

# **Neither Pirates nor Politicos: The Emergence of Venture Capital in Weak Institutional Environments**

Submitted by David Charles Lingelbach, to the University of Exeter as a thesis for the degree of Doctor of Philosophy in Management, April 2009

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(Signature)\_\_\_\_\_

## ACKNOWLEDGEMENTS

I have been fortunate to have had the support of a number of gifted scholars and individuals on the long journey to this degree. Lincoln Bloomfield, Louis Menand III, Richard Douglas, and Philip Windsor were models of scholarship, teaching, and public engagement while I was a student at M.I.T. and the London School of Economics. Their examples continue to guide me today. When I sought to reenter academia after a very long absence, Roger Leeds and Paul Draper each took a chance on me, which led to my pursuit of a Ph.D. Gordon Murray has been the consummate mentor, thesis supervisor, and friend; thanks for igniting my passion for research. Harry Sapienza has been an exemplar of intellectual clarity; thanks for helping me think through some central ideas at the beginning of this process. Evan Gilbert and Heather Sherwin have been important collaborators in this research project. Paul Lack of Stevenson University provided financial support for the initial fieldwork in South Africa. Noell Sottile was kind enough to proofread this work before it was submitted for examination. Each in their own way, my mother and father have been sources of comfort, love, and inspiration. Without my Jenny and our Catie, my life would be nothing. To all these, this work is dedicated.

**ABSTRACT**

Existing variance studies of venture capital (VC) provide an incomplete understanding of VC emergence, emphasizing either macro-level enabling conditions or the efficient fund-level operation of the VC cycle. While important, such perspectives do not provide for a complete understanding of the systemic, processual character of VC emergence. A multistage process model of emergence is developed, linking industry structural characteristics and their underlying processes to precursor resources through the intermediate processes of coproduction and diffusion. Using data from multiple embedded case studies in South Africa and Botswana, this model integrates four processes--simultaneity, coproduction, diffusion, and the VC cycle. These processes are linked by a logic that is dominated by initial conditions and includes elements of rational choice (conditioned by path dependence) and altruism. The establishment of appropriate simultaneity conditions enables the diffusion of the established VC model and related institutions from other populations. In the presence of a market failure, government investors and private fund managers can then cooperate to fill the equity gap, creating the signal necessary for replication of additional VC funds through the functioning of the VC cycle.

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## Abbreviations

AltX	Alternative Stock Exchange of Johannesburg Stock Exchange
AMSCO	African Management Services Company
ANC	African National Congress
ARD	American Research and Development
AVCA	African Venture Capital Association
BAC	Biotechnology Advisory Council
BANSA	Business Angel Network South Africa
BBBEE	Broad-based black economic empowerment
BDC	Botswana Development Corporation
BEE	Black economic empowerment
BRIC	Biotechnology Regional Innovation Center
BV	Bioventures
B&B	Bed and breakfast
CDC	Commonwealth Development Corporation
CEDA	Citizens Entrepreneurial Development Agency
COSATU	Congress of South African Trade Unions
CSIR	Center for Scientific and Industrial Research
CVC	Corporate venture capital
DACST	Department of Arts, Culture, Science and Technology
DBSA	Development Bank of Southern Africa
DFI	Development finance institution
DST	Department of Science and Technology
DTI	Department of Trade and Industry
EBRD	European Bank for Reconstruction and Development
EDESA	Development Bank for Equatorial and Southern Africa
EIB	European Investment Bank
EIS	Enterprise Investment Scheme
FAP	Financial Assistance Policy
FSB	Financial Services Board
FX	Foreign exchange
GDP	Gross domestic product
GEAR	Growth, Employment, and Redistribution: a Macro-Economic Strategy
GEM	Global Entrepreneurship Monitor
GNI	Gross national income
HDI	Human development index <sup>12</sup>
HIV	Human immunodeficiency virus
ICFC	Industrial and Commercial Finance Corporation
ICT	Information and communication technology
IDC	Industrial Development Corporation
IFC	International Finance Corporation
IIF	Innovation Investment Fund
IP	Intellectual property
IPO	Initial public offering
IRR	Internal rate of return
IT	Information technology

JSE	Johannesburg Stock Exchange
LAO	Limited access order
LBO	Leveraged buyout
MBA	Master of business administration
MNC	Multinational corporation
NACI	National Advisory Council on Innovation
NCSA	Natural Carotenoids of South Africa
NDB	National Development Bank
NEDLAC	National Economic Development and Labor Council
NEF	National Empowerment Fund
NIE	New institutional economics
NSI	National system of innovation
OAO	Open access order
OECD	Organization for Economic Cooperation and Development
OPIC	Overseas Private Investment Corporation
P	Botswana pula
PE	Private equity
PIC	Public Investment Corporation
PPP	Purchasing power parity
R	South African rand
RAH	Real Africa Holdings
RB	Reserve Bank
RDB	Reddingsdaadbond
RFID	Radio frequency identification
RIC	Regional Innovation Center, now renamed Biotechnology Regional Innovation Center (BRIC)
R&D	Research and development
SACP	South African Communist Party
SACU	Southern African Customs Union
SAEDF	Southern Africa Enterprise Development Fund
SAIDCOR	South African Inventions Development Corporation
SAVCA	South African Venture Capital and Private Equity Association
SBA	Small Business Administration
SBDC	Small Business Development Corporation
SBIC	Small Business Investment Company
SBIR	Small Business Innovation Research
SEDA	Small Enterprise Development Authority
SETA	Sector Education Training Authority
SIDBI	Small Industries Development Bank of India
SME	Small and medium sized enterprise
SPRDP	Selebi-Phikwe Regional Development Project
TTO	Technology transfer office
UCT	University of Cape Town
UNDP	United Nations Development Program
USAID	United States Agency for International Development
UYF	Umsobomvu Youth Fund
VC	Venture capital
VCT	Venture capital trust

VPB

Venture Partners Botswana

### **Declaration**

Earlier versions of both the theoretical framework and a portion of the data in this thesis were presented as two papers at international conferences. The first paper, co-authored with Gordon Murray and Evan Gilbert, was presented at the 2008 International Congress of Small Business in Halifax, Canada, while the second, co-authored with Heather Sherwin, was presented at the UN University—World Institute for Development Economics Research’s workshop on Entrepreneurship and Economic Development. In both instances, I served as the lead co-author.

I hereby declare that the material used in this thesis is based on my contribution.

## Chapter 1

### Introduction

#### *1.1 Overview*

Over 400 million new and young firms currently operate in developing and emerging economies. Of these, a tiny percentage--almost certainly less than 1%--are high growth, high potential businesses that can create or transform industries, improve productivity, contribute to economic growth, and create both jobs and wealth (Shane, 2008). While venture capital's role in financing new firms is minor in comparison to other instruments including informal investment and even commercial lending, at least in the United States (Shane, 2008), high growth, high potential firms rely on venture capital (VC) as a key resource provider.<sup>1</sup>

Venture capital's role in financing high growth entrepreneurship has been important in the major economies studied to date (Reynolds, Hay, Bygrave, Camp, and Autio, 2000)<sup>2</sup>, and VC is heavily concentrated in a few advanced economies, including the United States, the United Kingdom, and France (Megginson, 2004). In the literature venture capital has been defined as "a professionally managed pool of capital that is invested in equity-linked securities of private ventures at various stages in their development" (Sahlman, 1990). These ventures are typically involved in the creation of new assets involving new firms with innovative technologies ('classic' venture capital).

The percentage of private equity (PE) and venture capital funds raised for investments in emerging and developing economies has increased since 2001:

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<sup>1</sup> Venture capital may also play an additional indirect role in fostering economic development through its stimulus to financial sector development by providing additional equity that can be used as a basis for commercial bank and other types of lending (Berger and Udell, 1998).

<sup>2</sup> Total private equity and venture capital under management in 2005 is estimated at \$1.1 trillion, compared to global financial stock of \$118 trillion, but the majority of this figure is believed to be private equity and the bulk of venture capital is invested in rich countries. However, capital under management is growing more rapidly in many developing countries than in developed economies.



**Table 1.1--Private Equity and Venture Capital Levels in Emerging and Developing Economies**

Year	2001	2002	2003	2004	2005	2006	2007	2008
Total PE/VC funds raised (USD millions)	154,044	102,427	90,498	141,690	265,414	399,635	508,226	442,776
PE/VC funds raised for emerging markets	6,561	3,231	3,489	6,545	25,765	33,193	59,160	64,317
% of total	4.3	3.2	3.9	4.6	9.7	8.3	11.6	14.5

Source: Emerging Markets Private Equity Association (2009)

Reflecting this phenomenon, a growing body of literature has focused on empirical descriptions of venture capital in developing and emerging economies (e.g. Nye and Wassermann, 1999; Ahlstrom, Bruton, and Chan, 2000; Dossani and Kenney, 2002), and some efforts have been made to develop a more general theory of how national venture capital industries emerge (Manigart, 1994; Gilson, 2003; Avnimelech, Kenney, and Teubel, 2004; Ahlstrom and Bruton, 2006). However, relatively little research has focused on venture capital emergence at the frontiers of the phenomenon--the developing and emerging economies. Organizations are most likely to change their form in these frontier contexts, where the organization is more marginal and unstable. By studying organizational forms such as venture capital in these settings, a better understanding of how such organizations change can arise, from which a more complete theory can be developed about how organizational populations first emerge (Tsoukas and Chia, 2002).

Existing explanations for venture capital emergence have focused on institutions and enabling conditions as key determinants. Institutional explanations have emphasized legal origin as a key independent variable. Countries with English legal origin are more likely to protect minority investors such as venture capitalists (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1998), higher levels of venture capital exist in stock

market-centered financial systems<sup>3</sup> (Black and Gilson, 1997), and the level of initial public offering (IPO) activity in developed countries is positively correlated with later-stage venture capital investments, but not with early stage investments (Jeng and Wells, 2000). These findings suggest some possible drivers of venture capital emergence, namely English legal origin and, closely related to it, stock market-centered financial systems and IPO activity. Explanations based on enabling conditions as the key drivers of VC emergence have taken a variety of forms, the most prominent of which identifies the apparent need for the simultaneous presence of capital, specialized financial institutions, and entrepreneurs as the central engineering problem associated with the development of venture capital (Gilson, 2003).

While offering important insights into the phenomenon of venture capital emergence, these explanations suffer from a number of gaps and fail to explain some important anomalies. I turn now to a review of these.

## 1.2 *Gaps in the existing literature*

To date research on venture capital emergence has relied on data from advanced industrial economies where venture capital is more prevalent. In addition, these data have focused on venture capital after it has emerged and become established. At this stage in the industry's evolution data is more readily obtainable from datasets, industry associations, VC funds, and other sources. The greater range of quantitative data available at this stage facilitates robust statistical analyses of venture capital's determinants. The assumption arising from these analyses' findings is that venture capital is isomorphic. Yet, as noted above, change in organizational forms typically occurs at its margins, so, by studying venture capital in its prototypical core setting (United States, Europe, and, to a lesser extent, Japan), current researchers are collecting data about VC in the settings where it is most likely to be a stable form. Moreover, such methods may not be optimal in a domain where theory remains in the early stages of development (Van de Ven and Poole, 1995).

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<sup>3</sup> No commonly accepted definition of bank versus market-centered financial sectors exists at present. I have used results from Levine (2002) to distinguish between sectors along the activity, size, and efficiency dimensions developed in Levine (2002).

More recently, researchers have attempted to address this shortcoming by extending theory-building about venture capital using data from developing and emerging economies. These studies have focused on Israel (Avnimelech, Kenney, and Teubel, 2004), India (Dossani and Kenney, 2002), and China (Ahlstrom and Bruton, 2006), where the largest VC industries have emerged outside of the core countries. Their findings have made important contributions to our understanding of VC emergence, by highlighting a stage theory approach to emergence (Avnimelech, Kenney, and Teubel, 2004), calling attention to the need for policymakers and practitioners to cooperate to create VC industries (Dossani and Kenney, 2002), and applying network theory to VC emergence (Ahlstrom and Bruton, 2006). However, none of these studies have attempted to generalize their findings to a more general theory of venture capital emergence, perhaps because they have focused on regions where idiosyncratic institutional attributes and unique events (the migration of Soviet engineers to Israel in the early 1990s, India's history of state intervention, and *guanxi* in China, for example) might limit the generalizability of any resultant theory.

Existing studies of venture capital emergence also rely heavily on rational choice theory as the logic governing the relations between investors, fund managers, investees, and the state. Rational choice theory argues that individuals and organizations seek to maximize their wealth, status, and power (Goldstone, 1998). In particular, wealth maximization, reconfigured as marginal utility maximization in neoclassical economics, has been assumed as the principal motive of investors and fund managers in virtually every study of VC emergence to date. As a result, the possibility that VC actors might be seeking to maximize something other than wealth, such as status or power, has been understudied to date, as has the possibility that VC actors might be governed by logics other than rational choice theory, such as path dependence, initial conditions, or altruism (Goldstone, 1998). In particular, the ahistorical nature of VC theory, reflecting assumptions that logics such as path dependence and initial conditions may not be operating in VC emergence, is notable.

The theoretical perspectives that have been applied to venture capital studies to date are derived from economics and are focused on the principal-agency relationship and how venture capital manages the relationship between investors (principals), fund managers

(both principals and agents), and investees (agents) in conditions of imperfect information. Other theoretical perspectives beyond agency theory may provide additional insight into the VC emergence process, especially when the unit of analysis moves from the transaction and fund levels to the industry and cross-industry levels. Institutional theory, which focuses on the ‘rules of the game’ (North, 1990), may complement agency theory, while retaining a rational choice theory-centered approach. Economic sociology could widen the theoretical lens further by introducing non-materialist motivations, some of which fall within a rational choice theory approach (actors seeking to maximize status and/or power) and others outside of this dominant paradigm. Population ecology approaches could be expanded by including the perspective of diffusion theory.

The role of government in the venture capital emergence process has also been understudied to date, and theory development around this research question remains in its early stages. Considering the complex simultaneity problem presented by the venture capital phenomenon, and the importance ascribed by many governments to entrepreneurship, it is not surprising that an additional factor that may be associated with the presence of active venture capital sectors <sup>4</sup> is the degree and type of government support for such sectors. Government policy has been identified as an important factor in the establishment of globally competitive industries (Porter, 1998), and some scholars have asserted that virtually every national venture capital sector has been created with government support (Lerner, Moore, and Shepherd, 2005). However, it remains unclear if this support is necessary or incidental to the creation of vibrant venture capital sectors, and whether this support is mainly indirect (in the form of regulatory change and tax incentives) or direct (in the form of investment in venture capital funds). In addition, during market downturns in some countries public venture capital--government programs that directly fund entrepreneurial firms or encourage or subsidize the development of outside investors through equity or equity-like investments (Lerner, 2002)--has served as a substitute for illiquid or poor functioning

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<sup>4</sup> There is no agreed methodology for determining the existence of an active venture capital sector. Using the presence of a national venture capital association as one possible indicator of an active (or aspirations for a) venture capital sector (Kenney, Haemmig, and Goe 2006), 18 middle or low income countries or regions have such sectors at present: Africa, Asia-Pacific, Brazil, China, India, Indonesia, Latvia, Malaysia, Mexico, Latin America, Philippines, Poland, Russia, Slovakia, South Africa, Thailand, Tunisia, and Turkey. Another possible indicator is the presence of legislation specifically targeted at the venture capital sector, such as tax incentives.

private venture capital markets (Maula, Murray and Jääskeläinen, 2007). It also remains possible that public venture capital is a consequence, rather than an antecedent, of active venture capital sectors, in which case it remains uncertain if its presence is useful, irrelevant, or even destructive. Nonetheless, the phenomenon continues to exist and remains an active part of the policy agendas of many developing countries and the international development agencies that support them.

In many economies, venture capital can be considered as an ‘infant industry.’ A principal policy measure used to catalyze infant industries is protection from foreign competition through tariffs, quotas, exchange rate policy, and/or subsidies, although the track record of these measures is mixed at best (Perkins, Radelet, Snodgrass, Gillis, and Roemer, 2001). Of these, only subsidies are relevant to venture capital, as indigenous venture capitalists rarely face foreign competition early in their sector’s development. Welfare losses are lower with subsidies than with tariffs, and, as budgeted expenditures, subsidies are easier to account for (and thus easier to control) than tariffs or quotas. Finally, subsidies are easier to target than tariffs. Direct and selective policy measures, such as subsidies to the initial entrants to an industry to discover better production techniques, can increase social welfare and achieve socially efficient allocation of resources (Baldwin, 1969).

The key (and controversial) issue in infant industry policy is selection: which industries should be supported? While Japan, Korea, and Taiwan are often noted as examples of successful industrial policy, the impact of this policy appears to have been minor (Noland and Pack, 2003). Most examples are ones of failed policy, such as petrochemicals in Colombia, textiles in Kenya, and chip fabrication in the UK. Thus, the payoff to most developing countries from infant industry policy is likely to be slight, and developing a crystal ball to predict the industries of the future is likely to be futile.

Having said that, development of a venture capital sector is different from other types of infant industry development, in that venture capital complements a wide variety of industries, the common denominators of which are innovation and growth. Thus, subsidizing the development of venture capital does not require that a government take a view of the likely success of a particular sector, but rather on whether its economy is

already generating (or is capable of generating relatively soon) sufficient levels of innovation that can be translated into new firms with business models that can provide attractive risk-adjusted returns to venture capital investors. As we will see in Chapter 2, strong forces in many developing countries are arrayed against the development of innovative capacity. The infant industry literature also suggest that, in order to increase welfare and efficiently allocate resources, any public venture capital program intervention must be 1) direct, 2) likely in the form of a subsidy or its economic equivalent, 3) agnostic as to the industry or industries in which the program invests, but focused only on those firms that are innovative and growth oriented, 4) narrowly focused on new entrants to the venture capital sector, and, hence, 5) temporary by its very structure. Few government support programs for venture capital, whether in developed or developing countries, meet all or even the majority of these criteria. For example, the Small Business Investment Company (SBIC) program in the United States has been in existence continuously since 1958, despite the subsequent development of an active venture capital industry.

A wide variety of government support instruments exist to support the emergence of private venture capital activity. These instruments support policy programs that have two broad objectives: protection of existing small businesses and improvement in the overall competitiveness of the national economy. These programs can be grouped into instruments that involve the transfer of financial resources from the government to the private sector, and other, non-financial instruments concerned with regulatory reform or institutional development, as indicated in the following figure:

**Figure 1.1--Entrepreneurship Policy Programs**

<u>Policy Programs</u>	
Protection of small businesses	Improve competitiveness
<u>Instruments</u>	
Financial instruments	Non-financial instruments
R&D subsidies	Pension fund regulations
Direct subsidies to entrepreneurs	Taxation (personal or corporate)
Public venture capital programs	Secondary equity markets
Incubators	More flexible labor markets
Research commercialization	Changes in companies act

Source: Author

Many of the financial forms of support, notably direct subsidies and government-controlled venture capital firms, have generally failed to seed venture capital sectors, at least in developed economies (Gilson, 2003). However, government-funded venture capital appears to attract additional private funding to the sector (Leleux and Surlemont, 2003). While based largely on data from rich countries, these findings suggest that the type, timing, and extent of government support, as well as the nature of the policy blockage or failure being addressed, are all important variables having an impact on the relationship, if any, between government support and the emergence of active venture capital sectors.

Despite the general problems with subsidy effectiveness, as well as the lack of empirical support for its efficacy, public venture capital represents a form of government support that has held a particular fascination for policymakers in some developing countries. Public venture capital programs that were modeled in part on programs from other countries include SIDBI Venture Capital in India and Bahana Artha Ventura in Indonesia. The successes of the Small Business Innovation Research (SBIR) and Small Business Investment Company (SBIC) programs in the United States have fueled this interest, in part because both are believed to have contributed significantly to the development of the US venture capital industry (Lerner, 1999, 2002).

However, the global decline of the state since 1975 (van Creveld, 1999) has called into question the capability of many governments to play a useful role in the development of venture capital, particularly in developing countries characterized by weak institutional environments. While the literature does not agree on one definition, these environments can be characterized by a combination of weak property rights protection (particularly for minority investors), low levels of trust, poor tax administration, and high levels of ethno-linguistic fractionalization. Innovative state-led institution-building in the financial sector has been infrequent, with the development of public credit registries in poor French legal origin countries being an exception (Djankov, McLiesh and Shleifer, 2006). Despite substantial institutional endowments in many economies at the time of decolonization, governments in developing countries have a poor track record in providing public services (Pritchett and Woolcock, 2003).<sup>5</sup> Therefore, this study begins with a healthy skepticism about the capacity of governments in developing countries to design and implement effective programs in support of venture capital emergence.

Well-designed public venture capital programs can stimulate the formation of a private venture capital sector by helping to create necessary commercial and financial infrastructure (law firms, accounting agencies and data collection groups such as Venture Economics) and nurture business environments in which startups can succeed (Gompers and Lerner, 2001), but good designs appear to be few and far between (Gilson, 2003; Armour and Cumming, 2003). Amongst the design and implementation errors that public venture capital programs have made is to invest too little (Gompers and Lerner, 2001) or too much (Carragher and Kelly, 1998), become captured by interest groups (Gompers and Lerner, 2001), or too strictly follow geographical diversification guidelines to keep political interests happy (Lerner, 1999; Gompers and Lerner, 2001). The issue of interest group capture is of particular salience to this study, and I will return to it in greater detail in Chapter 2.

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<sup>5</sup> It is important to note that weak institutions are not necessarily synonymous with underdevelopment. Many developing countries became independent in a condition where they possessed strong governmental and educational institutions, e.g Ghana and much of British and French Africa. These countries were underdeveloped at independence, but had reasonably strong institutions. Subsequent to independence, these economies have remained underdeveloped, but their institutions have only weakened. The most robust measure of underdevelopment remains per capita GDP, as the more universal features of economic development (health, life expectancy, literacy, and so on) appear to follow from growth in per capita GDP (Ray, 1998).



Public venture capital funded by international agencies such as the International Finance Corporation (IFC), the US Agency for International Development (USAID), and the Overseas Private Investment Corporation (OPIC) have also faced many challenges, albeit different ones than those faced by purely domestic public venture capital. To date, few of these programs appear to have played a significant role in causing the emergence of venture capital in countries where they have been active. The challenges faced by these programs have included generally difficult investment environments in many developing economies in which such funds focus; little or no oversight experience on the part of public officials overseeing such funds, leading to poor fund manager selection; failure to attract the most talented fund managers, due to restrictions on compensation arrangements; overly narrow mandates, which limit flexibility and threaten sustainability; and lengthy approval processes, leading to the loss of deals to private firms (Gompers and Lerner, 2001). The last challenge is particularly noteworthy, as such funds often invest when asset price cycles are at or near their peaks, reducing the likelihood that attractive realized IRRs will be earned. By contrast, successful public venture capital programs (at least in the United States, where many programs emphasize technology commercialization) appear to complement, rather than substitute for, private venture capital activity, including by focusing on technologies and industries that aren't popular with private venture capitalists and other investors, and providing follow-on capital to investees of private venture capital funds when private fundraising falls off (as it often does in the venture capital cycle); adopt flexible responses to inevitable shifts in investee plans; and conduct effective due diligence, including assessment of investee overreliance on government grants and public venture capital, tangible progress as a result of such grants or public money, and lack of managerial experience (Gompers and Lerner, 2001).

Having reviewed some of the gaps of the literature, I will now examine some anomalies that further highlight the relevance of this research topic.

### 1.3 *Anomalies in the data concerning venture capital emergence*

Some evidence exists that venture capital emergence in developing and emerging economies may take place in ways that contradict existing explanations. Some economies--for example, Malaysia and South Africa--have succeeded in establishing attractive enabling conditions for venture capital, but venture capital has failed to take root<sup>6</sup>, calling into question whether such conditions are sufficient.<sup>7</sup> A few venture capital industries--for example, Brazil and Chile--have emerged despite low VC organizational population densities and the distance of these industries from other populations of venture capital funds, suggesting that population ecology theory explanations are not fully sufficient. Economies with strong network effects between entrepreneurs and financiers--for example, Indonesia and Pakistan--have failed to produce active VC industries to date, which leads one to question how general a networks-based explanation of emergence might be.

Since venture capital is a part of the resource acquisition process, which follows the opportunity identification, evaluation, and exploitation processes in new firm formation (Shane, 2003), it is logical that these earlier processes might help to shape the ways in which VC emerges. If opportunity identification, evaluation, and exploitation are different in developing and emerging economies than in developed ones, venture capital emergence may also be different as a result.

The dynamic nature of the opportunity set associated with venture-backed firms in developing and emerging economies is shaped by a number of structural factors. As a country's GDP/capital increases, its rate of new firm formation decreases (Shane, 2008; Reynolds, forthcoming), due to rising opportunity costs associated with leaving wage employment for self-employment as incomes rise (Carree, Van Stel, Thurik, and Wennekers, 2002) and the economies of scale arising from the substitution of capital for labor as wages rise (Noorderhaven, Thurik, Wennekers and Van Stel, 2004). In

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<sup>6</sup> While both countries have national venture capital associations (one possible indicator of an active venture capital industry), levels of seed, startup, and early stage investment have fallen off in both countries in recent years. Chapter 4 will examine this phenomenon in South Africa in detail.

<sup>7</sup> The Malaysian and South African development experiences have been compared by the ANC, which has noted the former's state-driven growth, poverty alleviation, and reduction in income disparities between the minority Chinese and majority Malay populations (Southall, 2006).

addition, as countries increase their GDP/capita, the economic structure shifts from one dominated by agriculture to those dominated by manufacturing and services (Shane, 2008). Since entrepreneurship is less common in manufacturing than in agriculture (Shane, 2008), this shift leads to a decrease in the percentage of the population in new or young businesses, as the following table of data from developing countries indicates:

**Table 1.2--The Relationship between New Firm Formation and Economic Structure**

<b>Country</b>	<b>World Bank Income Group Classification</b>	<b>% of Population in New or Young Firms</b>	<b>% of GDP from Agriculture</b>
Thailand	Lower middle	27.2	10
China	Lower middle	22.6	13
Brazil	Upper middle	18.3	7
Jamaica	Upper middle	16.2	6
Venezuela	Upper middle	16.1	4
Chile	Upper middle	9.1	5
Argentina	Upper middle	8.9	10
Latvia	Upper middle	7.8	4
Slovenia	High	7.7	3
Croatia	Upper middle	6.2	8
Mexico	Upper middle	3.3	4
South Africa	Upper middle	3.0	3
Hungary	High	2.8	5

Source: Shane (2008), World Bank Development Indicators

Consequently, VCs can generally expect to see a larger opportunity set of new and young firms in developing and emerging economies than in developed economies <sup>8</sup>, and these firms are more likely to be in agriculture than in manufacturing and services.

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<sup>8</sup> The Global Entrepreneurship Monitor project measures the level of both opportunity and necessity entrepreneurship across 42 countries and over time in many of these economies. A significant number of developing countries have levels of opportunity entrepreneurship (measured as the percentage of the labor force engaged in this activity) that are greater than those found in developed economies, including Peru (29% of labor force), Indonesia (16%), Colombia (14%), Jamaica (13%), Philippines (11%), Malaysia (11%), China (10%), and Thailand (10%) (calculated based on data in Bosma and Harding, 2007).

Agricultural firms face a different risk-return combination than those in other sectors and are less likely to be the type of high growth, high potential firms for which ‘classic’ venture capital was originally designed. Moreover, ownership structures for entrepreneurial firms in these settings are different from in developed economies (Kilby, 2003), and developing and emerging economies possess a rich indigenous traditions of financial development preceding Westernization, modernization, and/or colonization (Austin and Sugihara, 1993). All of these structural factors support the argument that venture capital emergence may follow different paths in different settings.

These apparent anomalies and conditions suggest that existing explanations of venture capital emergence may be incomplete, particularly when considering the institutional environments characteristic of developing and emerging economies. As venture capital has matured as a field of study, continued theory development is also needed to better explain how emergence takes place, which may also provide information about the determinants of this phenomenon. In light of the level of theory development in this domain, carefully designed and rigorously executed case studies of venture capital emergence may lead to a richer, process-based theory that complements existing perspectives.

With these gaps and anomalies as background, I now consider the aims and objectives of this thesis.

#### *1.4 Aims and objectives of this study*

The aim of this thesis is to develop a better understanding of the venture capital emergence process in weak institutional environments. In particular, a more complete process-based model of venture capital emergence is sought. This model should incorporate existing insights from variance-based studies into how venture capital arises in developing countries where weak institutional environments tend to prevail, while also contending with perspectives from other disciplines that may be relevant. A central assumption in this study is that explanations based on enabling conditions or population ecology are, for different reasons, insufficient to account for the patterns of VC emergence observed in developing countries and, perhaps, elsewhere.

This aim suggests a number of specific objectives for the thesis. First, I seek to explore the literatures of greatest relevance to the development of a more complete model. Aspects of institutional theory, economic sociology, and diffusion perspectives will be examined in Chapter 2, and these literatures, along with more minor literatures in entrepreneurship policy and business history, will be used to develop a number of propositions to guide data collection and analysis. Second, the thesis will describe a research strategy that is the best fit with the principal research question. The major research question of this work is “how does venture capital emerge in weak institutional environments?” Given the nature of this question, a process research strategy using multiple embedded case studies is likely to provide the data necessary to develop a model of venture capital emergence. This choice is described in detail in Chapter 3. Third, I seek to generate sufficient data on which to base the development of a more complete emergence model. Given the reliance of fieldwork involving interviews with often-secretive fund managers and government officials, collection of data in sufficient quantities and of acceptable quality is not a foregone conclusion. Chapters 4 and 5 report these data from South Africa and Botswana. Fourth, this thesis and its model have as their objective a meaningful contribution to both the existing literature, policy, and practice. This model should be seen as a complement to, rather than a replacement of, existing theoretical perspectives on venture capital emergence. The greater understanding of this organizational phenomenon gained from this thesis can contribute to more effective policy formation and implementation in emerging and developing countries, an increased likelihood of attractive returns from venture capital fund operating in these economies, and greater availability of risk capital to high-potential entrepreneurs creating new firms in these settings.

I turn now to a brief consideration of the significance of this study for theory, practice, and social action.

## 1.5 *Possible significance of this study*

Having considered some of the reasons why the study of venture capital emergence in developing and emerging economies may matter, I will now examine the possible significance of this study for theory, practice, and social action.

### 1.5.1 *Possible significance for theory*

These preliminary conclusions all suggest that a comparative approach to the study of venture capital emergence—one grounded in the insights of institutional theory, economic sociology, and diffusion theory—may provide new insights into a variety of organizational phenomena. In particular, the research in this thesis hopes to contribute to the advancement of knowledge in management in six principal ways:

- Venture capital may contribute to economic growth through its support of innovation, and public venture capital may play a role in the development of active venture capital sectors by catalyzing the development of necessary infrastructure such as skilled venture capitalists and second-tier equity markets. Therefore, gaining a better understanding of how venture capital emerges may help developing countries to achieve sustainable growth.
- Venture capital in developing countries remains understudied, particularly on a comparative basis. This thesis is the first comparative study of venture capital in Africa.
- The study of venture capital emergence may provide information about similar phenomena of emergence, particularly about innovative hybrid<sup>9</sup> institutions at the intersection of the public and private sectors in developing countries (such as Bahana Artha Ventura, a public venture capital organization in Indonesia).

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<sup>9</sup> Although first identified in Williamson (1991) as those economic organizations between market-based and hierarchy-based entities, a precise definition of hybrid economic organizations remains elusive. Menard (2004) defines them as “networking autonomous entities” and includes forms such as subcontracting, networks of firms (notably supply chains and distribution channels), franchising, collective trademarks, partnerships, cooperatives, and alliances.

Therefore, it may contribute to a better understanding of how governmental institutions in developing countries can be strengthened.

- The ways in which public venture capital has emerged in sub-Saharan Africa may contribute to the study of sources of the failure of African economic growth over the past 50 years (Collier and Gunning, 1999).
- The study of public venture capital programs in English legal origin countries may help to clarify the sources of the contradiction between the conclusions of the three main institutional schools (legal origins, finance and growth, and colonial origins), in which the colonial origins school finds that English legal origin and British colonial rule are negatively correlated with GDP level (Acemoglu, Johnson, and Robinson, 2002). This contradiction has been studied in specific situations, including India (Iyer, 2004) and South Africa (Brunt, 2006), with contradictory results. I will examine this controversy in Chapter 2.
- Finally, this study may shed further light on the distinctiveness of entrepreneurship in weak institutional environments (such as those in many developing countries), the normative and cultural/cognitive basis for this distinctiveness; and the ways in which such distinctiveness may shape public policies designed to promote entrepreneurship.

### *1.5.2 Possible significance for practice*

Practitioners affected by public venture capital programs include policymakers, program administrators, private venture capitalists, and entrepreneurs. These practitioners may find this research project of interest in the following ways:

- For policymakers—this project may help to clarify which policy levers are most likely to cause venture capital to emerge and the potential sequencing of these levers' usage. These insights may be useful in the contemporary era, where an increased reliance on public-private mechanisms is likely as a result of the current financial and economic crisis.

- For program administrators—existing programs may use the results of this study to assess the current viability of their programs’ structure, as well as provide insights into ways that their programs could be modified to be more effective.
- For private venture capitalists—this study may assist private VCs in assessing the competitive landscape on which they compete, in particular the ways in which public venture capital programs shape that landscape. The results may also help private VCs to form productive partnerships with public venture capital programs.
- For entrepreneurs—this study may assist current and nascent opportunity-oriented entrepreneurs to assess the viability of one possible source of external financing and its effect on the emergence of new sources of private sector funding.

### *1.5.3 Possible significance for social issues and action*

Entrepreneurship in developing countries remains one of the most understudied social phenomenon in the world today (Lingelbach, de la Viña, and Asel, 2005). Insofar as venture capital may be significant for the expansion of external finance to opportunity-oriented entrepreneurs in these economies, entrepreneurship (and employment in new ventures) becomes a more economically viable option for a larger percentage of these countries’ populations. A more entrepreneurial population, in turn, may have important social and political effects, both positive and negative, on developing countries.

### *1.6 Organization of this study*

Following this introduction, this study continues as follows. In Chapter 2, the relevant literatures are reviewed, resulting in some suggestive propositions to guide data collection. In Chapter 3, research methods are laid out and justified, followed by case studies from South Africa (Chapter 4) and Botswana (Chapter 5). From these cases and the consequent within- and cross-case analysis, a new theory of VC emergence is developed (Chapter 6). The study concludes with some implications and suggestions for future research (Chapter 7).



## Chapter 2

### Literature Review

#### 2.1 *Introduction*

In this chapter I examine the literatures related to the study of the venture capital emergence process. I begin by examining the structure of venture capital as a research domain, emphasizing the eclectic nature of the studies conducted to date. Then I turn to the relevant research streams. The literatures of relevance to the study of the venture capital emergence process are diverse, including the finance and managerial streams within the venture capital research domain, institutional theory, economic sociology, and diffusion theory. Entrepreneurship policy research and economic and business history also make relevant, albeit more minor, contributions to our understanding of the VC emergence phenomenon. I conclude with a brief discussion about the logics that might govern the venture capital emergence process.

