before the financial crisis of 2008. Thus, it seems clear that the better performance of Turkey relative to MENA on all of these measures cannot be attributed to the financial crisis. It is also true that Turkey has outperformed MENA in the wake of the financial crisis.

---

4 This is particularly true for the emerging markets of MENA, which are characterized by extremely low levels of volume and share sales, which Harrison and Moore (2012) call thin trading. Given the problems with thin trading we believe that the level of activity of the domestic stock market rather than market capitalization as a ratio of GDP is the better measure of the extent to which the stock market provides liquid financing to the private sector.
crisis. Indeed, while the performance of MENA remained flat or declined after the financial crisis, the performance of Turkey has either improved or remained relatively unaffected. We conclude from this review of the data that Turkey has done a better job allocating financial capital to the private sector in recent years than the countries of the MENA region.

The Private Investment Ecosystem in MENA and Turkey

We have established the favorable comparison of Turkey with the MENA region in terms of the ability of the economies to allocate financial capital, both credit and equity investments, to the private sector. In this section, we extend this suggestive finding by providing some evidence consistent with the claim that these differences might be understood in terms the development of an ecosystem to support private sector investments. Where the ecosystem develops well, presumably as credit and equity investments allocated to the private sector increase, e.g., in Turkey, financial capital can be used more productively. By contrast, when there is less allocation of credit and equity to the private sector, then the development of an ecosystem to provide structural support for private investment will languish. Whether investments in the private sector, for example, PE investments, chase short-term returns rather than productive investments will be affected by the ability of the ecosystem to support the latter. Indeed, our presumption is that the allocation of capital to the private sector in an economy builds capabilities that facilitate private investment activity; we will discuss these capabilities in terms of the community of organizations that deploy particular competencies to support private equity investments, which we shall refer to as the PE ecosystem.

The literature to date on the factors that drive PE investment in emerging markets has focused almost exclusively on the legal-financial systems and related institutions at the national level. For instance, in their assessment of the causes behind the underperformance of PE in emerging markets relative to US and Europe, Leeds and Sunderland (2003) point towards three main institutional factors: weak corporate governance standards, unreliable legal institutions, and shallow
markets for initial public offerings (IPO). In relation to the first, lax accounting practices and insufficient regulatory oversight lead to severe informational gaps between investors and target firms in terms of the provision and quality of information about finances and operations. Although the authors note that this problem is particularly salient during the due diligence stage, they also argue that these information asymmetries remain as investors try to assess the health and progress of their portfolio companies.

The loss in investor confidence arising from information asymmetries associated with weak accounting standards are further aggravated by the weak enforceability of contractual rights in some emerging markets. Investors rely on the threat of legal action to provide the necessary disincentives against contract breach; the lack of proper channels for registering and pursuing legal claims undermine this support. Additionally, as Leeds and Sunderland observed (2003:12), a maze of personal connections and the prevalence of corruption mean that local parties “… tend to be exceedingly adept at navigating the ins and outs of the legal system.” As they note, this puts foreign investors at a distinct disadvantage in the judicial resolution of disputes.

The third factor behind the underperformance of PE in emerging markets is a weak IPO market. According to Leeds and Sunderland (2003: 12), IPOs are the fundamental driver of the private equity industry, as they “… tend to maximize firm value.” However, the lack of depth in many equity markets in developing countries means that IPOs are not a viable exit option for PE investors. Furthermore, equity markets in emerging economies often serve as a capital-raising vehicle for only the largest of firms. For example, evidence from Latin America and Asia collected by Leeds and Sunderland (2003) showed that a small number of firms dominated daily trading volume in both geographies.

The importance of these three institutional factors in driving PE activity has been underscored repeatedly in the literature. Indeed, the gospel of the effects of financial-legal
institutions on PE investments is widely believed among the congregation of participants in PE markets. Our own data, based on 40 survey responses from and 25 interviews with participants in PE in the MENA region, reveal similar beliefs, as indicated by Figure 4.5

Insert Figure 4 about here.

Here we report the answers to a question about the major concerns of those who supply the capital for PE investments, so-called limited partners (LP). More than 80% of those who responded listed transparency in their relationship with the investing firms, so-called general partners (GP), as one of their top concerns. Indeed, this was regarded as more important, albeit by a small margin, than returns themselves; in other words, respondents indicated slightly more concern about whether the process was transparent than about returns. Nearly two thirds expressed concern about the alignment of interest between LP and GP; this concern outweighed concern about the two kinds of fees that GP charge LP, management fees and carry deal fees. Not surprisingly, we find these data convincing, but we would also suggest that a focus on institutional reform as a response to these concerns is incomplete in at least two ways. First, a narrow focus on national policy reform suggests an understanding of institutions and how they facilitate economic activity that is incomplete (Zucker, 1983). Second, a focus on legal financial institutions diverts attention from the capabilities and capacities for coordinated private action that enhance the success of PE investments.

