

PUBLIC POLICY FOR VENTURE CAPITAL: A COMPARATIVE STUDY OF EMIRATES, SAUDI ARABIA AND EGYPT

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ABSTRACT

This study presents an integrated public policy framework for supporting the emergence of a venture capital industry, from both supply and demand perspectives. The framework is applied to the case of venture capital evolution in three Arab countries, namely United Arab Emirates, Saudi Arabia and Egypt. In each country case study, five public policy mechanisms are analyzed using both primary and secondary information. Comparative analysis of the country case studies shows that the three countries have made varying levels of progress on company registration procedures and development of an entrepreneurial ecosystem. More work is needed to simplify bankruptcy and other regulatory obstacles to venture capital funds, such as the limited partnership structure and the use of convertible stock. The three countries have limited venture capital supply from a few government and private venture capital funds, primarily due to demand side weaknesses and a meager flow of investible enterprises. Strengthening the demand side should form the primary focus of government reforms in the near future, in addition to demonstrating successful and profitable venture capital investment. The latter is a key step in putting together the pre-conditions for the emergence of active venture capital industries in the three countries.

JEL: K2, O17, O250

KEYWORDS: Venture Capital, Arab Countries, Dubai, Egypt, Saudi Arabia, Public Policy

INTRODUCTION

Meggison (2004) defines modern venture capital (VC) as ‘... a professionally managed pool of money raised for the sole purpose of making actively-managed direct equity investments in rapidly-growing private companies, and with a well-defined exit strategy.’ Venture capital is equity capital that commands above market returns and is typically invested in young companies that have high growth potential but are nevertheless highly risky (Gompers 1997; Florida and Kenney 1988; Manigart et al. 2002). A venture capitalist will typically become deeply involved in the invested company beyond the provision of equity capital, giving strategic advice as well as access to a rich network of technical marketing, financial and operations support (Botazzi and Da Rin 2002; Klonowski 2010). Venture capitalists are there for the long haul, with a typical investment lasting from five to seven or ten years, working diligently with the entrepreneurs and the management team to grow the company (Dossani and Kenney 2002; Klonowski 2010). To monetize the return on investment, exit through IPO or trade sale is as important to the venture capitalist as growing the company. With these unique characteristics, venture capital is poised to support the growth of highly innovative and promising young companies in new industries, which other forms of financing would find too risky to invest in (Koh and Koh 2002). Thus, VC plays a vital role in pushing the frontiers of innovation and its commercialization (Kortum and Lerner 2000), having been the driving force behind the creation of whole new industries, such as biotechnology and information technology. For these reasons, governments of both developed and emerging economies have

adopted various policy mechanisms to foster the evolution of vibrant VC industries, hoping to replicate the spectacular success of the U.S., which is the exemplar in this respect.

This study offers an overview of a comprehensive policy framework to foster VC then proceeds to explore how the policy mechanisms apply in three Arab countries, namely the United Arab Emirates (UAE), the Kingdom of Saudi Arabia (KSA) and Egypt. A conceptual lens that combines both systems and evolutionary perspectives is employed in a comparative analysis of public policy for VC in the three countries. Conclusions and policy implications are drawn. This study addresses an important gap in the literature, as there is a paucity of studies on VC in Arab countries.

The next section provides a brief review of the literature on public policy for VC, from which the public policy framework is derived. Next, the country case studies are presented. For each country, the level of venture capital activity is described, followed by an analysis of the major public policy mechanisms adopted to support the emergence of venture capital. These include the entrepreneurship ecosystem, investment laws, tax incentives, second tier stock markets and government venture capital funding. Finally, the study offers a comparative analysis of the three countries from which conclusions and recommendations are drawn.

LITERATURE REVIEW

Most of the literature published on the topic of VC policy handles one or two policy elements and there is to date no single framework that collects both supply and demand side policies for VC. The policy framework adopted here is developed in detail in Seoudi (2014), and is illustrated in Figure (1) below. The framework takes a systemic view that integrates and connects both demand and supply side policies, as well as an evolutionary perspective that looks at initial conditions, pre-emergence and emergence stages in the development of a VC industry (Avnimelech & Teubal 2004).

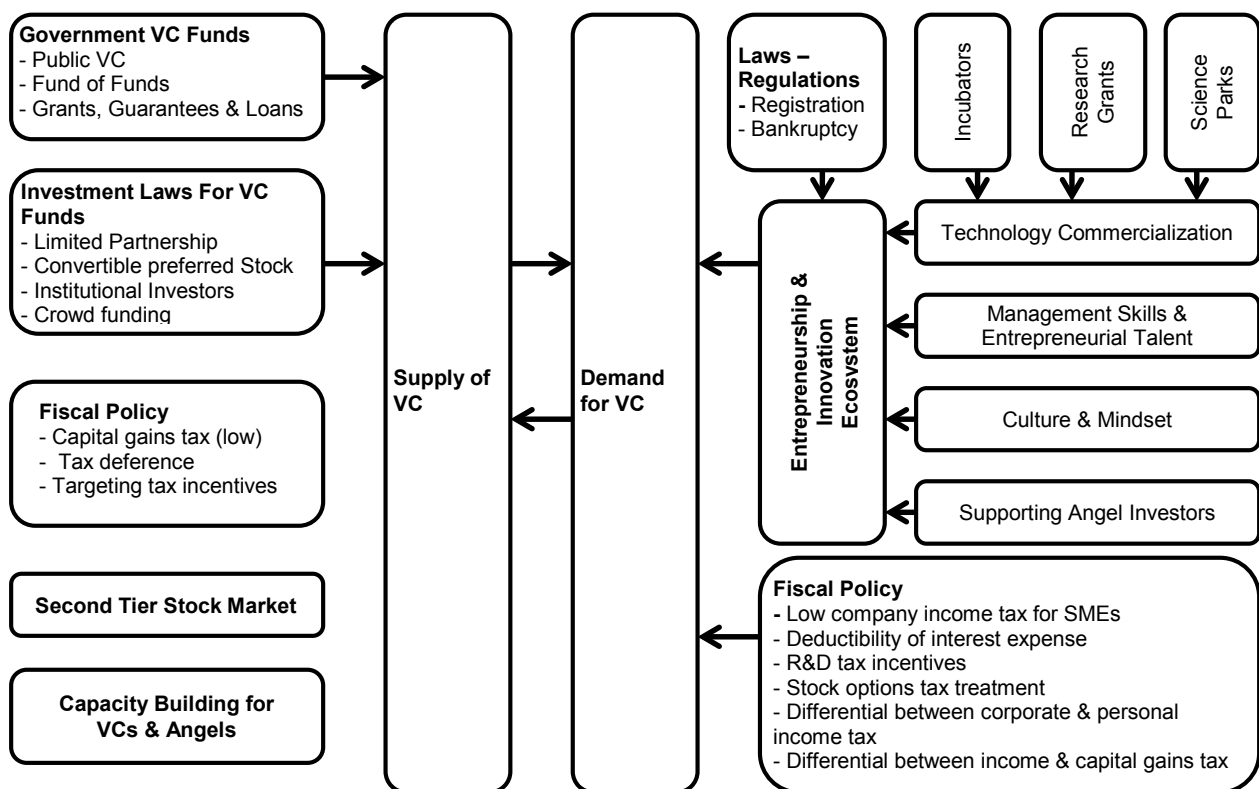
In order for venture capitalists to be drawn to invest in a particular country, in other words, for VC supply to emerge, there must be demand for this form of financing. To generate demand for VC, a vibrant entrepreneurial and innovation ecosystem with a wealthy supply of investment ready start-ups and high potential enterprises that will attract VCs is required. To develop such an ecosystem, governments have dedicated grant funds to support scientific research and created science parks and incubators for commercialization of new technologies (Romain and van Pottelsberghe 2004; Lerner 2009, 2010). Cultivation of an entrepreneurial mindset and a culture that accepts risk and failure as well as development of entrepreneurial and managerial talent are objectives of many government programs around the world (Mason and Harrison 2001; Harding 2002; Mason 2009). Investment laws and regulations should facilitate the creation and registration of new companies and ameliorate the punitive implications of bankruptcy so that failed entrepreneurs can pick themselves up and start over. The entrepreneurship literature has documented the importance of failure as experiential learning to sharpen entrepreneurs' business acumen.