These literatures suggest that our current models of VC emergence are incomplete, that institutional change facilitating VC emergence can occur through both diffusion and collective action, that collective action between fund managers and government investors may be made possible by coproduction between them, and that these processes may be interrelated, complicating VC emergence and any possible contribution that it might make to innovation and economic growth. The domain in which we examine VC emergence—weak institutional environments—can be better understood as an example of mature limited access orders (North, Wallis, Webb, and Weingast, 2007), in which VC may play a role in the transition of these economies to open access orders present in developed economies.

Institutional theory extends our understanding of venture capital beyond that of the principal-agent relationship by emphasizing the “rules of the game” that regulate principal-agent relations. In order for venture capital to emerge, institutions must change, either through an evolutionary process initiated by diffusion of VC-friendly institutions from other populations or deliberate collective action. Collective action is

challenging to implement in developing countries where dominant elite coalitions seek to maintain their positions. The law and finance literature suggests a research framework that distinguishes between English and French legal origin countries.

The economic sociology literature suggests that the economy is socially constructed and that embedded social ties, some strong and others weak, shape the emergence of markets and industries. Echoing recent findings from institutional theory, in some instances embeddedness facilitates exchange, but, as economies develop, strong ties can limit firm-level growth by making the transition to larger markets more difficult. A balance between embedded relations between the state and the private sector and firm-level autonomy has been characteristic of many of the examples of high per capita GDP growth in the post-World War II era. High levels of synergy between the public and private sectors may lead to these actors coproducing services, notably when these sectors contribute complementary inputs.

Emerging national VC industries are new organizational populations and, as noted earlier, diffusion of VC models and underlying institutions from already-established industries may play a role in emergence. Diffusion may occur with little change to the diffused object and for similar reasons across adopters, or the process can be more interactive, with diffused objects being transformed as they move from population to population. Proximity and efficacy play a role in the diffusion of innovations in the corporate venture capital subindustry and may influence the cross-border transmission of VC models to developing countries.

Finally, I look at the literatures on entrepreneurship policy and business and economic history for additional clues on the VC emergence process. The policy literature centers on three market failures—network, knowledge, and learning externalities—as the basis for government intervention. The history literature is more interesting and suggests that the history of VC must be put in a broader context that predates the traditional 1946 founding date for the industry, incorporates a central role for government from inception, and indicates that industry life cycle models describe the evolution of the industry in both developed and developing economies.

I turn now to consider each of these literatures in detail.

## 2.2 *The structure of venture capital research*

Within the discipline of management and business studies, venture capital research is a relatively young and eclectic field of study, relying on a diversity of theoretical and methodological approaches. The first Ph.D. thesis on venture capital was completed in 1959 (Hussayni, 1959; Landstrom, 2007), and several research streams, mainly descriptive in nature, emerged in the 1960s and 1970s. The bulk of the pioneering work in venture capital originated mainly during the 1980s (Landstrom, 2007). In part, the field's structure represents the relative newness of the venture capital phenomenon, which is generally dated in its contemporary manifestation from the end of World War II. To date, the study of venture capital has yielded important methodological innovations that have been used in closely related fields, such as entrepreneurship. Theory-building began in earnest during the 1990s, but fundamental issues remain unaddressed in each of the major sub-fields of venture capital research.

### 2.2.1 *Under-addressed areas of research in venture capital*

As an evolving stream of research, the study of venture capital has a variety of gaps waiting to be filled. For example, what undiscovered contract provisions are used by VCs to solve information asymmetry and uncertainty? What is the relationship between contracts and the problems they are intended to solve? Given that angels and VCs often invest in the same firms, why do these two types of resource providers exist? Do they solve the same problems in different ways, or different problems all together? Is this a function of investment size? How do the tools that VCs use before and following investment relate to one another? Are they substitutes or complements? Are VCs in structural holes better able to solve information asymmetry and uncertainty? Are strong ties more important than weak ties in the VC process? How do entrepreneurs obtain social ties if they don't have them, and are those entrepreneurs that lack social ties before founding at a permanent disadvantage? Each of these questions fits into an existing literature stream in venture capital (Shane, 2003).

### *2.2.1.1 Internationalization as an under-researched topic*

Emerging literature streams in and around venture capital seek to answer a series of other, larger questions. One important, but under-addressed, avenue of research concerns the internationalization of venture capital. From a policy perspective, as emerging economies develop venture capital industries, the questions of what and whether their governments can learn from the experiences of developed countries with active venture capital industries remain unanswered (Murray, 2007). Viewed through the lens of financial economics, VC internationalization raises questions about how VC markets will evolve in different economies, whether VC in different legal environments lead to new styles of VC investing, and the potential effect of business culture on fund structure (Cumming, Fleming, and Schwienbacher, 2007). Other scholars have noted the impact of the institutional and social environment on the VC-entrepreneur dyad (De Clercq and Manigart, 2007).

### *2.2.1.2 Positive organizational scholarship and engaged scholarship as under-researched topics*

A second emerging line of VC research concerns positive organizational scholarship (Ghoshal, 2005) and the related idea of engaged scholarship (Van de Ven, 2007). The dominance of agency theory in VC research to date has resulted in many important advances in the understanding of the micro-level of VC activity, particularly in the screening/selection and monitoring/advising stages of the VC cycle (Sapienza and Villanueva, 2007). At the same time, research based on agency theory has limitations, including distance from the phenomenon, a focus on small issues easily studied with quantitative methods and secondary data sources, a tendency to use one theory and method in the study of phenomena, and a somewhat unbalanced view of human nature that assumes the dominance of rational self-interest (Sapienza and Villanueva, 2007). Conversely, VC research based on close study of the phenomenon using multiple theories and primary data and informed by the multiple bases of human action may offer new insights into venture capital processes at the individual, fund, country, and international levels of analysis.

### *2.2.1.3 Process as an under-researched topic*

A third avenue concerns process. In part because of the dominance of agency theory and a related reliance on quantitative methods, less attention has been paid to date in VC research to the questions surrounding how VC-related processes emerge and operate. Process research methods have been used in corporate venturing (Burgelman, 1983), innovation research (Van de Ven, Polley, Garud, and Venkataraman, 1999), and other domains of management studies (Pettigrew, 1985), but to date remain underutilized within the VC domain. As a result, while we have some understanding of the determinants of the elements of venture capital, we lack both data and theory on how these elements fit together.

These three gaps in the VC literature—internationalization, emphasis on theoretical perspectives other than agency theory applied in a richer fashion, and process research methods—offer an opportunity to study how venture capital industries emerge over time in developing countries. These gaps arise mainly from the relative difficulty in collecting reliable data on VC in international settings (particularly in the developing world) and the additional methodological challenges associated with conducting rigorous process research. In addition, the prevalence of VC researchers trained in economics may have limited an exploration of theoretical perspectives outside the well-accepted agency models. I now turn to the literature that might inform an effort to fill these gaps.

Four streams of theory inform the work that follows: neoclassical explanations of venture capital; institutional theory (including the law and finance literature); economic sociology and political theory, particularly the literature on coproduction; and diffusion. In addition, the literatures on entrepreneurship policy and business and economic history (particularly focused on the evolution of national venture capital industries) contribute to our understanding and are both strongly linked to time as a dimension.

## 2.3 *Neoclassical explanations of venture capital*

### 2.3.1 *The role of venture capital in entrepreneurship research*

The study of venture capital is most closely tied to entrepreneurship, although its contribution to the development of entrepreneurship theory has remained relatively modest to date. Venture capital has also made small contributions to theory in both finance and strategy. Entrepreneurship's contribution to the development of other social sciences has been minor so far, and, while entrepreneurship studies continue to mature as an intellectual discipline (Cornelius, Landstrom, and Persson, 2006), its scholars increasingly cite one another, rather than being cited by other social scientists. Given the range of activities associated with entrepreneurship, its study has drawn on a wide variety of disciplines, including economics, sociology, and psychology.

#### 2.3.1.1 *Venture capital's role in opportunity exploitation*

The entrepreneurship process consists of five steps: opportunity identification and evaluation, exploitation of opportunities, resource acquisition, strategy development, and organizing (Shane, 2003). Venture capital plays a role at various stages in this process. First, VC availability shapes opportunity exploitation through the encouragement of new firm formation (Stuart and Sorenson, 2002; Amit, Brander, and Zott, 1998; Shane, 2003) and is improved by reductions in capital gains tax rates (Bygrave and Timmons, 1985).

#### 2.3.1.2 *Venture capital's role in resource acquisition*

At the stage of resource acquisition, obtaining sufficient capital is a central element, and formal venture capital is important for the development of high potential firms. Approximately one third of all initial public offerings in the United States are funded by VC (Shane, 2003), and VC adds additional value through advice, identification of acquisitions, suppliers, and senior management (Gorman and Sahlman, 1989). VC increases the employment and sales growth rates of investees, reduces the probability of their failure, and increases their chances of an IPO (Megginson and Weiss, 1991; Shane

and Stuart, 2002; Freeman, 2000; Manigart, 1999). VC-backed firms also support higher debt-to-equity ratios, improving their performance (Bates, 1994; Bates, 1995; Shane, 2003).

A central problem of resource acquisition concerns the asymmetric information situation between entrepreneurs and resource providers such as VCs. Entrepreneurs know more about their business, its opportunities, and the associated risks than outside investors. As a result, they may engage in risky actions (creating moral hazard for investors) unless financial resources are structured as equity (Ravid and Spiegel, 1997; Weinberg, 1994). Convertible securities (Sahlman, 1990; Kaplan and Stromberg, 2001; Sahlman, 1994; Gompers, 1997), covenants in investment agreements (Gompers, 1997; Kaplan and Stromberg, 2001), and forfeiture and anti-dilution restrictions (Hoffman and Blakely, 1987; Sahlman, 1990) may limit moral hazard in VC equity investments, but residual risks to VC investors remain (Williamson, 1985; Venkataraman, 1997; Arrow, 1974; Cooper, Woo, and Dunkelberg, 1988; Shane, 2003). These risks can be mitigated through other tools at the pre- and post-investment stages. Pre-investment tools include due diligence (Sahlman, 1990; Barry, 1994; Van Osnabrugge, 2000; Kaplan and Stromberg, 2001; Mason and Harrison, 1996), industry specialization (Barry, 1994; Sorenson and Stuart, 2001; Van Osnabrugge, 1998; Norton and Tenenbaum, 1993; Gupta and Sapienza, 1988, 1992), geographic focus (Sorenson and Stuart, 2001; Lerner, 1995; Kelly, 2000; Gupta and Sapienza, 1988, 1992), and syndication (Sorenson and Stuart, 2001; Lerner, 1994; Bygrave, 1988; Van Osnabrugge, 1998).

At the post-investment stage VCs manage risk using three principal tools: allocation of control rights to outside resource providers, including VCs (Gompers and Lerner, 1999; Kaplan and Stromberg, 1999; Van Osnabrugge, 2000; Kirilenko, 2001; Gompers, 1997); treating investments in new ventures as real options through milestone-based financing (Sorenson and Stuart, 2001; Bhidé, 2000; Venkataraman, 1997; Sahlman, 1990; Guidici and Paleari, 2000; Sahlman, 1994; Neher, 2000; Gompers, 1995; Williamson, 1985; Barzel, 1987; Bates, 1997; Basu and Parker, 2001; Roberts, 1991; Eckhardt, Shane, and Delmar, 2002); and close involvement with investees (Kaplan and Stromberg, 2001; Kelly, 2000; Sahlman, 1990; Van Osnabrugge, 2000; Sapienza, 1989, 1992; Sapienza and Gupta, 1994).

Resource providers such as VCs also use a range of non-economic mechanisms to manage information asymmetry and uncertainty. Direct ties between entrepreneurs and investors increase the probability that new ventures receive funding (Shane and Cable, 2002; Shane and Stuart, 2002). Referrals also increase the likelihood of resource acquisition (Kelly, 2000; Wilson, 1985; Tyebjee and Bruno, 1982; Fried and Hisrich, 1995; Tyebjee and Bruno, 1981; Roberts, 1991; Hall and Hofer, 1993), and other types of indirect ties appear to do so as well (Steier and Greenwood, 1995; Burton, Sorenson, and Beckman, 1998; Shane and Cable, 2002; Shane and Stuart, 2002; Verheul and Thurik, 2001).

VCs evaluate the quality of proposed opportunities and methods of exploitation using a variety of techniques. Characteristics of founders associated with opportunity exploitation include team size (Roberts, 1991), psychological attributes (Pandry and Tewary, 1979), education (Bates, 1997; Storey, 1994; Hustedde and Pulver, 1992; Shepherd, Douglas, and Shanley, 2000), and experience with startups and in management or the target industry (Casson, 1982; Amit, Glosten, and Muller, 1993; Bates, 1997; Mason and Harrison, 1996; Feeney, Haines, and Riding, 1999; Shepherd, Douglas, and Shanley, 2000; Kelly, 2000). VCs also associate a variety of opportunity characteristics with firm value, including the presence of a large market, product acceptance, relevant firm strategy, presence of competitive advantage, raw materials availability, production feasibility, product prototypes, and external accreditation, endorsement, guarantee, bond, license, or certification (Shane, 2003; Low and Abrahamson, 1997; Carter and Van Auken, 1990; Kaplan and Stromberg, 2001).

### *2.3.2 The finance literature on venture capital*

The research on the venture capital phenomenon can be divided into two streams: finance and managerial (Cornelius and Persson, 2006; Landstrom, 2007). In studying VC, finance scholars generally focus on the macro-level VC market and meso-level VC fund management, while management researchers tend to concentrate on micro-level VC processes (Landstrom, 2007). Within the finance stream of VC research (where



most scholars have a background in economics or finance), four broad streams can be identified:

- Theory—the study of VC as a mitigator and manager of agency conflicts through the use of monitoring, advice-giving, screening, exit incentives, syndication, and staging;
- Empirical—a focus on history, patterns, investee industry concentrations, tools, process distortions, exits, public policy, and, increasingly, internationalization;
- Practitioner—oriented toward fund managers and investors, and addressing legal and institutional issues, and;
- Relations between fund managers and their investors (Gompers and Lerner, 2003).

### 2.3.3 *The managerial literature on venture capital*

Within the managerial stream of VC research (where scholars with backgrounds in entrepreneurship or management tend to cluster), some of the processes studied to date include pre-investment activities, such as screening; investment strategies; syndication and co-investing; governance and contracting; post-investment activities, including board of directors behavior; and raising additional funds (Landstrom, 2007). These micro-level processes were eventually grouped into a fund-level process labeled the VC cycle (Gompers and Lerner, 1999).

While the finance stream of VC research has been dominated by agency theory from economics, managerial approaches to VC have pursued a wide variety of theoretical lens, including those from economics (agency theory, game theory, resource- and knowledge-based views); macro perspectives (population ecology, institutional theory, network theory); and micro perspectives (social exchange, social capital, learning, cognition and cognitive bias, psychological contracts, procedural justice) (Sapienza and Villanueva, 2007).

### 2.3.4 *Problems with the finance and managerial literatures on venture capital*

Within both the finance and managerial streams, public policy as a distinct perspective has been relatively understudied in comparison to other aspects of the VC phenomenon. A recent literature review by two prominent finance scholars identified only two public policy issues of interest—the relationship between VC and innovation, and policies to encourage angel investing (Gompers and Lerner, 2003). The bulk of the finance literature studies VC as a market phenomenon, in which the role of the state is to enable and optimize efficient agency relationships between investors, fund managers, and entrepreneurs. Managerial scholars of VC have admitted to possibility that government policy may play an important role in VC development, but have also called attention to how often governments get VC policy wrong (Murray, 2007). Precisely how governments might act more effectively in this policy domain remains substantially unaddressed.

One interesting contradiction in the managerial stream of VC research is that, while this stream focuses on VC processes, it does not generally use a process research approach to do so. Almost all studies of VC in both the managerial and finance streams are variance studies, in which the determinants of dependent variables are identified using a variety of statistical techniques. While these studies have helped us to understand what is happening in various aspects of the VC phenomenon, they do not help to answer the question of how these processes arise, operate, and interrelate. Variance methods do not capture the complex, often nonlinear nature of organizational change. In particular:

While the variance approach offers good explanations of continuous change driven by deterministic causation, this is a very limited way to conceptualize change and development. It overlooks many critical and interesting aspects of change processes. However, because most organizational scholars have been taught a version of social science that depends on variance methods, and because methods for narrative research are not well developed, researchers tend to conceptualize process problems in variance terms. One can see the “law of the hammer” in operation here: Give a child a hammer, and everything seems made to be hit; give a social scientist variables and the general linear model and everything seems made to be factored, regressed, and fit (Poole, Van de Ven, Dooley, and Holmes, 2000, p. 29).

As new national venture capital industries have developed, a literature on cross-country comparisons of venture capital development has emerged. This research focuses both on macro-level issues related to VC markets and micro-level behavior of VC funds (Wright, Pruthi, and Lockett, 2005). This literature suggests that density of existing VC funds is related to founding rates of new funds and that dense nearby populations of VC funds positively influence VC development in a country (Manigart, 1994). While stock markets appear central to VC development (Black and Gilson, 1997; Jeng and Wells, 2000; Megginson, 2004), their effect is not clear-cut and has been challenged by more recent work asserting that legal environment is as or more important (Armour and Cumming, 2003). Relatively few studies have considered institutional factors beyond the legal environment, such as social structure and culture, but those that have suggest that these factors are important (Nye and Wasserman, 1999; Bruton, Friend, and Manigart, 2005).

VC in developed markets is built on a series of strong assumptions about the institutional environment and economic actor behavior. These assumptions include 1) a belief in a rational, transparent and fair legal system in which contracts between economic actors can be enforced at a reasonable cost, 2) the contention that economic actors are generally motivated to pursue the maximization of their marginal utility function, and 3) an assertion that conflicts between investors (principals) and entrepreneurs or managers (agents) exist (Jensen and Meckling, 1976) and can be largely resolved through incentive structures designed in VC contracts. Each of these assumptions is heroic in nature. It seems quite plausible, indeed likely, that many if not all of these assumptions could fail in the context of developing countries.<sup>10</sup> Recent research has called into question the applicability of agency-based theories of the VC process (Ahlstrom, Bruton, and Chan, 2000; Arthurs and Busenitz, 2003), calling attention to social nature of VC in a variety of settings (Bruton, Ahlstrom, and Singh, 2002; Shane and Cable, 2002).

Moreover, these (neoclassical economics) assumptions fail to offer an adequate explanation for the emergence of firms, groups, and industries from individual

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<sup>10</sup> Developing countries can be defined as those economies identified by the World Bank as either low-income or middle income. These countries are most likely to differ from the assumptions underlying the neoclassical view.

economic behavior or to recognize the possibility that economic goals are usually pursued alongside other goals such as sociability, approval, status, and power (Granovetter, 1992). Moreover, these assumptions admit no possibility that economic actors may pursue collective and altruistic interests alongside self-interested utility maximization (Van de Ven, Sapienza, and Villanueva, 2007). Neoclassical assumptions require that new ventures create attractive risk adjusted returns (Gompers, 1995; Pollock, Porac and Wade, 2004). However, these assumptions are often relaxed in challenging early stage contexts, such as those in Western Europe. Here VC industries and governments regularly seek policy initiatives that resolve conflict between, for example, economic return and desired innovation outcomes. Recognizing the shortcomings of the current theoretical perspectives on VC, including an assumption of institutional stability, reliance on agency and, to a lesser extent, stewardship theory, and a lack of recognition of the social nature of VC, some recent research has sought new perspectives using theory from entrepreneurship and data from emerging markets (Ahlstrom and Bruton, 2006).

### *2.3.5 Existing narratives about venture capital emergence*

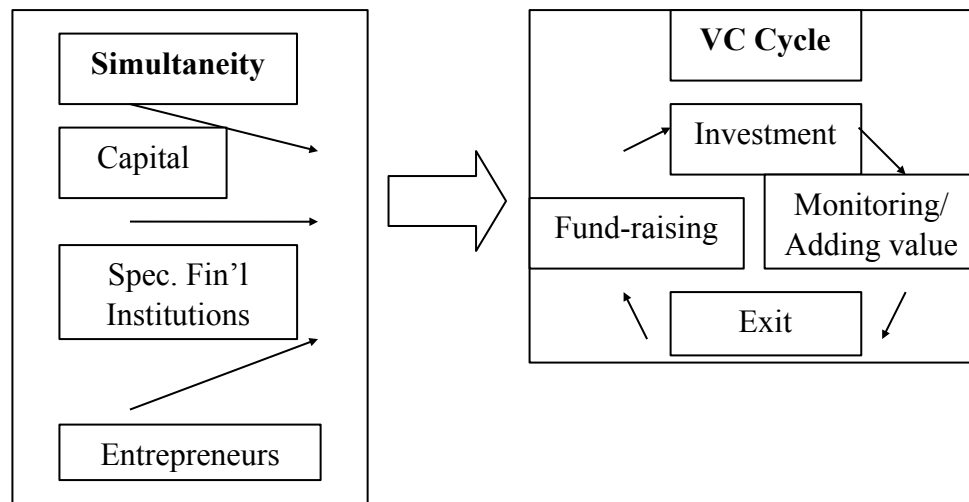
Based on these assumptions, several implicit narratives about VC emergence have been constructed to date. Narratives are stories that construct a credible, process-focused understanding about reality that is different from, but complementary to, logical-scientific knowledge (Bruner, 1986; Eriksson and Kovalainen, 2008; Van de Ven, 2007). These narratives are not models of or theories about VC emergence. Rather, they describe processes associated with emergence at different units of analysis.

One narrative explains VC emergence as a product of the VC cycle, in which fund managers raise capital from investors; invest, monitor, and add value to investees; exit investments; and raise new capital (Gompers and Lerner, 1999). While the operation of this cycle is subject to a number of disruptive factors, including overinvestment in fashionable sectors and volatile exit market valuations, the underlying concept of the VC cycle is one of self-renewal and sustainable long-run growth. This model generally fits the data from developed economies with active VC industries.

A related narrative calls attention to the importance of the enabling conditions surrounding VC by highlighting the challenges associated with the initial establishment of the VC cycle. In this view, three factors—pools of capital, specialized financial institutions, and entrepreneurs—must be simultaneously present in sufficient quantities to cause a VC industry to emerge (Gilson, 2003). As with the VC cycle, this simultaneity perspective is grounded in a life-cycle theory of social change, in which VC emerges organically in response to an underlying logic (Van de Ven and Poole, 1995) or as the manifestation of an evolving agency relationship.

A characteristic of life-cycle theories is that they prescribe a necessary sequence of events in order for development to occur (Jovanovic and MacDonald, 1994; Vernon, 1966; Van de Ven, 2007). In the case of the VC cycle, fundraising logically precedes investment, which logically precedes monitoring, and so on. Most important from the standpoint of emergence, the logic of the VC cycle requires exits at attractive internal rates of return (IRRs) as a precondition for fund managers to raise their next fund, as well as the removal of failed investments to allow more time for potential successes (Gifford, 1997). In the case of the simultaneity perspective, which we will argue can be seen as an antecedent to the first stage (fundraising) of the VC cycle, the life-cycle progression consists of multiple elements converging on the VC cycle's first stage. In the absence of a dominant theory of VC emergence, it is possible to construct a narrative about this process from perspectives already articulated by Gilson (2003) and Gompers and Lerner (1999). Gilson's simultaneity perspective provides the essential industry preconditions for the initiation and operation of Gompers and Lerner's VC cycle, as depicted here:

**Figure 2.1--A Depiction of the Implicit Current Model of VC Emergence**



Source: Author

While this sequence may provide an adequate explanation for VC emergence in economies *with strong property rights*, it is not clear that this narrative can also account for the emergence process in weak institutional environments (WIEs) characterized by weak property rights and inadequate protection of minority equity investors. On first inspection, very few of the active VC industries in these economies appear to have emerged organically as described by Gilson (2003). It seems likely that VC in these countries may emerge in distinctly different fashions than in the United States, Western Europe, and Japan. Evidence from a variety of developing and transitional economies, including India (Dossani and Kenney, 2002), Hungary (Karsai, Wright, and Filatotchev, 1997) and East Asia (Kenney, Han, and Tanaka, 2002), appears to support this line of reasoning. Therefore, the findings from the existing literature on VC emergence may describe a special case of limited application to most developing countries. A model of VC emergence explicitly based on data from weak institutional environments can provide novel insights of benefit to practitioners, policy makers, and advisors working in these settings, and lead to a more generalizable theory of VC emergence than the existing implicit model.

## 2.4 *Institutional theory*

In this section I examine those strands of institutional theory of possible relevance to the venture capital emergence phenomenon. Institutional theory is central to this thesis for two reasons. First, one strand of this literature provide important linkages to possible motors of venture capital emergence, namely coproduction and diffusion. Another strand reframes weak institutional environments as limited access orders, providing a connection between the political, economic, and social structures in developing countries and venture capital emergence through its contribution to innovation. Second, the law and finance stream within institutional theory provides a convenient basis for the research design in this thesis. I examine this stream in Section 2.4.9. In this thesis institutional theory is used as a linkage to other literatures (and, thus, a frame of reference), as well as a source of structure for subsequent data collection and analysis, rather than as the basis for subsequent propositions.

I begin this section of Chapter 2 by defining institutional theory and then examining its usage in management studies and venture capital research to date. Then I consider prior research that will provide linkages to other work and places venture capital in the milieu from which it subsequently attempts to emerge.

### 2.4.1 *What is institutional theory?*

Institutional theory has emerged as a complementary perspective to the principal-agent theory at the core of neoclassical economic theory. Together, institutional theory and agency theory provide a more complete understanding of economic reality than either could alone provide. To explain economic reality, principal-agent theory must make a number of strong assumptions, including:

- Economic actors seek to maximize their marginal utility, subject to the problems of adverse selection and information asymmetry

- The legal framework is rational and fair, and that contracts generally are enforceable

These assumptions are strong, even heroic, particularly regarding the seed and early stage investing that characterizes venture capital, and especially concerning venture capital in weak institutional environments such as those in many developing countries. Seed and early stage investing faces a uniquely challenging set of risks regarding 1) deal selection, 2) financial structure, 3) investee management capability, 4) technology, 5) execution of business strategy, and 6) exit. This risk cocktail requires higher IRRs and different distribution of risk between investor and investee than would be the case with later stage financing, such as private equity, or even in comparison to venture capital in a developed economy.

Institutional theory has been developed by economists, political scientists, historians, and sociologists to explain the diverse pattern and evolution of human institutions. It focuses on the “rules of the game” (North, 1990) that help to shape decisions made using agency theory perspectives. Implicit in institutional theory is the notion that economic actors may not always be able to behave as rational marginal utility maximizers, given the path dependent and initial conditions constraints on economic behavior provided by, for example, laws, regulations, customs, and norms.

#### *2.4.2 How has institutional theory been used in entrepreneurship and venture capital studies to date?*

To date, the application of institutional theory in venture capital research has remained limited, despite its promise in helping to explain how venture capital emerges. Scott (2001) has conceptualized a framework that defines a country’s institutional framework as a product of regulatory, cognitive, and normative pillars, based on earlier work by Parsons (1960) on social norms and March and Simon (1957) on cognitive and social structures. Kostova (1997) applies this framework to create a country institutional profile by which different business environments can be compared, and notes that different domains (such as entrepreneurship or venture capital) may apply these frameworks differently. Busenitz, Gomez, and Spencer (2000) apply this framework to



entrepreneurship generally, while Bruton, Fried, and Manigart (2005) have begun to refine the framework to venture capital by posing a series of research questions.

#### *2.4.3 Types of institutional theories*

Institutional theories can be divided into historical and new institutionalisms, with the latter containing sub-schools addressing sociological, political, and economic factors. Within new institutionalism, sociological theorists concentrate on social beliefs, political scientists on the redistribution to powerful groups, and economists (usually part of new institutional economics) on social efficiency needs. By itself, each of these approaches is incomplete, although some theorists, notably Douglass North from the economic tradition, have sought to integrate these perspectives. As will be shown shortly, an integrated approach to institutional theory offers promise as a way in which to link this theory with venture capital emergence.

Each sub-school of new institutionalism makes an important contribution to our understanding of why institutions matter. New institutional economics points out that neoclassical economic theory makes a faulty assumption that institutions are utility-maximizing, when the existence of many inefficient and corrupt governments both historically and in the contemporary period belies this assumption. Political theorists in new institutionalism assert that institutions are shaped by the ability of powerful groups to extract rents using policy. Sociological theories claim that good government arises from beliefs and ideas which become pervasive and persistent, and that trust in strangers is particularly important in this regard (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1999).

#### *2.4.4 What type of institutional theory can be used to study venture capital emergence?*

Different approaches to institutional theory are applied at different levels of analysis. Six levels of analysis can be identified: world system, societal, organizational field, organizational population, organization, and organizational subsystem (Scott, 2001).

While most of these levels are familiar, organizational fields are relatively less so, and these can be defined as:

Those organizations that, in the aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products (DiMaggio and Powell, 1983, p. 47)

Cognates of organizational fields include industry system (Hirsch, 1972) and societal sector (Scott and Meyer, 1983). Larger than an industry, organizational fields include in addition exchange partners, competitors, funding sources, and regulators (Scott, 2001). A recent theoretical model derived from game theory that incorporates the idea of an organizational field is the value net, in which the firms, its customers, suppliers, and competitors, and complementors create competitive advantage (Nalebuff and Brandenburger, 1996). Competitive advantage perspectives at the country level of analysis also incorporate a broader perspective consistent with that of an organizational field (Porter, 1990). Organizational fields are bounded by common cultural-cognitive, normative, or regulative frameworks. As a result, they “constitute a recognized area of institutional life” (Scott, 1994). Organizational fields appear to be the unit of analysis most relevant for the study of venture capital’s emergence.

#### *2.4.5 How do changes in institutions help to cause venture capital emergence?*

In the previous section I argued that venture capital emergence can be studied at the organizational field unit of analysis. Venture capital as an organizational field is highly sensitive to institutional conditions (due to the highly uncertain nature of its outcomes). It seems unlikely that venture capital will emerge without a change in those institutional conditions; in other words, until the “rules of game” are altered, venture capital is unlikely to emerge on its own. How do institutional conditions change to make possible VC’s emergence? Four perspectives on institutional change illustrate some of the possible mechanisms and areas of focus:

**Table 2.1--Four Perspectives on Institutional Change**

<b>Focus/Mode of Change</b>	<b>Reproduction</b>	<b>Construction</b>
Multiple Actors at Inter-organizational field	<p>Institutional Diffusion</p> <p>Reproduction, diffusion or decline of an institutional arrangement in a population or organizational field</p> <p>Evolutionary processes of variation, selection, and retention (isomorphism)</p> <p>Organizational institutional ecology literature</p>	<p>Collective Action</p> <p>Political action among distributed, partisan and embedded actors to solve a problem or issue by changing institutional arrangements</p> <p>Framing processes, mobilizing structures, and political opportunities</p> <p>Social movements and industry emergence literature</p>
Single Actor	<p>Institutional Adaptation</p> <p>Organizational efforts to achieve legitimacy by adapting to institutional environmental pressures and regulations</p> <p>Coercive, normative and mimetic processes</p> <p>New organizational institutional literature</p>	<p>Institutional Design</p> <p>Purposeful social construction and strategies by an actor to create or change an institution to solve a problem or correct an injustice</p> <p>Bounded agency: affordance and partisan mutual adjustment</p> <p>Old institutional literature</p>

Source: Hargrave and Van de Ven, 2006

Each of these change processes may play a role in developing the institutions necessary for VC emergence, although those at the macro-level are more likely to be critical for the formation of new VC industries. At the organizational field level, diffusion of the institutional arrangements necessary for VC fund replication has already been documented in the literature describing the movement of VC from the US to Europe and then Asia (Wright, Thompson, and Robbie, 1992). Diffusion from these populations to the weak institutional environments characteristic of developing countries appears to be plausible, given the common legal origins of these economies with developed country VC populations. Diffusion also suggests a variation/selection/retention process characteristic of evolutionary processes (Van de Ven and Poole, 1995). In this instance, this process will occur at the level of the institutions on which VC emergence relies. In

a later section of this literature review, the diffusion literature will be addressed in greater detail.

At the same time, collective action is also a possible option for changing the institutions in order to create a supportive environment for VC emergence. Here the process is deliberate, teleological, and political and may therefore represent embedded interest groups in a given economy. The nature of interaction amongst those interest groups—for example, competitive or cooperative—may be important to determining the outcome of the institutional change process. Later, the literature on coproduction and a theoretical framework for describing the relationship between dominant interest groups and economic development in developing countries will be reviewed (North, Wallis, Webb, and Weingast, 2006). These literatures give some clues on how this portion of the institutional change process having an impact on VC emergence might be imagined.

The literatures on how institutions change have focused to date on how organizations adapt to institutional pressures in the pursuit of legitimacy (Scott and Davis, 2007), or how institutions diffuse into new organizational populations (Aldrich and Ruef, 2006). We are just beginning to understand how institutions arise in the first place and why and how they change over time. New literatures on social movements and technological innovation are beginning to address this gap by focusing on institutional entrepreneurs and their efforts to mobilize collective action to change or create institutions.

In summary, the literature on institutional change indicates that diffusion and collective action play a significant role in bringing about the institutional change necessary for venture capital emergence. Later in this chapter I will examine the literatures exploring these processes in greater detail. Before doing so, however, I turn next to a brief consideration of the level of institutional change relevant to VC emergence.

#### *2.4.6 Which levels of institutional change are relevant to the study of venture capital emergence?*

In considering the level at which institutional change should be studied in the VC emergence process, new institutional economics identifies five levels of social analysis:

**Table 2.2--Five Levels of Social Analysis in New Institutional Economics**

<b>Level of Analysis</b>	<b>Frequency (years)</b>	<b>Purpose</b>
<p>Embeddedness</p> <p>Informal institutions, customs, traditions, norms, sanctions, taboos, codes of conduct, religion</p> <p>Theory: social theory</p>	100-1000	Noncalculative, spontaneous
<p>Institutional environment</p> <p>Formal rules of the game, focusing on property</p> <p>Instruments include executive, legislative, judicial, and bureaucratic functions, as well as power distribution among them</p> <p>Theory: economics of property rights, positive political theory</p>	10-100	Get the institutional environment right
<p>Governance</p> <p>Play of the game, focusing on contracts</p> <p>Aligning governance with transactions</p> <p>Theory: transactions costs economics</p>	1-10	Get the governance structure right
<p>Resource allocation</p> <p>Prices and quantities, aligning incentives</p> <p>Neoclassical economics, agency theory</p>	Continuous	Get the marginal conditions right
<p>Evolutionary</p> <p>Mental mechanisms</p> <p>Theory: evolutionary psychology, cognitive science</p>	Continuous, genetic	Get cognition right (?)

Source: Adapted from Williamson (2000)

This typology of institutional analysis calls attention to the levels of institutional environment and governance where public policy can have an impact, namely governance and the institutional environment. At these levels, institutional change can be implemented within the timeframes consistent with political cycles (in the case of governance) and regimes (in the case of the institutional environment). Focus on the other levels of analysis—embeddedness, resource allocation, and mental mechanisms—may be less fruitful for policy makers seeking to design more effective institutions for VC emergence. For the institutionalist (at least in the new institutional economics tradition), these levels are largely exogenous.