With respect to the first point, words like quality institutions, transparency, corporate governance, and corruption are often used, particularly in discussions of countries in the developed world, as if they had a singular meaning. This often translates into discussions of policy options that characterize institutions to support economic development in binary fashion, almost as if there were a switch that policy makers could operate to reform the climate for foreign investment. This simplistic representation is often accompanied by an emphasis on single measures of institutional

---

5 The survey results come from an unscientific survey of 40 key industry participants conducted in the second quarter of 2011. The details are reported in Balze, Mezias and Bazian (2011).
quality. For example, corruption is often reported in terms of an index score, e.g., the corruption perceptions index published by Transparency International.\textsuperscript{6} We do not mean to suggest that single dimension measures are never useful, far from it; rather, our point is that we need to bear in mind that thinking about these issues has to be multidimensional, even if we use single measures on occasion to summarize particularly relevant facts about global economies. This is borne out by the fact that almost every comparative study reveals significant differences in the systems of developed economies such as those of Germany, Japan, and the USA with respect to all of these institutions (e.g., Witt, 2004). Thus, we advocate an approach to thinking about the institutional context of PE investments that takes a broader view than simply advocating policies designed to produce ‘high quality’ institutions.

Second, the fact that policy regimes vary significantly among developed economies suggests the importance of culture and prevailing practice in determining what will be encoded in the official policies of the legal environment. This has been documented in great detail with respect to civil rights law and organizational practices in the US (e.g., Edelman, 1990; 1992), but we believe it is likely equally true with respect to legal principles and norms governing financial practices. Indeed, this is almost certainly part of the explanation for why different average concentrations of ownership in the equity markets of different developed economies are associated with very different regimes for regulating those markets (e.g., Maher and Andersson, 1999). More to our point, since new laws and regulations often only affirm what is already the prevailing practice on the ground (Abzug and Mezias, 1993), advocating change to policy and legal guidelines is likely insufficient. Therefore, we suggest that analysis of the institutions to support PE investments can also be framed around capabilities on the ground and how the organized interests that possess them have influenced and reacted to policy. Participants in the MENA PE market understand that statements about institutions only have meaning when they are linked with capabilities on the ground and the extent to which the

\textsuperscript{6}http://www.transparency.org/policy_research/surveys_indices/cpi
entire ecosystem facilitates certain activities. For example, the head of a major private equity firm based in Bahrain elaborated the ‘difficulty of exits’ during an interview.\footnote{We conducted interviews with twenty-five participants in the PE industry from the MENA region; again this was a convenience sample. The details are reported in Balze, Mezias and Bazian (2011).} His detailed observations about the travails of using the equity markets for exit from PE investments in MENA summarize some of the key challenges: “The region does not have very liquid public markets. Stock exchanges are fragmented. Listing requirements are not standardized across MENA … requirements in terms of corporate governance are often below international standards … As a result, the time and level of effort involved in educating business owners, structuring a deal, institutionalizing, growing and exiting a company is very high in the region compared to western markets.” Fragmented markets, non-standard listing requirements, the lack of knowledge among business owners, the need for templates to structure deals, and the difficulty of founding, nurturing, and selling businesses are complex problems that cannot be solved by a simple wave of the visible hand.