Government support of local Business Angel Networks (BANs) is key to building the ecosystem as angels play a unique role in entrepreneurial finance. Angel investors provide equity capital in the stage where the entrepreneur has depleted all personal sources of funds, yet is not big enough to warrant VC investment (Politis 2008; Mason and Harrison 2001). Lastly, tax incentives play an important role in aiding the development of the entrepreneurship and innovation ecosystem. Examples of such tax incentives include tax breaks for small and medium size enterprises, deductibility of interest as well as research and development expenses, and loss carry forward provisions. Moreover, it has been argued in the literature that differentials between personal income taxes and personal capital gains taxes (assuming the latter is the lower of the two) may encourage individuals to take risk and become self employed (Poterba 1989). It is also shown that keeping capital gains taxes low in comparison with personal income taxes may influence

the incentives of entrepreneurs and VCs alike to put forth their best effort to make the entrepreneurial venture a success (Keuschnigg and Nielson 2004).

A second set of public policy mechanisms works on augmenting the supply of VC by influencing the incentives of investors to invest in young promising companies, setting a favorable regulatory environment and in some cases availing public funds for VC investment. A basic element of public policy to foster VC is to build the local investor talent among both angels and VCs (Avnimelech and Teubal 2004; Baygan 2004). Favorable regulatory provisions are important for mobilizing large investment funds of institutional investors such as insurance companies, pension funds and university endowments. Allowing these large institutional investors to invest in young risky companies is a step that has been taken in the United States and in other OECD countries that have successfully emerged an active VC sector (Romain and Pottelsberghe 2004; Lerner, Moore, and Shepherd 2005). The limited partnership legal structure has emerged as a best practice in global VC and removing regulatory impediments to this practice would encourage foreign venture capitalists to invest domestically (Carvalho, Netto, and Sampaio 2012). Another common practice in VC is the use of convertible preferred stock, which is said to optimize the allocation of control rights between the entrepreneur and the VC (Trester 1998; Gilson and Schizer 2003).

Figure 1: A Public Policy Framework for Venture Capital



Adapted from Seoudi (2014)

Besides the regulatory infrastructure, venture capitalists require an exit strategy, which is often done through initial public offering (IPO) in the stock market. The existence of a second-tier stock market for small high-growth companies, like the exemplary NASDAQ, is an important policy mechanism to allow an exit mechanism that encourages the supply of VC (Jeng and Wells 2000; Botazzi and Da Rin 2005; Rebeiro and de Carvalho 2008). Often, governments not only set the regulatory infrastructure for VC investors, but go further to directly supply VC, in the form of public VC funds which invest directly in

portfolio companies (Beuselinck and Manigart 2007; Nightengale et. al. 2009). Since governments VC funds have in some cases failed to perform as expected, public capital is sometimes channeled indirectly in the form of a government fund-of-funds, which invests in VC funds rather than young companies (Pierrakis and Westlake 2009; Lerner and Watson 2008). Detailed theoretical justification and review of empirical evidence regarding the elements of public policy on the demand and supply sides is explicated in Seoudi (2014). In what follows, this policy framework is applied to assess the development of the VC industries in United Arab Emirates (UAE), Kingdom of Saudi Arabia (KSA) and Egypt.

Case (1): the United Arab Emirates

Categorized by the World Bank as a high-income country, the UAE's GDP reached USD 348.6 billion in 2011 and a total population of 9.206 million in 2012 (The World Bank, 2013). The UAE is the only Arab country included in the "Global Economics driven by Innovation", the most advanced competitiveness stage in the 2012-2013 Competitiveness Report issued by the World Economic Forum (WEF) (Schwab, 2012). The country has been working on decreasing its reliance on oil revenues (Morris, 2006) and on improving some of its revenue generating sectors such as tourism, telecommunications, and finance (Morris, 2006). The UAE has set its 2021 vision to become one of the leading knowledge-based economies and has accordingly established a number of initiatives and developed a set of policies to maximize innovation and perfect its business environment to support the transition of its economy (MENA Private Equity Association, 2013). In the UAE, the VC industry relies heavily on expatriate entrepreneurs, beside the participation of the Emirati nationals, a fact that makes the model of the UAE VC industry unique (Monger, Rawashdeh, & Al Azzam, 2008). Most VC firms in the UAE target investment opportunities in the whole Arabian Gulf region. UAE investors do not favor VC firms as compared to private equity (PE) and buy-out firms. This is attributed to the small-sized funds versus the huge amount of work that needs to be invested in the ventures in order to achieve satisfactory financial returns.

It is believed that the VC industry will not get more mature until the current financial players focusing on private equity and buy-out assets show more interest in VC. Abraaj Capital is one successful example; whereas the company has been investing in sizeable private equity deals, it has recently launched a new fund that targets the growth of regional SMEs (MENA Private Equity Association, 2011). In a recent study to find out the determinants of the VC industry in the UAE, PE fund managers judged the level of VC and entrepreneurship to be very low. They also emphasized the scarcity of local VC expertise in the UAE. Most of them admittedly rely on unsolicited submission, as well as informal networking to identify investment opportunities. The study concluded that, to strengthen the VC industry, expert VCs as well as a vigorous entrepreneurial population should exist with sufficient numbers. Hence, policies must target the strengthening, expansion, and diversification of the VC industry in terms of VCs and entrepreneurs (Monger, Rawashdeh, & Al Azzam, 2008).

Currently, there are two business angel networks operating in Dubai, the busiest and most prominent of the Emirati provinces: *Investors Dubai* and *ABAN*. *Investors Dubai*, part of *Investors MENA*, is a franchise of the best investment networks in the UK "*Business Angel Network*". It works on connecting entrepreneurs with interested investors while assisting entrepreneurs in finding the best way to present their companies to the investors (Investors, n.d.). *ABAN* or *Arab Business Angel Network* targets all early stage ventures or start-ups in the MENA region seeking seed funds between \$100K and \$500K. Though a non-sector specific network, it gives preference to media, ICT, and retail services and avoids businesses that involve alcohol or gambling (Gust, 2014).

Entrepreneurship & Innovation Ecosystem

Given the ease of doing business and the highly developed infrastructure, more entrepreneurs are encouraged to start their businesses in the UAE, especially technology-related ones (MENA Private Equity

Association, 2011). According to the National UAE GEM Report (2013), the rate of Total Entrepreneurial Activity (TEA) in the UAE was 7.8% in 2011, which is higher than the rate of other innovation-driven economies. It is worth mentioning that the percentage of Emiratis having positive perception of entrepreneurship as a career choice and perceiving UAE as a suitable environment for starting a business is much higher than the percentage of Emiratis who actually start-up their businesses. (El-Sokari et al. 2013). There are huge opportunities for entrepreneurs in the UAE that remain underutilized due to a set of hurdles, the most important of which are culture, funding gap, excess liquidity, bankruptcy laws, lack of qualified caliber, and high costs (El-Sokari et al., 2013). The Emirati culture discourages risk-taking and encourages secure jobs (Bharadwaj, 2012; Kargwell & Inguva, 2012). The low risk appetite is attributed to the bankruptcy stigma and the complex insolvency laws (El-Sokari et al., 2013; Bharadwaj, 2012). It is ironic that in a high-income country, small businesses are shutting down due to limited access to funds (MENA Private Equity Association 2013; El-Sokari et al., 2013). Emirati and other GCC investors seek to invest huge sums, a case that makes it hard for entrepreneurs to find investors matching their needs for smaller magnitudes of investment (Monger, Rawashdeh, & Al Azzam, 2008). Besides, acquiring bank loans in the UAE is associated with problems such as timeliness issues, high interest rates, and concealed charges (Dun & Bradstreet, 2008). In response, the UAE government has founded several loan programs for start-ups such as Dubai SME and Khalifa Fund. Crowd funding and microfinance also work better for SMEs as alternative solutions to bank lending. However, there still exists a gap that could potentially be covered through equity financing (El-Sokari et al., 2013). The lack of qualified personnel, especially engineers, is a serious problem in the UAE (Kargwell & Inguva, 2012). Accordingly, foreign entrepreneurs tend to establish the operations in their home countries and run only the sales and marketing activities in the UAE (MENA Private Equity Association, 2011).