#### *2.4.7 How can an integrated approach to institutional theory help to understand venture capital emergence?*

As noted earlier in this chapter, institutional theorists have tended to focus on particular disciplines, such as economics, political science, or sociology. This specialization has limited the generalizability of perspectives from institutional theory. One recent effort to provide an integrative perspective across the various theoretical disciplines in institutional theory has focused on the failure of development policy and provides a possible theoretical framework within which to view VC emergence (North, Wallis, and Weingast, 2006; North, Wallis, Webb, and Weingast, 2007). Three social orders have existed across human history: primitive (hunter/gather), limited access, and open access. Limited access orders (LAOs) control access to political and economic functions that create economic rents, thus maintaining order by co-opting elites with access to the levers of violence. Limited access orders are characteristic of most civilizations until the present time, as well as most countries in the world today.

Three broad types of LAOs can be discerned: fragile, basic, and mature. Fragile LAOs face high levels of internal and external violence and include most of today's failed states: Haiti, Iraq, Afghanistan, Somalia, and a number of sub-Saharan African countries. Basic LAOs have more robust state structures and are generally able to control violence; examples include Cuba, North Korea, Burma, and many Arab and sub-Saharan African states (North et al., 2007).

Mature LAOs support large numbers of organizations outside of the state, but require that the government sanction each one. As a result, the state can limit competition and create rents for the society's dominant coalition. The state has relatively durable and sophisticated institutional structures, such as court systems and central banks, which arise in part because private sector organizations support the differentiation, autonomy, and professionalization of these bodies. These structures can survive changes in the dominant coalition, such as the fall of apartheid in South Africa in 1994. This is the domain in which venture capital in developing economies principally arises.

#### *2.4.7.1 Venture capital as a limit on competition in limited access orders*

The economic and political structure of mature LAOs has a number of implications for VC emergence in these environments. First, in these countries VC is part of a structure that limits competition, rather than increasing it. Innovation creates potential competition, threatening the economic rents of elites. Therefore, dominant coalitions in mature LAOs adopt technology selectively and seek to actively disenable the organizational density required for indigenous technological innovation (North et al., 2007). Such countries may have scientists, research centers, and a national innovation policy, but channel the outcomes of this activity into rents for elites in the dominant coalition. This process can increase GDP per capita and productivity, without providing any “catchup” with OAO countries. As a result, VC in these domains tends to look fundamentally different from VC in open access orders.

#### *2.4.7.2 Sophisticated institutions, but no breakout—venture capital's role*

Second, sophisticated private institutions like VC may demand sophisticated public institutions like rule of law, a central bank, and a professional finance ministry, without the resultant relationship between the public and private sectors translating into an active VC industry. Unlike OAO countries, where sophisticated private sector actors provide a counterbalance to public institutions, in mature LAOs private sector actors can punish government if it violates its commitments, without calling into question the power that the state maintains over the private sector. As a result, significant levels of

development can be maintained in mature LAOs, without a breakout to an open access order.

#### *2.4.7.3 Can venture capital contribute to the transition to an open access order?*

A third consideration concerns the possible role of VC in the transition of a mature LAO to an OAO. North et al. (2007) argue that the transition is a two-step process. First, mature LAOs must create “doorstep” conditions, including 1) rule of law for the elites, 2) support for perpetual life elite organizations, such as domestic business corporations, and 3) centralized, consolidated control of violence. Once these conditions are established, transition can occur when 1) the rule of law defines elite rights impersonally, so that they can be transferred to non-elites, and 2) open access in either politics or economics places pressure for open access in the other domain. VC plays a supportive role in establishing rule of law for elites, as elites are often the major investors in domestic VC funds in mature LAOs and have an interest in maintaining their capital. VC may also support perpetual life business organization forms for their investees, insofar as this form increases the risk-adjusted returns and improves exit liquidity. However, given the modest role of VC in the economies of most mature LAOs, this support is unlikely to be decisive in the creation of “doorstep” conditions. However, regarding the transition itself, VC may be critically important as an interest group pressing for more liquid local stock markets that enable the transfer of elite share ownership in VC investees to non-elites through initial public offerings. If non-elites have resources that enable elites to “cash out” of these investments, VC becomes a tool in the transition to an open access order. Given the limited liquidity of local stock markets in most mature LAOs and the very low level of IPO activity involved with VC investments in these exchanges, VC does not appear to have been important in this regard to date.

#### *2.4.7.4 The role of foreign venture capital in limited access orders*

A fourth area of focus is the role of foreign VC in mature LAOs. Foreign VC can be seen as a specialized type of multinational corporation (MNC), which operate in LAOs as transplants mainly (but not exclusively) from OAOs. Elite dominant coalitions in



mature LAOs can ally with MNCs such as foreign VCs by investing their assets abroad with such organizations. These funds can then recycle these investments into mature LAOs. While this approach may satisfy the dominant coalition members, it reduces their incentive to develop domestic organizations such as venture capital.

Consequently, many LAOs (including some mature ones) have dual economies characterized by inefficient domestic industries side-by-side with “enclaves” of foreign investment run under a separate set of rules (North et al., 2007). This structure allows dominant coalition members to have the best of both worlds—access to international capital markets where property rights are secure, and continued control over local economies with limited competition and the resultant economic rents generating capital for investment abroad. If foreign VC participates in such an enclave economy, it retards domestic VC development, rather than advancing it.

#### *2.4.7.5 The transition to open access orders*

Approximately two dozen developed countries have developed open access orders (OAOs), where the social, political, and economic dynamic is fundamentally different from in LAOs. In these orders competition in both the political and economic spheres work together to ensure that citizens can enter political, economic, religious, and educational life freely. Seen through this lens, development is comprised of two separate exercises: moving from fragile to basic to mature types within the LAO category, and transitioning from LAO to OAO. The change processes involved with these exercises are entirely different from one another, but in neither case are these processes teleological in nature. It is possible for states to regress or stagnate; some recent examples of the former include Bolivia, Venezuela, Russia, and Somalia (North et al., 2007).

The insights provided by the conceptual framework in North et al. (2009) and related literature clarify some of the reasons why venture capital emergence has been so challenging in many developing countries, which can be characterized as limited access orders. Innovation represents a fundamental challenge to the economic rents sustaining dominant elite coalitions in these economies, because it introduces competition for the products and services generating these rents. Therefore, these elites seek to channel

innovation in ways that do not threaten these rents, which is likely to result in innovative activity being less than competitive with local firms, let alone with world-class firms. Since venture capital exists primarily to provide resources to high-potential innovative firms, this institutional setting is likely to dilute both the quantity and quality of dealflow seen by venture capital funds, reducing the probability that they will be successful.

However, if a mature limited access order is on the verge of transition to an open access order, then venture capital may play a supporting role in that transition by demanding rule of law for elites (to protect the venture capital funds' investment in firms, as well as the investment by elites in VC funds), domestic perpetual life business organization forms such as corporations (which increase the liquidity of VC fund investments), and liquid local stock markets (which provide a possible exit route for VC fund investments). Of themselves, the demand for these changes by VC funds are unlikely to bring about the transition to an open access order. Only the emergence of independent private sector innovative activity unconnected to dominant elite coalitions is likely to play a significant role in bringing about fundamental institutional change and a shift to an open access order in which active venture capital industries can flourish.

The perspective provided by North et al. (2009) is recent and has not had an impact on the venture capital literature. I now examine previous attempts to incorporate institutional theory into venture capital studies.

#### *2.4.8 Some recent attempts to apply institutional theory to venture capital*

While institutional theory has been robustly utilized in the entrepreneurship literature, venture capital research using institutional theory has been relatively limited to date, focusing either on specific institutional settings (Bruton and Ahlstrom, 2003), on framing research agendas (Bruton, Fried, and Manigart, 2005), or advancing initial theoretical frameworks based on network theory approaches from the entrepreneurship literature (Ahlstrom and Bruton, 2006). Approaches using NIE, such as transaction cost economics, property rights economics, or positive political theory, are almost completely absent from the literature to date.

An alternative theoretical framework for VC development in emerging economies grounded in institutional theory relies on network connections to explain emergence (Ahlstrom and Bruton, 2006). Networks between VCs, entrepreneurs, and enterprises can partially substitute for weak property rights and inefficient markets for corporate control (Butler, Brown, and Chamornmarn, 2003; Peng, 2003; Hoang and Antoncic, 2003) and may offer protection from government interference (Henisz, 2000, 2003). This framework extends earlier research on the importance of networks in East Asian entrepreneurship (Butler et al., 2003), in East Asia generally (Bruton, Ahlstrom, and Singh, 2002; Bruton, Ahlstrom, and Yeh, 2004; Bruton, Dattani, Fung, Chow, and Ahlstrom, 1999; Lockett, Wright, Sapienza, and Pruthi, 2002), in India (Wright, Lockett, and Pruthi, 2002), and China (Ahlstrom, Bruton, and Chan, 2000; Bruton and Ahlstrom, 2003). The heavy reliance of this framework on data from Asia, where networks are central to business activity, may limit its generalizability to other developing regions.

Having examined various theoretical perspectives within institutional theory from which propositions about venture capital emergence can be shaped, I next consider the second way in which institutional theory can assist this study: research strategy. A carefully designed plan for data collection and analysis is central to process-oriented case studies, which, as Chapter 3 will describe, is the best design for the research question of this thesis. The next section of this chapter reviews the law and finance literature, resulting in some conclusions about research design.

#### *2.4.9 The law and finance literature and implications for venture capital emergence*

The relationship between institutions and economic development appears to be direct and strong, although the transmission belts from the former to the latter still remain unclear. This relationship represents an additional transmission belt from institutions to VC emergence, in as much as higher levels of growth and development are generally associated with more active VC sectors (although see the caution of North et al. (2007) above, where strong growth and limited access orders that restrict indigenous VC are distinctly possible). Concerning economic development as measured by income levels,

three streams in the literature point to geography, institutions, and trade as the principal determinants. Of these, only institutional quality (as measured by settler mortality) has strong direct positive effects (Rodrik, Subramanian and Trebbi, 2004). Within the institutional literature, however, substantial disagreement continues about the principal determinant of GDP levels and growth rates. Three major schools have produced somewhat contradictory results:

- Legal origins (von Hayek, 1960, North and Weingast, 1989, and La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1997, 1998, 1999)—legal origins are an important determinant of investor rights protection, and investor rights protection is correlated with GDP levels and growth;
- Finance and growth (Beck, Demirguc-Kunt, and Levine, 2003a, 2003b, 2004)—legal system adaptability is positively correlated with superior financial intermediation, which is in turn positively correlated with GDP levels and growth;
- Colonial origins (Acemoglu, Johnson, and Robinson, 2001, 2002, 2003)—physical endowments (as reflected in disease) are correlated with colonial settler mortality, which in turn shapes the quality of institutional endowments, which in turn are correlated with GDP levels and growth.

The models of these three schools can be summarized as follows:

**Table 2.3--Principal Institutional Correlants with Positive GDP Growth**

	<b>Secure Property Rights</b>	<b>Evolving Legal System</b>	<b>Geographical Endowment</b>	<b>Non-British Colony</b>
Legal origins	Yes	Maybe	No	No
Finance and growth	Maybe	Yes	Yes	No
Colonial origins	Yes	No	Yes	Yes

Source: Brunt (2006)

The colonial origins school finds that legal origins do not explain differences in GDP (although legal and colonial origins are few, and the two categories are highly correlated with one another), although the two schools agree that secure property rights are central to modern economic development. The legal origins and finance and growth schools disagree about the extent to which different legal systems can adapt over time (Brunt, 2006). Some research contradicts the findings of both the legal origins and finance and growth schools, finding that civil law countries have greater menus of organizational choice and that the menu evolves equally as quickly as in English legal origin countries (Lamoreaux and Rosenthal, 2004).

Of particular interest to this study are the findings of the colonial origins school that both English legal origin and status as a former British colony are negatively correlated with GDP. These results have been supported by research on India (Iyer, 2004, Banerjee and Iyer, 2005, and Banerjee, Iyer, and Somanathan, 2005), but are contradicted by results based on a natural experiment in South African economic history, which show that security of property rights (provided most strongly by English legal origin) is positively correlated with GDP (Brunt, 2006).

The law and finance literature has to date paid no attention to ‘mixed legal systems’ that are at the intersection of civil and common law, although such systems are considered in the comparative law literature (Zimmermann and Visser, 1996). According to this research stream, jurisdictions with mixed legal systems include South Africa, Botswana, Zimbabwe, Namibia, Lesotho, Swaziland, Sri Lanka, and, at the sub-national level, Scotland, Quebec, and Louisiana (Zimmermann and Visser, 1996). South Africa and Botswana are both considered to be mixed systems based on common (English) law, as are Lesotho, Swaziland, Namibia, Zimbabwe, Sri Lanka and Scotland. In these jurisdictions court decisions are held in high regard, although they are not absolutely binding as they would be in pure English legal origin countries. For this reason, South Africa and Botswana will be considered as English legal origin countries for the purposes of this thesis.

A fourth school has begun to emerge around the concept of the transplant effect (Berkowitz, Pistor, and Richard, 2003). Legal codes can either be created *sui generis* or

transplanted from origin countries. The nature of the transplantation process is determined by the degree to which a transplant country is either familiar with the transplanted legal code before transplantation or adapted the code to local needs. Countries that are either familiar with or adapt transplanted legal codes can be characterized as receptive to transplantation, while those that do not display familiarity or adaptation are unreceptive to transplant. Importantly, receptivity to transplantation is positively correlated with legality (or effective legal institutions), which can be measured as a function of the efficiency of the judiciary, rule of law, absence of corruption, risk of expropriation, and risk of contract repudiation as defined in La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998). In turn, legality is positively correlated with GDP/capita. Thus, countries that are unreceptive to legal transplantation are more likely to have lower levels of GDP/capita than countries that are either legal origin countries or are receptive to legal transplant. These findings are stronger and more robust than earlier findings linking legal origin families to GDP/capita and represent a positive alternative way to conceptualize the research project. Recognizing the contradictory findings in the literature, I adopt legal origins as a control in developing my research methodology, based primarily on the widely cited nature of this literature in comparison to the competing schools.

Within institutional theory, the regulatory dimension is of particular relevance to public venture capital programs, as such programs form one important dimension of the regulatory environment. La Porta, Lopez-de-Silanes, and Shleifer (1998) argue that legal origin is a powerful determinant of investor protection and that countries with poor investor protection tend to have more concentrated ownership structures as a substitute for inadequate legal enforcement and weak legal structure. Rajan and Zingales (1998) challenge this view and assert that the political context—the support of financial institution development by the government and various interest groups—is a more reliable predictor of financial sector development. They show that civil law countries may be easier legal and regulatory environments for incumbent interests to capture and that, as a result, these countries may have exaggerated reactions to trade and capital market openings and closings. Thus, Rajan and Zingales (1998) assert that legal origin may play a greater role in the rates of change in financial development than in the absolute level of such development. Of particular interest is the timing of the

emergence of venture capital with the closing of borders worldwide to both trade and capital during the 1930s and 1940s.

Allen and Song (2005) show that levels of venture capital investing are inversely related to measures of law and order, and that this relationship may function as effective substitutes for contracts in venture capital. Kenney, Haemmig and Goe (2006) note that the two countries other than the US with well-developed venture capital sectors—Taiwan and Israel—do not have purely English (common) law origins (Taiwan is German origin, while Israel, according to Levush (2001), is mixed), while China's rapidly growing venture capital sector is based on socialist legal origin. As noted earlier, Gilson (2003) argues that governments in developing countries can engineer a venture capital market by recognizing the difficult challenge of solving a three-factor simultaneous problem—requiring entrepreneurs, risk capital, and specialized financial intermediaries to intermediate between the two—and catalyzing the emergence of any two of these factors to insure the emergence of the third.

Before moving on to the next literature of relevance to this thesis, it is worthwhile to summarize the two main findings from institutional theory of relevance here. First, the literature on institutional change points toward diffusion and collective action (and, related to it, coproduction) as two possible processes influencing venture capital emergence. Second, the most robust indicator of institutional quality (among many valid candidates) appears to be legal origin. Structuring this study with legal origin in mind will be central to the robustness of its conclusions.

With these findings in mind, I now turn to the economic sociology literature in order to see what findings might help to understand the collective action/coproduction process associated with institutional change.

## 2.5 *Economic sociology—social capital, synergy, embeddedness, and coproduction*

*I only know that he who forms a tie is lost. The germ of corruption has entered into his soul.*

*Joseph Conrad (1915/1995, p. 154)*

### 2.5.1 *Non-materialist explanations for economic phenomena*

The social sciences can be broadly divided into materialist and non-materialist approaches, both of which were represented in the work of Adam Smith. Smith's The Wealth of Nations embodies the materialist approach, and this seminal work has been the foundation on which utilitarians, classical political economists such as Mill, Bentham, and Ricardo, and neoclassical economics have built (Swedburg, 1991).

The road less taken has been Smith's non-materialist approach, which he described in The Theory of Moral Sentiments. It is from this work that the French sociological tradition (including Durkheim) and German economic history (such as Marx and Weber) are in significant measure derived. Durkheim, Marx, and Weber are three of the classic sources of the social capital literature, as all three focused on the norms and institutions that explain economic life.

The contemporary literature that examines the non-materialist explanations of economic life has centered in economic sociology. Economic sociology began with a critique of new institutional economics (Granovetter, 1985) and largely rejects as simplistic and wrong the notion that economic institutions come about as efficient solutions to economic problems (Swedberg, 1991). Thus, concepts such as transactions cost analysis, agency theory, the property rights perspective, and game theory—the key techniques of new institutional economics—are counter-posed with new economic sociology, rational choice sociology, and socio-economics as competing explanations for the shape and dynamics of economic institutions (Swedberg, 1997).

New economic sociology is founded on the idea that economics can be criticized for its assumption that “economic actors make decisions in isolation from one another—



independent of their social connections” (Granovetter, 1985). New economic sociology does not assume that another criticism of neoclassical economics—that economic actors are not always rational—is correct.

New economic sociology is founded on two theoretical concepts: embeddedness and the social construction of the economy. The first refers to the tendency of economic behavior to be “embedded in networks of interpersonal relations” (Granovetter, 1985), indicating the often close ties between embeddedness and network theory.<sup>11</sup> Social construction describes the ways in which networks influence the early stages in the formation of institutions and industries (Granovetter, 1992), which then take on lives of their own and are less subject to network influences.

### 2.5.2 *Social capital*

New economic sociology makes use of three middle-range strands of theory from mainstream sociology to explore embeddedness and social construction: network theory, organization theory, and cultural sociology.

While no generally accepted definition exists, social capital refers to “the information, trust, and norms of reciprocity inhering in one’s social networks” (Woolcock, 1998). Four types of social capital can be derived from the above-noted theoretical traditions (Portes and Sensenbrenner, 1993):

- Marx and Engels--bounded solidarity (adverse circumstances can cause groups to cohere);
- Simmel—reciprocity transactions (personalized exchange networks create norms and obligations);
- Durkheim and Parsons—value introjection (values, morals, and commitments precede contractual relations and shape individual goals)
- Weber—enforceable trust (formal institutions and informal groups use different mechanisms to ensure

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<sup>11</sup> Some economic sociologists have criticized the close association of network theory with embeddedness, e.g. Fligstein and Mara-Drita, 1996.

### 2.5.3 *Embeddedness as a concept in the social capital literature*

Two concepts span the literature on social capital: embeddedness and autonomy. While Polanyi was the first to refer explicitly to embeddedness (Polanyi, 1944), the concept was more precisely defined by Granovetter. He contended that “economic activity was inherently enmeshed in social relations of one configuration or another, and that development essentially brought about a change in the kind, not degree, of embeddedness” (Woolcock, 1998). Two types of social relations were identified, personal ties (strong) and networks (weak), with the impact of each on economic activity and development varying on the context and the relative mix of the two.

The early research on embeddedness identified three common themes: all forms of exchange are embedded in social relations; embeddedness can take various forms, including social ties, cultural practices and political contexts; and the benefits of embeddedness often come at a real cost that changes as development proceeds (Woolcock, 1998). In particular, regarding the changing costs of embeddedness, the strong personal ties that are commonly found in informal family- or ethnic-based exchange networks may limit the ability of successful entrepreneurs in these communities to make the transition to larger exchange networks. Making the transition from one to the other is challenging and represents one of the major constraints on development. Autonomy complements and in some instances serves as a check on embeddedness, allowing development to continue. Autonomy serves to limit the costs associated with embeddedness.

Social capital is generated when both embeddedness and autonomy are integrated at both the micro and macro levels, as indicated below:

**Table 2.4--Embeddedness and Autonomy**

	<b>Embeddedness</b>	<b>Autonomy</b>
Micro	Integration, i.e. intra-community ties (Durkhiem)	Linkage, i.e. extra-community ties (Simmel)
Macro	Synergy, i.e. state-society relations	Organizational integrity, i.e. institutional coherence, competence, and capacity (Weber)

Source: Woolcock (1998)

Of these, the generation and maintenance of synergy (beneficial relations between the state and society) has been of particular interest to comparative institutionalists.

As indicated below, synergy by itself is insufficient to create the kinds of developmental states which have accounted for the greatest increases in economic development in the post-World War II era. Only when high levels of synergy are combined with high levels of organizational integrity is a developmental state possible. In particular:

Where there is a sustained and dynamic interaction between a competent, responsive, state and its various constituents, we find prosperous and equitable economies, of which the “developmental states” such as Japan, South Korea, and Singapore are the prime examples. Here, state-society relations—especially those between government ministries and major business groups—are characterized by what Evans calls “embedded autonomy,” in which a coherent, connected, and cohesive development framework emerges as a result of “a concrete set of social ties which bind the state to society and provide institutionalized channels for the continual negotiation and renegotiation of goals and policies.” (Woolcock, 1998, p. 178)

The following table indicates the relationship between synergy and organizational integrity in the contemporary world:

**Table 2.5--Synergy and Organizational Integrity**

		<b>Organizational Integrity (corporate coherence and capacity)</b>	
		Low	High
Synergy (state-society relations)	Low	Anarchy (collapsed states), e.g. Somalia	Inefficiency and ineffectiveness (weak states), e.g. India and China
	High	Predation and corruption (rogue states), e.g. Zaire	Cooperation, accountability, and flexibility (developmental states), e.g. Japan, Singapore, South Korea

Source: Woolcock (1998)

Concerning the two case study subjects of this project (see below), it can simply be noted at this stage that South Africa would not appear to be an example of a developmental state, either in its apartheid-era or post-apartheid phases of development, while Botswana may be such an example. In the case of South Africa, whether these outcomes are due to low levels of synergy, low levels of organizational integrity, or both, is in part a subject of this project.

#### *2.5.4 Applying the social capital concept to venture capital emergence—the roles of synergy and coproduction*

In the management literature, social capital theory has been applied to both organizational advantage (Nahapiet and Ghoshal, 1998) and venture capital (Sorenson and Stuart, 2001; Florin, Lubatkin, and Schulze, 2003).

Social capital theory may offer one approach to understanding the emergence of VC sectors, especially in weak institutional environments. Social capital—the norms and networks that enable people to act collectively—plays a significant role in facilitating both nascent entrepreneurs and startups (Davidsson and Honig, 2003). Of the principal approaches to social capital, synergy—the mutual reinforcement of effective state institutions and civic engagement—can contribute to economic development (Evans, 1996) and has the broadest empirical support (Woolcock and Narayan, 2000).

Cooperative relations between the state and society can be divided into two phenomena: complementary actions by the state (such as the rule of law), and embedded relations connecting actors in the public and private sectors. Synergy appears to arise when both complementarity and embeddedness are present (Lam, 1996). While the importance of complementary state activities, such as the rule of law, is widely acknowledged in the institutional and VC literatures (Lerner, Moore, and Shepherd, 2005), embedded relations between venture capitalists and state actors have not been studied to date. Given that we can observe examples in which VCs are closely involved in political processes (for example, their involvement with the legislative process in the United Kingdom), understanding the structure of synergy between government institutions and private venture capitalists may help us to better understand how VC emerges and what may cause its subsequent demise.

Coproduction describes a synergistic process in which inputs from individuals in different organizations are transformed into goods or services (Ostrom, 1996). In the environments where an equity gap exists between the demand for seed, startup, and early stage capital for innovative firms and the supply of capital available to meet that demand, it can be argued that venture capital is not so much a market-based phenomenon as it is one driven by the state, in those circumstances where the government is the sole or dominant provider of venture capital. In those instances, the state and the private sector collaborate in varying degrees to “coproduce” venture capital, with the state playing a dominant role in setting terms and conditions, and investment priorities of such sectors. In these circumstances, venture capital is a public good, rather than a private good as it is in more developed institutional environments.

Coproduction has been studied to date mainly as a phenomenon existing between governments and civil society organizations, e.g. water and sanitation in Brazil (Watson, 1995), irrigation in Taiwan (Lam, 1996), and primary education in Nigeria (Ostrom, 1996), and arose out of the challenges facing urban governance theory in the late 1970s. Any service can be coproduced, if it involves the establishment of relationships between “regular” service providers (in this case, governments as the principal providers of venture capital in weak institutional environments) and “clients”

who want to be transformed by the service into “better” persons (in this case, private fund managers who are managing public venture capital funds).

Microeconomic theory helps to determine whether a service (such as venture capital) should be produced solely in the public sector, solely in the private sector, or jointly as a coproduced service. Such services will be coproduced only if synergy is created by doing so. If contributions from the public and private sector can be substituted one-for-one for each other, no synergy exists, and coproduction does not make sense. The tradeoff between public and private inputs depends on the wage rate paid to public officials (the input of the public sector into the process) compared to the opportunity cost facing the private sector by participating in the process. If public sector wage rates are lower than private sector opportunity costs, then the service should be produced in the public sector. Of course, given that differences in human capital between the public and private sectors may exist, any such balancing of public sector wages and private sector opportunity costs must account for this difference.

If, on the other hand, inputs from the government and the private sector are complementary, the potential for synergy exists, and coproduction may be possible. In the case of venture capital, for example, private sector fund managers may possess superior dealflow development, investment structuring, post-investment support and monitoring, and exit skills in comparison to government bureaucrats overseeing such programs, while the government may be able to provide patient, long-term investment capital to fund managers on terms superior to those available from the private sector.

In developing countries, the knowledge, skills and time of private sector actors may be severely underutilized, which means that the opportunity cost of contributing these inputs to coproduced services may be low (Ostrom, 1996). In these circumstances, the returns to coproduction are particularly high. While the skills necessary to create a “classic” venture capital fund in a developing country are likely to be scarce, other relevant skill sets that could be deployed in support of an alternative risk capital investment model may exist in much greater quantity. The success of microfinance in many weak institutional environments indicates that basic financial skills may be in relatively wide supply.

The principal challenge with respect to implementing coproduction in developing countries has been that, despite the wide availability of situations where private sector opportunity costs are lower than public sector inputs, designs for successful institutional arrangements needed to implement coproduction are difficult to come by. Such arrangements are challenging to implement in traditional public services such as education, health, and police (Wilson, 1989), and, while infrastructure (such as the successful Taiwanese irrigation program noted earlier) is easier to build, regulation, maintenance, and incentive structures remain challenging (Ostrom, 1996). These “engineering” challenges echo those associated with venture capital noted above (Gilson, 2003).

Coproduced services are more likely to be superior to either public or private production in the following circumstances:

- The technologies used in production must generate complementary production possibility frontiers, rather than substitutive ones;
- Legal options must be available to both the public and private sector actors
- Both the public and private actors must be able to build credible commitments to one another. As a result, if one increases input, the other will follow suit. Clear and enforceable contracts help to make this virtuous circle possible;
- Incentives should help to encourage both the public and private sectors to provide inputs. Multipolar political systems are more likely to provide these incentives.

The divide between the public and private sectors in many developing countries continues to be maintained by the concern for controlling corruption and other forms of opportunistic behavior. However, maintaining this division may simply create new forms of opportunistic behavior, such as is evident in the black economic empowerment initiative in South Africa.

## 2.6 *Organizational emergence, diffusion, evolution and internationalization*

### 2.6.1 *Emergence of new organizational populations*

New organizational populations (such as national venture capital sectors) are more likely to emerge when founders pursue the following strategies:

**Table 2.6--Strategies Leading to Emergence of New Organizational Populations**

Levels of Analysis	Cognitive Strategies		Sociopolitical Strategies	
	Learning	Cognitive Legitimacy	Moral Legitimacy	Regulatory Legitimacy
Organizational	Experimentation	Narrative and identity development	Build on local networks of trust	Avoid entanglement with government agencies as long as possible
Within population	Encouraging convergence around dominant design	Collaboration	Foster perceptions of reliability by mobilizing to take collective action	Present a united front to political and government officials
Between population	Promoting alliance and third party activities	Draw on taken-for-grantedness of existing populations	Develop a reputation of a new activity as a reality by negotiation and compromise with other industries	Co-opt government agencies as allies against competing populations
Community	Creating linkages with established educational curricula	Fit categorical requirements of independent certifying institutions	Embed legitimacy by organizing collective marketing and lobbying efforts	Embed the population within the political system via political action committees and hiring of former government officials

Source: Aldrich and Ruef (2006)



Governments can encourage the emergence of new populations of organizations by making more likely the successful realization of their sociopolitical strategies as follows:

**Table 2.7--Sociopolitical Strategies Leading to New Organizational Populations**

	<b>Moral Legitimacy</b>	<b>Regulatory Legitimacy</b>
Organizational	Facilitate networks of trust	Limit involvement with new organizational population
Within population	Permit mobilization for collective action	Be sensitized to the presentation of united fronts by new organizational populations
Between population	Make possible negotiation and compromise with other industries	Allow co-optation of government agencies by new organizational populations
Community	Legitimate collective marketing and lobbying efforts	Legalize political action committees and accelerate hiring of former government officials

Source: Aldrich and Ruef, 2006

### 2.6.2 *Diffusion*

The global spread of VC can also be understood through the theoretical lens of diffusion. Diffusion is “the process by which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 2003: 35). North American diffusion theory is grounded in an epidemic (or learning) framework, which is based on the spread of agricultural innovations, educational innovations, and disease (Griliches, 1957; Mansfield, 1968; Rogers, 2003). Under this framework, diffusion happens when information spreads. In order for information to spread, the institutional environment must be conducive to both its spread and its adaptation in new host environments.

The North American diffusion school describes the innovation-diffusion process as a multistage process consisting of the innovation decision (comprised of five steps:

knowledge, persuasion, decision, implementation, and confirmation), followed by either adoption or rejection. Adoption may be followed by later discontinuation of the innovation, while rejection can lead to later adoption (Rogers, 2003). Decisions to adopt an innovation can be made individually, collectively, or by authority figures (Rogers, 2003). A relatively neglected subfield within North American diffusion research is that which examines the rate of adoption of innovations in different social systems (e.g. Rogers and Kinkaid, 1981); this subfield is of direct relevance to developing a general model of VC emergence across different institutional environments. Rate of adoption is a function of “system norms, characteristics of the social system (such as concentration of opinion leadership), change agent variables (such as their strategies of change), and types of innovation decisions” (Rogers, 2003: 97). The characterization in the literature of the diffusion process as multistage strongly suggests that this process is life cycle in nature, as are the simultaneity and VC cycle components of the current emergence model.

The North American diffusion of innovation literature makes two assumptions: 1) innovations change little as they diffuse from one site to another, and 2) adopters adopt innovations for the same reasons (Abrahamson, 2006). These assumptions have been challenged by other research arguing that: 1) adopters translate innovations in ways that change both the imitator and the imitated; and 2) adopters translate innovations to suit their idiosyncratic circumstances (Czarniawska and Sevón, 2005; Abrahamson, 2006). Insofar as translation enters into the diffusion process, the stage process theory of diffusion has to be modified to incorporate other processes, which might be evolutionary, dialectical, or teleological in nature.

Endemic innovations are those that are exclusively native to an organizational population, such as a national VC industry (Gaba and Meyer, 2008). Innovations can spread to other populations or be rejected at the border of the organization’s population. Barriers to the spread of endemic innovations across organizational populations can include institutional norms, industry standards, technology platforms, regulatory regimes, and cultural practices (Gaba and Meyer, 2008), all of which tend to change slowly. In some cases, endemic innovations adapt in order to successfully cross borders into new organizational populations. Examples of such adaptation include the

transformation of the software industry's open source model to biotechnology, industrial design, and NASA's Mars mission (Goetz, 2003); the changes made to Japanese lean production methods by other industries in other countries (Womack, Jones, and Roos, 1990); and the morphing of microfinance (originally conceived by non-governmental organizations in developing countries) into the commercial lending sector (Armendariz de Aghion and Morduch, 2005).

A recent model of cross- and intra-population diffusion of endemic innovations using data from U.S. corporate venture capital (CVC) programs in the information technology (IT) industry (Gaba and Meyer, 2008) predicts that 1) **geographical proximity** to a VC population cluster increases the probability of CVC program adoption by an IT firm and 2) the likelihood of CVC program adoption is positively related to the **efficacy of investments** made by the VC population. These findings suggest that the VC diffusion process is rational and largely evolutionary in nature. While the findings of Gaba and Meyer (2008) are based on the diffusion of innovation between different organizational populations, diffusion among other population types formed by shared language, values, or nationality may have different characteristics, posing the question: is it more difficult to "take VC to IT or to Asia?" (Gaba and Meyer, 2008: 995).

Copying organizational forms across national boundaries can be dangerous for entrepreneurs (such as those that are involved with the establishment of national VC industries). Selection forces determining which organizational forms will survive may be present in one setting but not in another, and differing institutional structures may reduce or eliminate the advantages of routines and competencies as they move from one population to another (Aldrich and Ruef, 2006). For example, the first movers in the Swedish VC sector initially copied business models from Silicon Valley. After imitators failed, they adapted new approaches better suited to the Swedish institutional environment (Aldrich and Ruef, 2006).

## 2.7 *Other literatures*

### 2.7.1 *Entrepreneurship policy*

In the absence of an accepted general theory of entrepreneurship<sup>12</sup>, it has been difficult to reach a consensus in the literature concerning the optimal entrepreneurship policy that a government should follow. As defined by Stevenson and Lundstrom (2001), “entrepreneurship policy consists of measures taken to stimulate more entrepreneurial behavior in a region or country.... We define entrepreneurship policy as those measures intended to directly influence the level of entrepreneurial vitality in a country or region.” Audretsch (2003) describes entrepreneurship policy as focused on the process of change that depends on successful opportunity recognition, regardless of the organizational level, rather than on existing firms, as is common with SME policy in many developing countries. He also asserts that this policy is focused on the framework and environment in which entrepreneurs (current or nascent) make decisions. As a result, it tends to be more systemic than SME policy, and entrepreneurship policy tends to cross ministry lines, unlike SME policy, which is often concentrated in one government ministry or agency (Audretsch, 2003)<sup>13</sup>. Therefore, entrepreneurship policy is more difficult to successfully conduct than SME policy, particularly in developing countries where coordination is particularly challenging.

The logic of entrepreneurship policy is to address and resolve three market failures—network externalities, knowledge externalities, and learning externalities (Audretsch, 2003). Entrepreneurial firms are more valuable when they are proximate to other entrepreneurial firms, especially in industries that depend on clustering, sectoral linkages, or networks for competitive advantage (Porter, 1990). Knowledge is a public good (Arrow 1962), and local proximity is often necessary to access the spillovers that are generated from its production (Porter, 2000)<sup>14</sup>. In addition, the failure of firms

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<sup>12</sup> Shane (2003) is one recent attempt at such a general theory, but his framework continues to be debated.