For these reasons, we take an ecosystem view of how particular sets of institutions might engender investor confidence, which we depict in Figure 5. We emphasize the competencies and capabilities not just of PE firms but also of all the organizations that support them, such as firms that provide fund services, special advisers (like logistics, information technology, and management consultancies), legal services, and banking and transaction services. Of course, the actual ecosystem is likely far more complex than our simple representation, and there are likely significant differences across countries, regions, cultures, and levels of development in terms of the relative importance of specific components of the ecosystem. Nonetheless, we believe that the ecosystem perspective captures something fundamentally important about what leads to the success of private equity investments. Thus, we link the presence and vibrancy of this community of organizations with the ability of PE investors to create value. Ultimately, value creation is what sustains investor confidence and the flow of financial resources to PE investments in the local economy.
Taking a community ecology view, we emphasize the capabilities that support PE investments and how they are embedded in particular organizational forms. For example, a capability for effective corporate governance can be mapped to the presence of specialized audit and tax accounting firms. Similarly, the depth of legal institutions can be mapped to the presence of law firms that specialize in PE contracts and the legal services firms that support those contracts. Specific forms of managerial know-how can be mapped to the presence of firms that provide advisory services in areas like information technology, logistics, and management consulting. This shifts the focus of the analysis away from abstractions like ‘institutional quality’ and puts attention on more tangible issues such as the presence and quality of firms with capabilities that allow PE investments to thrive. The benefit of adopting a community ecology lens on PE is that it allows for a bottom-up analysis of the emergence and growth of the PE industry. Re-focusing the discussion to consider the myriad of organizations that bolster the industry can provide insights at a level of granularity that is missing from more abstract discussions of financial legal institutions. Moreover, from a policy perspective, the prescription of enacting profound changes to the underlying institutions of a country’s economy leads almost inevitably to paralysis by analysis or even worse, egregiously misguided policy. By contrast, we emphasize the possibilities for policies to enhance PE investments by facilitating the development of complementary capabilities, e.g., in information technology integration, efficient supply chain management, or transaction services.

Much like the idea of an ecosystem in biology, a PE ecosystem refers to a clearly delineated set of organizations that provide services to support successful PE investment. When parts of this community of organizations are underdeveloped or even absent in an economy, PE investment cannot play its full role in advancing economic development. Although there is not yet convergence in the literature on a formal definition of the set of firms that constitute a PE ecosystem, it is possible
to deduce what they might be from the perspective of practitioners (e.g., the regular listing of industry categories in trade publications such as those of Private Equity International). For example, one might argue that the PE ecosystem consists of organizations providing specific kinds of services such as fund services, special advisers (such as information technology, logistics, and management consulting firms), legal services, and banking and transaction services. Consistent with this approach, the robustness of the PE ecosystem could be measured in terms of the presence or absence of these various types of firms.

As a first approximation to the strength of the PE ecosystem in Turkey and the MENA countries, we gathered evidence about how frequently the component organizational forms are mentioned in cyberspace. Our central claim is simple; most organizations, particularly newer ones engaged in professional services, are likely to have at least a minimal presence on the internet. Thus, internet search results associated with private equity, each of these organizational forms, and the names of the respective countries should give us some idea of the presence or absence of the various forms to support the private equity industry in the MENA region. We used English language terms based on our assumption that the vast majority of the professional service firms would have some English language presence even if the majority of their business were conducted in another language, e.g., Arabic or Turkish. For example, a sample search would include the terms “Private Equity,” “Fund Services,” and Iraq. The quotation marks are an instruction to the search engine, e.g., Google, which is the one we used, to search for pages that contain the literal terms enclosed. Tabulating the number of search results for each such category provides a rough indication of the presence or absence of each organizational form in each country; normalized counts from such a search are presented in Figure 6.

---

8 www.privateequityinternational.com

9 In addition, translation of all of these search terms into a variety of languages would present difficulties and require assumptions of comparability of terms across languages. Admittedly, using only English terms may skew the counts because more investment-oriented countries likely are also more English oriented; however, as long as the processes that produce more use of English are related to the building of the ecosystem for private equity, we do not believe that this bias will be too severe.
To produce the ranking of countries presented in this graph, we took the raw counts that were produced by the Google searches and executed the following calculations for more effective comparisons across countries: For each element of the ecosystem, we associated search counts with countries. For instance, each country presented in Figure 6 received a raw Google count that resulted from using ‘Fund Services’ as the search term. For all countries we search for four components of the ecosystem. After allocating counts to each country along each dimension, we implement a simple max-min normalization procedure. Finally, the transformed scores along each dimension are averaged to provide a composite score for each country. This normalization provides a more effective benchmark for comparing the countries than would a simple comparison of raw counts because it reflects performance relative to the group of countries under consideration. Of course, we do not wish to overstate the reliability of a measure as crude as these counts; as we suggested above, it is, at best, a first order approximation. Clearly, some direct measure of the capabilities of the component organizations of the ecosystem, such as input measures, e.g., the quality of professional training, or an output measure, e.g., total revenue of firms from private equity clients, would be superior. At the same time, it is also clear that gathering such data would be difficult, if not impossible. Ultimately we believe that despite these important caveats, the data are still informative. We believe this not least because Turkey, which we have shown is more effective in allocating financial capital to the private sector, emerges as the country in the region with the most robust PE ecosystem.