Investment Laws & Regulations

The UAE government has been taking steady steps to ease the process of starting a company. In 2010, the UAE abolished the minimum capital requirements for starting a business and simplified the registration documents (Dubai SME, 2011; World Bank Group, 2015). The procedures for approving foreign investments have also been eased and investors were granted the privilege of applying for their businesses online and following up on the application status by phone (Dubai FDI, 2013). Moreover, Dubai's Chamber of Commerce and Industry (Dubai Chamber) plays an effective role in enhancing the business environment (Government Of Dubai, 2014) and promoting Dubai as an international business hub (Dubai Chamber, 2014). While several UAE policies encourage foreign investments (KPMG, 2006), yet the legal framework for investment still favors nationals over foreign investors (U.S. Department Of State, 2012; Latham & Watkins, 2012). This has been clearly demonstrated in the restricted foreign ownership of stocks and land, as well as the sponsorship, agency, and distributorship requirements that apply to foreign companies established outside the free zones (U.S. Department Of State, 2012).

Recently, the UAE government has taken serious steps to attract more foreign investors by creating a favorable environment for them. By the end of 2011, the Federal Cabinet announced its approval of a new Company Law, which raises the foreign ownership ceiling over 49% for some types of businesses and gives more protection to the shareholders (U.S. Department Of State, 2012; Dubai FDI, 2013). Another important channel that supports investment in the UAE is found in the 36 free zones spread over the seven emirates (UAE Free Zones, n.d.). These include, but are not restricted to, industrial, educational, logistics, financial, IT, and Media clusters (Dubai Free Zone Council, n.d.). The zones provide huge incentives to foreign and local businesses including 100% tax exemption, 100% full capital and profit repatriation, 100% foreign ownership, generous supply of energy at inexpensive rates, and speedy approval procedures (PKF, 2009; Horovitz and Ohlsson, 2005; KPMG, 2006). Moreover, free zones provide access to an impressive range of facilities and robust infrastructure that strongly aids businesses (Horovitz and Ohlsson, 2005; KPMG, 2006; PKF, 2009), not to mention their excellent geographical location (KPMG, 2006).

By attracting foreign investors, free zones have facilitated the transfer of technology to the country and created a huge number of jobs (PKF, 2009). Many of these free zones offer special services and opportunities to entrepreneurs starting up their businesses. Regarding the intellectual property rights and protection, the UAE government is perceived as the regional leader in this regard. It continuously works on enhancing the trademark, patent, and copyright laws. Software piracy rate in the UAE is also considered among the lowest in the Middle East region, with Dubai as the highest performer (Dubai FDI, 2013). Bankruptcy laws represent a serious impediment for entrepreneurship engendering fear of the stigma and other consequences of failure (El-Sokari et al., 2013). It takes three years, starting the end of the liquidation process to free the bankruptcy of its debts because the insolvency laws are unclear and highly complex (Reuters, 2012; El-Sokari et al., 2013). As judged by legal experts in the west, the bankruptcy laws in the UAE regulate the procedures of bankruptcy and its consequences. However, they do not define a clear process for the evaluation of the bankrupt's assets nor its distribution (U.S. Department Of State, 2012). Recently, the UAE government has started reconsidering the insolvency laws and simplifying them (U.S. Department of State, 2012; Dubai SME, 2011).

Tax Incentives and Second-Tier Stock Market

At the federal level, there is no tax legislation applied to all the emirates in the UAE and each emirate issues its own tax decrees, which are similar to each other (KPMG, 2006). In principle, income taxes are imposed on all corporate entities. Practically, taxes only apply to foreign bank branches and foreign oil companies. Hence, there is no formal exemption for corporate entities and accordingly, they have to continuously seek tax advice to be aware of any changes in the ongoing practice or legislation (KPMG, 2006). Companies operating in the free zones of the UAE enjoy additional tax incentives like exemption from corporate taxes for a minimum of 15 renewable years (Embassy of U.A.E. in London, 2014). In some emirates, like Dubai, the exemption period may reach 50 renewable years (Dubai FDI, 2013). Imports and exports are tax-exempt in the free zones (Sagerklint & Porntepcharoen, 2009; U.S. Department Of State, 2012).

There is currently no second-tier stock market for SMEs' listing in the UAE. However, there are ongoing plans for establishing one and an advisory board has already been established by NASDAQ Dubai to study the establishment of such a market (Taylorwessing.com, 2013). On the positive side, though, the Dubai Financial Services Authority (DFSA), which regulates NASDAQ Dubai, brought down the IPO minimum market capitalization from \$ 50M to \$ 10M to increase chances for IPOs and raise the market liquidity (Taylorwessing.com, 2013). On the other hand, the absence of the second-tier market is not believed to significantly affect start-up rates nor restrict VC activity. At any rate, other exit strategies like trade sales are possible (Monger, Rawashdeh, & Al Azzam, 2008).

Government Venture Capital Funding

To achieve its 2021 vision of building a competitive knowledge-based economy, the UAE government has been fiercely promoting entrepreneurship. Government efforts include the development of public policies, institutions and programs to support SME start-up, growth, and expansion both financially and non-financially (El-Sokari et al., 2013). Table (1) below presents the various funding projects initiated by the Emirati government to finance entrepreneurship and innovation, including the government VC funds. It is noteworthy that the majority of government initiatives support UAE nationals and not foreigners (MENA Private Equity Association, 2013).

Table 1: Emirati Government Venture Capital Funding

Government Funded Incubators, Science Parks & Research Funding	
Dubai Internet City (DIC) 2000	<p><u>Aim:</u> Become MENA’s leading ICT spot.</p> <ul style="list-style-type: none"> - Creating a knowledge-based economy (Dubai Internet City, 2014). - Hosts several Fortune 500 companies, multinationals, and ICT start-ups (Dubai Internet City, 2014). - Support services for start-ups include office spaces and IT infrastructure (Dubai FDI, 2013, 5).
Dubai Silicon Oasis Authority (DSOA) http://www.dsoa.ae 2005	<p><u>Aim:</u> Established with a focus on technology-based industries.</p> <ul style="list-style-type: none"> - High technology ecosystem: SMEs, VCs, universities, incubators, large businesses, government & business services
Dubiotech http://www.dubiotech.ae/about-dubiotech/about-tecom-investments 2005	<p><u>Aim:</u> World’s first free-zone devoted to life sciences with the aim of becoming the Middle East’s premier life sciences hub.</p> <ul style="list-style-type: none"> - Hosts academic, industrial, commercial, and residential projects. - Create alliances and affiliations with other research parks, hospitals, universities, & regulatory bodies worldwide. - Provides an attractive business environment through state of the art infrastructure, support services, tax-free income, non-restricted capital movement, and support for access to various markets. - Offers a one-stop shop for businesses including government services, registration & licensing, regulatory affairs management, and leasing services.
ICT Fund http://www.ictfund.gov.ae/About-Us.html 2005 (linkedin.com, n.d.)	<p><u>Aim:</u> Fostering an entrepreneurial culture in the ICT sector and advancing the ICT industry in UAE.</p> <ul style="list-style-type: none"> - Creating linkages between academia and industry and boosting the development of technology in the UAE by involving UAE Nationals - Financial and non-financial support for businesses, academic institutes, and individuals - Access to networks of investors and experts in the ICT industry.
Silicon Oasis Founders (SOF) 2011 (linkedin.com n.d.) In5 http://infive.ae 2013	<ul style="list-style-type: none"> - Targets seed phase start-ups related to the field of mobile applications and technologies - Aids businesses in fine-tuning their business proposals, growing and expanding (Silicon Oasis Founders, 2014). <p><u>Aim:</u> Fostering the development of digital media and ICT start-ups.</p> <ul style="list-style-type: none"> - Providing a strong infrastructure and supporting services to entrepreneurs from the idea creation stage and throughout the commercial launching of their services and products. - Services include access to funds, networking, consulting services, and set up assistance.
Public Venture Capital Funds Mohammed Bin Rashid Establishment for Small & Medium Enterprises (Dubai SME) 2002 (Dubai SME, 2013)	<p><u>Aim:</u> Turning Dubai into a leading center for SMEs characterized by innovation</p> <ul style="list-style-type: none"> - Support for UAE Nationals from the business idea stage until registering the company and starting operations - Provides capital funds for early stage enterprises (MENA Private Equity Association, 2013) and facilitates access of SMEs to bank loans. (Dubai FDI, 2013). - Dubai SME 100 is a ranking of the finest SMEs
Khalifa Fund 2007 (Khalifa Fund, 2014)	<p><u>Aim:</u> Promotes investments among Emiratis and supports small to medium size businesses</p> <ul style="list-style-type: none"> - Capital investment on establishment: AED 2 Billion. - Supports Abu Dhabi’s local enterprises through financing SMEs, offering training and advisory services for entrepreneurs, establishing networks between investors and entrepreneurs .