<sup>13</sup> There are exceptions. For example, the United Kingdom has successfully worked across ministry lines to promote SME development (National Audit Office, 2006)

<sup>14</sup> This may be mitigated to some extent by the Internet.

generates knowledge, which can only be accessed by investors and entrepreneurs locally. Finally, the learning or demonstration effect creates externalities, as nascent firms (particularly in geographies without a strong entrepreneurial tradition) observe the viability of entrepreneurship. This learning spillover is, again, only available to those close by.

The result of these three market failures may be that entrepreneurs may place a lower value on entrepreneurial activity than public policy makers, who can observe the larger social benefits of entrepreneurial activity; the economy benefits as a whole from spillovers, while individual entrepreneurs generating R&D do not. Sound entrepreneurship policy seeks to close the gaps created by these market failures. Storey (2003) categorizes policy initiatives in this area, but makes no reference to venture capital as a specific policy initiative.

Market failures create five rationales for policy interventions (Lundstrom and Stevenson, 2005):

- Higher transactions costs for small business loans reduce their ability to obtain commercial loans on competitive terms;
- Perceived higher failure rates for small firms cause lenders to perceive higher lending risks to these firms;
- Lack of collateral and absence of track record make it more difficult for small firms to demonstrate their capacity to repay and service financial obligations;
- Uncertain commercial viability of new technology and early stage firms makes it harder for them to attract financing, and;
- Lack of access to information about financing alternatives limits access to finance for small firms in comparison to large ones.

Public venture capital programs seek to address lack of collateral and the absence of a track record for innovative entrepreneurs through risk-sharing with private investors, and to make equity capital available to firms with uncertain prospects through incentives such as tax credits and soft capital to venture capital firms and business angels.

Lundstrom and Stevenson (2005) articulate a framework for entrepreneurship policy that consists of six areas of focus: entrepreneurship promotion, entrepreneurship education, startup environment, startup and seed capital financing, business support for startups, and target group strategies. Within the financing category, governments vary in the time that they have focused on access to finance as an issue, the diversity and number of policy initiatives, the extent of direct government financing, the relative emphasis on debt versus equity in these programs, and the extent of focus on addressing the information asymmetries between financiers and founders (Lundstrom and Stevenson, 2005).

### *2.7.2 Economic and business history*

The global history of venture capital has been dominated to date by the modern American experience. However, informal external equity finance of new firms has existed since antiquity and played a central role in the Columbus expeditions of the late 1400s and the establishment of the world's first multinational corporation, the Dutch East India Company, in 1602. The Gutenberg press was financed by an early business angel. To date the phenomenon of venture capital from 1930s America is to miss much of the rich history of the broader phenomenon of risk capital.

One notable exception to this lack of attention is the case of 3i in the United Kingdom, which is extensively documented in Coopey and Clarke (1995). Initially created as the Industrial and Commercial Finance Corporation (ICFC) in 1945 by the major British and Scottish clearing banks and the then-private Bank of England, 3i was a creature of the 1931 Macmillan Commission, which identified a long-term financing gap for small and medium-sized businesses, and resultant political pressure by way of the Treasury from the Labor Party (Coopey and Clarke, 1995).

The emergence of 3i must be seen against the backdrop of the overall development of state banking since the mid nineteenth century. State banking was initially seen as a governmental response to a market failure in rapidly growing economies such as Russia beginning in the 1890s (Gerschenkron, 1962), although more recent arguments for it

have focused on the informational advantages that the state may have over borrowers in economies where private banking is relatively weak (Haggard and Lee, 1995). Other scholars have pointed to the ways in which state banking can be used to compensate those sectors hurt by rapid industrialization (Loriaux, 1991), to the rivalry between state and private banks, or to the presence of a strong state (Zysman, 1983) as alternative explanations of the emergence of state banking in various countries over time. These logics have echoes in the contemporary debates about the role of government in VC development.

In the first wave of its development, state banking focused on agriculture and urbanization. The second wave specifically targeted small firms and included a large number of initiatives including (Verdier, 2000):

- Japan (1912)—Relief Fund for Small Farmers and Manufacturers
- France (1919)—Credit National
- France (1923)—Credit Hotelier, Commercial et Industriel
- Netherlands (1927)—Middenstandsbank
- Sweden (1934)—AB Industrikredit
- Norway (1936)—Manufacturing Bank
- Belgium (1937)—Caisse Nationale de Credit aux Classes Moyenne
- Canada (1944)—Canadian Industrial Development Bank
- Australia (1945)—Industrial Finance Department of the Commonwealth Bank
- United Kingdom (1945)—Industrial and Commercial Finance Corporation
- Netherlands (1945)—Herstelbank
- Germany (1948)—Kreditanstalt fuer Wiederaufbau
- Germany (1949)—Industriekreditbank AG—Deutsche Industriebank
- Italy (1947)—Cassa per il Credito all imprese Artigiane
- Italy (1952)—Mediocredito
- Spain (various)—Credito Oficial
- Belgium (1962)—Societe Nationale d'Investissement

Reflecting the principal periods in American economic history (Lazonick, 1988), three phases in the history of venture capital in the United States can be distinguished (Florida and Samber, 1999):

- Relationship-based lending and insider-based equity finance, as reflected in the development of the New England textile industry between 1815 and 1860 (Lamoreaux, 1994);
- Venture finance of new mass production-based sectors, perhaps best exemplified by Andrew Mellon's Union Trust Company and the rise of the Pittsburgh economy during the late 1800s and early 1900s (Cannadine, 2006);
- Modern venture capital, which began its rise during the 1930s, was codified by Georges Doriot at American Research and Development beginning in 1946, and continues to this day.

The Mellon experience is particularly instructive, as the structure of venture capital during this period was practically identical to venture capital today. Of note is the fact that public venture capital was not a factor in the first two phases of venture capital in the United States, but became a significant factor in the third phase.

This history suggests that new types of finance, such as venture capital, may arise in response to new technologies or business organizations (Florida and Samber, 1994), at least in the United States. In this context, established financial institutions are slow to evolve to meet the unique demands of these new opportunities, suggesting that modern venture capital is itself a temporary phenomenon, as its antecedents were, and that a broader consideration of the phenomenon of risk capital or external equity finance may have greater potential generalizability.

The antecedents of modern venture capital are usually found in the late nineteenth and early twentieth centuries in the United States (Gompers, 1994; Cannadine, 2006), as well as the venture investing of the government-owned Tennessee Valley Authority (Reiner, 1991). These efforts became more professional in the 1930s and 1940s, when the Rockefeller, Bessemer, Whitney, and Payson and Trask families brought in outside managers to pursue investments in new firms. The government's response to the Great



Depression of the 1930s set the scene for many of the protean institutions of modern venture capital, both in the private and public sectors. Legal and economic factors from the mid to late nineteenth century explain to a significant degree financial sector development today (Fohlin, 2006).

The history of public venture capital in the United States and the United Kingdom may suggest patterns of emergence of relevance to the phenomenon in developing countries. Of interest is the apparent symbiosis between public venture capital in the two countries, with the Macmillan Report of 1931 in the UK playing an important role in stimulating interest in a government role to fill the equity gap in the United States (Noone and Rubel, 1970). American public venture capital emerged over a long period. Initial studies that advocated financial assistance to small business and legislation proposing the creation of special institutions to assist small business started in 1935. However, seminal legislation—the Small Business Investment Act—was not proposed until 1950, resulting in the establishment of the Small Business Administration in 1953. However, the SBA could not make equity investments in small business, and a Federal Reserve study in support of such investment was required before a Small Business Investment Act was proposed and passed in 1958. Twenty-three years from the initial idea to enabling legislation is a lengthy period, especially when compared with the rate at which many other important institutional innovations were legislated during the New Deal and Fair Deal periods. It is worth reflecting on why the equity gap took so long to address in the United States, the most successful modern venture capital market, and, in particular, the extent to which the economic boom in the United States during the 1950s may have slowed this process.

An interesting factor in the emergence of American public venture capital was the longtime support of the initiative by Senator John Sparkman, a conservative Democrat from Alabama. Sparkman emerges from the history of the period as a key champion for what became the SBIC program. During the period from 1950 to 1957, for example, Sparkman and his allies introduced at least twenty-five bills proposing special institutions to aid small business. After serving in the House of Representatives from 1937 to 1946 (where he served as Majority Whip in 1946), Sparkman was elected to the Senate in 1946, where he served until 1979. He was Adlai Stevenson's vice presidential

running mate during the 1952 elections. Sparkman was a powerful political presence during the Roosevelt and Truman administrations and served as Chairman of the Select Committee on Small Business and the Committee on Banking, Housing, and Urban Affairs during his career.

By contrast, no one individual appears to have played a central role in the establishment of ICFC in the UK. Instead, permanent civil servants in the Treasury and the Bank of England both played central roles as institutions in the establishment of ICFC, with the major clearing banks and, to a lesser extent, the Labor Party contributing to the effort (Coopey and Clarke, 1995).

As this brief history indicates, the differing paths traveled by the US and UK in the early stages of venture capital emergence resulted in founding industries with fundamentally different attributes:

**Table 2.8--ARD versus ICFC**

<b>ARD</b>	<b>ICFC</b>
Non-institutional; managers were entrepreneurs	Institutional; managers were bureaucrats
Active investor	Passive investor
Short-term	Long-term
Profit from capital gains	Profit from current income
Fund managers owned the company and were closely involved with investees	Managed by employees who could not join boards or become involved with investee management
Specialized in a few companies in high-growth industries	Generalist with a specialized knowledge of finance

Source: Coopey and Clarke (1995)

Within the contemporary period of modern venture capital, four sub-periods in the evolution of the modern venture capital sector can be identified:

- 1945-1958—Establishment
- 1958-1975—Two schools of thought
- 1975-2000—Boom
- 2000-present—Consolidation and separation between private equity and venture capital

This historical categorization is somewhat similar to that proposed for the US venture capital sector by Avnimelech, Kenney, and Teubel (2004):

- 1930-1945—Background conditions
- 1945-1957—Pre-emergence
- 1958-1972—Emergence
- Early 1970s to late 1970s—Crisis
- Late 1970s to present—Restructuring and consolidation, economic success and legitimation

These patterns reflect the industry life cycle, which is in turn influenced by the product life cycle (Klepper, 1997). Industry life cycles vary greatly from industry to industry, but generally consist of four phases (Grant, 2007):

- Introduction/emergence (1945-1975 in venture capital)
- Growth (1975-2000)
- Maturity (2000-present)
- Decline

During the introduction/emergence phase, competition centers on alternative technologies and/or organizational designs. In the venture capital industry, this struggle could be seen most clearly in the competition between classic, private sector-dominated approaches (represented by ARD) and mixed public-private models (represented by SBICs). By the mid-1970s (at least in the United States), mixed models of venture capital were in relative decline, and the classic model had come to predominate. Other countries are at different stages in their industry life cycles, although it appears that industry innovation is shifting from product innovation (represented by the investment

structuring techniques pioneered in the United States in the 1950s and 1960s) to process innovation, where new organizational forms are arising to implement venture capital in a variety of business environments and strategic situations. Corporate venturing is one example of this kind of process innovation.

The length of the introduction/emergence phase (the principal topic of this project) varies significantly by industry (Grant, 2007):

- US railroad—approximately 50 years (1827 to 1870s)
- US automobile—approximately 25 years (1890s to 1913-15)
- Personal computers—4 years (1974-1978)
- Digital audio players—4 years (1997-98 to 2001)

By contrast, the introduction/emergence phase of the US venture capital industry appears to have been approximately 30 years in length (1945-75). With the compression of industry life cycles across many, if not most, sectors during the twentieth century, the lengthy emergence phase of venture capital remains an anomaly. The length of the emergence phase may be shaped by the following factors (Grant, 2007):

**Table 2.9--Factors Shaping Length of Industry Emergence Process**

<b>Factor</b>	<b>General Characteristics</b>	<b>Comments Regarding Venture Capital</b>
Demand	Limited to early adopters: high income, avant-garde	Likely driven by deal flow of innovative, growth-oriented firms
Technology	Competing technologies and rapid product innovation	Appropriate adaptation of classic VC model, as well as process innovation
Products	Poor quality. Wide variety of features and technologies. Frequent design changes.	First movers may have poor returns
Manufacturing and distribution	Short production runs. High-skilled labor content. Specialized distribution channels.	Shortage of skilled local VCs and deal flow sourcing likely to be key constraints
Trade	Producers and consumers in advanced countries.	Not applicable—VC usually remains local in emergence phase (Hong Kong and Singapore are notable counterexamples)
Competition	Few companies	Mixture of private and government-supported firms
Key success factors	Product innovation. Establishing credible image of firm and product	Not well understood in many venture capital environments

Source: Grant (2007)

The end of World War II marked the birth of the contemporary venture capital sector with the establishment of American Research and Development (ARD) in Boston in 1945 (Bygrave and Timmons, 1992; Hsu and Kenney, 2005) and, one year later, the founding by the British government of the Industrial and Commercial Finance Corporation (ICFC), the antecedent of 3i (Coopey and Clarke, 1995). The timing is not accidental, as war and other forms of political violence are often drivers of financial innovation (Ferguson, 2001). The mixture of private, public, and philanthropic motives, and the tension between these motives, reflected in the early activities of ARD and ICFC would continue to characterize the venture capital sector as it evolved. In 1947 the Colonial Development Corporation (CDC, subsequently renamed the Commonwealth Development Corporation) was established in the UK, and, despite its

early emphasis on agribusiness, it too came to play a role in catalyzing venture capital in developing countries, particularly after it refocused on private sector activities in the 1980s (Cowen, 1984; McWilliam, 2001). The Commonwealth Development Finance Corporation (CDFC) was established in 1953 as a private sector alternative to CDC by the Bank of England, but its persistent losses led to its ultimate sale in 1986 (McWilliam, 2001).

The years 1957 and 1958 marked the second phase in the evolution of the sector. In 1957 the industry established itself on the US West Coast when Arthur Rock secured financing for Eugene Kleiner to found Fairchild Semiconductor. By the early 1990s the West Coast would become the epicenter of the industry (Saxenian, 1994).

In 1958 the establishment of the US Small Business Investment Company (SBIC) program marked a significant shift in the evolution of the venture capital paradigm. While the founders of ARD had emphasized investments in noble ideas and the importance of advice by venture capitalists to their investees, the early SBICs provided little advice and did not monitor their investees actively, while their capital structure (up to 4:1 leverage, with the debt guaranteed by the US government) encouraged investments in cash flow-positive firms with more limited prospects for a “home run.” The recession following the 1973-4 oil embargo led to a substantial drop in IPO activity and increased losses in many SBIC-backed firms. The resultant failures of both investees and SBICs led to a fall in the number of SBICs from 700 in the mid-1960s to 250 by 1978 (Gompers, 1994).

A third phase of the evolution of the sector can be seen in the rise of high technology startups, beginning with Apple Computer in 1975. As a result of changes in the 1979 Employee Retirement Income Security Act’s prudent man rule, pension funds could invest up to 10% of their assets in venture capital funds. The prudent man rule and the reduction of capital gains tax in 1978 from 49.5% to 28% led to a significant rise in commitments to venture capital funds in the United States during the 1980s. This period also marked a reinvention of the SBIC program in the early 1990s and a shift in the composition of fund commitments from individuals to institutional investors, mainly

tax-exempt investors such as pension funds and endowments. These investors influenced a shift toward later stage investments and LBOs (Gompers, 1994).

The venture capital sector entered a fourth phase with the dot.com collapse in 2000. During this phase some of the inefficient practices that came to rise in the third phase, notably herding and grandstanding, led to substantial reductions in IRRs and a fall in commitments. The cyclical character of the industry, as well as its vulnerability to exogenous shocks, are both correlated with the IPO market, and these characteristics became firmly established with the downturn of the NASDAQ beginning in April 2000 (although venture capital also suffered in the wake of market downturns in the late 1960s and early 1980s).

Key patterns in the development of venture capital in developed economies include the following:

- Cross-national co-evolution, e.g. the US and UK experiences (although the reasons for this co-evolution are not yet understood)
- Early and continuing involvement of the government in shaping the venture capital environment
- Cyclicity and sensitivity to market shocks, resulting in lengthy periods to reach the growth and maturity phases of the industry life cycle
- Experimentation over long periods of time with alternative models
- Emergence in the wake of economic or other crisis

By contrast, the modern history of venture capital in developing countries can be traced to the establishment of Commonwealth Development Corporation in 1948. Established to ensure the supply of essential goods from the colonies to Great Britain, CDC developed into a public corporation whose primary mission was to finance the establishment of new enterprises (Cowen, 1984). Antecedents of CDC, including the Puerto Rico Development Corporation (established in 1942), the South African Industrial Development Corporation (established 1940), the East African Research Industrial Council (established during WWII), and East African Industries all influenced

the design of CDC, as did the contemporary examples of ICFC in the United Kingdom and Cameroons Development Corporation in Africa.

Like many public venture capital funds today, CDC often invested in development projects and required a fixed and nominal return linked to its principal source of funding, the UK Treasury. In some instances CDC invested in startup state corporations, while in others it invested alongside private investors, a practice for which it was criticized by banks such as Barclays. Most projects were in the agribusiness sector, and performance on the portfolio as a whole was modest at best, although one of the early CEOs was a successful UK venture capitalists.

The next stage in the evolution of venture capital in developing countries was the proliferation of a number of US government-stimulated funds in the late 1960s and early 1970s (Fox 1996), a development mirrored by the establishment of the first private sector venture capital funds in Japan in 1972 (Ono, 1995).

A third stage began in the early 1980s with the establishment of vibrant venture capital sectors in Hong Kong, Singapore, and Taiwan (Kenney, Han, and Tanaka, 2002). Another important development during this period was the founding of Business Partners in South Africa. A fourth—and, to date, the most significant—stage in the development of venture capital in developing countries began in the early 1990s. The liberalization of many developing and transitional economies contributed to this phenomenon (Leeds and Sunderland, 2003). Development finance institutions, including OPIC, USAID, IFC and EBRD, greatly expanded their activities during this period, particularly in Latin America, Central and Eastern Europe, and the former Soviet Union, although the effectiveness of these programs has been mixed (Lancaster, Nuamah, Lieber, and Johnson, 2002).

## 2.8 *Possible logics underlying the venture capital emergence process*

A number of possible logics are available to explain human and organizational behavior, and these may be helpful as this thesis collects and analyzes data considering the existing theories about VC emergence. These logics enable any resultant model to rise



above that of a narrative by providing a logic linking the model's various components. In order for a model to be more than a description of events, a logic must link these components in a way that is logical, credible, and supported in fact. A model linked by such a logic must also credibly argue that the probability of the events described by the model at the genesis of the VC emergence process is high, or at least higher than alternative explanations.

The most commonly used logic in describing how humans or organizations interrelate is rational choice theory (RCT), which argues that individuals act to maximize their wealth, status, and/or power (Kiser and Hechter, 1991; Goldstone, 1998). RCT is the basis for neoclassical economic theory and is likely to be present when a common phenomenon, arising from different settings or initial conditions, is observed (Goldstone, 1998).

A second, more recently identified logic is path dependence, which explains outcomes as a probabilistic function of intermediate events occurring between initial conditions and those outcomes (Arthur, 1994; David, 1997; Goldstone, 1998). Path dependence may be operating as the logic, when a unique event occurs, is diffused to other settings, but does not repeat despite similar initial conditions in those settings (Goldstone, 1998).

A third possible logic would explain outcomes as a function of initial conditions; this law has been described variously as 'sedimentation' or incremental institutional change. When a phenomenon is observed occasionally, and similar initial conditions precede the phenomenon, then this law is likely to be operating (Goldstone, 1998).

A fourth logic is altruism, which has been revived recently in the entrepreneurship literature (Van de Ven, Sapienza, and Villanueva, 2007). The literature does not describe the type of phenomenon pattern that would likely reflect the operation of this logic.

Importantly, these logics are not necessarily exclusive. RCT can incorporate both path dependence and initial conditions (Goldstone, 1998), and RCT and altruism can and do

coexist (Van de Ven, Sapienza, and Villanueva, 1997). However, one logic or combination of logics would be expected to prevail throughout a social change process.

## *2.9 Conclusions and suggested propositions*

Venture capital is an interesting phenomenon that plays a central role in the entrepreneurial process. However, just as entrepreneurship currently lacks a general theory that can adequately account for antecedents and consequences of entrepreneurial activity and the various processes associated with it, research in venture capital does not yet have a conceptual framework to adequately account for its emergence.

However, we have some important clues that suggest how best to proceed in developing such a framework. The current implicit model of VC emergence adequately describes two important components of emergence: the macro-level enabling environment, where three sub-processes (the creation of a stock of entrepreneurs, the development of pools of capital seeking a VC risk-reward combination, and the legal and human capital environment conducive to the creation of specialized financial institutions necessary for VC) operate; and the fund-level VC cycle, which operates as a self-perpetuating cycle of fund-raising, investment, support, monitoring, and exit. What this model does not tell us is how these two processes are linked, and whether other processes may mediate them.

Institutional theory provides a useful way to think about how these possible mediating processes may arise, as well as a general framework within which to design the research to answer our primary question: how does VC emerge? By introducing the possibility that institutions are not utility-maximizing, institutional theory allows for the introduction of non-economic motivations that may play a role in VC emergence. In particular, dominant elite coalitions control mature limited access orders. These orders exist in the developing countries and are likely to be the economies in which VC has recently emerged or may emerge next. As an important resource provider to high potential entrepreneurial firms, VC facilitates the disruptive economic change that may reduce or eliminate the rents on which dominant coalitions depend for their survival. Thus, the relationship between VCs and the dominant coalition, mediated through the

state controlled by that coalition, may be central to VC emergence in mature limited access orders. Better understanding the process underlying that state-private sector relationship becomes important to an overall conceptual framework for emergence.

Economic sociology helps us to better understand the process of state-private sector relations by highlighting the centrality of embeddedness, which allows the public and private sectors to coproduce certain types of services that neither can efficiently produce alone. Regarding venture capital, the state can contribute investment capital to VC funds for longer periods and, in part as a result, at lower IRRs than the private sector can, creating more favorable economics for other private investors in the fund, as well as the fund management. Fund managers contribute specialized investment skills, and the cost of contributing these may be relatively low for VC models that are other than “classic” ones. Coproduction has arisen in markets with characteristics broadly similar to VC, suggesting that it may have applicability in this domain as well. In broad terms, social capital is the resource that facilitates coproduction between the public and private sectors. How this process might begin remains a question to be addressed by other literatures.

Diffusion theory offers one explanation for how the coproduction process might be initiated. Among other factors, cross-population diffusion of venture capital depends on geographical proximity to other VC industries, as well as the efficacy of investments made by those populations. In other words, nearby successful VC models are more likely to be diffused. However, if two populations do not share common languages, values, or nationalities, the diffusion process may be altered or made less likely. In the event that diffusion does occur, a VC model becomes available for adoption or modification. This example may catalyze coproduction to be initiated.

Here the operative word is “may.” The literatures on entrepreneurship policy and business history both suggest that VC emergence is likely to be both contingent and nonlinear. The policy literature focuses on the need to solve various types of market failures, but the presence or absence of this phenomenon remains controversial amongst researchers—one man’s market failure is another’s efficient market. As a result, policy frameworks for facilitating VC emergence remain rudimentary, leaving the overall

engineering challenge in place and, in particular, offering little guidance about how to engineer coproduction between the public and private sectors.

These theoretical perspectives can be linked by logics governing human and organizational behavior. While rational choice theory dominates both economic and some non-economic explanations for venture capital, RCT can be conditioned by and reconciled with both the path dependence and initial conditions logics, and the literature review suggests that these laws, which recognize the centrality of historic conditions, may also be a play in venture capital emergence by helping to establish both the institutional framework and the basis for any cooperation between the public and private sectors. This cooperation may also be conditioned by altruism or actors responding to collective interests. These conclusions suggest a hybrid logic combining self- and collective interests, such as that hypothesized by Van de Ven, Sapienza, and Villanueva (2007).

The key conclusions of relevance to this thesis from the literature review are:

- The current implicit model of venture capital is incomplete, failing to take adequate account of the role of coproduction between government investors and private fund managers in filling the equity gap
- The institutional change required for VC to emerge appears to operate through two mechanisms: diffusion and collective action. In the former case, diffusion of VC models from other environments is governed by proximity. Collective action requires government investors and private fund managers to actively cooperate with one another.
- However, collective action is complicated by the institutional structure in mature limited access orders, where elite dominant coalitions limit competition and do not have a strong interest in promoting national innovation systems. Locally developed venture capital can be distorted by this structure, creating an additional subsidy mechanism for these elites. Foreign venture capital can also be distorted by enclave effects and does not appear to be a catalytic mechanism for VC emergence in these environments.

- In order for coproduction to be effective in causing VC emergence in weak institutional environments, mature limited access order economies must be well on the way to fulfilling “doorstep” conditions or already in the transition process to an open access order.
- If entrepreneurship policy does not take account of the deeper institutional structures characteristic of limited and open access orders, policy is likely to be ineffective. The history of risk capital strongly suggests that the VC emergence process is likely to be a serendipitous one, rather than the linear and progressive tale told in much of the VC history literature to date.

The literatures and these conclusions suggest the following:

*Proposition 1: VC emergence is in part a teleological process. Purposeful social construction by both government investors and fund managers is required to initiate and, in some instances, maintain the “VC cycle.”*

*Proposition 2: Coproduction and embeddedness are the central elements in the teleological process that forms part of VC emergence. Specifically, government investors and fund managers coproduce VC in part by forming and maintaining embedded relations with each other; these relations are motivated by both selfish and altruistic motives.*

*Proposition 3: Embeddedness is a precondition for coproduction in VC emergence.*

*Proposition 4: There is a positive relationship between the level of coproduction and the sustainability of a national VC industry.*

*Proposition 5: Diffusion of VC models from other institutional environments plays a significant role in the VC emergence process. It logically follows the establishment of simultaneity conditions, is coterminous with coproduction, precedes the VC cycle in the emergence process, and is facilitated by geographical proximity of active VC industries in other economies.*

*Proposition 6: These processes are linked by a logic which combines rational choice theory (conditioned by path dependence and initial conditions) and altruism.*

I now turn to examine the research methods that are appropriate for addressing these propositions.

## Chapter 3

### Research Design

#### 3.1 *Introduction*

In this chapter I consider the appropriate research design and related strategy and methods for the research question raised in Chapter 2. Given the incomplete nature of theory building on venture capital emergence, I suggest that multiple case studies of emerged and emerging VC industries and focused on the emergence process offers promise as a means to develop a more complete theory of VC emergence.

The choice of case studies as the research strategy is not without controversy. Lack of rigor in case preparation, the challenges of generalizing from one or a small number of cases, and the lengthy data collection process and often unwieldy nature of many case study documents have been frequently cited by researchers trained in other social science methods as reasons why case studies are sub-optimal research instruments (Yin, 2003). However, when 1) ‘how’ research questions are involved, 2) the researcher cannot control the behavioral events he is studying, and 3) when the focus is on contemporary events, then case studies are superior to other strategies, such as experimentation, surveys, archival analysis, or histories (Yin, 2003). Since each of these three conditions applies to this thesis’ research question, case studies are the optimal research approach.

To examine the empirical validity of the propositions derived from the literature review, I use an “alternatives templates” research approach (Langley, 1999) to compare the simultaneity, VC cycle, and diffusion models (all of which are life cycle in nature) with the coproduction model (teleological in nature). In the spirit of Allison (1971), I recognize the possibility—indeed the likelihood—that this comparison will result in a composite model of VC emergence incorporating aspects of some or all of these models. As with earlier process studies involving long-term time horizons (Burgelman, 1983), a qualitative method using a longitudinal-processual approach (Pettigrew, 1979)

was used to study VC emergence comprehensively in two case settings—South Africa and Botswana.

I develop process data from four sources: semi-structured interviews with current and past VC practitioners in South Africa and Botswana, archival research at fund managers and newspapers, direct observation of fund managers, and a review of the limited academic literature on the South African and Botswana VC industries and related institutions. Eighteen interviews were conducted over the period July 2007-October 2008 (fifteen related to South Africa and three related to Botswana) and included executive management at VC funds, government organizations investing in VC funds, South Africa's national VC association, academics researching VC or entrepreneurship, and entrepreneurs receiving VC investment. I interviewed all the South African government organizations currently involved in VC as investors or fund managers, the policy body overseeing VC development in Botswana, four fund managers (three South African and one Botswana) that have received funding from public sources (national, regional, and DFI), and one South African fund manager with exclusively private investors.<sup>15</sup> These interviews including a one week extended interview with, and observation of, a South African fund manager which received 50% of its funds from public sources. This fund manager was selected due to the access it provided to additional data—including interviews with investees, board minutes, and other documents—with which to confirm or disconfirm data from other sources.

As indicated in Appendix 2, the interviews conducted for this study totaled 71.15 hours, including 40 hours of continuous working contact with one South African fund manager. Excluding this extended interview/observation session, the average interview lasted for 1 hour and 39 minutes, with interview lengths ranging from 1 to 3 hours. In some instances these interviews will followed up with email correspondence and telephone contact. In addition, four other respondents provided additional information through unstructured interviews or email correspondence.

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<sup>15</sup> One interview in Botswana was conducted by a South African academic, who is an associate professor of economics at the University of Stellenbosch.



In general, interviews were conducted at the CEO or decision-maker level in the organizations. Contact with interviewees was established in a variety of ways. My previous experience in South Africa allowed me to establish initial contact with one organization (Business Partners) and the national industry association in South Africa (SAVCA). An American academic colleague helped me to make contact with one fund (Ethos). From those contacts and “cold calls” I was then able to gain access to the remainder of the South African interviewees. Initial contact with Botswana interviewees was substantially more difficult to establish, requiring repeated emails and phone calls. Interviews with Botswana government officials were conducted by a South African academic colleague who travels regularly to that country, based on his contacts with one of Botswana’s leading financial services firms. The resultant interview portion of the dataset is believed to be one of the richest gathered about a national venture capital industry in the developing world to date.

Following each interview (generally on the same day), a transcript was prepared, based on extensive notes or audio recordings taken by the authors during each session. On the basis of this transcript an “incidents list” was created before being assembled into events. These events formed the core data used to develop a narrative of the VC emergence process.

This paper takes a weak process research approach (type II in Van de Ven and Poole, 2005). While the phenomenon under study (VC emergence) is not fully understood, and therefore generally more amenable to study using type III process research methods (Poole, 2008; Edmondson and McManus, 2007), and while I generally hold a processual ontology consistent with types III or IV research (Van de Ven and Poole, 2005), this inductive approach to theory-building led to a phasic model of VC emergence more consistent with type II.

Methodologically sound case studies place primary emphasis on providing primary and secondary reports on reliability, construct and internal validity (Gibbert, Ruigrok, and Wicki, 2008). Methodological rigor was maintained in this study as follows. With respect to reliability, the interviewer usually began with an invitation to tell about origins of interest in VC, then directed discussion toward four questions: 1) How did

VC in South Africa or Botswana come about?, 2) How would you evaluate the role of government in VC?, 3) How can the level of entrepreneurship in South Africa or Botswana be characterized, and 4) How can the level of innovation in South Africa or Botswana be described? Respondents were asked to link their statements to those made by other respondents and to provide specific examples where possible.

*Construct validity* is obtained by using data from at least two sources—interviews with government officials and fund managers, and archival material from multiple sources. In South Africa a third data source—direct observation of a fund manager—was also used. These data were gathered mainly by the author<sup>16</sup> and a clear chain of evidence maintained. While access to fund managers in both countries and to government officials in South Africa was readily obtained, access to government officials in Botswana proved more difficult than expected, and interviews were conducted with lower level officials than would have been optimal. Difficulty in access in Botswana was likely due to the country's small size and its homogeneous nature, which may limit access for researchers on short-term projects. Construct validity has been weakened by the absence of peer and informant review of transcripts.

*Internal validity* has been developed by direct reference to the earlier literature on VC emergence and diffusion, while *external validity* was established by using a nested approach: examining data from South Africa and Botswana at both the program and fund level.

The following sections of this chapter describe the choice of research strategy and its implementation.

### 3.2 Overall strategy and rationale

Perhaps the single largest problem in all types of research is the problem of induction. Specifically, how do we generalize from a set of data, especially given that, in the social sciences, many phenomena are subject to non-normal probability distributions not

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<sup>16</sup> A South African co-author conducted one interview in Botswana.

easily modeled by traditional statistical techniques? The problem of induction is as old as philosophy itself, but is most commonly associated with Hume (Hume, 1748, 2000).

Narratives are particularly problematic regarding their generalizability. A fundamental challenge with all narrative-based research (of which case studies such as those forming the principal dataset in this project are a part) is that it can lead to over-interpretation of patterns in data and, hence, overestimation of underlying causes (Taleb, 2007). The constant human search for patterns leads many researchers (in social science and other disciplines) to draw mistaken conclusions from limited data. Some philosophers have argued that researchers can get closer to the truth only through “falsification.” Falsification involves the identification of evidence that disproves a general proposition, rather than the marshalling of evidence to prove a proposition (Popper, 1971, 2002).

On the other hand, many scientific discoveries have been made despite the falsification of a proposed theory by data, of which the discovery of Neptune by Adams and Leverrier in 1846 is one example. When scientists are confronted by contradictions between data and theory, the most common approach is to find ways to eliminate the conflict without giving up the theory, rather than simply giving up the theory (Okasha, 2002). Charles Peirce and Norman Hanson described the process of iterating between data and theory as abduction (Peirce, 1931-58; Hanson, 1958).

Because it seeks to answer a “how” research question, this project uses the process philosophy and method of research (Rescher, 1996; Poole, Van de Ven, Dooley, and Holmes, 2000). This is an epistemological choice in favor of “how” over “what” reflecting two types of human intelligence: logico-scientific and narrative (Bruner, 1986). Process is defined here as a “narrative describing how things develop and change” (Van de Ven, 2002, 2007), where the study of the phenomenon in question is centered on a temporal sequence of events (Abbott, 1988; Pentland, 1999; Poole et al., 2000; Tsoukas, 2005).

Two approaches to social science research can be identified: variance and process (Mohr, 1982). Variance approaches account for change by studying the relationships between independent and dependent variables (Van de Ven, 2007) and have dominated

management and business studies, as well as venture capital research, to date. The use of a process approach may give new insights into the venture capital phenomenon, as this comparison of the two approaches suggests:

**Table 3.1--Variance Versus Process Approaches to Research**

<b>Variance Approach</b>	<b>Process Approach</b>
Focus: Fixed entities with variable attributes	Focus: Entities that participate in events and may change over time
Satisfactory explanations specify necessary and sufficient causality	Satisfactory explanations specify necessary causality
Satisfactory explanations are comprised of efficient causes	Satisfactory explanations may be comprised of final, formal, and/or efficient causes
Generality of explanation depends on uniform application across range of cases	Generality of explanation depends on its versatility
Monotonic, "well behaved" causal relationships	Temporal ordering is critical to outcome  Explanations include multiple causal factors operating at different levels and for different temporal spans  Causal relationships are not monotonic or "well behaved"

Source: Poole (2004)

To use a process approach, a researcher must clarify his or her ontology. In particular, the following question must be considered: is the social world represented as being populated by real entities ("things"), or by processes? Process research approaches can accommodate both ontological choices, but these choices result in different research designs:

**Table 3.2--Typology of Research Designs**

		<b>Ontology The Social World Is Represented As Being:</b>	
<b>Epistemology</b>		Populated by real entities ("things")	Constituted by processes
	Variance approach	Variance studies of synoptic variables representing processes  Causal analysis of independent variables explaining dependent variable	Variance studies via modeling of processes  Dynamic models of complex adaptive systems
	Process approach	Process study narrating sequence of change events in organization  Progression of change (stages, cycles, etc.) in the development of organizational entity	Process study narrating social construction  Qualitative process studies of emergence

Source: Poole (2008)

Existing venture capital research is clustered in the upper left quadrant of the above table; VC scholars use variance approaches and assert, explicitly or implicitly, that the social world that they study is populated by things. While the author's ontology has evolved during this study toward one asserting the dominance of processes in the social world, this study adopts an approach more consistent with earlier studies on venture capital emergence, combining a process approach with an ontology centered on a social world comprised mainly of things. As a result, this study focuses on identifying and understanding the change progression within the VC emergence process through a narration of a sequence of change events. From this narration, a theory of VC emergence may arise. As noted at the end of this thesis, one future research direction from this work is to extend the study of VC emergence into the lower right and (thereafter) upper right quadrants.