The validity of these findings is also bolstered by the fact that Turkey is ahead of its MENA neighbors in growth, innovation, and entrepreneurship. With respect to GDP, Turkey has run ahead of not just of the average for MENA countries, but was one of the ten fastest growing economies in

---

10 Specifically, it represents the raw counts for a given component of the ecosystem where N is the number of countries, we transform the raw counts using the formula for each i between 1 and N. This bounds the transformed scores between 1 and 7.
the world in 2011. With respect to innovation, Turkey also emerges as a leader according to the ranking in the Global Innovation Index 2011. This measure includes innovation driven outputs of the economy such as patents and scientific research articles; the score for Turkey was about fifteen percent higher than the average for MENA. With respect to entrepreneurship, we get a similar result using data from the Global Entrepreneurship Monitor (2011), which suggests Turkey has higher percentage of the population between 18 and 64 actively involved in setting up their own business. The coincidence of these facts suggests the possibility that the ecosystem to support private equity is an important harbinger of productive economic development.

**Private Equity in MENA: Boom and Bust**

Thus far, we have presented suggestive data to support two claims. First, Turkey is allocating capital more effectively to the private sector than the average MENA country. Second, the organizational capabilities to support private investments, which we labeled the PE ecosystem, are more developed in Turkey than in the average MENA country. We conclude with the central claim of the analysis: More effective allocation of capital to the private sector and the creation of capabilities to support investments in that sector is associated with more success in PE investments. Evidence consistent with this claim is important because we believe that PE investments are a lead indicator of effective integration into the global financial system. For this evidence, we now turn attention to the history of the PE industry in the MENA region and Turkey since 1995; we compare the performance of PE investments in Turkey and MENA on two measures: total number of deals and the success of funds at raising capital from investors.

We begin by reviewing data on the total number of PE deals, reporting separate counts for the total MENA region and Turkey in Figure 7. It is notable that each line represents total counts, comparing the number of deals in Turkey with the total count of deals for all countries in the MENA

---

region; no adjustment is made to render the MENA count to the country level so as to make it more comparable with Turkey. From 1995 to about 2004, approximately one decade, there was relatively little activity in the region. Occasional small spikes of activity, such as in 1999–2000 and 2003–2004 interrupted longer periods with relatively little activity. According to data from Zawya and TEPAV, the total deals in the MENA region or Turkey never exceeded ten per year during this decade. Then in 2004, there was a sea change; money flooded to the region. MENA countries saw this PE wave hit first, and it followed to Turkey about a year later. Throughout this boom, Turkey lagged by about a year; indeed, the MENA figures for a given year, remained larger than the Turkey figures for the subsequent year through 2008, when the financial crisis overwhelmed global markets. At this point, activity in both the larger MENA region and Turkey decreased sharply, crashing back to levels in 2009 not seen since 2004. The years since the crisis yield a very different pattern of PE deal flows. More specifically, the data show that the PE industry in Turkey has rebounded more strongly than in the MENA region and without the lag seen during the boom that preceded the bust. Although PE performance as measured by the number of deals undertaken was more robust in the MENA region prior to the financial crisis, it appears that PE is more robust in Turkey from 2009 onwards.

Insert Figure 7 about here.

The claim that the private equity ecosystem is burgeoning in Turkey is validated when we examine data at the level of individual funds. The data to demonstrate this came from two sources, and we ran two analyses that corresponded to these different data. The smaller dataset, which we obtained from Zawya, contains observations on PE funds across the MENA region; from these data, we were able to construct observations on 101 funds. We were able to supplement this dataset with data on 119 funds exclusively in Turkey from TEPAV; this combined dataset contains observations

---

12 A small number of years excluded specific MENA countries from the count of deals due to missing data; details are available from the authors.
13 You can visit their websites to learn more about Zawya http://www.zawya.com/ or TEPAV http://www.tepav.org.tr/tr/. Please contact the corresponding author to discuss the actual data used in this report.
on 220 funds. In all discussions below, the smaller dataset (termed the partial dataset) is the one that includes only the information on 101 funds obtained from Zawya; the larger dataset (termed the full dataset) includes the data on 220 funds from both Zawya and TEPAV.