This table shows the most prominent Emirati government initiatives in support of technological innovation and entrepreneurship along with details on targeted beneficiaries and services offered. Government venture capital and private equity funds are also shown.

Table (1) shows that Khalifa Fund is among the prominent VC funds in UAE is, which was established in 2007 (Khalifa Fund, 2014) as an independent entity, not under the Abu Dhabi Government Authority (MENA Private Equity Association, 2013). The fund is part of the long term vision of the UAE president and ruler of Abu Dhabi, Sheikh Khalifa Bin Zayed Al Nahyan, to turn Abu Dhabi into one of the biggest investment hubs and to contribute to the transformation of the UAE economy (MENA Private Equity Association, 2013). The capital investment of the fund, on establishment, was AED 2 Billion (MENA Private Equity Association, 2013; Khalifa Fund, 2014). The fund provides support for Abu Dhabi’s local enterprises through financing the establishment and expansion of SMEs, offering training and advisory services for entrepreneurs, establishing communication networks between investors and entrepreneurs, and generally nurturing the entrepreneurship culture (Dun & Bradstreet, 2008; MENA Private Equity Association, 2013; Khalifa Fund, 2014). The fund has also introduced some specialized social funding programs that aim at assisting specific segments of the population such as special needs, widows, and retirees (MENA Private Equity Association, 2013; Khalifa Fund, 2014).

Case (2): the Kingdom of Saudi Arabia

The Kingdom of Saudi Arabia is the birthplace of the Islamic religion, which pervades most aspects of life including economic, political, and educational affairs (Al Mosallam, 2008). According to the World Bank (2012), KSA is a high-income country with a total GDP of \$711 billion in 2012 (The World Bank, 2014). It has been the world's largest producer of oil (Alshumaimri, Aldridge, & Audretsch, 2010) and it owns around one quarter of the proven oil reserves in the globe, equivalent to 260 billion barrels (The Royal Embassy of KSA In Washington DC, 2014). Over the past decade, the country has relied on its oil production to achieve rapid economic growth. With concerns about the sustainability of this economic strategy, the country has recently moved toward building a solid knowledge-based sustainable economy by creating effective human resources and productive assets. These efforts paid off in 2009 when the country's economy was described as being in a transition state from a 'factor driven' to an 'efficiency driven' economy (Schwab, 2010), increasing employing more Saudi nationals who are becoming more educated and qualified (Al Mosallam, 2008). The focus for the coming years will be on developing the science and technology fields, developing and empowering the SME sector, and nurturing innovation. On this front, the government has adopted science and technology policies to create knowledge spillovers, particularly through the creation of science parks (Alshumaimri, Aldridge, & Audretsch, 2010).

Although the concept of VC has many similarities to the deeply rooted practice of 'mudarabah' in Islamic finance, modern VC was nonexistent in KSA until the end of 2011. With heavy investments in the country's infrastructure and establishment of technology and science parks, experts believe that VC can boost the rate of high-tech start-up activity in the Kingdom (MENA Private Equity Association, 2011). Accordingly, the government has strongly promoted for entrepreneurial activity and created several incubators, VC funds, loan programs for SMEs, and entrepreneurial support programs. Moreover, the increase in the paid-up capital of the Saudi Credit & Savings Bank (to SAR 36 Billion) has been a strong catalyst for SME growth and entrepreneurial development initiatives, especially that this government bank provides interest free loans (MENA Private Equity Association, 2013).

There are two angel networks in KSA, namely: Oqal and SIRB. The first is a private network, established in 2009 by Al Rashid, an investor and businessman, to finance and support innovative start-ups. This happens through frequent gatherings that bring entrepreneurs, investors, and experts together to share knowledge and experience, as well as make new connections (Oqal, 2014). The SIRB network was officially established by KACST with the aim of building a knowledge-based economy. The SIRB network focuses on establishing and maintaining interaction and communication between very early stage entrepreneurs and investors. Besides, it works on providing entrepreneurs with consulting services to ensure success of their projects (SIRB, 2014).

Entrepreneurship & Innovation Ecosystem

Since 2009, the Saudi government has been working on raising entrepreneurial activity through establishing technology parks in its major cities, fostering its educational capabilities and infrastructure across all educational levels and stages, and empowering its technology incubators and research centers (MENA Private Equity Association, 2011). This started paying back in 2010, when KSA's TEA rate reached 9.45%, marking a significant leap from the previous year (4.7 %) and placing the country in the 24th position compared to the 59 countries participating in the GEM Report (GEM, 2010). However, the initiation of new ventures in KSA was still limited and despite the existence of successful start-ups, almost none of them benefited from the kingdom's support services (MENA Private Equity Association, 2011). In the same year, 2011, Silatech and Gallup's report showed that government regulations were the biggest obstacles for those planning to start a new business in KSA. It wasn't until 2013 that the rate of start-ups started accelerating significantly (Bharadwaj, 2012).

Entrepreneurs in KSA are mostly young males who are well educated and wealthier relative to their counterparts in the Saudi population (Ramady, 2012). Family businesses have grown over the years to dominate several Saudi markets, where foreign companies found it hard to enter due to regulatory obstacles. Family businesses continue to form the majority of the entrepreneurial initiatives (Al Mosallam, 2008). When it comes to the perception of entrepreneurship, 76% of the Saudi population could see good opportunities in starting their own businesses, of which 69% believe they have the required skills and knowledge to do so. However, this contradicts with the mere 1% of population (excluding current entrepreneurs) who expressed intentions of starting a business in a 3-year time span. This also contradicts with the 39% of Saudi population who, despite perceiving positive opportunities, confess that fear of failure would prevent them from starting their own businesses (GEM, 2010).

Major impediments to the growth of entrepreneurial activity in KSA include culture, access to finance, education, human capital and infrastructure. The Saudi culture looks highly upon entrepreneurs and views entrepreneurship as a favorable career, but does not foster the entrepreneurial traits required for success, such as risk taking, independence, innovativeness, and personal initiative (Ramady, 2012). The majority of Saudi SMEs are dissatisfied with financial services as loan procedures are highly complicated, meeting the requirements for personal guarantee is very hard, and the terms are very rigid (Looney, 2004). The Saudi government has accordingly taken several initiatives to solve the problem, including the Saudi Industrial Development Fund (SIDF) and the Saudi Credit Bank (SCB) as elaborated in Table (2). Low levels of higher education among Saudis are attributed to the preference of work and income generation to education (Al Mosallam, 2008). National education policy does not pay much attention to encouraging entrepreneurship and making sure students graduate with the required skills, characteristics and technical efficiency for starting a new business (Ramady, 2012). The establishment of science and technology focused institutions such as KAUST and KACST are a step to fill the gap (KACST, 2012). Despite these efforts, there remains a lack of qualified human capital capable of starting, managing and growing a new venture, and entrepreneurs depend on their own personal capabilities and social relationships in running their businesses (Looney, 2004; Al Mosallam, 2008, Ramady, 2012). The IT infrastructure in KSA is underdeveloped, and acquiring a high-standard technological network is highly expensive for an SME and almost unreachable (Looney, 2004).