Once a general research approach has been identified, the next choice in research design concerns the identification of generic process models that might operate during the VC emergence process. To date, four such models of social change have been identified: life cycle, evolutionary, dialectic, and teleological (Van de Ven and Poole, 1995; Poole et al., 2000). The principal distinguishing characteristics of these models are as follows:

**Table 3.3--Models of Social Change**

	<b>Life Cycle</b>	<b>Evolutionary</b>	<b>Dialectical</b>	<b>Teleological</b>
<b>Members</b>	Developmentalism Ontogenesis Metamorphosis Stage and cyclical models	Darwinian evolution Mendelian genetics Saltationism Punctuated equilibrium	Conflict theory Dialectical materialism Pluralism Collective action	Goal-setting, planning Functionalism Social construction Symbolic interaction
<b>Pioneers</b>	Comte, Spencer, Piaget	Darwin, Mendel, Gould and Eldridge	Hegel, Marx, Freud	Mead, Weber, Simon
<b>Key Metaphor Logic</b>	Organic growth Immanent program Prefigured sequence Compliant adaptation	Competitive survival Natural selection among competitors in a population	Opposition, conflict Contradictory forces Thesis, antithesis, synthesis	Purposeful cooperation Envisioned end state Social construction Equifinality
<b>Event Progression</b>	Linear and irreversible sequence of prescribed stages in unfolding of immanent potentials present at the beginning	Recurrent, cumulative and probabilistic sequence of variation, selection, and retention events	Recurrent, discontinuous sequence of confrontation, conflict, and synthesis between contradictory values or events	Recurrent, discontinuous sequence of goal setting, implementation, and adaptation of means to reach desired end state
<b>Generating Force</b>	Prefigured program/rule regulated by nature, logic, or institutions	Population scarcity Competition Commensalism	Conflict and confrontation between opposing forces, interests, or classes	Goal enactment Consensus on means Cooperation/symbiosis

Source: Poole et al. (2000)

These processes of social change may be comprised of a wide variety of event progressions that are far more complex than linear sequences of stages (Van de Ven, 2007). The child psychology literature provides some examples of the wide variety of developmental progressions that are possible, including (Van den Daele, 1969; Van de Ven, 2007):

- Simple unitary progression (X leads to Y, which leads to Z). Examples from the strategy literature include Scott (1971), Gluck, Kaufman, and Walleck (1980), Lorange (1980);
- Multiple progressions, including parallel (several Xs lead in parallel to several Ys, which lead to several Zs), divergent (X leads to two Ys, each of which leads to two Zs), and convergent (4 Xs lead to two Ys, which lead to Z). Examples include Mintzberg, Raisinghani, and Theoret (1976);
- Cumulative progressions, where more than one stage belongs to a unit at a time, including addition (X belongs to a, Y belongs to a and b, Z belongs to a, b, and c), substitution (X belongs to a, Y belongs to b, Z belongs to b and c), and modification (X belongs to a, Y belongs to a and b, Z belongs to c). Examples include Greiner (1972) and Quinn (1980);
- Conjunctive progressions, where events in one path influence events in another path of a multiple progression, and where the relations can be probabilistic, inclusive, or mediated. Examples include Cohen, March, and Olsen (1972);
- Recurrent progressions, where strings of events repeat over time. Examples include Mintzberg et al. (1976).

Equipped with a sense of the generic models of change and how developmental progressions occur, it is now possible to continue with the next step in research design: the mode of inquiry. Two broad choices are available: deduction and abduction. Because the existing models of VC emergence are incomplete, a more complete model of VC emergence requires abduction, in which we make conjectures to explain anomalies or surprising patterns (Peirce, 1955). These conjectures are based on information contained in one or more cases. We observe processes at work in these cases, sort the data into categories, develop propositions to explain these data, and then confirm, disconfirm, or modify these propositions using additional data from other cases or the same case during a different period or at another level of analysis. Abduction, deduction, and verification are combined in grounded theory building case studies (Van de Ven, 2007; Strauss, 1987).

The issue of sample diversity is important for process research, but no single approach (homogeneous or heterogeneous cases) is best (Van de Ven, 2007). Pettigrew (1990) suggested four guidelines for selecting cases:

- “Go for extreme situations, critical incidents, and social dramas”—here the process is readily observable, but findings may not be generalizable due to the case’s unusual nature
- “Go for polar types”—the processes being studied seem very different from one another (for example, successful versus unsuccessful)
- “Go for high experience levels of the phenomena under study”—but not always possible when dealing with new phenomena, such as VC emergence
- “Go for a more informed choice of sites and increase the probabilities of negotiating access”—cooperation from case targets is central to completing case studies, but sample bias may be introduced and needs to be accounted for in any findings

Related to sample diversity is the issue of sample size. Unlike variance studies, where the number of cases is critical to generalizability, in process studies the key consideration is the number of events associated with a change process in a case study (Van de Ven, 2007). Depending on the number of cases and events, the following typology of process research designs is suggested:

**Table 3.4--Typology of Process Research Designs**

	<b>Few Events</b>	<b>Many Events</b>
<b>Few Cases</b>	Summary case studies	Summary case studies Phasic case studies Time series analysis Markov analysis
<b>Many Cases</b>	Multivariate analysis Phasic analysis with optimal matching Event history analysis	Multivariate analysis of summary data Phasic analysis with optimal matching Markov analysis Time series analysis

Source: Poole et al. (2000)



One challenge with process research design is that it is generally not possible to know *a priori* whether cases will contain few or many events. However, given that only a few cases of VC emergence in weak institutional environments have been observed to date, a safe approach is to select that method common to studies using only a few cases, but where few events or many events are possible. This approach is to use summary case studies. In turn, this design is typical of comparative case studies designs (Van de Ven, 2007), assuming sufficient numbers of cases for systematic comparison and induction (Yin, 2003).

Based on the foregoing, a multiple embedded case study approach will be used. Multiple case studies allow for the use of replication logic, where the cases are viewed as a series of experiments. Each case serves to confirm or disconfirm the inferences drawn from the others (Yin, 2003; Bingham, 2005). As a result, findings from multiple cases are more generalizable and better grounded than those from single cases. The use of an embedded case approach also improves the richness and reliability of resulting models (Yin, 2003).

### 3.3 *Case selection*

The selection of cases in case study-based research must be logically linked to the research propositions being explored (Yin, 2003). Four of the six propositions elaborated at the end of Chapter 2 suggest that government investors and fund managers coproduce venture capital emergence, so cases that involve varying degrees and types of direct government investment in venture capital funds are a natural focus. Proposition #5 suggests the possible importance of diffusion in VC emergence, so cases involving varying degrees of VC model diffusion are appropriate. No obvious case selection criterion is suggested by Proposition #6, which is concerned with the possible logic linking the sub-processes (if any) in VC emergence.

Beyond these general case selection criteria, Tsoukas and Chia (2002) suggest that, by studying organizations in frontier contexts, it becomes easier to observe the emergence of organizational change. Since I suspect that VC emergence might vary with

institutional context (although that is a topic for another study), the choice of cases involving VC industries in regions where VC is least well-established seems promising. Since it is likely that there will be relatively few cases of VC emergence in such frontier contexts, it seems practical to focus on countries where emergence is most likely to occur. Since the literature suggests that VC industries are more likely to emerge in English legal origin countries, a focus on cases from these countries seems to make sense. Of these countries, mature limited access orders are the only institutional types likely to have the conditions supportive of innovation and high-potential entrepreneurship on which VC emergence may well depend.

To summarize, the criteria for case selection are as follows:

- Varying degrees and types of direct government investment in venture capital
- Varying degrees of VC model diffusion
- Cases from regions where VC is least well-established
- Cases involving English legal origin countries
- Cases involving mature limited access orders

Given a research design involving the comparison of emerged with emerging VC industries, the key constraint is the relatively small number of emerged VC industries in English legal origin countries. Four such countries exist--India, Malaysia, South Africa, and Thailand. Each of these possible cases has direct government investment in venture capital and varying exposures to VC model diffusion. However, India cannot be characterized as a mature limited access order, and as Asian countries both Malaysia and Thailand cannot be considered frontier contexts for VC emergence. Moreover, neither of these countries has other cases of similar GDP/capita or cultural origin against which they could be compared. By contrast, South Africa satisfies all the above case selection criteria and is contiguous to Botswana, a country with an emerging VC industry with comparable GDP/capita and cultural origin.

Therefore, two case studies--South Africa and Botswana--have been selected from a total estimated population of 37 venture capital industries<sup>17</sup> in developing countries. These cases are from English legal origin countries<sup>18</sup> (see the diagram below, and Appendix 1 for a full list of countries). As indicated in the earlier literature review, legal origin is the most widely recognized indicator of institutional quality. English legal origin countries have the strongest levels of investor protection (LaPorta et al., 1998, 2000), and strong investor protection is associated with both effective corporate governance (LaPorta et al., 2000) and efficient capital allocation (Wurgler, 2000). Therefore, strong investor protection may be associated with the way in which venture capital emerges (Bruton, Fried, and Manigart, 2005).

While legal origin introduces a control for institutional quality, this control is imperfect. Two other measures of institutional quality--rule of law and property rights--indicate a difference between South Africa and Botswana. Using a rule of law measure developed in Kauffmann, Kraay, and Mastruzzi (2006), which is based on data from the period 1998 to 2005, and property rights scores from the Heritage Foundation<sup>19</sup>, using data from the period 1998 to 2005, the following measures for the case countries and countries with national venture capital associations were found (more negative numbers indicate lower levels of rule of law, lower scores indicate weaker property rights:

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<sup>17</sup> This population consists of 6 countries of English legal origin with nascent or emerging public venture capital, 14 English legal origin countries with emerged public VC, 3 French legal countries with nascent/emerging programs, and 15 emerged programs in French legal origin countries.

<sup>18</sup> Although five types of legal origin exist (English, French, German, Scandinavian, and socialist), English and French origins are the most dissimilar in terms of both investor protection and quality of government, both of which factors may influence the emergence of public venture capital. Their contrast is expected to show the starkest contrasts between different explanations of emergence. In addition, these two legal origin types contain the largest number of developing countries (121 countries, out of a total of 152 such countries as classified by the World Bank) and, in particular, the largest number of developing countries that have not yet implemented public venture capital. Thus, the outcomes of the study are likely to have the broadest possible policy application.

<sup>19</sup> While more rigorous property rights measures exist (Claessens and Laeven, 2003), they do not include data for many of the developing countries with venture capital industries.

**Table 3.5--Rule of Law and Property Rights in Developing Countries with Venture Capital Industries**

Country	Rule of Law Score	Property Rights Score	Country	Rule of Law Score	Property Rights Score
Botswana	0.65	70	India	0.04	50
Malaysia	0.55	57.5	Turkey	-0.02	60
Poland	0.46	65	Brazil	-0.30	50
Latvia	0.27	50	Mexico	-0.38	50
Slovakia	0.26	50	China	-0.41	30
Tunisia	0.21	50	Philippines	-0.46	52.5
Thailand	0.20	65	Indonesia	-0.86	37.5
South Africa	0.17	50	Russia	-0.89	40

Sources: Kaufmann, Kraay, and Mastruzzi (2006); Heritage Foundation (2009)

These data indicate that Botswana has a higher level of rule of law than South Africa and better developed property rights. Both countries have above average scores on these measures in comparison to other developing countries with VC industries. While these results do not lead to any modification in the propositions advanced in Chapter 2, they do suggest that Botswana's institutional environment is somewhat more favorable than South Africa's, even though both have the same legal origin.

By controlling for institutional quality, this study can then focus on those factors contributing the VC emergence by comparing a case from a context in which VC has already emerged with one from a context in which VC is either nascent or in the process of emerging. This contrast between emerging and emerged VC industries has been employed in one previous variance study (Ooghe, Manigart, and Fassin, 1991). Moreover, by selecting cases from contexts in the same geographical region and at similar levels of development as measured by GDP per capita, additional controls are introduced in order to eliminate effects related to geography and economic structure.

As a result, the case studies can be focused to the greatest extent possible on explaining emergence versus nascence.

Emerging programs will be defined as those where a decision has been announced to form a public venture capital program, but the decision has not yet been fully implemented, while nascent programs are those where a need for public venture capital has been identified, but no decision to establish a program has been announced. Fully emerged programs will be those that have completed a full investment cycle, consisting of investment and divestment. In general, such programs are likely to be at least ten years old<sup>20</sup>. The study of both nascent/emerging and emerged programs is important, to disentangle the processes of genesis (observable in nascent/emerging programs) from those of perpetuation and growth (likely to be seen in emerged programs). For each country, two units of analysis will be considered: the country and the fund level. For each country, at least one fund will be studied.

This research design explicitly recognizes that the choice to concentrate on English legal origin countries ignores the many French legal origin countries in the developing world where VC has already emerged or is in the process of doing so (see Appendix 1). As described in the final chapter of this thesis, a natural next step from this research program would be to extend its inquiry to French legal origin countries.

Having controlled for legal origin, geography, and GDP per capita, the selection of cases was governed in part by the literature review, which indicated that mature limited access orders are most likely to have an emerged VC industry. Mature LAOs are likely to be upper middle income countries, of which two (South Africa and Malaysia) have emerged VC industries. Of these two contexts, South Africa was selected, since it has a next door neighbor—Botswana—with a similar level of development and geography, but where VC is still in the process of emergence. This approach is consistent with a polar types approach to comparative case selection (Pettigrew, 1990).

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<sup>20</sup> A government-supported fund's cycle may be defined somewhat differently as when a second tranche of government money is authorized by the budget. An important and unresolved issue is whether emergence should be defined as that point at which a public venture capital fund raises new funds from primarily private sources, or when any new funding, public or private, is raised.

Initial research also indicated that South Africa may be a ‘deviant’ case (Lijphart, 1971). ‘Deviant’ cases are those not easily explained by existing theory. In the case of South Africa, attractive enabling conditions and the efficient operation of the VC cycle appeared on first inspection to exist, yet the venture capital industry appeared to be struggling. ‘Deviant’ cases can be useful in identifying variables that are missing from existing theory and are thus potentially valuable in building theory.

The resultant case study design is indicated below (gray shaded areas indicate the cases of interest in this thesis, while the others indicate possible future research directions):

**Figure 3.1--Overall Research Design**

	English legal origin	French legal origin
<b>Nascent/emerging</b>	<b>Botswana</b> <b>(upper middle income)</b> Fund Fund	<b>Gabon</b> <b>(upper middle income)</b> Fund Fund
<b>Emerged</b>	<b>South Africa</b> <b>(upper middle income)</b> Fund Fund	<b>Mauritius</b> <b>(upper middle income)</b> Fund Fund

Source: Author

An alternative approach to site selection was also considered, in which the transplant effect, rather than legal origins (all English legal origin countries below), would be used:

**Figure 3.2--Alternative Research Design Using Transplant Effect**

	Unreceptive Legal Transplant	Origin or Receptive Legal Transplant
Nascent/emerging	Botswana	?
Emerged	South Africa	Australia

Source: Author

While the classification of Botswana as an unreceptive legal transplant remains subject to confirmation by further research, this alternative approach preliminarily indicates that the comparison of South Africa and Botswana remains potentially fruitful, when the legal transplant school is substituted for the legal origins one. The comparison between South Africa and Australia suggests a future line of research.<sup>21</sup>

Having selected the cases, the choice of case sequencing is important. South Africa was selected as the site of the first case study. As an emerged program in an English-speaking country notable for its transparency, and with constituents of which the principal investigator already has had some prior contact, this program was an appropriate site at which to conduct initial fieldwork and refine interview and archival research techniques.

The South African research setting is particularly rich, given the presence of at least two cultural clusters (Anglo and African)<sup>22</sup>, permitting potential comparisons at the fund level between richer, Anglo areas and poorer, African ones. The complexities of South African society are more akin to India than they are to many other African countries (Calderisi, 2006), allowing for possible future comparisons in that direction. The South African public venture capital program is also believed to be the oldest in the developing world, and one component, the Industrial Development Corporation, established in 1940, was studied as an example by the Colonial Development Corporation (predecessor to the Commonwealth Development Corporation) during its inception (Cowen, 1984).

The geographic situation and economic history of South Africa may provide some clues that help to explain the context in which public venture capital arose there. The country is part of one of three groups of African states that have significantly higher levels of GDP per capita than the continent as a whole (Maddison, 2001). The first group consists of five countries bordering the Mediterranean (Algeria, Egypt, Libya, Morocco, and Tunisia), while a second group (Gabon, Mauritius, Reunion, Seychelles,

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<sup>21</sup> At least one South African interviewee (a founding member of the private equity industry) has indicated that the comparison between the South African and Australian VC industries could be fruitful.

<sup>22</sup> Interestingly, the Dutch/Boer cultural cluster is not referenced in the cross-cultural literature.

and Congo) consists of a variety of special cases. Four southern African countries (Botswana, Namibia, South Africa, and Swaziland) constitute a third group. South Africa's isolation contributed to a pattern of development that was markedly different from those states of central and western Africa that are the hard core of African poverty. Until the late nineteenth century, it was one of only five states with territorial composition similar to today (the others were Egypt, Ethiopia, Liberia, and Morocco). As a result, South Africa was able to avoid to some degree (or minimize the impact of) the disruptive consequences of the African decolonization process that began in 1956 in the Sudan.

Despite significant increases in economic growth in the post-apartheid era, South Africa has struggled to establish a robust entrepreneurial sector on which flourishing venture capital activity could be based. The country's innovation system has existed since at least the 1940s and is characterized by an existing knowledge structure and high levels of R&D spending at the firm level. However, poor schooling has led to a shortage of scientists and engineers, leading to an "engineering gap" (OECD, 2007). Reflecting "mental models of how the innovation system operates (that are) overly focused on the role of the state" (OECD, 2007), a diverse range of governmental interventions in the venture capital sector have taken place over the past fifteen years, yet, after at least one round of funding, many funds have closed or moved into later stage investments. As a result, the future of venture capital remains highly uncertain.

At the same time, private equity has continued to flourish in the country, driven by a variety of factors including easy availability of credit to support buyout financing. The high returns from this activity have played a role in stunting the development of seed, startup, and early stage financing, suggesting that private equity and venture capital may be both substitutes and complements.

By developed country standards, South Africa's private equity and venture capital sector is small, with total funds under management of \$8.1 billion in 2006. However, it remains one of the largest such sectors in the emerging markets and, relative to GDP, is comparable to both Europe and Australia.



Botswana was the site of the second case study to be conducted under this research project. As an upper-middle income country of English legal origin in the African cultural cluster and with a natural resource-dependent economy, Botswana's experience with public venture capital can be compared with South Africa's while controlling for a number of institutional variables. Botswana's post-independence history is one of the few success stories in sub-Saharan Africa, producing both high rates of growth and a robust democracy (Leith, 2005; Acemoglu, Johnson and Robinson, 2001).

Botswana's development trajectory has been significantly different from South Africa's. Like Lesotho, Swaziland, and, to a lesser extent, Namibia, Botswana has been dependent on South Africa for much of its economic history up to and through independence from Britain in 1966 (Mhone and Bond, 2001). Exports of migrant labor to South Africa (as well as beef exports to Europe), imports of finished goods from South Africa, and a common monetary policy with South Africa characterized the Botswana economy during the pre- and early post-independence years.

The following table summarizes key data on South Africa and Botswana:

**Table 3.6--South Africa and Botswana: Key Data**

	<b>South Africa</b>	<b>Botswana</b>
Population	47,390,900	1,757,880
GDP (current US\$ billions), 2007	277.6	11.8
GNI/capita (income level)	\$5390 (upper middle)	\$5900 (upper middle)
Life expectancy at birth	47.7	35
Internet users/1000	108.8	34.0
Ease of doing business rank	32nd	38th
<u>Economist</u> Index of Democracy	7.91 (31st in world), flawed democracy	7.47 (39th in world), flawed democracy

Source: World Bank

### 3.4 *Researcher's role*

A variety of technical, interpersonal, and ethical considerations shape the behavior of the author as the principal instrument in a qualitative study (Marshall and Rossman, 2006). These considerations are expected to have an impact on this study in the following ways:

- **Technical considerations**—As with many qualitative studies, the author expects to engage in a moderate degree of participantness (Patton, 2002), combining elements of direct participation in the daily lives of subjects with observation and reflection. The former is important to form relationships with the subjects to elicit a “thicker” set of data. For example, the author spent a week with the chief executive officer of Bioventures (the subject of the fund-level case study in South Africa), including office time, visits to investees, and time with her family. Second, this study has a high degree of revealedness—all interviewees are aware that the author is conducting research on them for the purposes of publication. Third, this study requires both intensive and extensive exposure to its research subjects. Fieldwork took place over approximately one year, and, while interviews are being conducted, strong relationships of trust must be developed between the researcher and the subjects. Finally, as the research questions are relatively more exploratory and diffuse, it will be important for the researcher to have access to a relatively wide range of people as new insights are gained and the research project narrows in focus.

Negotiating entry to the South African research site was successfully completed. Initially, a prior acquaintance with one fund manager was used to establish the researcher's bona fides with the industry association's executive director. The executive director was helpful in arranging access to some of the other players in the industry. The researcher also directly contacted South African academics interested in this topic, and their network of contacts were useful in accessing the fund manager that is the subject of the fund-level study in South Africa, as well as in providing some initial contacts in Botswana.

Entry to the Botswana research site proved more problematic, perhaps because of recent restrictions on academic freedom in the country (Taylor, 2006). Introduction to the CEO of the country's largest VC fund was provided by the South African industry association, but interviews with government officials ultimately had to be conducted through the offices of a South African academic colleague, who had prior relationships in the country.

To maximize the efficient use of resources, the researcher has used three undergraduate research assistants to a) construct a timeline of relevant historical events in South Africa, and b) gather basic information about the financial sector and entrepreneurship in Botswana, where the research assistant was studying on a semester-abroad program at the University of Botswana.

- Interpersonal considerations—the researcher has extensive prior experience as an advisor on venture capital and entrepreneurship in developing countries. In these prior roles, he has developed the core interpersonal skills required to conduct effective qualitative research: building trust, maintaining good relations, respecting norms of reciprocity, and sensitively considering ethical issues (Marshall and Rossman, 2006). However, as a former venture capitalist in Russia, the researcher is also likely to have a variety of experience-based biases about the topic of this thesis, including a view on how venture capital may emerge in weak institutional environments, as well as cognitive biases, such as anchoring, which when combined with idiosyncratic prior experience, may lead to biased outcomes.

Ethical considerations are relatively modest in this study. Interviewees are highly educated, sophisticated, often wealthy, and well-established within the elites of their societies, which has reduced the power differential that often exists between researchers and subjects in developing countries. In addition, the researcher shared drafts of relevant sections of this study with a few interviewees with personal and professional interests that might be harmed by its conclusions for comment before submission or publication.

### 3.5 *Data collection methods*

This project will rely on contextualism as a principal theory of method (Pettigrew, 1990). This approach is particularly relevant to the study of organizational change, and emergence is a change process. Contextualism uses both vertical (multiple levels within and outside the organization under study) and horizontal (connections across time) analysis, as well as their interconnections, to study the interaction between change and action. A key assumption of contextualism is that changes in the target organization may be linked to changes occurring in the sector or economy (Pettigrew and Whipp, 1990) and, importantly, that the sources of organizational change may be found in asymmetries between different levels of context. Industries may change faster than individual firms within in them (or vice versa), and the economy may change faster than either of these levels. A second assumption is that history lives in the present and may shape the future, although changing contexts create uncertain and probabilistic paths of organizational change. History matters, but does not determine. A third assumption is that processes of change both constrain and shape the contexts in which they live. Finally, contextualism assumes that change may have multiple causes.

Three major issues of research implementation using a contextualist approach are:

- Time issues: what period should be studied? When does the process of change begin and end? In the study of public venture capital, related questions include the following: when does public venture capital begin? When does its emergence end? Social dramas or breakpoints can be used to frame the period under study (Pettigrew, 1985; Tushman and Romanelli, 1985).

A broader issue is the definition of change itself. In the context of this project, change has a variety of dimensions, including speed (how quickly has public venture capital emerged?), quantity (how many resources were committed to the program, and how did that change over time?), quality (in what ways has the emergence of public venture capital improved access to capital to seed and early stage firms? To what extent has resulted in the development of an active venture capital sector), and

process (how has the delivery of public venture capital changed over time?). Thus change can be categorized in various ways, including:

- Quantum or piecemeal (Miller and Friesen, 1982)
- Revolutionary or evolutionary (Greiner, 1972; Pettigrew, 1985)
- Convergence and reorientation (Tushman and Romanelli, 1985)

Related to the definition of change is the meaning of time. Time means different things in different contexts; it is necessarily social and subjective (Whipp, 1988).

This is particularly true in venture capital, which is subject to a cycle of fundraising, investment, and exit.

- The planned opportunism of research site choice:

Site selection is critical in case research. As noted earlier, the cases in this project were selected to 1) ensure the greatest degree of generalization, and 2) provide the greatest contrasts possible between nascent and emerged programs. As noted earlier, Pettigrew (1990) highlights other attractive attributes to include in site selection, including:

- Extreme situations, critical incidents, and social dramas—The cases were selected to provide the greatest possible contrast between nascent and emerged programs. Focusing on a sequence of social dramas allows for a structured look at emergence in an organization (Pettigrew, 1979). In public venture capital, such dramas could include the first instances of each stage in the venture capital cycle (first fundraising, first investment, first exit, and, where it exists, first refinancing of the program or fund), leadership succession such as appointments of new CEOs, or macroeconomic events that could have an impact on the program's emergence (such as the end of apartheid in South Africa).
- Polar types—Sites should be selected to contrast high and low performance. The distinction between nascent and emerged programs provides one such contrast. In addition, cases should be selected that disconfirm patterns from

early case studies. Early case studies of public venture capital (e.g. Lerner, 1999) indicated that such programs have a certification effect on investees. Therefore, cases should be selected, if possible, that will disconfirm this effect.

- More informed site choice through an initial survey—a survey of key players in the sector can help to empirically form views on the problems, prospects, and range of experiences in a sector. It also helps to build a network of relationships, which appears to increase the chances of success in negotiating access to preferred case sites.
- Data collection and degree of involvement: The aim of data collection is to gather evidence that is processual (action-oriented), comparative (range of cases in different sectors), pluralist (evidence from different sources), historical (evidence gathered over time), and contextual (evidence gathered concerning levels above that of the organization being studied). Triangulation of data is accomplished through interviews, documents, and direct observation. One case researcher conducts 50 interviews per case in work done on the health service (McKee and Pettigrew, 1988). Interviews are tape recorded, and interview pro formas are used to guide the questioning process.

Document review may consist of minutes from relevant meetings, strategy and policy documents, secondary quantitative and qualitative material (such as newspaper and periodical articles), memos, and correspondence.

Direct observation might include attending formal meetings, site visits, informal encounters and conversations, and time spent living and working within the organization.

The sequence of data collection is critical. First, collection should focus on establishing what actually happened, mainly through archival and interview research. This research should establish a chronology of change. Then, answering the questions of how and why such change occurred should be pursued, using further

interviews, observations, secondary data collection, and informal questioning, at different levels of analysis.

Each case study will rely on evidence from five sources: documentation, archival records, interviews, direct observation, and participant observation. Data collection will rely on the use of multiple sources of evidence, a case study database, and a formal chain of evidence linking questions to data and conclusions (Yin, 2003). Of these sources, it is expected that long and repeated interviews (McCracken, 1988) with key participants will be a particularly rich source of information.

### 3.6 *Data management*

Raw data consists of the following types:

- Interview notes
- Archival material, including annual reports from funds and industry associations; placement memoranda; and newspaper articles
- Various quantitative data, including macroeconomic and industry indicators

On the researcher's first fieldwork exercise in South Africa, he discovered that recording interviews appeared to be constraining the free flow of conversation with subjects. After consultation with the thesis supervisor, a decision was taken to replace recordings with extensive note-taking. This approach has worked well for the subsequent interviews.

Extensive notes from each interview will be kept in small notebooks. Shortly after each interview, these notes will be transcribed into individual Word documents retained on the researcher's computer. The transcription process allows the researcher to correct any errors in the note-taking process, as well as make the interview material more accessible for content coding.

Archival material and quantitative data are also being retained on the researcher's computer.

### 3.7 *Data analysis strategy*

The tension between over-structured and under-structured data analysis is central to qualitative research. In most cases, the researcher must choose between a template (more prefigured and stipulative, often using revisable coding sets) and editing (less prefigured) analysis strategy (Crabtree and Miller, 1992). Template strategies are frequently used in grounded theory (Marshall and Rossman, 2006).

Preliminary research questions and a thorough literature review may often suggest categories by which data can be coded preliminarily. The following questions were used to provide a basic structure in the interview process:

- How did you first become interested in venture capital?
- How did venture capital in South Africa/Botswana come about?
- How do you define venture capital?
- What role, if any, did the government play in venture capital?
- Were there any champions for venture capital? If so, who? What did they do?

Following the first round of interviews in South Africa, transcripts were reviewed and a coding system, consisting of 28 codes in 10 categories, was developed. The system is as follows:

- Government (GOV): codes include GOV, government regulation (GOV-REG), government—Reserve Bank (GOV-RB), government-fund (GOV-FUND), government-champion (GOV-C)
- Champion (CHAMP)
- Norms (N): codes include N and norms—black economic empowerment (N-BEE)
- Enabling institutions (EI): codes include EI, government-to-government (EI-G2G), international financial institutions (EI-IFI), and other (EI-O)
- Learning (LEARN): codes include LEARN, learning within organizations (LEARN-IN), and learning between organizations (LEARN-OUT)
- Universities (UNIV)



- Macro environment (MACRO): codes include MACRO, political (MACRO-P), and economic (MACRO-E)
- Cooperation (COOP): codes include COOP, associations (COOP-A), fund-to-fund (COOP-F2F), government-to-fund (COOP-G2F)
- Complements (COMP): codes include COMP and angels (COMP-A)
- Substitutes (SUB): codes include SUB, private equity (SUB-PE), and equity markets (SUB-EQ)

The resultant event coding was used as the primary basis for within case analysis.

### 3.7.1 *Within Case Analysis*

Analysis of the evidence arising from each case will rely heavily on process-tracing (George and Bennett, 2004). Process-tracing involves the generation and analysis of “data on the causal mechanisms, or processes, events, actions, expectations, and other intervening variables, which link putative causes to observed effects” (Bennett and George, 1997). Often used in political science and political sociology, process-tracing is a technique of within-case analysis that can substantially increase the robustness of comparative case analysis. In addition, process-tracing can be useful for theory development, which is an important objective of the project.

Process-tracing comes in a number of varieties, including detailed narratives or chronicles (which are largely atheoretical); the use of hypotheses specific to the case and without attempting to extrapolate into a generalization, or with some degree of generalization based on laws of either a deterministic or probabilistic nature; analytical explanations, where theory is used explicitly; and more general explanations, where detailed tracing of cause and effect is dropped in favor of a higher level of abstraction. Consistent with a grounded theory approach, within-case analysis in this project used the second of these varieties of process-tracing, where propositions will be used to develop some degree of generalization. However, it was critical to limit the extent to which these propositions drive the emergence of a narrative of cause-and-effect explaining the relative nascence of the South African and Botswana public venture capital sectors.

### 3.8 *Management plan and timeline*

The following schedule for completion of the thesis was followed:

- July-August 2007: pilot case study fieldwork in South Africa
- September-December 2007: analysis of data from South African fieldwork
- January 2008: fund-level case study fieldwork in South Africa
- Spring 2008: analysis of data from South African fieldwork
- May 2008: presentation at annual research student's conference
- June 2008: completion of remaining fieldwork in South Africa and Botswana
- June 2008: presentation of paper based on South African fieldwork at ICSB conference
- August 2008: presentation of paper based on fund level South African fieldwork at UNU-WIDER workshop
- Fall 2008: analysis of data from Botswana and South Africa
- Spring 2009: completion and submission of thesis
- May 2009: viva voce examination

I now turn to the first case study in this thesis, that of South Africa and its venture capital industry.

## Chapter 4

### South Africa Case Study

*South Africa in the eighteenth century had already learned to depend, as it depended so remarkably in the nineteenth and twentieth centuries, upon windfalls for its prosperity.*

*De Kiewiet, A History of South Africa Social & Economic (1960, p. 27)*

*What we are witnessing in South Africa now are the problems that the whole world is going to face increasingly in the twenty-first century. We are witnessing a rich white enclave having to deal with the fact that it is actually part of a wide world and it has to share with that world or die. We are at the forefront of a profound global transition.*

*Francis Wilson, Professor of Economics at the University of Cape Town,  
Quoted in Dervla Murphy, South from the Limpopo (1997, front endpage)*

*There can be no doubt that the historian...will point to the period between the discovery of gold on the Witwatersrand and the establishment of the city of Johannesburg as a turning point in the history not only of Southern Africa but of the whole continent.*

*R.V. Selope Thema (journalist and ANC activist, quotation viewed at Apartheid Museum, Johannesburg)*

#### 4.1 Introduction

In this exploratory, theory-building case study, I examine the emergence of the South African venture capital industry in light of the existing, incomplete implicit theory of VC emergence and the propositions advanced at the end of Chapter 2. Two levels of analysis are considered: country and fund. At the country level I consider the simultaneity conditions--entrepreneurs, pools of capital, and specialized financial institutions--and underlying enabling conditions that may play a role in venture capital emergence (Gilson, 2003). Then at the fund level I examine the operation of the VC cycle in the South African context.

The principal aim of this case study is to examine the validity of the propositions advanced at the end of Chapter 2, with a particular focus on determining whether the coproduction process is operating in South Africa. Specific objectives within that aim include the following:

- To investigate whether simultaneity conditions are present in South Africa, and, if so, whether the venture capital is operating efficiently;
- To determine the extent and nature of purposeful social construction between government investors and fund managers in South Africa's venture capital industry;
- To examine the degree to which embeddedness assists in coproduction, and;
- To ascertain the logic governing the process of venture capital emergence.

The emergence of the venture capital industry during the 1980s and 1990s was followed by a period of stagnation and submergence, despite attractive enabling conditions and the efficient operation of the venture capital cycle. To explain this apparent inconsistency, I suggest that this pattern of emergence and submergence might be better explained by including an additional intermediate element in the emergence process after simultaneity and before the VC cycle--coproduction between government investors and private sector fund managers. A weakening of the coproduction process during the post-apartheid era may help to explain the challenges of sustaining the venture capital industry's emergence in that country, and suggest a potentially generalizable addition to our understanding of venture capital emergence in other limited access orders.