We interpret Realized Fund Size, a continuous variable indicating the amount of capital raised in USD, as a measure of performance of the individual funds. Since the raising of capital occurs towards the beginning of the life of a fund, often years prior to its close, it is a measure of expectations of ultimate fund performance rather than performance itself. Because measures of the performance of the investments of a fund are often not known until it closes, we worried that measures based on the performance of actual investments would be less available, i.e., right-censored, and have more measurement error, for more recent funds. As a result, we did not deem it feasible to use measures of actual fund performance; additionally, realized fund size is a widely used benchmark in the industry (Balze, Mezias, and Bazian, 2011). Because the distribution of this variable is skewed, with a long tail of very large funds, we used the natural log of realized fund size as our dependent variable. We estimate the values of this transformed variable using linear regression with White’s heteroscedasticity-consistent standard errors. We include as independent variables a set of categorical variables signifying the geographic focus of particular funds (North Africa, Levant, GCC, MENA and Global). The variable to assess our claim that funds that invest in Turkey have better performance is called Invested in Turkey, which is coded one if a particular fund carried out transactions in Turkey and zero otherwise. The descriptive statistics for these variables are reported in Table 1 for both data sets. Correlation coefficients for the two models are presented in Tables 2 and 3. The results of the estimation of the models for the two datasets are presented in Table 4.14

14 The estimates we report are all net of fixed effects for investment focus, related to the strategy of the funds, and fund status, related to the life cycle of the deal; details on these data can be requested from the authors.

Insert Tables 1 through 4 about here.
As Table 1 reports, the mean fund size for the full dataset is smaller ($161M) than the mean fund size for the partial dataset ($227M). Because the full dataset is constructed by adding funds exclusively focused on Turkey, this indicates that – on average – realized fund sizes are smaller in the TEPAV data, simply because the funds are smaller. The geographic focus dummies (Levant, GCC, MENA, Global and North Africa) are coded to represent broad regional aggregates. In the partial dataset, which includes funds from all over the MENA region, 22 percent had a strategic focus on North Africa. Analogous figures for focus on Levant, GCC, Global, and all of MENA were 18 percent, 30 percent, 8 percent and 46 percent. The decrease in means for these dummies between the partial and the full dataset is accounted for by the increase in the total number of observations. The exception is the variable Global, which increases because the additional 119 Turkish funds in the TEPAV data are assigned to this category. In terms of our variable of interest, 9 percent of the funds surveyed in the partial dataset carried out transactions in Turkey while 58 percent of the funds in the full dataset had done so.

As a precursor to our empirical results, we present correlation coefficients for the variables included in our regressions. Table 2 presents results for the full dataset, while Table 3 presents results for the partial dataset. For the full dataset, the variables North Africa and Levant have a positive association with the dependent variable but they are not significant at the 5 percent level. Out of the remaining geographic indicator variables, GCC and MENA have a correlation coefficient of 0.31 and 0.37, respectively while global displays a negative association with the log of realized fund size with a coefficient of -0.41. The merged data indicator – the variable which signifies observations that came from the TEPAV data – displays a negative association with realized fund size implying that PE investments in Turkey tend to be smaller. Most importantly, our variable of

---

15 We coded the geographic focus of funds as follows. They were labeled North Africa if they listed Egypt, Sudan, Libya, Algeria, Tunisia, Morocco or North Africa. They were labeled Levant if they listed Iraq, Syria, Palestinian Territories, Jordan, Lebanon, or Levant. They were labeled GCC if they listed Saudi Arabia, Oman, UAE, Kuwait, Qatar, Bahrain, Yemen, or GCC. Funds were included under the MENA label if they listed Middle East or MENA. We labeled a fund Global if it listed Iran, Turkey, Africa, Worldwide, North America, Pakistan, or South Asia. Given debate as to whether Iran and Turkey should be considered a part of MENA, we ran versions of our models with these two countries coded under MENA and Global; results did not differ. In the results presented, we put Iran and Turkey in the Global category.
interest Invested in Turkey is negatively associated with the log of realized fund size. Since these are simple correlation coefficients rather than in a multiple regression format with a constant, this result does not lead us to re-evaluate the predicted direction of the Turkey effect, which we believe to be positive.\footnote{The regression analysis also includes fixed effects for the status of the fund, the investment focus of the fund, and year.} Moving to the partial dataset, the North Africa, Levant and GCC indicators reverse signs; by contrast, the GCC and MENA indicators keep the same sign but the magnitudes of the effects decrease. Interestingly, in the case of the restricted set, the association between our variable of interest and the dependent variable is actually positive with a correlation coefficient of 0.32.