Investment Laws & Regulations

To foster entrepreneurship, regulations for starting up and registering new companies and bankruptcy laws are key determinants of the entrepreneurial ecosystem, which forms the demand for VC. Over the past decade, the Saudi government has succeeded in simplifying the set up and registration process of new SMEs easier and less bureaucratic (Al Mosallam, 2008; World Bank Group, 2015). The kingdom came in second place among MENA countries in the 2010-2011 Global Competitiveness Report, and ranked 21st in Global Competitiveness worldwide. To reach this position, the country has taken serious actions to strengthen its institutional framework, increase its market efficiency, and enhance the country's infrastructure (Schwab, 2010). More work is needed to make government regulations more supportive for entrepreneurs, specifically with regards to prioritizing SMEs in public procurement, tax regimens for SMEs, and ease of licensing. The establishment of the Saudi Arabia General Investment Authority (SAGIA) in 2000 (Zuhur, 2011) and the National Competitiveness Center (NCC) in 2006 has contributed to enhancing the business environment in several ways including the enhancement of shareholder protection (NCC 2010; Dr. M. Al Amri & Co., 2011; SAGIA, 2014). Minimum start-up capital requirements were eliminated in 2008 and by 2012, a one-stop-shop for business start-up and registration greatly simplified and speeded up the start-up process (World Bank Group, 2015). The country also made significant progress in enhancing access to credit. Besides, the bankruptcy process was made faster and more efficient in 2010 where time limits were set for the process to motivate creditors to participate. Also, earlier access to friendly settlements was provided (Saudi Gazette, 2012).

KSA adopts a liberal trade policy; there are neither quantity nor price restrictions on imported goods and customs duties are kept low, or eliminated for imports originating in Arab Countries with which the kingdom has trade agreements (Dr. M. Al Amri & Co., 2011). With regards to intellectual property rights protection, KSA is still lagging behind (Ramady, 2012) and regulations in this regard are not strictly applied (Al Mosallam, 2008). Patent regulations, in specific, are well developed in KSA and cover all the aspects of issuing, registering, cancellation, and duration of a patents. The only party authorized to issue patents is King Abdul Aziz City for Science and Technology (KACST) (Dr. M. Al Amri & Co., 2011). The Kingdom generally encourages foreign direct investment and no restrictions are imposed on money flow into or out of the country (Dr. M. Al Amri & Co., 2011). It also provides foreign investors in most sectors, with the same incentives, support, and guarantees provided to KSA nationals (IC, 2012). Investors from GCC countries are the only foreigners entitled for land ownership, as well as trading and distribution in the Kingdom (ICDT).

Tax Incentives

Two types of taxes are imposed in KSA: Zakat and Taxes. Zakat is a form of religious tax defined by the Islamic law 'Sharia' and imposed on wealth that exceeds the family's essential financial needs. The Kingdom applies this form of tax on Saudi nationals, shares of Saudi shareholders in partially foreign-owned firms, and on fully Saudi-owned firms. Gulf Cooperation Council (GCC) nationals are also treated the exact same way as Saudi nationals (Dr. M. Al Amri & Co., 2011). On the other hand, regular income taxes are levied on a foreigners' business income at a rate of 20% whether the foreigner is a resident in KSA, a non-resident with a permanent established business in KSA, or a non-resident gaining income from a registered company in KSA (Deloitte, 2012). When it comes to dividends, these are subject to withholding taxes, where companies withhold 5% of the gross dividend amount and pay the rest to the foreign shareholders (Dr. M. Al Amri & Co., 2011). Capital gains tax is applicable only in case of the transfer or sales of a foreigner's shares (Gerard Associates Ltd, 2012).

Speaking of tax incentives, Saudi Nationals, GCC Nationals, as well as foreigners, are all exempt from income, sales, value-added, land, and property taxes (IC, 2012) that is because they already pay Zakat. However, for foreigners, the tax incentives are different. The kingdom's government offers a 10-year exemption from taxes for foreign companies with a minimum of 25% Saudi ownership operating in the industrial field, as well as a 5-year exemption for non-industrial joint stock companies (ICDT). Moreover, on investing in any of the six underdeveloped provinces in KSA (Northern Border, Al-Jouf, Hail, Abha, Jizan, Najran), investors are granted 10-year tax incentives in the form of employment tax allowances (Deloitte, 2012; IC, 2012).

Second-Tier Stock Market and Government Venture Capital Funding

The Saudi Stock Exchange 'Tadawul' is the main avenue for Saudi companies to go public and access large amounts of capital. The infrastructure of the market is well developed in terms of listing requirements, ongoing supervision, as well as settlement and custody arrangements. IPOs and capital raisings by local companies have been gaining pace, and this has positive implications for corporate governance and operational efficiency (Saudi Credit Bureau, 2014). However, KSA does not have a second-tier stock market for small and medium enterprises to go public through IPO.

Table 2: KSA Government Venture Capital Funding

Government Funded Incubators, Science Parks & Research Funding	
King Abdul Aziz City of Science and Technology (KACST) 1977 (Alabdula'aly, 2004)	<u>Aim:</u> To act as the KSA's national research hub and science agency - Sets national science and technology policies and is the Kingdom's patent office - Promotes technology transfer by creating links between industry and research institutes - Created "BADIR Technology Incubators" to support early stage technology-related start-ups in ICT, Biotechnology, and Advanced Manufacturing
Technology Transfer, Innovation & Entrepreneurship (TTIE) 2006 http://ttie.kfupm.edu.sa/site/ Centennial Fund 2004 (Hertog, 2010)	<u>Aim:</u> Established by King Fahd University of Petroleum & Minerals to develop R&D infrastructure - Incubates promising academic research for commercialization <u>Aim:</u> Decrease unemployment through supporting SMEs (Hertog, 2010). - Offers entrepreneurs mentoring services (Hertog, 2010). - Grants loans with a ceiling of SAR 200,000 (Shalaby, 2004)
Riyadh Techno Valley (RTV) (riyadhstehnovalley.blogspot.com, 2013)	<u>Aim:</u> Achieving a knowledge-based economy in the kingdom (Riyadh Valley Co, 2014) - A science park established by King Saud University. - Commercializes outcomes of research & offers start up services
King Abdullah University of Science and Technology (KAUST) 2009 http://www.kaust.edu.sa	<u>Aims:</u> Diversify KSA economy through innovation and entrepreneurship - Hosts an incubator & research park - Seed fund for technology start ups up to USD 250000 upon due diligence, both cash and in-kind.
Dhahran Techno-Valley (DTV) 2001 http://www.dtv.com.sa/	<u>Aim:</u> Establish a knowledge-based ecosystem to foster technical innovation & commercialization. - King Abdullah Bin Abdulaziz Science Park (KASP) - Innovation Center - Business Incubator
Public Venture Capital Funds	
Saudi Industrial Development Fund (SIDF) 1973 (Almosallam, 2008)	<u>Aim:</u> Supports the development and sustainable growth of the private industrial sector - Started with a capital of SR 500 million and reached SR 20 Billion by 2005 - Grants medium and long-term loans to industrial projects - Offers equity participation with-up-to- 50% of the total project financing (ICDT).
TAQNIYA http://www.taqnia.com/overview.htm 2011	<u>Aim:</u> Promotes knowledge and technology transfer to build an industrial innovation ecosystem - An investment corporation established by the Public Investment Fund (PIF) of KSA. - Builds partnerships with industry, academic, and VC leaders to bring the maximum value while making good returns. - Invests in technology-related projects at different stages - Will create several investment vehicles both locally and internationally.

This table shows the most prominent Saudi government initiatives in support of technological innovation and entrepreneurship along with details on targeted beneficiaries and services offered. Government venture capital and private equity funds are also shown.