This chapter is structured as follows. First, a country-level case study of South African venture capital is conducted. This study focuses on simultaneity conditions and, underlying these, enabling conditions, given the suspicion that simultaneity is the first step in the venture capital emergence process. In addition, the country-level case begins to examine evidence concerning coproduction between the South African government and private sector fund managers. The conclusions reached in the country-level case help to set the scene for the next part of this chapter, in which a fund-level case study of Bioventures, a South African venture capital fund, is conducted. The data in this case focus on determining whether the VC cycle is operating efficiently, and whether the findings about coproduction from the country-level case are supported at the fund level.

I now turn to a country-level case study of South African venture capital, which focuses on simultatenity and enabling conditions.

## 4.2 *Country-level case study*

This portion of Chapter 4 is a country-level case study of South African venture capital emergence. It begins with a review of the historical and policy context within which venture capital arose in this country, including the role of SME development in that process. Then, current venture capital activity is examined, assessing South African data both over time and in comparison to other economies. These data demonstrate that South African venture capital has emerged and is now submerging. After describing government attempts to assist the development of venture capital and modest business angel activity, the case study proceeds to review the enabling conditions, from which an assessment of Gilson's simultaneity conditions is made. This assessment shows that simultaneity conditions were relatively weak in South Africa, but that venture capital emerged anyway. This paradox provides a basis for a review of the macro-level evidence in favor of coproduction as a process influencing VC emergence in South Africa. The evidence on coproduction then provides a basis for a fund-level case study in the following section.

I turn now to South Africa's macro-level experience with venture capital.

### 4.2.1 *Historical and policy context*

The emergence of private equity and venture capital in South Africa has been driven by different sets of factors. While private equity was catalyzed by the international sanctions environment beginning in the 1970s and was thus indirectly and unintentionally had an impact on by the government's apartheid policies prevailing then, venture capital was catalyzed largely by government intervention to jump start the sector as part of a broader effort to create a globally competitive economy. This effort was complemented by private sector interest, rather than driven by it. As is the case in most other settings, private equity developed without direct and conscious government support, while venture capital could not exist without such support. Both private equity and venture capital have also been shaped by the windfall nature of the South African economy, its reliance on natural resources, and the boundaries of race, which have been renegotiated throughout South African history.

Private equity activity has existed in South Africa since Rhodes' consolidation of the diamond and gold mining industries beginning in the 1870s.<sup>23</sup> Settler colonialism in South Africa created a stock of entrepreneurs whose business interests were fueled by forcible acquisition of land and labor. When combined with the discovery of diamonds and then gold in the 1870s and the subsequent arrival of British capital, this settler entrepreneurship led to very rapid economic development in comparison to colonies lacking these features (Good, 1976).<sup>24</sup>

In the 1930s both the African National Congress (ANC) (Gumede, 2005) and the National Party (Dommissie, 2005) created funds to support small businesses owned by blacks and Afrikaners, respectively, but both focused on debt rather than equity and the impact of these efforts on economic growth appear, in any case, to have been relatively slight (Gumede, 2005; Abedian and Standish, 1985).<sup>25</sup>

The modern private equity sector predated venture capital and was catalyzed by the international sanctions launched against South Africa, which began in the late 1970s and intensified in the mid 1980s.<sup>26</sup> Sanctions caused multinationals to divest their local operations, many of which possessed monopolies and were thus attractive as buyout candidates as a result of large free cash flows. Although interest rates were high at the time (approximately 16%), 25% returns on capital could be realized by private equity

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<sup>23</sup> I am grateful to Jo' Schwenke at Business Partners for drawing my attention to the examples of Rhodes and the Oppenheims as early private equity investors in South Africa. While Rhodes was an active entrepreneur and pioneering private equity investor, he also squashed nascent black African entrepreneurship in the commercial farming sector as Prime Minister of the Cape Colony. Historians believe that this move was intended to provide cheap black labor for Rhodes' gold and diamond mining operations (Bundy, 1979).

<sup>24</sup> Algeria, Kenya, and Rhodesia (now Zimbabwe and Zambia) are other examples of settler colonialism in Africa (Good, 1976), and the term has also been applied to Australia, New Zealand, Canada, Israel and Ireland. Of these, the latter five have active venture capital industries. As indicated by the differing and mainly disappointing developmental trajectories of these states, settler colonialism has been no guarantee of prosperity.

<sup>25</sup> With one exception. Anton Rupert gained his initial experience in small business at the Reddingsdaadbond (RDB), which he joined in late 1940. Rupert went on to found Rembrandt Brands (one of the most successful Afrikaner entrepreneurial firms) and the Small Business Development Corporation (Dommissie, 2005). Some evidence exist that the largest effect of the RDB was to finance the buyout of Jewish-owned general stores by Afrikaners (Marmont, 1989).

<sup>26</sup> For example, by June 1987 120 US companies had sold their South African operations, including GM and IBM (Feinstein, 2005).

funds using debt from local banks. The oldest and most prominent South African private equity firms—Ethos and Brait—came to life in this environment.

Widespread formal interest in venture capital began in the mid-1980s with the establishment of the Johannesburg Venture Capital Club (JVCC).<sup>27</sup> However, interest did not translate into the establishment of the country's first formal venture capital fund until 1992, when Technifin was founded. A joint venture between two state-controlled organizations, the Industrial Development Corporation (IDC) and the Center for Scientific and Industrial Research (CSIR), Technifin focused on commercialization of technologies, based in part on the previous success of CSIR in licensing lithium battery technology. However, after making only 3-4 investments, Technifin was judged a failure and quietly ceased operations in the late 1990s.

#### *4.2.1.1 The role of SME development in shaping South African venture capital*

As in many limited access orders, the evolution of venture capital in South Africa is intertwined with SME development. In South Africa SME policy has become linked closely with black economic empowerment (BEE)<sup>28</sup> in the post-apartheid era, reflecting similar policy initiatives targeting disadvantaged indigenous populations in similar orders, such as Malaysia and Indonesia, as well as apartheid-era efforts to assist poor Afrikaners. While the National Party began showing interest in small business development for Afrikaners as early as the late 1930s, the first modern initiatives in SME development occurred in 1979<sup>29</sup>, when the Carlton Conference and then-Prime Minister P.W. Botha recognized the importance of small business, including for black

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<sup>27</sup> Some observers date the establishment of venture capital in South Africa to the founding of the Small Business Development Corporation (now Business Partners) in 1980. While SBDC/Business Partners has focused on small business finance since its inception, the main thrust of its successful strategy has been on debt or debt-like financing to post-cash flow businesses, many of which can be characterized as lifestyle in nature. This does not detract from the innovative strategy of Business Partners, which has consistently identified and implemented solutions to address the needs of these types of businesses; these innovations include “beehives” (shared manufacturing facilities) and royalty-based financing structures. One local bank—Finansbank—made a venture capital fact-finding trip to the United States in 1984, indicating that interest in venture capital was growing even prior to the establishment of the JVCC.

<sup>28</sup> Black economic empowerment is a broad initiative of the South African government that focuses on improving the economic prospects of previously disadvantaged populations.

<sup>29</sup> This was the same year in which David Birch published research that demonstrated the importance of small businesses in the job generation process (Birch, 1979).

Africans, coloreds<sup>30</sup>, and Indians in urban areas. The Carlton Conference marked a transition by the ruling National Party away from a regulated, state-led economy and toward deregulation, privatization, and SME development, perhaps influenced by the rise of Thatcherism in the UK (Hirsch, 2005) and the combination of skills shortages, protests, sanctions, and international divestment (Southall, 2006). In particular, the 1976 Soweto uprisings caused the apartheid government to build a black middle class as a buffer between whites and the black masses (Southall, 2006).

This dramatic change in economic policy may also reflect the influence on the government of the nouveau riche Afrikaner businesspeople that had benefited from regulation (and who now wished to protect their gains), as well as the growing recognition that political stability could only be insured by creating more jobs for the large numbers of unemployed in the cities. As noted by one observer, the government also had a need to hide this unemployment in more “squishy” informal sector employment numbers (Nattrass, 1990).

High levels of ownership and market concentration in many sectors developed during apartheid’s late period and severely limited the ability of new, innovative, and entrepreneurial firms to emerge, particularly amongst the majority black African community. While 500,000 businesses were owned by black Africans by the late 1980s, the bulk of these firms operated in low- or no-value added sectors such as hawkers (150,000 firms), taxis (100,000-120,000), backyard manufacturers (70,000), and small shopkeepers (50,000) (Khosa, 1990; Nattrass, 1990).

SME development became a key policy priority for the African National Congress (ANC) after it gained power in 1994, reflecting the party’s view that the economy was dominated by white-owned conglomerates (Hirsch, 2005). A Presidential Conference on Small Business in March 1995 produced a “White Paper on National Strategy for the Development and Promotion of Small Business in South Africa,” which in turn led to the establishment of four institutions focused on promoting small business

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<sup>30</sup> In the South African context, the term ‘colored’ refers to people of mixed racial heritage, including sub-Saharan African and European, Indonesian, Malay, Indian, Madagascan, Mozambican, Mauritian, and/or St. Helenian backgrounds.



development, including one new financial intermediary--Khula Enterprise Finance (Khula)—dedicated to providing SME finance.<sup>31</sup>

At that time an important decision was taken to reduce the government's shareholding in the Small Business Development Corporation (now Business Partners), based on the view that this apartheid-era institution was ineffective in dealing with small black entrepreneurs (Hirsch, 2005). The government used the proceeds from its reduction in shareholding to capitalize Khula.

#### *4.2.1.2 The role of SME policy in South African macroeconomic policy*

The government's SME development policies were part of its larger economic policies, of which GEAR (Growth, Employment and Redistribution: A Macro-Economic Strategy) was the most important during the period 1996-2000. GEAR focused on greater fiscal prudence, easing monetary policy, and encourage of investment as its principal pillars (Hirsch, 2005), with the objectives including faster growth, employment creation, and reduced inflation. GEAR reflected the requirements of the Stability Pact for countries joining the European Monetary System, and its arguments paralleled those made in 1994 by Brazilian President Cardoso when he introduced his *Plano Real* (Gumede, 2005). However, despite tight coordination across ministries, and between the government and the Reserve Bank at the outset, tight monetary policy, crises in other emerging markets in 1998, reduced government investment due to tight fiscal policy, and cautious private sector behavior limited the impact of GEAR, resulting in disappointing economic and employment growth. The high real interest rates that resulted from GEAR's incomplete implementation also reduced the attractiveness of private equity and venture capital as investments, along with all long-term investments.

In varying degrees, all the new SME support institutions established by the ANC have failed to realize their promise, although individual programs within some institutions have been successful. The commingling of BEE with SME development has proved to

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<sup>31</sup> The other institutions were the Centre for Small Business Promotion (a policy unit within DTI), Ntsika Enterprise Promotion Agency (non-financial support to entrepreneurs), and the National Small Business Council (representing regional councils of small businesses) (Hirsch 2005).

be too difficult to realize in practice, at least in the short and medium term, especially when combined with the establishment of new governmental institutions from scratch. Instead, retooling existing institutions and programs to focus on SME development and BEE appears to have been somewhat more promising.

At the same time, the essential problem facing new firms—market concentration in many sectors that entrepreneurs may wish to enter—remains essentially unresolved, as conglomerates have repackaged their business interests to comply with the 1998 Competition Act. In addition, reforms of small business regulation have languished to some degree. Thus, South Africa is a confirmatory example of the challenges facing mature limited access orders, as dominant elite coalitions (which changed in composition to some degree with the passing of apartheid) have acted to maintain the economic rents they gain from owning firms facing limited competition.

Finally, the South African government has only recently acknowledged that there are at least three types of small businesses, each of which having distinct opportunities and challenges: microenterprises, high-growth SMEs (the natural target for venture capital), and black-owned and managed SMEs in lower growth sectors.

#### *4.2.1.3 Government support for venture capital in South Africa*

South African public venture capital programs appear to have come of age in the late 1970s, during a period of crisis for the Afrikaner government. After gaining power in 1948, the National Party introduced a variety of programs to improve the economic prospects for Afrikaners, including the expansion of Boer employment in state owned corporations and the channeling of capital to Afrikaner entrepreneurs through contracts, banks, and insurance companies (Esman, 1987). These programs were meant to address the economic imbalance between Boers and Anglos, where the former owned only 6% of manufacturing and construction, 6% of finance, and 1% of mining in the 1940s. These differences reflected both the historic Anglo dominance of mining and finance as an outgrowth of the gold and diamond mining operations of the late 1800s, as well as the innate conservatism and collectivism of Afrikaner culture (Stokes, 1974). These

cultural attributes may have limited the attractiveness of new venture creation to many Afrikaners<sup>32</sup>.

#### *4.2.1.4 Economic structure related to South African venture capital development*

When South Africa began the formal process of eliminating apartheid in 1990, it already possessed a modern economy with globally competitive firms in a number of industries and a well-established market-based financial sector (Kwok and Tadesse, 2006) with a long history.<sup>33</sup> However, it has not escaped the decline in GDP/capita that has plagued most African countries; its GDP/capita peaked in 1981.

South Africa has a number of other characteristics that may have an impact on the emergence of venture capital there. While the country has the lowest level of entrepreneurial activity of any developing country followed by the Global Entrepreneurship Monitor project (Von Broembsen, Wood, and Herrington, 2006), it also has one of the largest private equity and venture capital sectors of any developing country. The private equity and venture capital sector is the most active one in Africa, with total capital under management of R86.6 billion (USD 12.6 billion) at 12/31/07 (KPMG/SAVCA, 2008). South Africa has one of the largest and most deregulated financial sectors of any developing country (EIU, 2006) and has experienced recent low real interest rates (Clarke, Eifert, Habyarimana, Ingram, Kapery, Kaplan, Schwartz, and Ramachandran, 2005) and amongst the highest real equity rates of return in the world from 1900 to 2002 (Dimson, Marsh and Staunton, 2002).

#### *4.2.1.5 The first steps toward venture capital in South Africa*

The private equity and venture capital industries were stimulated in the late 1970s and early 1980s by two developments. First, spinoffs from foreign companies in response to antiapartheid divestment pressures led to the creation of the first private equity firms

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<sup>32</sup> Although not all, as the example of Anton Rupert shows.

<sup>33</sup> For example, the Johannesburg Stock Exchange commenced operations in 1887. Other African stock exchanges with significant histories include Botswana (established 1989), Egypt (started 1883), Ghana (1990), Kenya (1954), Malawi (1995), Mauritius (1988), Morocco (1929), Namibia (1992), Nigeria (1960), Swaziland (1990), Tanzania (1998), Tunisia (1969), Zambia (1994), and Zimbabwe (1896) (Goetzmann, Li, and Rouwenhorst, 2005).

(KPMG/SAVCA, 2006). However, this activity emphasized later stage buyouts, rather than early stage venture capital. Second, the Small Business Development Corporation (SBDC) was created in March 1979 as a private initiative spearheaded by Anton Rupert, one of South Africa's most successful Afrikaaner entrepreneurs (Esterhuyse, 1986).

SBDC may have arisen from Rupert's earlier experience in co-founding the Development Bank for Equatorial and Southern Africa (EDESA) with the Union Bank of Switzerland in 1972. EDESA's objective was to promote African entrepreneurship through private sector approaches, but it was opposed by both the South African government and the country's business community. These interests argued that supporting EDESA would divert resources from the Bantu homelands under development then (Dommissie, 2006).

SBDC (later renamed Business Partners) emphasized financing, training, and advice and focused on small manufacturing firms. Its expressed aims were to assist firms from all segments of the population (Esterhuyse, 1986). The South African government joined SBDC as a 50% owner in November 1980, and a reincorporated entity of the same name was launched in February 1981 with share capital of Rand 150 million. The initial emphasis of SBDC was on debt finance and property rental.

The evolution of the South African venture capital since 2000 has been marked by slow growth in funds under management and a movement away from seed stage investments.

The establishment of significant venture capital activity can be marked by the establishment of the South African Venture Capital and Private Equity Association (SAVCA) in 1999. Governments and development finance institutions (DFIs) are the single largest source of funding for South African venture capital, accounting for 36.3% of cumulative funds raised through 2005, compared to 5.6% of funds raised from government/DFI sources in Europe to date. The South African public venture capital sector consists of a number of players, including Business Partners<sup>34</sup>, the Industrial

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<sup>34</sup> KPMG/SAVCA (2006) classifies Business Partners as a corporate venture capital fund, rather than a government fund. This reflects the recent reduction in ownership by the South African government in Business Partners to 20%. Given Business Partners' majority government ownership during the bulk of its history, it will be considered a public venture capital fund for the purposes of this research project.

Development Corporation (IDC), NEF Trust, and the South African Enterprise Development Fund.

Despite significant increases in economic growth in the post-apartheid era, South Africa has struggled to establish a robust entrepreneurial sector on which flourishing venture capital activity could be based. A diverse range of governmental interventions in the venture capital sector have taken place over the past fifteen years, yet, after at least one round of funding, many funds have closed or moved into later stage investments. As a result, the future of venture capital remains highly uncertain. At the same time, private equity has continued to flourish in the country, driven by a variety of factors including easy availability of credit to support buyout financing, and the high returns from this activity have played a role in “crowding out” seed, startup, and early stage financing.

#### *4.2.2 Current venture capital activity*

The following tables provide a summary of the level and characteristics of venture capital investment in South Africa. As with many other country-level studies of venture capital, these data are provided by the national venture capital association. Given the interest of this organization in promoting venture capital investment, the possibility for bias in these data cannot be completely dismissed.

Limited data is available on the South African private equity and venture capital sectors before 2000, although strong growth in the number of funds and funds under management appears to have occurred after 1995. Stillman, Sunderland, Heyl, and Swart (1999) quote the following data on the scope of the industry from unnamed sources:

**Table 4.1--The South African Private Equity Industry in 1999**

Type of Fund	Number of Funders	Investment Capital Available (R billion)
Private equity funders	38+	15+
Listed equity funders	9	2.6
Financial institutions	9	4.5
Business angels	?	2.5
<b>Total</b>	<b>56+</b>	<b>24.6+</b>

Source: Stillman, Sunderland, Heyl, and Swart (1999)

Of the above amounts, it was estimated in 1999 that R 400 million was available for startup funding, while business angel financing (R 2.5 billion) was believed to be the main source of seed financing then.

More accurate data has been collected by KPMG and SAVCA since 2000. Since the attempted reinvigoration of the industry in 1999, it has evolved as indicated by the following data:

**Table 4.2--Summary Statistics on the South African Private Equity and VC Industry, 2000-2007**

Year	Funds under Management (R billions)	Funds under Management (USD billions)	Captives-Government (R billions, number of funds)	Total Investments Made During Year (R billions)	% Seed Made During Year	% Startup and Early Stage Made During Year	Seed, Startup, and Early Stage Investments (R billions)
2000	34.7	4.6	8.3 (4)	3.5	10	15	0.875
2001	35.9	3.0	7.1 (5)	2.4	1	11	0.288
2002	37.0	4.3	6.2 (5)	3.5	2	23	0.875
2003	39.3	5.9	5.2 (8)	4.3	1	11	0.516
2004	39.7	7.0	5.8 (6)	6.5	0	6	0.39
2005	42.5	6.7	7.0 (4)	4.5	0	11	0.495
2006	59.3	8.4	10.1 (4)	6.9	1	13	0.966
2007	86.6	12.6	12.3 (4)	26.1	0	2	0.51
2008	103.1	10.9	13.7 (4)	21.3	2	2	0.852

Source: KPMG and SAVCA (2000-8), oanda.com for FX rates

These data indicate that, while total funds under management has increased strongly in both nominal and USD-denominated terms over the period 2000-8, seed, startup, and early stage investments have shrunk as a percentage of total investments and stagnated in local currency terms. Startup and early stage investments were a significant part of the industry through 2003 but have declined since then. After some activity in 2000, seed investments have become a minor part of the industry. Virtually all of the growth in the industry since 2000 has been in the form of later stage investing. Captive government funds have grown and remain a significant percentage of total funds under management, but have declined in relative importance over the period.

Ranked by either investment activity or fundraising, South Africa has one of the most active private equity and venture capital sectors in the emerging markets:

**Table 4.3--Private Equity/Venture Capital Activity by Country**

<b>Country</b>	<b>Private equity/venture capital investments (R billions)</b>	<b>Funds raised (R billions)</b>
China*	13.3	2.8
South Korea*	10.1	2.4
India*	8.6	NA
<b>South Africa***</b>	<b>6.0</b>	<b>11.2</b>
Malaysia*	4.9	0.8
Pakistan*	2.6	NA
Poland**	1.2	0.3
Romania**	0.6	NA
Hungary**	0.4	0.6

\*2004, \*\*2005, \*\*\*2006, Source: KPMG and SAVCA (2007)

In comparison to developed economies, South Africa's private equity and venture capital sectors are well-developed:

**Table 4.4--Private Equity/Venture Capital Investments to GDP, Selected Countries/Regions**

<b>Country/Region</b>	<b>Private Equity and Venture Capital Investments/GDP (average 2003-6, except as noted)</b>
South Africa	0.385%
United States (2004-6)	0.547
United Kingdom	0.85
Europe (excluding 2004)	0.34
Australia (2004-6)	0.44

Source: KPMG and SAVCA (2004-7)

However, as with many other economies, the largest percentage of this activity is in later stage investing:

**Table 4.5--Private Equity/Venture Capital Investments by Stage, Selected Countries/Regions**

	<b>Seed, Startup, and Early Stage as % of Total Investments, 2000-4</b>	<b>Expansion and Development Stage as % of Total Investments, 2000-4</b>	<b>Buyout and Replacement Capital as % of Total Investments, 2000-4</b>
South Africa	15%	39%	46%
Europe	12%	26%	62%
United States	15%	31%	54%

Source: KPMG and SAVCA (2007)

Seed, startup, and early stage investments are dwindling as a percentage of nominal GDP:



**Table 4.6--Seed/Startup/Early Stage Investments to GDP, South Africa, 2000-2006**

	2000	2001	2002	2003	2004	2005	2006
Seed, Startup, and Early Stage to nominal GDP (%)	0.095	0.028	0.075	0.041	0.028	0.032	0.059

Source: KPMG and SAVCA (2000-7) and EIU (2007)

These figures reflect the percentage of funds raised in earlier years for earlier stage investments:

**Table 4.7--Investment Raised for Earlier Stage Investments, South Africa, 2001-2006**

	2001	2002	2003	2004	2005	2006
Funds Raised for Earlier Stage Investment as a % of Total Funds Raised	55%	15%	14%	0%	0%	0%

Source: KPMG and SAVCA (2007)

The industry has a high percentage of captive funds<sup>35</sup>, most of which are linked to banks or governmental entities:

<sup>35</sup> SAVCA defines a captive fund as those “who manage on-balance sheet investments that were funded by a parent or group, often from an indeterminate pool of money” (KPMG/SAVCA, 2008).

**Table 4.8--Private Equity/Venture Capital Industry by Type of Fund, South Africa, 2006**

Type of Firm	Total Funds under Management, 2006 (R billions)	Number of Firms	% of Total Industry Funds under Management
Independent	22.0	25	39.1
Captives--financial services	17.5	9	31.1
Captives--government	10.1	4	18.0
Captives--other	6.6	6	11.7
<b>Total</b>	<b>56.2</b>	<b>44</b>	<b>100.0</b>

Source: KPMG and SAVCA (2007)

Foreign and government sources remain the largest investors in South African private equity and venture capital, although pension funds have rapidly increased in significance:

**Table 4.9--Private Equity/Venture Capital Funding Sources, South Africa, 2006**

Source	Funds Raised in 2006, Total Domestic/ Foreign (R billions)	% of Total Funds Raised in 2006
Pension and endowment funds	3.366/.721/2.645	30
Government and foreign aid agencies	2.506/.05/2.456	22
Insurance companies	2.133/1.153/.98	19
Private equity funds of funds	1.103/.219/.884	10
DFIs	.763/0/.763	7
Corporates	.722/.274/.448	6
Banks	.327/.327/0	3
Private individuals	.321/.062/.259	3
<b>Total</b>	<b>11.241/2.806/8.435</b>	<b>100</b>

Source: KPMG and SAVCA (2007)

Returns to investors from private equity investing in South Africa appear promising, although no comparable study of venture capital has been conducted to date. One study of South Africa's private equity industry looked at the performance of 11 independent later-stage funds over a 13 year period and found an average IRR of 35.7% with a return volatility of 13.7%; these returns were significantly more than those of other asset classes.<sup>36</sup> Self-reported unrealized gross IRRs from three technology-oriented venture capital funds quoted in this study averaged 9.69% (Missankov, van Dyk, van Biljon, Hayes, and van der Veen, 2006).<sup>37</sup>

These data indicate the following patterns in the development of the industry:

- While the industry as a whole has grown strongly from 2000 to 2006, seed investment has withered, while startup and early stage investments have held relatively constant as a percentage of the industry's total investments. No firm evidence has been established that seed investment has been replaced by informal venture capital, e.g. business angels;
- Government-controlled funds remain a significant percentage of the entire industry, and its resources are concentrated in a relatively few funds;

Interviews with fund managers, government officials, and association executives indicate that:

- Practically no independent venture capital activity exists in South Africa today.  
Government entities provide virtually all new funding for seed, startup, and early

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<sup>36</sup> This study appears to have significant selection bias, as it deliberately excludes returns from the other major categories of South African private equity and venture capital funds—captives-financial, captives-government, and captives-other. These categories comprised the majority of the industry in 2006. In addition, the study was prepared by individuals that appear to be associated with one of the largest private equity funds of funds in South Africa; this fund could have a strong economic interest in promoting greater pension fund investment in private equity. Finally, this study was not peer-reviewed prior to its presentation.

<sup>37</sup> Returns from these technology-oriented funds are highly variable. In addition, one R 270 million technology fund not included in these data reported a IRR of approximately 30% as of August 2007.

stage funding.<sup>38</sup> Most existing venture capital funds that had previously focused on these stages have shifted to later stage investing, while others have indicated that they will likely discontinue operations in the near future due to higher risk-adjusted returns from other activities (such as private equity).

- Exit liquidity remains constrained by a wide variety of factors, some of which are South Africa-specific (FX and IP controls of Reserve Bank) and others more typical of other emerging economies (small local market, need to “go global” earlier in firm’s lifecycle to realize high returns to investors).

#### *4.2.3 The government’s attempts to jumpstart venture capital*

Following a strategic review by the Department of Trade and Industry (DTI) in 1999, IDC launched a jumpstart of the VC industry through its investment in a total of 9 funds, as indicated in the following table:

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<sup>38</sup> Data indicate that a total of R 581 million invested by early stage funds in 2005-6, R 333 million (57%) was invested by captive-government funds and R 333 million (40%) invested by independent funds. Captive-government funds represented 63% of the total funds under management by early stage funds as of December 31, 2006. The shift by independent funds out of seed, startup, and early stage investing is believed to accelerated in 2007.

**Table 4.10--IDC's Investments in Venture Capital Funds**

<b>Fund</b>	<b>Total Funds under Management (R millions)</b>	<b>IDC Investment (R millions)</b>
<b>Phase I (2000-1)</b>		
Argil	100	75
Archway II	160	75
Vantage	150	75
Horizon	140	75
Bioventures	80	20.08
<b>Phase II (post 2001)</b>		
New Africa Mining	563	112
NEF Ventures Trust	200	100
Msele Nedventures	83	12
Women Private Equity Fund	125	50
<b>Total</b>	<b>1596</b>	<b>594</b>

Source: IDC

While IDC's initial investment were focused on technology-oriented funds, a second round of investing included both technology and non-technology funds. At the same time, the Southern Africa Venture Capital Association (SAVCA) was established to represent both private equity and venture capital interests.

The Department of Trade and Industry (DTI) is the lead government ministry responsible for private equity and venture capital development. Following a workshop in mid-1998, a United States Agency for International Development (USAID)-funded strategic review by the DTI in late 1999 concluded that government should support venture capital primarily through public-private partnerships and identified Australia, Ireland, Israel, Taiwan, and the United States as countries with government venture capital programs from which South Africa could learn. This review made the following recommendations (Stillman, Sunderland, Heyl, and Swart, 1999):

- Development and maintenance of a venture capital infrastructure through support for education and high-level assistance to technology-based firms;
- Encouragement of and assistance to entrepreneurs through a decentralized network including workshops and mentorship programs;
- Direction of government-supported research and development by rationalization of existing programs, leveraging 20% of Science Council funding with private sector funds, dedicated government funding for SME-originated research programs, attraction of international partners, and tax concessions;
- Increased availability of seed and early stage venture capital through the establishment of five private sector-managed and partially government-financed technology-focused funds modeled after the Australian Innovation Investment Fund program.

Based in part on the strategic review's fourth recommendation, IDC launched a jumpstart of the VC industry through its investment in a total of 9 funds. The strategic review's other recommendations have been less effectively implemented with varying degrees of success.

#### *4.2.4 South Africa business angel activity*

As with private equity, business angel investment is often associated with venture capital activity, although the complementary nature of the relationship between them is increasingly being challenged (Shane, 2009). Limited information is available on business angel activity in South Africa. As noted earlier, business angels were believed to account for R 2.5 billion in seed financing in 1999. Some venture capitalists report that a small number of angels are active in the country at present (estimates range between 10 and 50 participants), and these VCs report that this small number may play an important role in constraining venture capital development. Others report more active angel interest, as reflect in attendance at business plan competitions. A previously established angel network (Business Angels Network South Africa—BANSA) appears to be inactive at present.

The large number of US dollar millionaires in South Africa (estimated by Merrill Lynch at approximately 42,000) may offer a potential source of angel financing, although few of these millionaires are believed to have derived the bulk of their wealth from current entrepreneurship (the typical path to angeldom).<sup>39</sup>

#### 4.2.5 *Enabling environment for venture capital in South Africa*

Having now described the historical and policy contexts within which South African venture capital has emerged, as well as some general characteristics of its current activity, I now turn to a fuller consideration of the first component of the current incomplete model of VC emergence, that of simultaneity conditions. In this discussion I will also refer to those conditions underlying Gilson's simultaneity conditions as enabling conditions or enabling environment.

Gilson (2003) establishes three conditions for the emergence of venture capital--sufficient stocks of entrepreneurs, pools of capital with a potential interest in venture capital risk/return combinations, and specialized financial institutions capable of managing the principal-agency issues inherent in seed, startup, and early stage investments in high growth firms. Underlying these conditions are a variety of other conditions and processes that are indicators of the enabling environment. These indicators were determined from recent evaluation studies of the venture capital industries in the UK and South Africa conducted for the World Bank (Lingelbach, 2008; Murray, 2008).

Based on a review of data from published sources, a subjective assessment of South Africa's enabling environment conditions was conducted, ranking each condition along a spectrum from strong to moderate to weak. This assessment has been validated through its review by World Bank staff overseeing the above-referenced evaluation study, but has otherwise not been subjected to any other peer review to date. Thus, these assessments must be treated with some caution. Nonetheless, they do give a

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<sup>39</sup> For example, the two South African billionaires listed on *Forbes'* World Billionaires list (Nicky Oppenheimer of DeBeers and Johann Rupert of Richemont) both inherited the bulk of their wealth. In both cases, the sources of this inherited wealth were ultimately entrepreneurial, with the Oppenheimer wealth originating in the later 19<sup>th</sup> century and the Rupert fortune from the mid to late 20<sup>th</sup> century.

general indication of the conditions underlying Gilson's simultaneity conditions in South Africa.

South Africa has a moderate enabling environment for private equity and venture capital activity, with summary assessments for aspects of that environment and its relationship to Gilson's simultaneity conditions indicated as follows:

**Table 4.11--Enabling Environment, Indicators and Assessment, South Africa**

<b>Enabling Environment Indicator</b>	<b>Relevant Gilson (2003) Simultaneity Condition(s)</b>	<b>Assessment</b>
Political	All	Moderate
Economic	Entrepreneurs, capital	Moderate
Legal and regulatory	All	Strong to moderate
Industry information	All	Strong
Government agencies supporting entrepreneurial finance	Capital, specialized financial institutions	Moderate
Government programs supporting entrepreneurial finance	Capital, specialized financial institutions	Moderate to weak
Policies supporting investors	Capital, specialized financial institutions	Weak
Policies targeting funds	Capital, specialized financial institutions	Moderate to weak
Policies targeting investees	Entrepreneurs	Moderate

Source: Author

I now consider each of these conditions in detail.

#### *4.2.5.1 Political enabling environment (moderate)*

In the transition from apartheid to democracy, the promotion of entrepreneurship has played a relatively modest role in government policy. In part, this lack of emphasis reflects the priority of both the Mandela and Mbeki administrations on macroeconomic



stability and, more recently, employment creation and poverty reduction. New venture creation played a bit part in the former, which, to the extent it focused on investment, was concerned more with attracting large-scale investment from abroad. More recently, new small businesses have been of interest mainly for their ability to create new jobs for black Africans and, as a result, government policy focus appears to have shifted away from innovative growth-oriented new firms and toward lifestyle-oriented microenterprises.

Black economic empowerment (BEE) policies of the post-apartheid governments appear to have complicated the business environment in which growth-oriented entrepreneurs operate. A Black Economic Empowerment Commission was formed in May 1998 and issued a report in April 2001. BEE charters specifying varying levels of black ownership and/or management have been adopted by the petroleum and liquid fuels (November 2000), mining (July 2002), and financial services (July 2003) sectors (Southall, 2006). These charters led to other sectors quickly adopting similar guidelines, while the government outlined a parallel set of codes. While BEE may have forced some whites into entrepreneurship (examples include the successful startups Click-A-Tel and EDH) and thus increased business startup levels, these policies also appear in some instances to distort capital allocation, including in the venture capital sector. For example, one respondent (a VC fund manager) reported that it must hire a black African management team and sell a minimum of 25% of the fund management company's equity to a BEE partner to raise a new fund.

Inadequate government attention to violent and organized crime appears to have limited investment and startup activity, particularly in the past four years. Weak government policies aimed at curbing the spread and impact of HIV have also had a serious effect to date on productivity for all businesses, but may have disproportionately affected small firms.

Finally, educational policies have severely limited the quality of math and science education (128<sup>th</sup> out of 131 countries measured by the 2007-2008 Global Competitiveness Report) and, hence, the supply of scientists and engineers. Yet, South African institutions have a reasonably high capacity for innovation (43<sup>rd</sup> out of 131

countries) and company spending on R&D is relatively high (26<sup>th</sup> out of 131) (World Economic Forum, 2008). Technology-based firms are less likely to be established than in other countries with more robust science and technology education programs.

A potential shift in government policy toward the support of angel investing and venture capital was indicated in the 2008 budget, where a 30% upfront income tax deduction has been proposed for investments by individuals, venture capital funds, and corporations in high growth, high-tech companies with revenues up to R 14 million and assets up to R 7 million. The proposed deductions will have annual caps of R 500K for individuals, R 7.5M for funds, and R 750K for corporations. As a practical matter, the tax deduction will have no impact on venture capital funds, as they are organized as tax-transparent vehicles.