In Table 4, we present the results of our estimation, net of fixed effects for fund status, fund investment focus, and year. Critical to our central narrative, the Invested in Turkey dummy has a positive impact on the log of realized fund size with a coefficient of 0.7, which is significant at the 10 percent level on a two-sided test and at the 5 percent level on a one-sided test. Recalling that the dependent variable is log transformed, this coefficient implies that companies that invested in Turkey increased realized fund size by approximately 70 percent, holding all else constant. This effect is more pronounced for the partial dataset where companies that invested in Turkey realized around 76 percent gains in the size of their funds. Given the fact that all of our independent variables are categorical, it is important to interpret these results as a comparison to the excluded category or reference group. In this particular case, the reference group is a fund with a balanced investment strategy with MENA as its geographic focus in the fund raising phase of its lifecycle. Thus, the coefficient on the Invested in Turkey dummy denotes that, on average, firms that invested in Turkey achieved higher fund sizes than the reference group. Since we take realized fund size to be a measure of performance, we also interpret this to mean that these funds performed better. The coefficients for the other variables reveal no particularly surprising results: Funds with North Africa and Levant as their geographic focus fare worse than the reference group whereas funds which have GCC and the wider MENA region fare better. Also, it is important to note that since we are
including a variety of fixed effects in the specification, the coefficients reported are net of the impact of these categories; these include fund status, fund focus, and year. On the whole, there is little material difference between the results of the full and partial datasets. Both display a pronounced and statistically significant finding: Funds that invested in Turkey were more successful in terms of raising capital than funds that did not have investments in Turkey.

**Concluding Points**

Through the course of our analysis, we have presented a series of indicators and facts in an attempt to weave these suggestive data into a single narrative. We began by analyzing three different data series to support our claim that Turkey has done a better job than its MENA neighbors at allocating capital to the private sector. Specifically, we presented two measures of how well the banking system operates to intermediate funds to the private sector and a single measure of the effectiveness of the equity market. None of these measures alone would be convincing; however, three measures addressing two different sectors, banking and equities, revealed the same temporal patterns, with Turkey ultimately moving to the forefront. We do not believe that such a systematic pattern would be likely to emerge simply as the result of a coincidence.

The reliability of this pattern as well as our interpretation of it is further bolstered by our finding that Turkey was ahead of its MENA neighbors in the creation of an ecosystem to support private sector investments, including PE. In terms of presence in cyberspace, organizations with capabilities that support the successful use of private capital to create productive domestic economic capacity are more present in Turkey than MENA countries. We linked this finding with our evidence about allocation of capital to the private sector, suggesting that the effective allocation of capital to the private sectors will be an important determinant of the creation of the PE ecosystem. Consistent with this conjecture, the data we collected suggest that the ecosystem of Turkey is more developed than the ecosystem of its MENA neighbors.
We closed our argument by drawing the link from the first two findings, more effective allocation of capital to the private sector and a more developed PE ecosystem, to two measures of the success of PE investments. First, using data on the counts of deals, we demonstrated a specific pattern. There was a long period of relatively little PE activity followed by several boom years that saw a significant influx of investment capital to the PE industry in MENA and Turkey; throughout this period, Turkey lagged behind the MENA countries in terms of the total number of deals. The 2008 financial crisis brought this ‘period of plenty’ to a close, and both MENA and Turkey witnessed declines in the number of deals. However, the post-crisis years have seen Turkey emerge as a preferred destination for PE investments; since 2008, Turkey has pulled ahead and remained ahead of its MENA neighbors in total number of deals. The dominance of Turkey as the preferred PE destination can also be seen when we undertake a more systematic analysis of the performance of PE funds. Our regression analysis of fund-level data from all over the MENA region indicates that funds with investments in Turkey achieved significantly greater realized fund size. Thus, on a key measure of fund performance, we showed that investing in Turkey was associated with considerably better outcomes.