Several technology parks have been established across different regions in the Kingdom to support entrepreneurs and ease the process of setting up a company. Besides, a great number of research facilities and incubators have also been established and are strongly supported by the government. Many funds were created to support start up projects including university funds set up to support graduates' projects. Most of these programs are government funded. Currently, there are only six private VC funds in KSA. These private VC funds are supported by major Saudi corporations and target Saudi national projects. The main reason behind the poor contribution of the private sector is high and guaranteed returns on investment coming from the Saudi stock market and the real estate sector (MENA Private Equity Association, 2011, 2013). Table (2) above aggregates the most significant funding programs initiated to encourage and support entrepreneurial activity in KSA. However, of all the public funds, only those by King Abdullah University of Science and Technology (KAUST) and King Saud University (KSU) are currently active (MENA Private Equity Association, 2013). Table (2) above also shows the venture capital funds established by the Saudi government.

Case (3): the Arab Republic of Egypt

Egypt is the most populated country in the Middle East and its economy is based on a variety of sectors due to its wealth of agricultural and natural resources (MENA Private Equity Association, 2013). In 2012, the country's GDP was USD 262.8 billion (The World Bank, 2014). The country is perceived as a distinguished center of education producing an average of 330,000 university graduates annually and creating a rich pool

of talented well-educated youth. Egypt's youthful population promises a potentially prosperous entrepreneurial environment (MENA Private Equity Association, 2011). The outbreak of the revolution in 2011 has been a remarkable turning point for Egypt on several fronts. However, since then, the country's economy has been very unstable causing deterioration in the business environment. Ironically, this was coupled with the rising hopes of youth and investors that resulted in countless efforts for promoting innovation, nurturing the entrepreneurial environment, and creating jobs (MENA Private Equity Association, 2013). Such efforts are demonstrated in the increased access to financing tools, the establishment of more incubators, the creation of angel networks, and the development of SMEs banking, among others. All these efforts have left the country with an even greater potential for VC investments (MENA Private Equity Association, 2013) and a more conducive business environment from the entrepreneurs' viewpoint (Hattab, 2012).

Despite these efforts, in the 2012 GEM report, Egypt was ranked last among the factor-driven economies with regard to its TEA rate, while it came 3rd amongst the MENA countries participating in the same cycle of the report (Hattab, 2012). Hence, Egypt still has a long journey to develop a vigorous entrepreneurial ecosystem and grow its VC funds (MENA Private Equity Association, 2013). The VC industry is relatively new in Egypt. In 2012 there were only 16 VC corporations in Egypt. While few of these companies actually carry on VC activities, only 9 out of the 16 are listed in the stock market and are basically securities companies listing "venture capital" as one of their activities to take advantage of the tax exemption privileges (Kenawy & Abd-el Ghany, 2012). Recently, Egypt has seen progress in the VC industry including the rise of more active VCs, incubators, an angel investment network, and the Egyptian Private Equity Association (EPEA). Egypt has also ranked higher in the "Global Venture Capital and Private Equity Country attractiveness Index Report" reaching the 57th position in 2013 (Groh, Lieschtenstein, & Lieser, 2013), up 10 positions from 2008 (MENA Private Equity Association, 2013). However, there has been a decline in the investment size and a focus on a very few target enterprises. So, there is still a lot of work ahead before the emergence of a viable VC industry in Egypt (Kenawy & Abd-el Ghany, 2012).

The literature identifies several stumbling blocks for the Egyptian VC industry, including lack of expertise, few promising early stage ventures, limiting entrepreneur and investor behavior and low levels of research and technological innovation. One of the big problems facing VCs in Egypt is the shortage of experienced investors with the required technology and industry expertise to professionally screen deals and pick promising enterprises. VCs find it challenging to get a steady deal flow with attractive ideas and well thought business plans, especially in the technology based areas (Kenawy & Abd-el Ghany, 2012, MENA Private Equity Association, 2013). In terms of behavior, entrepreneurs are usually reluctant to disclose their financial information to VCs and prefer to take loans rather than relinquish equity, which points to the need for raising awareness of entrepreneurs in this regard. As for investors, they prefer projects with low risk, quick profits and minimal involvement. The volatility of the political and economic situation and the subsequent stock market reactions do not provide support for smooth exit of VCs (Kenawy & Abd-el Ghany, 2012, MENA Private Equity Association, 2013).

Before 2012, angel investments in Egypt were pervasive; however, they took the form of personal investments largely relying on personal contacts (MENA Private Equity Association, 2011). In 2012, Cairo Angels was established to act as the first and only formal Egyptian entity connecting angel investors with entrepreneurs. Member investors collaborate in the due diligence process, but eventually, investment is an individual decision. Collective investments for an accepted project range from EGP 250,000 to EGP 1 Million, with a few exceptions that go above these amounts. The network is more than a source of funding as investors not only provide the financial support, but also offer some advisory services. To date, the network has invested a little over EGP 5 Million in eight new businesses, which are mostly technology-related, though the network welcomes projects in other various fields of business (Cairo Angels, 2013).

Entrepreneurship & Innovation Ecosystem

In 2009 and 2010, a number of promising start-ups were founded in Egypt, especially in the internet and mobile sectors. This was a natural consequence of the rising number of internet and mobile users in Egypt, as well as the enhanced technology infrastructure in terms of broad-band connectivity of both mobile and wired networks (MENA Private Equity Association, 2011). During the same period, Egypt also witnessed a significant trend of establishing cross-border start ups which have an operating base in Egypt beside a client-facing base in a well-established target market, mostly the U.S. (MENA Private Equity Association, 2011). After the 2011 revolution, Egyptians were highly concerned about the economic and security situations of the country, while most early stage entrepreneurs perceived the business environment as more conducive to starting and growing a business. Particularly, they felt more positive about the government's performance, conditions for creating start-ups, the developmental levels of the Egyptian cities, and even the economic situation. When it came to the factors directly affecting the entrepreneurial activity, satisfaction of the adult population, in general, was slightly higher after the revolution than before it. These factors included education, training, intellectual property rights, financing instruments, social image of entrepreneurs, as well as social and cultural norms. On the other hand, they felt more negative about the support of the infrastructure and market openness to the entrepreneurial activity, compared to the pre-revolution era (Hattab, 2012). The TEA rate was 7.8% of the population in 2012, of which 3.1% were in the process of starting a business, while 4.8 % were owners/managers of a start up. This TEA rate was the least among the factor-driven economies included in the 2012 GEM report (Hattab, 2012).

The majority of the adult population forming the 7.8% TEA rate was males, aging between 25 and 34 years, and earning an income between EGP 8001 and 10,000. They mostly lived in Egypt and had completed a post-secondary study. In 2012 around 85% of the Egyptian population perceived entrepreneurship as an appealing career. However, only 60% believed they possessed the required knowledge and skills to start their businesses, while a mere 42% had intentions of starting their businesses in the future. Fear of failure was a concern for 33% of the population. On a positive note, Egypt has the least business discontinuation rate among the factor-driven economies where it reached 5.28%, with around 40% quitting due to the unprofitability of their businesses (Hattab, 2012).

There are three major barriers holding Egyptian entrepreneurs back from starting or growing their businesses, namely, culture, education and training and access to finance. The Egyptian culture does not encourage creativity, innovation, or risk taking. It does not promote attitudes of self-sufficiency, personal initiative, and achieving success through independent personal efforts (Hattab, 2012). Moreover, the Egyptian public education system does not contribute to the development of an entrepreneurial mindset nor does it help students acquire skills such as innovative thinking, business development, or risk taking (Sherif, 2014). Several private universities, training houses and non-profit organizations in Egypt offer entrepreneurial education and training (Sherif, 2014). However, most of these initiatives are only accessible to a restricted segment of youth who are English literate and have received a good education (Sherif, 2014). Egypt ranked 68th in technology transfer activities among the 69 countries included in the 2012 GEM report (Hattab, 2012). Access to finance for start-ups is poor despite banking sector reform in 2004 and a number of efforts to make small loans accessible to youth. Nevertheless, access to credit from banks remained a privilege for the larger enterprises due to the risk-averse attitude of banks, as well as the high transaction costs associated with granting credit to start-ups (Hattab, 2012; El-Said, Al-Said, & Zaki, 2012). On the bright side, a number of private-sector financing options have become available, but mostly to those well-educated English literate entrepreneurs who are starting technology-related businesses. Such options include private equity and VC corporations such as Idevelopers and Sawari Ventures, which not only provide access to finance, but rather provide support through incubators and accelerators where they host entrepreneurs with promising ideas (Sherif, 2014).