#### *4.2.5.2 Economic enabling environment (moderate)*

Economic growth has increased significantly during the post-apartheid era, but still remains below the 5-6% growth rates required to reduce poverty. During the period 1981-1993 growth averaged 1.04%, while it increased to 3.44% during the period from 1994 to 2006. Inflation has also dropped substantially from 14.58% during 1981-1993 to 7.43% during 1994-2006. Both of these developments are a credit to the ANC's macroeconomic stabilization policies since 1994 and have created significantly more favorable conditions for startup activity, as well as private equity and venture capital.

However, the result of macroeconomic stabilization has been persistently high real interest rates, which have choked off the kind of growth and job creation required to reduce poverty and high unemployment (at 25.6% in 2006, the country's official unemployment rate is the highest in the world). While real interest rates have now been reduced to the 8% range, they remain too high to generate significant new investment required for growth. Given that these interest rates are higher than corporate profit margins (which range between 3% and 7% for non-financial firms and are less than 6% in South Africa), it is rational for investors to avoid corporate investment and place their excess funds in the bond market or in bank deposits (Chang, 2008).

A relatively small national economy (\$587.5 billion PPP GDP in 2006) has required many South African entrepreneurs to internationalize early in their histories to achieve the growth rates and economies of scale necessary for high IRRs. To some extent, geographical isolation from developed markets has limited the competitiveness of traded goods and services by increasing transport costs. While trade remains relatively free, capital account controls (noted below) constrain the sale of South African firms. These controls reflect the long-standing concerns of the Reserve Bank about insulating the South African economy from commodity price swings.

#### *4.2.5.3 Legal and regulatory enabling environment (strong to moderate)*

While problems remain, the overall regulatory environment for private equity and venture capital activity in South Africa remains generally favorable. Limited liability partnerships are widely used as investment vehicles, as tax treatment of capital gains and income from private equity investments is handled consistent with international best practice.<sup>40</sup>

The Doing Business 2008 report ranks South Africa at 35<sup>th</sup> out of 178 economies for the ease of doing business, indicating a relatively benign legal and regulatory environment. The country's rankings for each of the measure's subcomponents suggest several areas of weakness:

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<sup>40</sup> Taxation of realized capital gains was clarified in the February 2007 budget speech by Finance Minister Trevor Manuel.

**Table 4.12--Doing Business Components and Rankings, South Africa**

<b>Measure</b>	<b>Ranking</b>
Ease of doing business	35
Starting a business	53
Dealing with licenses	45
Employing workers	91
Registering property	76
Getting credit	26
Protecting investors	9
Paying taxes	61
Trading across borders	134
Enforcing contracts	85
Closing a business	68

Source: World Bank (2007)

The cost, time, and complexity associated with both export and import transactions are reflected in the many comments made by South African entrepreneurs and fund managers concerning the difficulties of internationalization. Given its geographical isolation, reducing these barriers seems central to improving firm-level competitiveness.

Entrepreneurs and fund managers also cite the challenges of hiring and firing workers as a principal constraint on new venture creation in South Africa. Reflecting the political philosophy underlying the tripartite alliance between the ANC, the South African Communist Party (SACP), and the Congress of South African Trade Unions (COSATU) which has governed since 1994, South Africa's low ranking for employing workers has had the peculiar effect of limiting job creation in new firms.

An important issue is increased investment in the industry by pension funds.

Regulation 28 of the Pension Funds Act limits such investment to either 2.5% or 5% of assets under management, depending on interpretation.

At present, no tax incentives exist to facilitate investment in private equity or venture capital funds (although incentives have been proposed in the 2008 budget—see above). South Africa's taxation system is generally favorable to both domestic and foreign investment. No specific tax incentives have been provided to date to promote private equity or venture capital development. Until 2007, the capital gains tax legislation has been unclear whether the realization of long-term equity investments should be taxed using capital gains or ordinary income tax rates. However, new regulation has now clarified that all equity investments held for more than three years will be taxed at the capital gains rate upon realization.

A 2006 study commissioned by Finmark Trust recommended the following changes in tax incentives for private investment in South African SMEs:

- The adoption of the UK's venture capital trust (VCT) scheme, with the VCTs being listed on AltX, and;
- EIS-type tax incentives for angel investors, which would be put in place at the same time as VCTs to assure a level playing field (ECIAfrica, 2006).

While the legal and regulatory environment is well-developed, respondents who are entrepreneurs and venture capitalists cite a variety of barriers to establishing a new business, including 1) the number of procedures required to register a company, 2) complex tax laws, including, for example, the need to have four non-family members to register a firm with the tax authority, and 3) employment laws, which restrict firms' ability to fire workers.

These barriers to entry are reinforced by inefficiencies in the regulation of the financial sector, including recent changes in the National Credit Act which restrict credit card borrowing and lending against housing (two major sources of seed and working capital for South African entrepreneurs).

A frequently cited obstacle to entrepreneurship in South Africa is the policies of the Reserve Bank (RB), the nation's central bank. Often considered one of the most unreformed of the country's apartheid-era institutions, RB remains interventionist,

particularly concerning exchange controls and transfer of intellectual property outside of the country. One important consequence for venture capital development is that funds can sell only 75% of a South African investee to entities outside of the country, significantly limiting exit liquidity by way of strategic/trade sales. Recent changes in the exchange control regime may make it somewhat easier for foreign entities to buy South African investees, as transactions less than R 50 million are now only subject to reporting to the Reserve Bank, not approval. It is still unclear if the 75% rule noted above still applies; if so, it continues to represent a substantial barrier to exit liquidity, regardless of the recent changes.

The vast majority of South African private equity and venture capital funds are organized as bewind trusts, although a few funds have begun to organize as limited liability partnerships. Bewind trusts provide virtually all the benefits normally associated with limited liability partnerships (including limited life, tax efficiency and limited liability) and do not appear to be an obstacle to the industry's development.

South African private equity and venture capital funds are regulated by applicable local legislation, such as the Companies Act, the Competition Act, the Income Tax Act, and, if their investors include pension funds, the Pension Funds Act. While not enshrined as legislation, black economic empowerment codes and charters are in effect binding on funds as well, as local institutional investors will not invest in funds that do not comply with them.

Exchange controls administered by the Reserve Bank represent an important form of regulation of the industry, as these controls limit the sale of investments to offshore entities. The Reserve Bank also regulates the transfer of intellectual property to offshore firms.

The Financial Services Board (FSB) regulates the provision of financial advice from capital providers to capital receivers, but regulation consists solely of informational filings. According to SAVCA, these filings are not a barrier to entry to the industry. At present, listed private equity funds are not a significant part of the industry, although such vehicles would face more substantial regulatory and reporting requirements.

Self-regulation consists of compliance with SAVCA's code of conduct, which is applicable to that organization's members. Most funds are members of SAVCA.

Typically, bewind trusts used by venture capital and private equity funds in South Africa are governed by a three-tier structure consisting of 1) a board of trustees, which ensure that the trust deed is enforced and the interests of investors are protected, 2) a governing board, which reports to the board of trustees and makes investment and exit decisions, and to whom the fund manager reports, and 3) an ethics committee, which advises the governing board on the extent to which the fund is fulfilling its ethical, environmental, and social responsibility imperatives. Each of these boards includes independent members, as well as representatives of the investors.

#### *4.2.5.4 Industry information enabling environment (strong)*

The Southern African Private Equity and Venture Capital Association (SAVCA) was established in 1999 as one of the earliest associations for the industry in the emerging markets. Now comprised of 61 fund managers and investors (full members) and 27 associate members, SAVCA produces an annual industry review in collaboration with the Financial Mail (a leading national business daily) and an annual survey of industry performance in collaboration with KPMG.

While SAVCA has been an effective information disseminator for the industry, it has had a more limited impact on government policy concerning entrepreneurial finance until the recent appointment of a full-time executive director. Since that appointment, SAVCA has played an important role in influencing whether PE and VC investments would count as BEE investments, as well the shift in 2007 from the taxation of realized capital gains as ordinary income (29% marginal rate) to taxation at the capital gains rate (10%). These changes have relied heavily on individual SAVCA members preparing white papers and attending meeting with government officials, as SAVCA has only two full-time employees at present.

#### 4.2.5.5 Market (exit) enabling environment (moderate to weak)

South Africa's capital markets are amongst the broadest and deepest in the emerging markets. The Johannesburg Stock Exchange (JSE) was established in 1887 and currently lists approximately 400 equities with a total market capitalization of \$370 billion, making it the 14<sup>th</sup> largest equities exchange in the world. In comparison to other equities market, the JSE is relatively less concentrated, with the top three stocks accounting for 15% of market capitalization as of 2001. By comparison, the top three stocks in the UK account for 22% of market capitalization.

From low levels in 2001, South African IPO activity rapidly grew and converged with the United Kingdom, only to fall off thereafter:

**Table 4.13--Initial Public Offering Activity, South Africa versus United Kingdom, 2001-2005**

	2001	2002	2003	2004	2005
South Africa--new capital raised/ market capitalization (%)	0.184	0.263	0.511	0.584	0.190
United Kingdom--new capital raised/ market capitalization (%)	1.095	0.827	0.548	1.094	0.989

Source: [www.doingbusiness.org](http://www.doingbusiness.org), accessed April 3rd, 2009

However, IPO activity has been a less important source of exit liquidity for South Africa's PE/VC sector than other avenues:



**Table 4.14--Sources of Exit Liquidity, Private Equity/Venture Capital Industry,  
South Africa, 2002-2006**

(in R millions/ number of deals)	2002	2003	2004	2005	2006	Total, 2002-6	Average deal size (R millions)
Sale to another PE firm or financial institution	83/3	167/7	1,580/18	1,274/28	1485/15	4,589/71	64.6
Sale to managers	281/35	289/62	608/78	507/85	874/88	2,559/348	7.4
Sale of listed shares	36/6	703/16	544/19	951/4	786/8	3,020/53	57.0
Trade sale	397/28	514/16	663/16	325/8	927/16	2,826/84	33.6
<b>Total</b>	<b>797/72</b>	<b>1,673/101</b>	<b>3,395/131</b>	<b>3,057/125</b>	<b>4,072/127</b>	<b>12994/55 6</b>	<b>23.4</b>

Source: KPMG/SAVCA (2007)

Contrary to the experience of VC funds in developed markets, exits through sale of shares have not provided returns to funds that are as attractive as other sources of exit liquidity, based on the limited available evidence:

**Table 4.15--Comparisons of Return from Exit Liquidity Types, Private Equity/  
Venture Capital Industry, South Africa, 2005-2006**

	Proceeds/ Cost (Total)	Proceeds/ Cost (Sale to Fund/FI)	Proceeds/ Cost (Sale to Managers)	Proceeds/ Cost (Sale of Listed Shares)	Proceeds/ Cost (Trade Sale)
2005	2.2	2.1	2.5	2.4	1.7
2006	3.3	5.5	4.5	4.2	1.6

Source: KPMG/SAVCA (2007)

Fund manager respondents currently structuring exits suggest that IPOs are a relatively unlikely source of liquidity going forward. For example, one venture capital fund

manager reported that exits are likely to involve the sale of investees to foreign strategic buyers, with compensation being partly in cash and partly in the acquirer's shares. Only two exits by way of IPO from private equity or venture capital investments have occurred in South Africa in the contemporary period, and both were private equity transactions (Brait's listing of Kelly Group in early 2007 and the 2004 listing of Peermont Global).

South Africa's banking sector has been one of the most developed in the emerging markets. However, over the period 2001-2005, private sector credit declined, potentially constraining the market for debt-financed buyouts or strategic sales:

**Table 4.16--Selected Characteristics, Banking Sector, South Africa and United Kingdom, 2001-2005**

	2001	2002	2003	2004	2005
South Africa-- Private Credit/GDP (%)	132.22	125.73	128.08	134.44	66.31
United Kingdom-- Private Credit/GDP (%)	131.94	135.75	140.05	147.88	155.18

Source: World Bank [Doing Business](#) website

Measured over the period from 1900 to 2000, South African equities have amongst the highest real risk-adjusted returns of the sixteen largest equity markets, as noted in the table below:

**Table 4.17--Sharpe Ratios, Selected Countries, 1900-2000**

<b>Country</b>	<b>Sharpe Ratio--1900 to 2000</b>	<b>Country</b>	<b>Sharpe Ratio--1900 to 2000</b>
Australia	0.40	Italy	0.26
United States	0.33	Japan	0.26
<b>South Africa</b>	<b>0.32</b>	United Kingdom	0.26
Canada	0.32	Ireland	0.21
Netherlands	0.30	Belgium	0.20
Sweden	0.30	Switzerland	0.19
France	0.27	Spain	0.18
Germany	0.26	Denmark	0.14

Source: Dimson, Marsh, and Staunton (2002)

These results strongly suggest that investment in South African equities is amongst the most efficient mechanisms to achieve equity returns for those investors with a global equity asset allocation strategy. However, these historical results do not appear to have had a positive effect on exits from VC investments in South Africa to date.

The JSE's AltX provides a possible exit mechanism for venture capital funds. As with many other second-tier exchanges, listing requirements on the AltX are less restrictive than on the JSE's main board, including minimum share capital of R 2 million, no profit history, and 100 shareholders. Seventy eight firms are listed on AltX as of December 2007, of which 56 have listed in 2007.

#### *4.2.5.6 Government agencies supporting entrepreneurial finance (moderate)*

DTI is the apex ministry responsible for coordinating SME policy, including private equity and venture capital development. Although not an active interlocutor in discussions with the industry, the Reserve Bank plays a central role in the industry's evolution through its control of exchange rate and intellectual property rights policies, both of which impact exit liquidity.

The Industrial Development Corporation (IDC) remains the single most important government agency supporting entrepreneurial finance. Created by the South African government in 1940 as an industrial development bank, IDC is, in the words of one observer, “the most important government-controlled agency for the development of the real sector, after DTI...” (Hirsch, 2005). IDC’s mandate is to invest in industrial undertakings that benefit the country and meet the criterion of economic viability. After the fall of apartheid, IDC has also been allowed to invest in other southern African economies. Given that nascent black entrepreneurs lacked capital at the time of transition with which to establish new firms, IDC has been an important instrument in the implementation of black economic empowerment.<sup>41</sup>

Other government organizations concerned with entrepreneurial finance include the following<sup>42</sup>:

- Umsobomvu Youth Fund (UYF)—Following discussions in the National Economic Development and Labor Council (NEDLAC) that began in 1997, UYF was established in 2000 with a corpus of R 625 million from the demutualization of Sanlam and Old Mutual, some of which is used for investment in other funds. UYF reports to the government’s Department of Labor and provides a wide range of services to youth entrepreneurs, including business advice and financing.
- National Empowerment Fund (NEF)--Funded by R 2 billion from the Treasury and DTI.
- Innovation Fund--Established in 2000 as a trust fund to promote technological innovation, the Fund is a program within the Department of Science and Technology (itself established in 2004 as an outgrowth of the Department of Arts and Culture). It emphasizes commercialization of technology and intellectual property rights.

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<sup>41</sup> Interestingly, while subject to some of the same discriminatory policies of the apartheid era, Indians in Natal were able to create a merchant class (Southall, 2006).

<sup>42</sup> Only a portion of these organizations’ funding is allocated to venture capital. A precise breakdown is not available at present.

- Khula Enterprise Finance (Khula)--Khula was established in 1995 by the Department of Trade and Industry with capital commitment of R 1 billion and began operating in 1996. Much of its early activity was in the sphere of loans and loan guarantees.
- Public Investment Corporation (PIC)--Established in 1911, the PIC is an investment management company wholly owned by the South African government. With total assets of R 719.8 billion at March 31, 2007, the PIC's principal client is the government's employee pension fund. 3.5% of the government pension fund assets (approximately R 20 billion) managed by PIC are allocated to its Isibaya Fund, which has invested in six private equity funds to date.

#### *4.2.5.7 South African government programs in entrepreneurial finance (moderate to weak)*

As private fund managers have migrated to later stage deals, South African governmental entities have moved to fill the equity gap at the seed, startup, and early stages through a variety of direct investment programs. At this stage, it is difficult to evaluate the effectiveness of these programs, many of which appear to have as a primary objective the creation of new jobs.

##### *4.2.5.7.1 Industrial Development Corporation*

IDC remains the single largest investor in the seed, startup, and early stages in South Africa. Following a review of its experience in providing capital to VC funds beginning in 2000, IDC's venture capital strategic business unit established a R 250 million direct investment program. This program will invest on the same terms and conditions as private fund managers, but, appears willing to take risks that the private sector would not normally take. The objectives of this program appear to include both "demonstration effect" (attracting new fund managers into the sector through a few success stories) and job creation.

In March 2007 the European Investment Bank (EIB) announced a € 50 million investment in a risk capital facility to be jointly managed by IDC and EIB. The facility

will focus on investments in SMEs and BBBEE opportunities through three windows: direct investing, co-investment, and niche venture capital funds.

While it is difficult to assess the success of IDC's direct investment program (only 4-5 promising investments had been identified as of August 2007), it seems clear that IDC may not yet possess sufficient personnel to assess, structure, and manage direct VC investments. IDC's previous VC experience has been limited to investing in other VC funds, for which significantly different skills may be required.

#### 4.2.5.7.2 *Umsobomvu Youth Fund (UYF)*

To date, UYF has invested R 285 million in 210 firms, although it does not invest in seed stage firms. UYF focuses on firms owned by individuals between 18 and 35 years in age, as well as in women-owned enterprises.

Regarding venture capital activities, UYF invests directly (via its General Fund), as well as via its R 100 million investment in the R 125 million Business Partners Umsobomvu Franchise Fund. This latter activity focuses purely on franchisee operations and has invested R 70 million to date.

#### 4.2.5.7.3 *National Empowerment Fund (NEF)*

NEF has invested R 433 million to date in 79 companies. It focuses exclusively investments in firms that contribute to broad-based black economic empowerment (BB-BEE).<sup>43</sup>

#### 4.2.5.7.4 *Innovation Fund*

To date, the Fund has invested approximately R 1 billion in 120 projects, but has also provided grants to universities to establish technology transfer offices (TTOs) and

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<sup>43</sup> Black Economic Empowerment (BEE) policies have been established in the post-apartheid era to address the inequalities of the apartheid era (1948-1994). BEE policies aim to provide economic opportunities to previously disadvantaged populations, including black Africans, Coloreds, and Indians. BB-BEE was established in 2006 as a result of criticism of narrowly based black empowerment policies, which emphasized ownership and management criteria.

intellectual property chairs on the faculty, as well as conducting a National Innovation Competition across South Africa's universities.

#### 4.2.5.7.5 *Blue Catalyst*

While Blue Catalyst recently ceased venture capital activities as part of a restructuring, it represents an interesting case study in VC activity at the provincial level. Established in 2004 as part of the Gauteng provincial government's Blue IQ initiative<sup>44</sup>, Blue Catalyst was limited by a lack of good deal flow, legal limitations imposed by the nature of its funding<sup>45</sup>, and a high cost structure (7 investment professionals paid R 1 million/year each). Blue Catalyst has now restructured its operations to serve as a network for approximately 3200 members, many of whom are entrepreneurs. It is also considering providing a R 50 million investment in a R 250 million technology-oriented VC fund; Blue Catalyst's investment would serve as a risk mitigation tool for private investors in the proposed fund.

#### 4.2.5.7.6 *Southern Africa Enterprise Development Fund (SAEDF)*

Established in 1994 with USD 100 million from the US government, SAEDF is similar in design to the enterprise funds launched in the early 1990s by the US throughout Eastern Europe and the former Soviet Union. As indicated by its name, the fund's geographical mandate extends beyond South Africa to include Zimbabwe, Botswana, Zambia, Malawi, Angola, Namibia and Mozambique. SAEDF focuses on later stage transactions involving SMEs, although much of its activity has centered on investments in intermediaries that then finance SMEs.

Since inception, SAEDF has invested approximately USD 80 million in 27 enterprises, of which 16 were startups. Nineteen investments have been realized to date, and 11

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<sup>44</sup> Blue IQ emerged during the premiership of Tokyo Sexwale (1994-1998) as a vehicle to promote strategic investments in the province, which includes the greater Johannesburg and Pretoria metropolitan areas. Sexwale is believed to have ties to the Rupert family, whose patriarch, Anton, established SBDC/ Business Partners (Southall, 2006).

<sup>45</sup> According to Blue Catalyst staff, the Public Funds Management Act prohibits the investment of grants funds to make either a positive return or a loss.

investments were in financial intermediaries. One investment was in a South African venture capital fund.

#### *4.2.5.8 Policies targeting investors (weak)*

To date, South Africa does not appear to have any policies that encourage investors to participate in private equity or venture capital. Several government programs targeting venture capital development have noted that their role is to take risks that the private sector will not take, but to do so at market rates (note: please see earlier discussion concerning proposed changes to tax incentives in 2008 budget).

The largest barrier to increased institutional investment in private equity and venture capital appears to be the conservative approach to asset allocation taken by many players, notably pension funds (mainly government-owned). In part, the conservatism displayed by government pension funds may reflect the fact that they absorbed 80% of South Africa's pre-1994 national debt of R 190 billion (Gumede, 2005). At the end of 2006, pension fund assets totaled R 1.081 trillion, comprised of R 640 billion in public sector pension funds (owned by the Ministry of Finance, Telkom, Transnet, and Post Office) and R 441 billion in private sector pension funds owned by 13,488 institutions (Economist Intelligence Unit, 2007; Financial Services Board, 2007).

The 2003 appointment of a new chief executive at the largest government pension fund manager—the Public Investment Corporation (PIC)—appears to have had some positive effect on its conservative culture. A new fund within PIC—Isibaya—has been allocated 3.5% of PIC's assets and includes in its investment focus both private equity and venture capital fund investments. However, the bulk of pension fund investment in South African PE and VC continues to come from foreign sources.

Revisions to the Pension Funds Act of 1956 are being considered and would include revisions to asset allocation limits and inclusion of socially responsible investing as a permissible activity. According to the Ministry of Finance, these revisions may be completed by 2010.



The insurance sector is mainly private sector and, perhaps for this reason, has taken a somewhat more aggressive attitude to private equity and venture capital investment. However, insurance companies are also risk-averse and invest the bulk of their excess funds in property and the local stock market (EIU, 2007). The sector's asset allocation strategy is closer to that of banks than pension funds, reflecting a pattern seen in many other countries. Recent increases in insurance industry investment in PE and VC do not appear to be driven by any changes in government policy.

Interestingly, DTI's strategic review in 1999 recommended that incentives for private investors be introduced, including, for government-supported venture capital funds, a requirement that government investors (two thirds of total capital) receive only 10% of profits, once the government's original investment and a risk-free rate of return on that investment have been received. However, this design was never implemented.

#### *4.2.5.9 Policies targeting funds (moderate to weak)*

##### *4.2.5.9.1 Industrial Development Corporation (IDC)*

Following a 1999 strategic review commissioned by the Department of Trade and Industry, funded by USAID, and conducted by Robert Stillman, Julie Sunderland, Louis Heyl, and Harry Swart for Nathan Associates, IDC was mandated to address the financing gaps faced by growing technology-oriented companies. In response, it approved a R 300 million facility in 2000 and made four commitments of R 75 million each to a combination of new and experienced fund management organizations (Argil, Archway, Vantage, and Horizon). Each fund manager was expected to raise a minimum of R 100 million and a maximum of R 250 million for their funds, including IDC's investment.

These four inaugural funds were expected to focus on the technology sector. A second tender round expanded IDC's investments in fund managers to a total of nine funds, including some that were non-technology in their focus. IDC's investment in these nine funds totaled R 594 million, while the total capital raised by these funds was R 1.596 billion.

Importantly, IDC invested in these nine funds on the same terms, conditions, and pricing as those provided to the funds' private investors. While such an investment structure did not distort the market for capital to such funds, it also did not provide any incentive for private investors to enter this market. Some observers have noted that the IDC had a slow approval process for investments in VC funds. Fund managers have also observed that it is difficult to take IDC (and other large public investors such as PIC) to court in South Africa, in the event of any disputes, and that, in some instances, IDC insists on de facto control of the fund's investments through a 25.1% or greater share of the fund's total capital.

Respondents have noted that IDC has had a tendency to micro-manage investment activities of fund managers in comparison to other investors, to focus on issues that are not central to investment performance (such as keeping intellectual property rights in South Africa or aligning fund financial reporting standards with those of IDC's other, non-PE/VC investments), to lack a useful understanding of the industries in which PE and VC fund managers invest, and to delay important decisions due to IDC's centralized decision-making structure. All of these operational factors may have played a role in the relative lack of success of the funds in which IDC has invested to date.

How have the nine funds in which IDC has invested performed? While detailed financial information is not available on most of these funds, it can be noted that:

- IDC has withdrawn from one fund
- One fund has been liquidated
- None of the remaining funds have been able to raise a second fund, although at least one is in the process of doing so.

From these results, it cannot yet be argued that IDC's investments in PE and VC have resulted in a self-sustaining set of funds. It also remains unclear if IDC's investment in these funds catalyzed other investors, notably private sector investors, to become involved.

#### 4.2.5.9.2 *Khula Enterprise Finance (Khula)*

Business Partners manages a R 150 million fund (Business Partners/Khula Startup Fund), to which Khula provided R 120 million and Business Partners R 30 million. As of December 31, 2006, this fund had invested R 16 million.

In addition, in 2003 Khula has established a R 40 million joint venture fund with Anglo-American, the Anglo-Khula Mining Fund, which invests in “junior mining projects” with investments ranging between R 1 million and R 5 million, mainly for capital equipment and working capital. This fund is managed by Anglo Zimele, Anglo-American’s BEE initiative. A total of seven investments have been made to date, from which two have been exited.

#### 4.2.5.9.3 *Public Investment Corporation (PIC)*

According to fund managers that have interacted with PIC, this organization is interested in VC, but, despite having committed to an investment in at least one VC fund to date, has not closed on any VC fund investments. As is the case with IDC, fund managers are reluctant to take on PIC as an investor, given their power and influence.

#### 4.2.5.9.4 *Business Partners—A Special Case*

Established in 1980 as the Small Business Development Corporation (SBDC), Business Partners focuses on providing a range of financial and property services to the SME sector in South Africa and elsewhere in southern and east Africa. 20% owned by the South African government via Khula, Business Partners has had a long-standing interest in venture capital and private equity, although the bulk of its activities consist of debt finance to established, lifestyle SMEs.

While Business Partners has had a long-standing interest in venture capital, its primary focus has remained on meeting the financial needs of cash flow-positive lifestyle SMEs. Its business model emphasizes providing a mix of debt, equity, quasi-equity, and real estate products, which can be tailored to meet the specific requirements of its clients.

Its successful management of its in-house knowledge has allowed Business Partners to replicate its operations across South Africa and, more recently, in other countries in Africa as well.

The genesis of Business Partners can be found in the experiences of Anton Rupert, who founded Rembrandt, one of the leading global luxury goods firms. In the late 1970s, Rupert began receiving unsolicited business plans from local entrepreneurs. At the same time, he became concerned about the effects of grand apartheid, which forced different races to live in separate geographical areas. After SBDC was formed, its first managing director did extensive research on SME development practices around the world and, as a result, identified four needs common to most SMEs: money, support, advocacy, and access to premises.

At its inception, SBDC/Business Partners was 50% owned by the government, with the remainder owned by the private sector. The government controlled only 25% of the board, and its representatives included senior civil servants from DTI, the Ministry of Finance, and IDC. The original motivations for the government's investment in Business Partners remain unclear, but anecdotal evidence suggests that Rupert sought government funding as a way to leverage private investment. From its inception, Business Partners was controlled by the private sector.

Business Partners had total assets of R 2.1 billion at 9/30/07. According to its corporate website, Business Partners has invested over R 6.6 billion in entrepreneurs since its inception. It invested R 840 million in 664 businesses during the fiscal year ended 3/31/07, of which R 354.1 million was invested in 296 firms owned and managed by black Africans. The company has been consistently profitable; its return on average assets over the period 2003-2007 averaged 7.4%. While these results are lower than the aspirational returns of private equity or venture capital funds in South Africa or elsewhere, they indicate the sustainability of the Business Partners model.

The success of Business Partners can be attributed to a number of factors, including:

- First mover advantage—Business Partners was the first specialized financial institution in South Africa focusing on SMEs;
- Fit of business model with environment, e.g. focus on cash flow-positive, lifestyle SMEs, which are prevalent in South Africa's risk-averse business environment;
- Strong organizational skills, particularly in knowledge management;
- The Rupert factor—Anton Rupert's status as one of the country's leading entrepreneurs conveyed an aura of inevitability to the Business Partners experiment and probably provided significant political cover during the grand apartheid period

While some aspects of the Business Partners model are likely exportable to other countries, e.g. superior knowledge management skills and a business model suited to environments rich in lifestyle businesses, other aspects are specific to South Africa and are also path dependent, e.g. the first mover advantage and the Rupert factor. These factors suggest that the Business Partners approach can work elsewhere to a much more limited extent than it has in South Africa.

#### 4.2.5.10 *Policies targeting investees (moderate)*

As noted in the 2006 Global Entrepreneurship Monitor (GEM) report on South Africa, the country's relative ranking has declined since GEM began gathering data in 2001, while its overall level of entrepreneurship has held relatively constant (Maas and Herrington, 2007). These developments have occurred against a backdrop of steadily improving macroeconomic prospects, including significant increases in economic growth as compared to the apartheid era. A principal reason for this situation, according to GEM, is that entrepreneurs appear to lack the mindset and skills needed to access international markets, create employment, and pursue innovation (Maas and Herrington, 2007).

However, fund-level evidence suggests that dealflow levels at venture capital funds are comparable to those seen in countries with well-developed venture capital markets, contradicting the GEM findings. For example, one fully invested fund manager, focused on seed, startup, and early stage investments in technology-oriented firms, saw

377 deals over its investment period, from which it invested in 8 firms (2.1% of dealflow). These results are comparable to fund statistics in the US or Europe in this fund's focus area, strongly suggesting that levels of opportunity entrepreneurship in South Africa may be sufficient to sustain venture capital activity.

Based on a cross-country survey of experts, the overall policy environment for new venture creation in South Africa appears to be broadly comparable to other developing countries. The 2004 GEM report for the country indicates that the SME policy emphasis of the government is slightly positive, while SME program effectiveness is negative. These survey results also indicate that, while South Africa possesses a wide diversity of government programs to assist small businesses, these programs are not coordinated through a single agency and the personnel staffing these programs are perceived as being relatively incompetent and ineffective in assisting potential entrepreneurs (Orford, Herrington, and Wood, 2005).

Demand side programs include the following (listed in the order that entrepreneurs have used or heard of them, according to the 2004 GEM country report):

- Sector Education Training Authorities (SETAs)
- Competitiveness Fund
- Industrial Development Corporation
- Export Incentives
- Manufacturing Advisory Centers
- Ntsika (now part of newly formed Small Enterprise Development Authority (SEDA))
- Khula
- Brain
- Umsobomvu

While South Africa has elements of an innovation policy, it lacks an overall policy framework that effectively coordinates the various elements of governmental intervention. An independent Department of Science and Technology was only established in 2004 (this function was previously part of the Department of Arts and Culture), and a government fund to promote technological innovation (now known as

the Innovation Fund) was established in 2000. This fund initially focused on information and communications technology (ICT), but later expanded its remit to include biotechnology, new materials, and advanced manufacturing.

The initial efforts of the Innovation Fund focused on research funding for universities, which produce a significant quantity of world-class scientific research. For example, South Africa has approximately 50 A level science researchers, and important applied technologies (such as RFID tags) were developed in the country. However, the Fund soon discovered that university researchers were relatively unqualified concerning commercialization of the technologies they were discovering. As a result, the Fund has extended grants to four universities to establish technology transfer offices (TTOs) to collaborate with the business community.

#### *4.2.5.11 Conclusions regarding enabling conditions*

As indicated at the beginning of this section, the enabling conditions for South African venture capital vary in their support for Gilson's simultaneity conditions. One finding that emerges from a review of these factors is that two of Gilson's conditions--pools of capital and specialized financial institutions--appear to be supported by weaker enabling conditions than Gilson's third condition, that of entrepreneurs.

This finding is counterintuitive, given South Africa's relatively low level of opportunity entrepreneurship in comparison to other developing economies and the apparent advanced nature of South Africa's financial services sector. The 'deviant' nature of the South African case of VC emergence lies in part in this finding. In particular, the conservative asset allocation policies of local institutional investors and poor exit liquidity prospects despite a well-developed local stock market, when combined with somewhat ineffective government programs in support of entrepreneurial finance, has limited VC emergence.

Having now considered enabling conditions, I now consider how these translate into Gilson's simultaneity conditions in the South African context.

#### 4.2.6 *Gilson's simultaneity conditions in South Africa*

Concerning Gilson's simultaneity conditions precedent to the VC cycle in the current incomplete model of VC emergence, the evidence is mixed. Respondents have reported that each of these conditions is present in sufficient quantities to stimulate the VC cycle. In particular:

- Pools of capital—South Africa is notable for its large number of US dollar millionaires, estimated at 48,586 in 2007 (Capgemini and Merrill Lynch, 2007). Informants also report evidence of local entrepreneurs investing as angels or VCs in startup or early stage firms. In addition, large pools of capital are controlled by government and private sector pension funds, although government investment in VC funds has been problematic in some instances. However, very little private capital is currently being invested in early stage VC funds;
- Specialized financial institutions—Informants report no barriers to the establishment of VC funds or fund management organizations, including legal forms conferring limited liability on investors. The regular establishment of VC funds since the late 1990s confirms that specialized financial institutions can operate in the South African environment.
- Entrepreneurs—While general studies of South African entrepreneurship indicate a paucity of opportunity-oriented activity (Maas and Herrington, 2007), informants report sufficient deal flow to operate VC funds. For example, one technology fund manager reported that it invested in 2.1% of the deals it saw, roughly equivalent to metrics of VC funds in other markets.

Given Gilson's requirement that all three of the above conditions be satisfied in sufficient quantities in order for venture capital to emerge, and given the above-noted questions about whether two of the three conditions have been met, we can conclude from this simple assessment that, since two of the three simultaneity conditions do not appear to be present in sufficient quantities, venture capital is unlikely to emerge in South Africa.



And yet it did. Earlier in this thesis, I noted that South Africa was selected as a case study because it appears to be ‘deviant’ and thus interesting from the standpoint of theory-building regarding venture capital emergence. In South Africa the VC sector has emerged and then submerged. The previous discussion of the enabling conditions underlying Gilson’s simultaneity conditions has provided some clues as to why this pattern of emergence may have occurred. On the surface, the South African environment for VC emergence appears to be promising, but a variety of underlying weaknesses--those having an impact on developing sufficient stocks of capital to invest in VC funds and the specialized financial institutions required for VC fund management--appear to be limiting continued emergence. Despite these weaknesses, and the relatively low level of opportunity-oriented entrepreneurship, what may be most interesting is that VC emerged at all in South Africa. The pattern of emergence, followed by submergence, adds further to the ‘deviant’ nature of the South African case.

Therefore, other processes may be at work, along with simultaneity, that allow South African VC funds to efficiently operate the VC cycle. This consideration of enabling and simultaneity conditions has highlighted the central role of government in South African venture capital emergence, and some initial comments along these lines seem in order at this point. The emergence of new populations of organizations, such as South Africa’s venture capital sector, requires a variety of strategies at various levels within the economy (Aldrich and Ruef, 2006). Aldrich and Ruef’s theoretical perspective suggests ways in which governments and development finance institutions can encourage the emergence of new populations of organizations generally and venture capital in particular. These ways make more likely the successful realization of a new population’s sociopolitical strategies.