Although there are weaknesses in the data and considerable leaps of faith are required to link the findings with the specific interpretations we have drawn, we believe that consistency of the findings is encouraging. Using three macroeconomic indicators to assess the ability of specific company investments to deliver value for the economy has obvious weaknesses. First, any subsample of indicators may paint a different picture than would a more comprehensive review of the panoply of indicators based on a more complete model of how macroeconomic variables interact to affect private equity investments in emerging economies. We have little doubt that growth in the gross domestic product, per capita income, the current account deficit, foreign direct investment flows, as well as many other overall factors characterizing the economic environment of a country
matter to the success of private equity. We chose three that we believed were particularly important and illustrative of the processes of interest to an ecosystem perspective on PE; we leave it to others with more expertise in macroeconomics and finance to develop a more comprehensive model relating macroeconomic variables and PE investments. Second, and more important to the interpretation of our findings, we provided no direct measurement of mechanisms linking the macroeconomic indicators of readiness to allocate financial capital to the private sector with either the total number of PE deals or the relative success of funds with investments in Turkey. Similarly, we drew no direct links between the macroeconomic measures in our figures with the internet-based measure of the PE ecosystem that we provided. Finally, we provided no direct measure of the mechanisms that link either the macroeconomic indicators in our figures or our internet based measures of the PE ecosystem with the quicker recovery of the volume of deals in Turkey or the Turkey effect revealed by our analysis of realized fund size. Even the analyses of realized fund size, which permitted specific statistical inferences, must be regarded as largely exploratory. In particular, because our data were at the fund and not the country level of analysis, we could not control for a variety of potentially important factors such as growth in the gross domestic product, per capita income, foreign direct investment flows, the current account deficit, etc. Replication in the context of more rigorous multivariate analyses to replicate these findings and validate our interpretations is necessary. Additionally, we have made short shrift of enormous scholarly literatures on how governance and legal systems, e.g., Henisz (2000), society, e.g., Dobbin; 1997, and culture, e.g., Guillén (1994) may affect the growth of private equity and integration into global financial systems. We have also ignored a large body of more practitioner and mass oriented discussions of private equity and investor rights, e.g., Ferris (2013), not to mention enormous amounts of materials produced by advisory firms and consultancies available from the websites of various firms.\textsuperscript{17} Thus, we have left to future research the hard work of establishing more systematically the links about

\textsuperscript{17} http://www.imeams.com/downloads/IMEAMS_2013_English.pdf provides one recent example focused on the MENA region.
which we have provided little more than speculations. In empirical terms, this will require finding the right kinds of data and estimating the correct underlying relationships accurately and effectively. In theoretical terms, it will require integrating what we have called an ecosystem perspective with a considerable volume of both theoretical and practitioner research.

Despite some obvious weaknesses and the fact that the analyses we have presented here do not constitute conclusive findings, we have presented them in the belief that they highlight important questions concerning how alternative investments, innovation, and growth are linked: What are good measures of the effectiveness of an economy in allocating capital to the private sector? What measures might capture the capabilities of firms and other actors in the economy, which we have lumped under the label of ecosystem, to support the effective allocation of investment capital to achieve economic growth? What makes an economy succeed in attracting and allocating one form of private capital, namely PE investments? We believe we have done more than suggest these important questions; indeed, we regard our findings as data based conjectures about possible answers to these questions. Despite some obvious weaknesses in these data, we believe the underlying ideas are of critical importance, particularly for emerging economies. For example, taking an ecosystem view implies that the policymakers can shift their focus from “rectifying” abstractions like legal institutions to the encouragement of the formation of specific types of firms that comprise the PE ecosystem.

At a minimum, this greater repertoire of policy interventions enhances the extent to which public policy to encourage investments can be tailored to the specific needs of the local context. The apparent success of Chinese investments in emerging markets, particularly Africa (Nartey and Mezias, 2013), also would seem to suggest that enacting the institutional reforms advocated by economists at multilateral organizations is not the only route to attracting foreign investment. Similarly, the uneven history of development and associated difficulty in establishing universal
policy principles and prescriptions (Easterly, 2001) suggest the need for more contextual approaches. We believe that an ecosystem approach can do this in at least two ways. First, the desire to encourage specific ecosystem components based on particular development needs or past studies of how it has proceeded can guide policy in specific settings. Second, a census of existing organizations with capabilities relevant to utilizing private capital to catalyze economic development provides a means of assessing the economic strengths and weaknesses of specific countries or regions. Longitudinal tracking of the ecosystem based on either or both of these contextual approaches offers the promise of significantly enhancing our understanding of how the mechanisms that link financial capital, growth, innovation, and entrepreneurship. Thus, we hope that the approach we have advocated can inform policies that are important to pressing issues of economic development as the global economy enters the second decade of the 21st century.
References