Investment Laws & Regulations

Investors used to establish their companies under one of the two laws regulating Egyptian business: Investment Law No. 8 of 1997 and Companies Law No. 159 for 1981. An amendment was passed in 2005 (Law No. 94 for 2005) to link the two laws and create a unified law, which simplified procedures for establishing a company. All companies are provided guarantee against nationalization or expropriation, repatriation of capital, dividends, and other profits as well as freedom in setting prices and margins (GAFI, 2005; GAFI 2014). The Investment Law also offers some attractive incentives to foreigner investors and companies operating in Egypt's Free Zones and those in Special Economic Zones (SEZ). The law established a One-Stop-Shop for investors in GAFI (General Authority for Investment), which housed representatives from all the entities responsible for business registration in one place and shortened the registration time to 3 days (GAFI, 2014).

In 2008, the minimum capital requirement for establishing a business was dropped from EGP 50,000 down to EGP 1000, to be completely abolished in 2010 (World Bank Group, 2015). Despite these efforts, entrepreneurs still had negative perceptions of the licensing and registration procedures. Ghanem (2013) attributes the ineffectiveness of the changes to two possible reasons. He explains that either such changes were not well communicated to entrepreneurs so they are not aware of them, or it could be that the changes were not effectively put to action due to some bureaucracy. On the other hand, establishing businesses in Egypt is a much easier process for the influential/well-connected citizens, though they still face barriers in trying to grow their businesses. Consequently, this leaves the socially less fortunate with minimal chances of accessing the market and escaping poverty (Sherif, 2014). Regarding the Intellectual Property Rights (IPR), a law has been passed in 2002 to align the Egyptian IPR regulations with the WTO Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement. Following the agreement obligations is believed to stimulate FDI and boost creativity through a better business environment (GAFI, 2014). However, it should be noted that law enforcement is weak in Egypt while piracy and corruption are very high.

Tax Incentives, Second-Tier Stock Market and Government Venture Capital

In 2005, the Egyptian Authorities passed the Income Tax Law No. 91 of 2005, which has cut personal and corporate income taxes by 50% bringing tax rates from 40% down to 20% for all except the oil and gas companies. In return, the law has phased-out many other tax exemptions stated in the Investment Law, while keeping the tax exemptions on dividends and capital gains from securities/bonds listed in the Egyptian stock market. The same applies to gains from investment funds that comply with the Egyptian stock exchange law and dividends from the Egyptian Central Bank securities (GAFI, 2009). Despite these incentives, taxes are still among the top challenges for doing business in Egypt. A significant percentage of small enterprises do not comply with tax regulations indicating a serious problem with the tax policies concerning small companies (Ghanem 2013). Hence, Egyptian authorities are called upon to seriously consider easing tax regulations and providing more incentives to encourage small businesses and VCs alike (MENA Private Equity Association, 2013).

In 2007, the Nile Stock Exchange (NILEX) was established as a second-tier stock market to provide an alternative source of capital for Egyptian SMEs besides bank loans (Daily News Egypt, 2009). NILEX offers a favorable regulatory framework SMEs' listing and trading that serves investors and SMEs alike with convenience, flexibility and security. It allows SMEs from all sectors and countries the opportunity to access long-term capital to grow their businesses and offers additional services such as company valuation, promotion to customers, suppliers, and stakeholders, in addition to supporting merger and acquisition processes. With regards to investors, NILEX protects their rights and provides them with a variety of fast growing companies to diversify their investment portfolio. On a more strategic scale, NILEX contributes to the economy by promoting job creation and entrepreneurship as a concept, attracting local and foreign

investments for fast growing SMEs, and offering an exit mechanism to VCs (NILEX, 2007). The total volume traded in NILEX for the past five years was 198,911,806 Egyptian pounds.

The Egyptian government has undoubtedly taken steps to improve SME access to finance, enhance entrepreneurs' skills, and provide incubators for promising ideas. Among the most active governmental bodies supporting these initiatives are the Ministry of Communication and Information Technology (MCIT), which established the Technology Incubation Program (TIP) and Technological Innovation and Entrepreneurship Center (TIEC) (MENA Private Equity Association, 2011). GAFI is also a prominent sponsor of entrepreneurship in the country, creating the first sovereign fund for SMEs "Bedaya" (MENA Private Equity Association, 2013) as shown in Table (3) below.

Table (3) aggregates the most prominent Egyptian government initiatives in support of entrepreneurs along with details on targeted beneficiaries and services offered. However, in a survey by Egypt's GEM study (2012) where experts were asked to assess the "extent and quality of government support programs", answers indicated dissatisfaction with government policies and programs. Government programs were deemed ineffective and unsupportive of the establishment and growth of start-ups (Hattab, 2012). Interviews with former executives of the Bedaya government fund point to troubles in raising the targeted investment funds, as well as poor and slow performance. The anonymous experts also informed the researchers that the general quality of the entrepreneurs making use of the Bedaya funds were of the traditional SME types, rather than the high growth entrepreneurial 'hits' that are typically sought after by VCs.

RESULTS AND DISCUSSION

The UAE, KSA and Egypt are the three largest Arab economies in terms of GDP and were chosen for the study because they are among the most active in the area of entrepreneurship, which attracts venture capitalists in search of investment opportunities. Other active countries in the field are Jordan and Morocco. Egypt is also the most populated Arab country, prominent as a hub for culture and education, with a majority of its 82 million population in poverty. The UAE is the most progressive among the Arab countries in terms of developing its business climate and attracting foreign entrepreneurs and investors. Moreover, it sets an example of a small oil rich country that has taken remarkable steps in diversifying its economic base and attracting an expatriate population five times the size of its indigenous population.

KSA is largest Arab economy and relatively highly populated country that is largely dependent on oil and needs to start diversifying its economy. The three country case studies are to a great extent exemplars of the status of the VC sector in other Arab countries and many developing countries outside the Arab region striving to ignite their economic engine with fuel from entrepreneurship and innovation. Comparing the public policies of the three countries that are relevant to the development of VC yields some interesting insights on the pre-emergence conditions of the three countries, the gaps that need to be tackled and the required policy support. The comparative analysis follows the elements of the VC public policy framework presented at the beginning of the paper and elaborated in each of the three country case studies. First, the entrepreneurial ecosystem is most developed in the UAE, followed by Egypt and then KSA. The business friendly climate in the UAE has gone a long way in making the country a destination for business people, while there are efforts underway in Egypt and Saudi to improve on that front. Culture continues to be a barrier toward entrepreneurial activity as the three countries share an inclination away from risk taking and individual initiative, and a marked fear and stigma attached with failure. Egypt is at a unique moment in its history as opposing forces play out in the political and economic arenas. The unstable political situation and the consequent volatility of the economy is an obstacle for Egypt's progress in attracting entrepreneurs and investors.