<table>
<thead>
<tr>
<th>Table 1: Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Realized Fund Size</td>
</tr>
<tr>
<td>In(Realized Fund Size)</td>
</tr>
<tr>
<td>Levant Dummy</td>
</tr>
<tr>
<td>GCC Dummy</td>
</tr>
<tr>
<td>MENA Dummy</td>
</tr>
<tr>
<td>Global Dummy</td>
</tr>
<tr>
<td>North Africa Dummy</td>
</tr>
<tr>
<td>Invested in Turkey Dummy</td>
</tr>
<tr>
<td>Merged Data Indicator</td>
</tr>
</tbody>
</table>
### Table 2: Correlation Coefficients for the Full Dataset

<table>
<thead>
<tr>
<th></th>
<th>Ln(Realized Fund Size)</th>
<th>North Africa</th>
<th>Levant</th>
<th>GCC</th>
<th>MENA</th>
<th>Global</th>
<th>Invested in Turkey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ln(Realized Fund Size)</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Africa</td>
<td></td>
<td>0.0374</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Levant</td>
<td></td>
<td>0.0197</td>
<td>0.0663</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCC</td>
<td>0.3072*</td>
<td>-0.1325*</td>
<td>0.1713*</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MENA</td>
<td>0.3739*</td>
<td>-0.1714*</td>
<td>-0.1127</td>
<td>-0.0089</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global</td>
<td>-0.4117*</td>
<td>-0.2668*</td>
<td>-0.2481*</td>
<td>-0.4643*</td>
<td>-0.533*</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>Invested in Turkey</td>
<td>-0.3736*</td>
<td>-0.3932*</td>
<td>-0.3521*</td>
<td>-0.4418*</td>
<td>-0.4025*</td>
<td>0.8415*</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

* denotes significance at the 5 percent level

### Table 3: Correlation Coefficients for the Partial Dataset

<table>
<thead>
<tr>
<th></th>
<th>Ln(Realized Fund Size)</th>
<th>North Africa</th>
<th>Levant</th>
<th>GCC</th>
<th>MENA</th>
<th>Global</th>
<th>Invested in Turkey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ln(Realized Fund Size)</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Africa</td>
<td></td>
<td>-0.2881*</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Levant</td>
<td></td>
<td>-0.2833*</td>
<td>-0.0577</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCC</td>
<td>0.2276*</td>
<td>-0.3430*</td>
<td>0.037</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MENA</td>
<td>0.2634*</td>
<td>-0.4826*</td>
<td>-0.3739*</td>
<td>-0.3334*</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global</td>
<td>0.1558</td>
<td>0.2005*</td>
<td>0.1508</td>
<td>-0.1906</td>
<td>-0.0474</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>Invested in Turkey</td>
<td>0.3216*</td>
<td>-0.1651</td>
<td>-0.1457</td>
<td>-0.1273</td>
<td>0.3420*</td>
<td>-0.0917</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

*denotes significance at the 5 percent level
Table 4: Regression Analysis of log of Realized Fund Size

<table>
<thead>
<tr>
<th>Variables</th>
<th>Full Dataset</th>
<th>Partial Dataset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ln (Realized Fund Size)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>19.55**</td>
<td>18.68**</td>
</tr>
<tr>
<td>Invested in Turkey</td>
<td>0.671+</td>
<td>0.812*</td>
</tr>
<tr>
<td>North Africa Dummy</td>
<td>-1.225**</td>
<td>-0.775*</td>
</tr>
<tr>
<td>Levant Dummy</td>
<td>-1.536**</td>
<td>-1.292**</td>
</tr>
<tr>
<td>GCC Dummy</td>
<td>-.798</td>
<td>-0.087</td>
</tr>
<tr>
<td>Multiregion Dummy</td>
<td>0.377</td>
<td>0.286</td>
</tr>
<tr>
<td>Merged Data Indicator</td>
<td>-1.775**</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>220</td>
<td>101</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.501</td>
<td>0.484</td>
</tr>
</tbody>
</table>

Notes: All tests use robust standard errors. ** p<0.01, * p<0.05, + p < 0.1

All estimates are net of fixed effects for fund status, fund focus, and year of first close.
Europe Campus
Boulevard de Constance
77305 Fontainebleau Cedex, France
Tel: +33 (0)1 60 72 40 00
Fax: +33 (0)1 60 74 55 00/01

Asia Campus
1 Ayer Rajah Avenue, Singapore 138676
Tel: +65 67 99 53 88
Fax: +65 67 99 53 99

Abu Dhabi Campus
Muroor Road - Street No 4
P.O. Box 48049
Abu Dhabi, United Arab Emirates
Tel: +971 2 651 5200
Fax: +971 2 443 9461

www.insead.edu