Table 3: Egyptian Government Venture Capital Funding

Government Funded Incubators, Science Parks, Research Funding	
<p>The Technology Innovation and Entrepreneurship Center (TIEC) http://www.tiec.gov.eg/Pages/VariationRot.aspx 2010</p>	<p><u>Aim:</u> To become a prominent regional hub for innovation and entrepreneurship in the field of ICT and to drive the country towards an innovation-based economy.</p> <ul style="list-style-type: none"> - Commercialize innovations, issue IP licenses, and generate revenues - Entrepreneurship Support through the Technology Entrepreneurship Accelerator (TEA) and the Startup Support program - Incubation: Start IT Business Plan competition and Start IT Virtual Incubation Program both allow startups to benefit from incubation services offered by TIEC including workspace & consultancy services - Innovation Support through its Egypt Innovate ICT Award and TIEC Capacity Building Program “ Innov Egypt-Industry” - Technology Management: providing technology labs that fulfill the needs of developers in terms of training, certifications, and testing in the areas of mobile, electronics, and cloud computing.
<p>Science & Technology Development Fund (STDF) http://www.stdf.org.eg 2007</p>	<p><u>Aim:</u> Catalyzes the scientific field in Egypt through funding research</p> <ul style="list-style-type: none"> - Technology Incubators Program: Seeks commercializing R&D outcomes by supporting fresh start-ups and guiding them towards the required know-how of building their businesses. - Centers of Scientific Excellence: Aims to build scientific centers that enhance the quality of research in Egypt and boost top-level research. - Development & Innovation: Provides innovation grants, supports building networks of research centers, and offers joint funds together with the Egyptian International Modernization Center (IMC).
<p>Social Fund for Development (SFD) http://www.sfdegypt.org/web/sfd/aboutus 1991</p>	<p><u>Aim:</u> Achieve socio-economic development through reducing unemployment, poverty, and raising living standards.</p> <p>Offers administrative services & provides loans through its 31 one-stop-shop offices</p> <p>Promotes entrepreneurship, facilitates networking, training, incubation, and technical support.</p> <p>Financing SMEs through direct loans, Shariah-compliant tools, links to banks</p>
Public Venture Capital Funds	
<p>Bedaya Centre for Entrepreneurship and SMEs Development 2010 https://www.linkedin.com/company/bedaya-center-for-entrepreneurship-and-sme-development</p>	<p><u>Aim:</u> Foster economic development through supporting the development and growth of SMEs. With an initial total capital of around EGP 134 Million Bedaya works in three directions:</p> <ul style="list-style-type: none"> - Bedaya SMEs Clinics Program - Funding through private equity or loan guarantees - Bedaya StartUp Academy
<p>The Technology Development Fund (TDF) http://www.mcit.gov.eg/Media_Center/Press_Room/Press_Releases/1079 2004</p>	<p><u>Aim:</u> Invests VC funds in Egyptian start-ups to support potential ICT projects.</p> <ul style="list-style-type: none"> - Operates as a public-private partnership where the MCIT provides incubation services and facilities at Smart Village (the ICT premier zone in Egypt), EFG Hermes (one of the top private equity companies) is the private sector arm that manages the funds, and IDEAVELOPERS (the VC subsidiary of EFG Hermes) provides advisory services to the fund managers, as well as the incubated companies. - The first round fund was EGP 50 Million and was raised from several leading Egyptian organizations.

This table shows the most prominent Egyptian government initiatives in support of technological innovation and entrepreneurship along with details on targeted beneficiaries and services offered. Government venture capital and private equity funds are also shown.

At the same time, the social dynamic that has been unleashed since January 2011 shows that the massive numbers of young, educated and passionate Egyptians are gradually starting to take matters in their own hands as skepticism rises toward the various political regimes. Entrepreneurial initiatives are on the rise and the entrepreneurial spirit is taking hold, at least among a segment of well educated youth, who may hold promise and build momentum toward a tipping point for wider social and cultural reform, in which risk taking and individual initiative are applauded and fear of failure recedes. Entrepreneurship education and business training are areas where significant work needs to be done, especially in Egypt and KSA. Public universities in Egypt are fertile grounds for entrepreneurial education. Access to finance for SMEs also points to a gap that needs to be tackled and where further efforts are needed in the three countries. Furthermore, technological innovation and scientific research and development are quite weak in the three countries, and commercialization activity is scant.

Mobile and web applications are areas of high technology entrepreneurship that may bear lower hanging fruit for the Arab region. Second, we compare reforms in investment laws and regulations to encourage entrepreneurship and to provide the legal infrastructure for the operation of VC. The three countries have made significant progress with respect to the registration process for new companies, making it simple, quick and accessible for any person to set up a legal business, though the UAE is at the lead. The bankruptcy process is still problematic, lengthy and threatening to entrepreneurs and further reform is needed on that front in the three countries. Also important are laws and regulations to facilitate the mobilization of large institutional investors toward VC, the setting up of limited partnerships and investor ownership of convertible preferred stock, which are specific to VC operation and thus foster the supply of VC. On this front, there is a lot of regulatory reform needed, especially in Egypt where VCs still prefer to set up their offshore funds to bypass the complications of Egyptian regulation.

The third policy mechanism relates to fiscal policy and tax incentives. The UAE has the least tax levels and offers businesses many opportunities for tax exemptions. KSA comes next with no sales and value added taxes, 20% personal and corporate income taxes for foreigners and Islamic zakat rates for nationals. Egypt also sets its personal and corporate incomes taxes at 20%, which is a marked improvement. All three countries offer significant exemptions to companies operating in free zones. Moreover, Egypt offers exemptions on capital gains taxes for securities of companies traded on the Egyptian stock market. Egypt is the country with the most problems in tax collection and enforcement, as well the highest government budget deficit. Therefore, future policy reform may better target streamlining and simplification of taxation evaluation and payment processes rather than offering further tax exemptions to VCs.

Fourth, the second-tier stock market is an essential ingredient to strengthen the supply of VC as it represents the outlet for viable exit strategies, a necessary stage in the VC investment process. Egypt is the only country among the three that has established its second-tier market, NILEX, since 2007, which is a significant achievement. The trading volume and the number of listed companies are relatively low. Since the entrepreneurial ecosystems of many Arab countries are still nascent, positioning NILEX as the 'NASDAQ' of the Arab region may be a fruitful strategy for the near future. Policies to attract more companies from the region need to be explored and gaining critical mass in the already established market should take precedence, from a regional perspective, over creating other second-tier exchanges that will also suffer from weak activity. However, to achieve this, huge regulatory reforms are needed to remove obstacles in the face of local and foreign investors and entrepreneurs.

Finally, government provision of VC is the last supply side policy that is explored in the current study. The analysis shows that Dubai is the country with the largest government VC funds, followed by Saudi Arabia. Egypt has only one government fund, Bedaya, which is understandable given the financial shortages the government has experienced, especially in the years following the 2011 revolution and the ensuing political unrest and economic stagnation. The weak level of government VC funding is not seen as the primary deficiency; on the contrary it is adequate for the current level of development of the pre-conditions that are required for the emergence of an active VC sector. High amounts of government VC funds would be more destructive than helpful at this stage. Government funds would better be targeted at enhancing the demand side, to create a steady flow of investible start-ups and demonstrate profitable VC investment that would attract VC funds. Only then will it make sense for the governments to direct more public VC funds to the sector.

CONCLUSION

This study has examined the current state of public policies that the governments of the United Arab Emirates, the Kingdom of Saudi Arabia and the Arab Republic of Egypt have adopted to facilitate the emergence of a venture capital industry. The study has used a comparative case study methodology based on a conceptual framework on public policy for venture capital, drawn from the extensive literature on the

topic. In this concluding section, we highlight the main recommendations that arise from the analysis and the possibilities for future research. The analysis presented above points to the need for more demand side policy work to be accomplished for the supply side policies to have a greater impact. Without generating a flow of entrepreneurial start-ups to attract VC, supply side policies and infrastructure will remain limited. The focus of the governments in the coming years should be on igniting the entrepreneurial spirit and removing obstacles for newly established enterprises, with special focus on high growth potential enterprise. The highest priorities in this respect are in building skills and talent through training and education of entrepreneurs and investors, and improving their access to finance while augmenting the supply of risk capital for young companies with public funds. Although the current level of government VC funds is quite low in the three countries under study, this level of supply of government VC is adequate for the stage of development of the entrepreneurial ecosystems.

Higher supply of government VC funds would be harmful as the three countries are yet to develop an adequate flow of promising and investible start-ups. When the latter exist, they will attract foreign and regional VC funds, which can then be matched and augmented by government VC funds. Taking the evolutionary perspective, the pre-conditions for the emergence of the VC sector are still under development. Extensive regulatory reforms, especially in Egypt, are badly needed to remove current obstacles facing entrepreneurs and VCs. Future research on public policy for VC in the Arab region specifically, and in developing countries more generally, may usefully tackle each of the five policy mechanisms in detail. For each policy mechanism, country idiosyncrasies may be compared to successful patterns in countries with highly evolved VC industries, to point to areas for further reform and improvement. Furthermore, research on the performance of the early movers, the venture capital funds currently operating in the Arab countries will illuminate areas for policy research and action.

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