In the case of South Africa, a careful analysis of these strategies and the facts on the ground suggests that a weakening of the networks of trust in the post-apartheid era may have severely limited the promise of venture capital. In particular, the comfortable “old boys” business networks of the apartheid years have been reshuffled, while new networks have continued to emerge. Venture capital funds are sensitive to robust networks of contacts to facilitate all stages of the investment process, from fundraising

through dealflow generation to exit. To varying degrees, fund managers appear to have created dealflow generation networks, but have suffered in their efforts to develop networks to facilitate both fundraising and exit.

In South Africa networks that facilitate both fundraising and exit ultimately lead to the same destination: the government. For different reasons, fund managers have not yet established sufficient levels of trust with government in the post-apartheid era to empower their fundraising or exit efforts. On the fundraising side, public sector investment in venture capital funds is perceived by fund managers as both necessary (as government is the largest investor in venture capital by a substantial margin) and an impediment to attracting private investment. Government investment does not appear to catalyze private investment in to venture capital, yet government investors are perceived as obstructive in their governance of fund operations. As a result, fund managers see government investors as a “necessary evil,” an attitude which does not facilitate the development of a fundraising network based on trust.

On the exit side, it seems clear that Reserve Bank exchange control and intellectual property policies have significantly limited exit liquidity for the many fund managers seeking offshore buyers for their investees. Perhaps more important than the policies themselves is the thin dialogue that currently exists between the venture capital community and the privately owned Reserve Bank on these matters. This result may be rooted in both the legal independence of the Bank, as well as the concession that the ANC made to the Afrikaner business community when it allowed the apartheid-era governor to remain in place after 1994.<sup>46</sup>

While the South African government remains relatively open and accessible to the venture capital sector, low levels of trust between the two appears to be an element in venture capital’s recent submergence. Building trust is an exercise in social capital creation. Social capital can contribute to development when synergies within professional alliances, and between the state and civil society or the private sector, can be achieved (Woolcock and Narayan, 2000). The state’s role in this process is the

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<sup>46</sup> The governor, Chris Stals, remained in power until August 1999, when he was replaced by Tito Mboweni, an ANC loyalist and economist.

critical one, as it is in the best position to build alliances across boundaries in society, but firms and communities also play an important role by rewarding good governance and searching out “pockets of efficiency” (Fox, 1992) within governmental organizations.

It is important to note that the National Economic Development and Labor Council (NEDLAC) is one mechanism through which the government can establish a dialogue with the private sector. Established in 1995, NEDLAC was originally intended as a consensus-building device across society, but, as Mbeki centralized economic policy-making, its purpose has shifted to more minor tasks, such as industry-level studies.

A summary of the weaknesses in existing government policies and programs in support of private equity and venture capital is as follows:

**Table 4.18--Weaknesses of Existing Government Programs Supporting Venture Capital, South Africa**

	<b>Demand Side</b>	<b>Supply Side</b>
Environment	<p>High levels of market concentration limit attractive opportunities for new businesses in many existing industries</p> <p>Small local market for most products and services requires early internationalization by VC-funded firms in order to achieve high returns to investors</p> <p>Limited regulatory reform since fall of apartheid, including on competition policy, employment law, and small business registration</p> <p>Commingling of BEE/job creation and innovation policies can create conflicting outcomes and does not clarify overarching emphasis; absence of overall innovation policy framework</p> <p>Immigration barriers may have limited entrepreneurial minorities</p> <p>BEE may misallocate existing human capital</p>	<p>No senior-level VC “champion” within government</p> <p>Technically illegal to invest government grant money</p> <p>National Credit Act now restricts borrowings on credit cards and against housing</p> <p>Interventionist Reserve Bank policies, including exchange controls and IP cross-border restrictions, limit exit liquidity</p> <p>Regulation 28 of Pension Funds Act is unclear and limits pension fund alternative asset allocation (no “prudent man” rule)</p> <p>Limited evidence to date that VC provides sufficient risk-adjusted returns to investors</p>

	<b>Demand Side</b>	<b>Supply Side</b>
<b>Firm</b>	<p>Perceived difficulty in establishing new firms, including income and capital gains tax, and employment law barriers</p> <p>Limited R&amp;D commercialization infrastructure, especially at universities</p>	<p>IDC de facto principal funder of seed, startup, and early stage funds; perceived as bureaucratic and controlling</p> <p>Limited evidence of learning, both within VC sector and between government programs funding sector</p> <p>No incentives to private investors to participate in public/private funds</p> <p>Higher recent returns from private equity appears to be crowding out VC</p> <p>Perceived low levels of angel finance by some VC fund managers</p> <p>Many government VC and SME programs staffed by ill-qualified political appointees</p>
<b>Individual</b>	<p>Small and possibly shrinking number of opportunity entrepreneurs</p> <p>Low tolerance for risk-taking or failure</p> <p>Perceived large opportunity cost of starting a new business</p>	<p>Limited supply of qualified fund managers, especially given BEE mandate</p>

Source: Author

If we were to rely exclusively on Gilson's model, venture capital would not emerge in South Africa. However, the current incomplete and implicit model of VC emergence described in Chapter 2 contains a second element--the efficient operation of the VC cycle. Perhaps relatively weak simultaneity conditions can in some way be compensated for by efficient fund operation. As noted above, I also found evidence that the relationship between the government and private sector fund managers may also be an additional sub-process within the venture capital emergence process.

#### 4.2.7 *From country-level to fund-level case study*

I conducted an exploratory round of fieldwork in South Africa in June 2007, consisting of 12 semi-structured interviews with government officials, fund managers, and academics (a full interview list is included in appendix 2). These interviews and the resultant analysis formed the basis for the South African country-level case study.

Upon my return, content analysis of the interview notes was undertaken to identify possible patterns across interviews. To conduct this analysis, a coding system was developed inductively, resulting in 10 general categories and 38 subcategories. Each interview comment was coded using this system, resulting in a total of 259 coded comments.

A frequency analysis of the coded comments indicates that the following codes were most frequently mentioned (accounting for 80% of the comments):

**Table 4.19--Coding Frequency Analysis, South Africa Interviews**

Government-fund	49	Complements-general	9
Universities	23	Substitutes-private equity	8
Macro-economic	19	Government-change	8
Macro-general	18	Learning-within org	6
Champions	15		
Government-regulation	15		
Norms-BEE	13		
Norms	12		

A review of the coding frequency analysis revealed several surprising findings. First, universities were a much more frequent report than expected, suggesting that these organizations may play a more important role in South African venture capital emergence than previously believed. Second, macro-level reports (macro-economic and macro-general) represent a large share of the total reports, suggesting that the

enabling conditions were not as attractive as the quantitative data on South African indicated. Third, a very low level of reports on learning indicated that little learning was happening as the South African venture capital industry began to emerge. Taking into account this frequency count and the individual comments indicated some potentially promising avenues for pursuit as I gathered data for the fund-level case study:

- Lack of coordination among programs concerned with VC developments appears to be widespread, with the Department of Trade and Industry apparently acting in a weak coordinating role for a portion of the programs;
- Black economic empowerment, and the commingling of innovation and job creation objectives, may serve to retard the development of the VC sector, including the emergence of public venture capital;
- An unexpectedly large number of comments focused on the weak macro environment in South Africa (both generally and economically). Well-developed legal and regulatory structures and above-historical trend economic growth do not of themselves appear to be sufficient to stimulate VC formation;
- South Africa appears to have many mini-champions of venture capital, but no single figure that has served to catalyze the industry's development;
- The overall enabling conditions that appear to support VC development appear to be deteriorating over time in the post-apartheid period
- Despite a great deal of organizational change within the government and a significant degree of experimentation within individual programs (such as IDC), little cross-organizational learning appears to have taken place.

These conclusions suggest to me that, before examining emergence at the fund level, it may be important to tease out the role of relations between the government and private fund managers in South African VC emergence. I turn now to a direct consideration of this relationship.

#### 4.2.8 *The role of coproduction and embeddedness in South African venture capital emergence*

I find strong evidence that coproduction and embeddedness between governmental investors and private VC fund managers have weakened in the post-apartheid era. While early efforts at VC emergence, such as the creation of the Small Business Development Corporation (SBDC) in the late 1970s, involved intimate involvement between private and public sector actors, post-apartheid attempts at VC emergence show evidence of a growing distance between public and private sector actors.

Two events seem of critical importance to the dilution of embeddedness between government investors and fund managers—the 1999 “jumpstart” of the industry spearheaded by IDC, and the efforts, beginning in 2003, to promote a BEE program at the national level. IDC’s first round of VC fund investing appears to have been driven by a topdown commitment to developing South Africa’s innovation capacity. This commitment was articulated by the Department of Trade and Industry (DTI), but was ultimately a product of the economic policymakers of the Mbeki administration. Based on interviews with fund managers active then, no evidence exists that fund managers were actively consulted as this policy was drafted. This lack of active consultation may be due to a variety of factors, including the autocratic nature of the Mbeki administration (Gumede, 2005).

The design and implementation of the 1999 IDC program also reflected the weak embedded relations between IDC and the funds in which it invested. IDC officials expressed general disappointment with these funds’ performance, commenting that 1) none of the initial funds in which they invested were able to raise the levels of total capital expected at the time of their commitment and 2) all were past their deadlines for reaching full investment. In part as a result of IDC’s disappointment with these funds, and rather than seeking to understand the sources of underperformance or the perspective of the fund managers, IDC decided to establish a direct investment program, placing it in competition with the funds that they helped establish.



Fund managers also appeared to make little effort to strengthen their embedded ties with government investors in the post-apartheid era. One fund manager expressed resentment that IDC's investment added no value to its initial fund-raising efforts, as it did not catalyze other investment in the fund. In testimony before the Parliament's Committee on Science and Technology concerning the establishment of a Technology Innovation Agency, a South African fund manager stated that "(t)ypically, Government Agencies do not have the capacity to fulfill this role of value-add investor and from our experience with the BRICs (N.B.—Biotechnology Regional Innovation Centers), their personnel do not have the expertise, networks or time to perform these functions" (Sherwin, 2008).

These post-apartheid era views can be contrasted with the embedded relations between public and private sector actors concerned with VC in apartheid-era South Africa. Anton Rupert, a leading Afrikaner entrepreneur and founder of Richemont and the Rembrandt Group, formed a close relationship with the highest levels of government during that era, which was central to the establishment of SBDC (Dommissie, 2005).

In general, government policy initiatives are purposeful in nature. In what ways, if any, does the VC emergence process in South Africa resemble a teleological model of social change? As noted earlier, teleological models consist of four stages—goal formulation, implementation, evaluation, and modification—which are not necessarily sequential (see Figure 2 for an indicative illustration). The motor of change is purposeful social construction, while change takes place constructively at the level of a single entity. Does the South African VC emergence experience show evidence of purposefulness, particularly regarding the relationship between the public and private sectors? I now examine each stage of a generic teleological process for evidence of that such a process type exists, before considering whether that process is purposeful.

#### *4.2.8.1 Goal formulation*

The formulation of goals related to VC emergence in South Africa has taken place largely in the context of the country's post-apartheid political economy. The focus of the ruling ANC has been on macroeconomic stabilization, given the fragile state of the

economy inherited from the apartheid-era government. Predating these concerns, however, has been the historic commitment of prior governments to industrial development, which can be seen clearly in the establishment of IDC in 1940.

In examining the goals related to VC development, one underlying theme has been the dialectical conflict between the goals of job creation and innovation. This ongoing confrontation has failed to generate a synthesis to date. As in many other countries, VC development in South Africa has not been a direct goal in itself, but, instead, has been linked to other economic and social goals. This linkage first emerged in the late 1970s, when the objective of **job creation** for both black Africans and whites played an important role in the establishment of the SBDC. Government encouragement of entrepreneurship—and the related interest in stimulating VC—reflected the structural break experienced by the South African economy linked to the decline of gold mining (Feinstein 2005). The introduction of international sanctions in the mid 1980s led to a second, temporary goal of **import substitution**, which played some role in the establishment of the private equity industry but appears to have a limited impact on entrepreneurship and VC. One informant indicated that, while sanctions could have created demand for locally produced products and hence stimulated entrepreneurship, most potential entrepreneurs and their financiers sensed that the opportunity presented by sanctions would not last very long.

**Innovation** emerged as a goal directly linked to VC in the late 1980s, although government interest in this goal can be traced to the 1962 establishment of the South African Inventions Development Corporation (SAIDCOR) as a division of CSIR. Several informants described South Africa's innovation capacity as being “mid level” and focused primarily on applications. A key economic policy maker stated that “in general, South African manufacturing firms had no reputation for genuine product innovation” but also noted apartheid-era innovations in areas such as oil from coal, nuclear power, military specification electronics, communications technologies, and systems integration capabilities (Hirsch, 2005). Two important industrial innovations—lithium batteries and RFID tags—emerged from these efforts, while one significant process innovation—human-to-human heart transplants—was pioneered in the country.

The first implementation of innovation as a goal related to VC occurred in 1988, when IDC and SAIDCOR formed Technifin, the primary purpose of which was technology commercialization. After making four investments, Technifin ceased operations in 1993-4, and IDC transferred its ownership to SAIDCOR. After Technifin's failure, innovation faded as a goal until the late 1990s, when it reemerged in the wake of the government's 1996 white paper on science and technology. This document described a national system of innovation, but, as one informant noted, South Africa lacked an integrated national innovation policy as of mid 2007. A national research and development (R&D) strategy was announced in 2001, as well as strategies for advanced manufacturing and biotechnology.

The drafting of a national VC program by DTI in 1999 was directly linked to the government's efforts to spur innovation, according to several informants. Perhaps reflecting the collective nature of the ANC leadership, no informant could point to a national-level champion for this effort; innovation policy was reported by informants as simply one element of economic policy.

The final report to DTI on the national VC program made four recommendations, which articulated for the first time goals related to VC development in South Africa:

1. Development and maintenance of a VC infrastructure, including education and business support;
2. Encouragement of and assistance to entrepreneurs, including a network of facilities, workshops, and mentorship;
3. Direction of Government-supported research and development, including rationalization of programs across departments, earmarking of 20% of parliamentary funding to be matched with private funding, allocation of R&D funding for SME benefit, and tax concessions, and;
4. Increased availability of seed and early stage capital through the establishment of five VC funds modeled on the Australian Innovation Investment Fund (IIF)

program, the development of private capital sources, and the encouragement of an active angel network (Stillman, Sunderland, Heyl, and Swart, 1999).

The increasing emphasis on innovation and VC development in the late 1990s was underpinned by the growing emphasis by Presidents Mandela and Mbeki on **economic growth**, which can be dated almost from the beginning of Mandela's presidency in 1994. In addition, at the level of VC fund managers, the goal of **catching the next technological wave** began to emerge in the late 1990s during the later stages of the global dot.com boom.

By 2003 another wave of goal formulation developed, focused once again on job creation, particularly for unskilled black African workers. South Africa's subpar economic growth and a changing economic structure that was shedding unskilled jobs heightened concern amongst policymakers that the benefits of "the rainbow nation" were not being shared equitably. BEE and a related initiative, broad-based black economic empowerment (BBBEE), sought to increase black African participation in the economy through targeted ownership and employment percentages. The VC industry was able to manage the impact of BEE and BBBEE on its investees and fund managers through the more relaxed BEE/BBBEE requirements for small business, as well the inclusion of VC investments as BEE-qualifying for ownership quotas.

BEE/BBBEE heralded the return of the tension between innovation and job creation goals which has characterized VC emergence in South Africa since the late 1980s. This tension and the formulation of goals across both the apartheid and post-apartheid eras are the most distinctive attributes of the VC goal formulation process in South Africa. While tension remains between these goals, it seems clear that goal formulation in and around venture capital development has taken place in South Africa.

Have these goals been implemented?

#### *4.2.8.2 Implementation*

The unresolved conflict between the goals of innovation and job creation has had an impact on the implementation of those goals as a part of the VC emergence process. The implementation portion of the emergence process can be divided into two historical phases: pre-1999, where SBDC/Business Partners and Technifin were the principal initiatives, and post-1999, where IDC was the key driver of VC development.

Technifin and Business Partners represent fundamentally different approaches to implementation of VC-related goals. Established in 1980 as SBDC, Business Partners focuses on providing a range of financial and property services to the SME sector in South Africa and elsewhere in southern and east Africa. Currently 20% owned by the South African government via Khula, Business Partners has had a long-standing interest in VC and private equity, although the bulk of its activities consist of debt finance to established, lifestyle SMEs. Its business model emphasizes providing a mix of debt, equity, quasi-equity, and real estate products, which can be tailored to meet the specific requirements of its clients.

Following the establishment of formal goals and recommendations for VC development in late 1999, IDC was directed by DTI to implement the recommendation concerning the establishment of new VC funds. However, it was clear from the outset that the design of IDC's VC fund program varied from that proposed in the recommendations made in the report on VC to DTI in 1999 (Stillman, Sunderland, Heyl, and Swart, 1999). In particular, the IDC did not provide incentives to private investors to invest in these funds; IDC's investment was *pari passu* with private investors, and its returns were not capped. Table 2 indicates those VC funds in which IDC invested.

IDC investments in VC funds took place in two phases: 2000-1 and post-2001. A key difference between the two phases is the shift from technology-oriented funds in the former to more generalist investment strategies in the latter. This shift does not appear to have been made with the benefit of any formal evaluation of the performance of the funds in the first phase.

While IDC's fund investments were the principal efforts directed at VC implementation, other VC funds were established primarily with private sector capital, including Ethos' Tech Fund I (Rand 270 million in capital under management, established 2001-2) and HBD Fund I (Rand 70 million under management, established 2000). Both funds focused on early stage technology firms, although Ethos preferred businesses with existing revenues.

I conclude that the South African government has attempted to implement the varied and contradictory goals associated with venture capital development, using IDC as its principal instrument. Experience from other countries attempting to establish VC industries suggests that many governments can formulate (flawed and contradictory) goals, and many of those are able to implement some kind of government support program for venture capital. However, few have been able to move beyond the implementation phase to an evaluation of these goals and how they have been achieved to date? I now consider South Africa's experience with evaluation of its VC support programs.

#### *4.2.8.3 Evaluation*

Despite dissatisfaction with the overall implementation of VC, limited formal evaluation of the industry has occurred to date. However, much informal evaluation of VC was provided by informants, indicating that this activity within a teleological process has occurred. The two known instances of formal evaluation are IDC's 2006-7 self-study of its experience with VC fund investment, and the industry association's 2008 draft white paper on proposed changes in regulations having an impact on VC investment.

IDC's self-study examined other models of VC investing, including the experiences of the International Finance Corporation (IFC), 3i, Commonwealth Development Corporation (CDC), and Enterprise Ireland. IDC concluded that it had learned enough from its fund investing experience to shift to direct investing. This conclusion was notable for differing with mainstream academic and practitioner views on public VC,

which emphasized public-private partnerships in which government plays the role of a passive investor with capped returns.

The Southern African Venture Capital and Private Equity Association's (SAVCA) evaluation of the industry has taken the form of a draft white paper on VC development. To date, the industry association has focused on regulatory changes, such as tax treatment of capital gains (favorable changes in which were included in the government's 2008 budget speech) and exchange controls, rather than on the goals associated with VC, the implementation of these goals by fund managers and investors to date, or a formal evaluation of goals and/or implementation. Informants have indicated a growing recognition of the importance of strengthening embeddedness between government actors and fund managers, including the need for a forum for dialogue with the National Treasury and improved linkages with government actors concerned with innovation policy.

Informal evaluation of South Africa's experience with VC to date is widespread amongst the key stakeholders in the industry. Informant reports about evaluation have generally focused on implementation issues and the broader enabling environment, rather than on goal formulation and the unresolved tension between innovation and job creation. Regulatory constraints (including those limiting exit liquidity), political distortions having an impact on fund managers (including BEE/BBBEE, government investor micromanagement, and the concentration of early stage capital in the hands of government investors) and deal flow issues were most frequently cited by informants in their evaluation.

I conclude that evaluation of South Africa's venture capital support programs has taken place, albeit in a largely informal manner. To complete a teleological process, actors must respond to evaluation (formal or informal) and modify goals, implementation of those goals, or sometimes both. Has South Africa acted to do so?

#### *4.2.8.4 Modification*

Despite limited formal evaluations, significant modifications have been made to the implementation of VC in South Africa. However, the tension between innovation and job creation goals has remained unresolved to date, and both goals remain central to VC development.

Specific modifications to VC implementation include 1) IDC's shift from funds to direct investing, 2) the impact of BEE on future fund-raising efforts, including the need to alter fund management company ownership in order to raise local funds, 3) Blue Catalyst's (a regional fund established by the Gauteng provincial government) shift away from VC to networking, 4) the shift to later stage investing by early stage VC funds and the discontinuation of some early stage funds, and 5) the Innovation Fund's shift to commercialization and IP protection.

While modification of the goals associated with venture capital emergence in South Africa has not occurred, significant informal modification of the ways in which these conflicting goals are implemented has taken place. As a result, it appears that a purposeful process aimed at aiding VC emergence has taken place between the South African government and private sector fund managers. Sometimes acting together, and sometimes separately, the public and private sectors took a variety of actions over a lengthy period, suggesting that this process has been relatively slow. For example, goal formulation began in the late 1970s with policy pronouncements on job creation and continued until 2003 with the BEE initiative, a period of 24 years. Implementation can be argued to have started in 1980 with the establishment of SBDC (Business Partners' predecessor) and continued to today, a period of 29 years; some may date implementation from the IDC phase, beginning in 1999. The evaluation period has been relatively short (2006-8), marked at its start by IDC's self study and concluded with SAVCA's white paper. Modifications to the implementation of VC policies has taken place in the last two or three years as well.



Now that a purposeful process associated with VC emergence involving the state and private sectors has been established, I turn next to the evidence that this process is one of coproduction between these sectors.

#### *4.2.8.5 Evidence on coproduction*

Given the mixed picture on simultaneity conditions in South Africa, has the subsequent VC cycle come into operation? While I will explore this question in greater detail in the fund-level case study later in this chapter, respondents have indicated that as of mid 2007, the VC cycle appears to be incomplete as viewed across the industry as a whole. In particular, in some instances fund managers have raised second funds without securing exits from investments made in earlier funds at attractive IRRs. In most cases, these second funds have been raised in part by altering significantly the investment strategy. For example, one informant secured commitments from investors for a second fund by broadening its investment strategy beyond South Africa and the specific technology domain of its first fund. Another fund manager altered its investment strategy to focus on later stage transactions.

Do the existing life cycle-based models of VC emergence--Gilson's simultaneity conditions and Gompers and Lerner's VC cycle, in sequence--give a better account of VC emergence in South Africa than a teleological model such as coproduction? Based on the current evidence, while the underlying logic of the simultaneity/VC cycle model appears to be present in the day-to-day operations of individual funds (particularly in the stages from fundraising to monitoring and adding value), the sequence of events associated with VC emergence in South Africa also seem consistent with a teleological model, in which events did not seem to proceed in a necessary order, but included many unresolved conflicts (such as that between job creation and innovation in the goal formulation process), dead ends (such as the failure of Technifin), and ad hoc adaptations in the absence of formal objective evaluations (such as IDC's shift to direct investing). We turn now to consider what role, if any, coproduction may have played in a teleological narrative of VC emergence in South Africa.

A key difference between life cycle and teleological processes of change is that the latter does not prescribe a necessary sequence of events (Van de Ven and Poole, 1995). If VC emerged in South Africa in a sequence of events that varies from that seen elsewhere, then this narrative may suggest that the VC emergence process has a teleological element. More particularly, if purposeful coproduction of VC in South Africa took place between government investors and fund managers, and if that particular sequence of events varies from VC coproduction processes elsewhere, we can conclude that the role of coproduction is important in the evolution of a country's VC industry.

As noted earlier, we suspect that coproduction may be a central component in any teleological process of VC emergence. In this narrative, coproduction is socially constructed by the government and fund managers, both of which are interested in the emergence of an active VC industry. From the government's standpoint, the primary interest is in filling the "equity gap" that appears to exist for seed and early stage investments in young innovative firms, while fund managers have an interest in securing patient (and cheaper) capital, usually unavailable from private sources, that can serve as the basis for developing the track record required to raise the next fund. Evidence for attempts at coproduction in the South African VC industry can be seen by examining cooperation between government and fund managers at three levels: policy changes, modifications to existing goals and implementation, and day-to-day operations. At the level of policy change, the contrast can be drawn between Anton Rupert's intimate involvement with government in the development of SBDC in the late 1970s and early 1980s, and, as indicated by informants, the more modest efforts of SAVCA to change regulations having an adverse effect on VC exits in 2007-8. South Africa's experience in this regard can be contrasted with that of the UK, where Ronald Cohen and David Cooksey have advised government on public VC policy as powerful insiders. South Africa has lacked such gurus to date.

At the level of changes to the goals and implementation of existing VC programs, informants indicated a contrast between fund managers having had little direct impact on IDC's programs, while playing a more significant role in altering regional programs, such as Blue Catalyst. At the level of day-to-day operations involving funds in which

IDC has invested, informants indicated a steadily deteriorating situation characterized by micromanagement, slow decision-making, and marginal contributions to private fundraising of government investment. This narrative suggests that, while coproduction between government and fund managers exists, it has steadily weakened over time.

Using this country-level case study as a foundation for further exploration, I turn next to examine whether the findings at this level can be replicated at the fund level. In particular, I am interested in establishing if the coproduction process can be found at the fund level. I consider these questions by examining the case of Bioventures, a South African venture capital fund.

#### *4.3 Fund level: Bioventures case study*

In this portion of Chapter 4, I utilize the insights gained from the country-level case study of South African VC emergence to further develop a more complete model of VC emergence. After a review of South African technology and innovation policy, the story of a South African VC fund--Bioventures--is narrated and then interpreted. These data confirm the findings of the country-level case study that coproduction is central to the VC emergence process in this economy. This case study concludes by asking whether other processes may be at work in VC emergence, a topic addressed by the Botswana case study in Chapter 5.

I turn now to the story of Bioventures, a South African biotechnology VC fund.

##### *4.3.1 Introduction*

In this case study I focus on two key objectives. First, does the fund's evolution since inception show evidence of the VC cycle, the second element in the incomplete model of VC emergence? Second, what evidence, if any, can be established regarding a possible coproduction process between private fund managers and government investors?

The choice of Bioventures as a case study was somewhat idiosyncratic. Venture capital fund managers are notoriously secretive, and establishing access to the data required for a rich case study is often impossible. Such is especially the case in developing countries, where trust of outsiders may be relatively low.

I was introduced to Bioventures' fund manager by a South African academic that I met during initial fieldwork. The resultant interview revealed a respondent unusually willing to speak her mind about the challenges faced in building a venture capital fund in South Africa. Subsequent negotiation resulted in almost total access to Bioventures' data, including all annual reports since the fund's establishment, board minutes<sup>47</sup>, several of the fund's investees, and extended interviews with the fund's small staff. As a result, a fund level case study of Bioventures presents an unusual opportunity, despite the fact that it was not chosen objectively.

A second idiosyncratic element in the selection of Bioventures is that the fund focuses on biotechnology investments. It is the only VC fund in South Africa exclusively focused on this industry. Biotechnology is different from other economic activities, in that it is a means of production, rather than a set of products and services that would normally characterize an industry (Hacking, 1986). Biotechnology also depends to a much greater extent than other economic activities on basic research, which creates substantial uncertainty about commercializing its products (Bartholomew, 1997). Biotechnology innovation often takes place between firms and research institutions, rather than within firms.

As a result, biotechnology innovation can be understood as a product of the stocks of scientific knowledge contained in research establishments and firms and the flows of that knowledge between them. A framework accounting for the operation of this stock and flow system consists of eleven interlinked elements, including VC (Bartholomew, 1997), and assessing South Africa along these dimensions indicates that the country's institutional framework for biotech innovation remains relatively weak, except for government policy and utilization of foreign technology.

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<sup>47</sup> Unlike board minutes in many other jurisdictions, South African board minutes provide a greater level of detail about substantive issues, including, in this instance, conflicts between board members, and between the board and the fund manager.

Insofar as VC is central to operating a national system of biotechnology innovation, two conclusions can be reached from Bartholomew's typology. First, VC is not playing an important role in South African biotechnology today. Second, the biotech innovation system in South Africa is relatively weak, making it more difficult for VC to emerge.

The structure of the global biotechnology industry has been based on a model of intellectual property monetization borrowed from the information and communications technologies (ICT) sector in Silicon Valley (Pisano, 2006). However, the biotech industry is different from ICT in three important ways (Pisano, 2006):

- Highly risky drug R&D—high and persistent uncertainty in commercialization;
- Integrated drug R&D—pieces of the process cannot be easily disaggregated;
- Difficult to harness collective learning to realize drug R&D profits—associated knowledge is either intuitive or tacit

As a result, investments in biotechnology require long time frames and large amounts of funding, neither of which is generally suitable for VC investment (Pisano, 2006).

Thus, when examining a biotech VC fund in South Africa, a mismatch may exist between VC as a financial instrument and the financial needs of biotech firms. Such a mismatch is likely to be manifested in the need for multiple rounds of funding driven by the investee's needs (rather than staging investment for monitoring purposes by the VC fund) and exits at lower valuations driven by the incomplete commercialization of investee products. As a result, greater stress on the VC fund and its investees, as well as their relationship with one another and with the fund's investors, is likely to be seen.

Having established the special difficulties of biotech VC investing, which may be significantly greater than those faced by VC funds investing in other sectors such as ICT, I turn now to a description of the context within which Bioventures emerged, focusing on technology and innovation policy.

#### 4.3.2 *Technology and innovation policy in South Africa relevant to biotechnology*

Technology policy was largely neglected until the fall of apartheid in 1994 (Kaplan, 1999). At that time, the country was strong on basic science (particularly in defense and nuclear power), but relatively weak on technologies with large global markets. In 1994, the government established a Department of Arts, Culture, Science and Technology (DACST), the first ministry dedicated to science and technology. The ministry's creation was quickly followed by the 1996 publication of a white paper on science and technology, which used the national system of innovation (NSI) framework. South Africa was the first developing country to use NSI in its technology policy.

These promising beginnings were followed by a period of drift and relative inactivity. In 2001 the government promulgated a national biotechnology strategy (DACST, 2001), which some observers have noted as being too heterogeneous to provide necessary focus to innovation efforts (OECD, 2007). A central component of this strategy was the creation of Biotechnology Regional Innovation Centers (BRICs), which were to focus on creating new intellectual property (DACST, 2001). In 2002 a national research and development strategy was published, within which tensions between basic goals were evident (Kaplan, 2004).

In 2006 the National Advisory Council on Innovation (NACI) evaluated the national system of innovation (NACI, 2006), which represented a key input into the OECD's review (OECD, 2007). NACI's report identified that South Africa's NSI was slipping in comparison to peer countries. It also pointed to unfocused research under the apartheid regime and continued underdevelopment of human capital as the main reasons for that slippage. VC also is discussed in the NACI report, namely the paucity of seed, startup, and early stage funding and the lack of cooperation between VC funds. Little mention of VC is made in the OECD review, suggesting that this organization sees VC as an insignificant constraint to innovation in South Africa.

Finally in 2007 DST published a draft 10 year plan for the South African NSI. The plan calls for a substantial expansion of the country's innovation activity and is centered on five "grand challenges," including biotechnology (Kaplan, 2008). A critical review of

this plan called attention to the increase in the lack of focus in innovation policy inherent in this plan, an issue also identified as a weakness in the OECD review (Kaplan, 2008).

In summary, VC has played a relatively minor role in South Africa's NSI to date. However, biotechnology has become an increasing focus of the government's technology policy, suggesting that a VC fund (such as Bioventures) focused on this domain may have relatively greater policy significance.

Having established the challenging context in which Bioventures was conceived, I now turn to a narrative history of its emergence. This narrative identified four phases in the fund's emergence: background and fundraising (1998-2001), launch and first deals (2001-2002), full investment and emerging problems (2003-2005), and the next fund (2006-present).

#### *4.3.3 Background and fundraising (1998-2001)*

Bioventures (BV) was formed in November 2001 by Heather Sherwin, a young Ph.D. with some experience in investment banking. After earning her doctorate in cell biology from the University of KwaZulu-Natal in 1994, Sherwin completed postdoctoral studies at the University of Cape Town (UCT) and in France. In 1998 she returned to school to study for an MBA at UCT. While at UCT, she became interested in finance and venture capital through lectures given by Mike Page (now dean of executive education at Erasmus University in Rotterdam).

As Sherwin finished her MBA, she noted the internet boom and saw biotech as the next wave. However, in South Africa banks were for the most part not interested in the biotech sector. One exception was Gensec Bank, which was part of the Gencor mining group. Unlike other South African banks, Gensec liked to have people around with PhDs, on the theory that, once hired, they would be likely to find a role and do it well. Sherwin joined the bank's internationalization division in 1999, which focused primarily on mergers and acquisitions work.

Shortly thereafter, in 2000 Gensec Bank bought Sanlam Asset Management, the investment management arm of Sanlam, one of South Africa's largest financial services companies. Because Gensec Bank bought the firm for shares, a majority of Gensec Bank's shares were now owned by Sanlam. Reflecting the more conservative corporate culture of the later, Gensec Bank became much less entrepreneurial as a result.

This development posed a problem for Gensec Bank, as it had started the first venture capital fund, Archway I, focused on information technology in South Africa. Archway I had been very successful, achieving an IRR of approximately 40%, but a subsequent fund, Archway II, collapsed, indicating the highly risky nature of venture capital in South Africa.<sup>48</sup> Ron Den Besten, head of Archway I, was interested in biotechnology, but Gensec and Archway may have constrained from investing in the sector by Sanlam's conservative hand.<sup>49</sup>

As a result of this constraint, and with Sherwin's interest in striking out on her own, Gensec Bank agreed in 2001 to invest R 5 million in a biotechnology-focused venture capital fund to be managed by Sherwin. Gensec Bank placed an important precondition on its investment: the fund must have a minimum total capital of R 50 million and maximum total capital of R 100 million. With this seed commitment, Sherwin set off to raise the remainder of the fund, which was to be called Biotech Venture Partners Trust Fund, or Bioventures for short.

Bioventures' investment prospectus called for the fund to invest in six sectors:

- Genomics
- Pharmaceuticals and fine chemicals
- Healthcare technologies
- Agriculture, floriculture, and mariculture
- Nutraceuticals
- Bioprocessing and biomaterials

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<sup>48</sup> Archway I's investors were Standard Chartered and Merchant Bank, Dimension Data, and Gensec Bank. Dimension Data was a South African IT firm that was interested in Archway I mainly as a source of dealflow for its own business development.

<sup>49</sup> As of March 2008, Den Besten is the head of Aureos South Africa.



What is immediately apparent from this list of priority sectors is that Bioventures had a much broader focus than biotech venture capital funds in the United States. Many were selected because Sherwin and Den Besten perceived that South Africa may have a potential competitive advantage in the underlying technologies or might possess some other advantage. The investment prospectus noted that natural oils and chemicals, genetically modified organisms for floriculture and mariculture, nutraceuticals, and bioprocessing looked to be particularly promising.

Of interest to prospective investors was the potential dealflow identified by Bioventures:

**Table 4.20--Initial Dealflow, Bioventures**

<b>Area of Biotechnology</b>	<b>Number of Deals</b>
Genomics	6
Pharmaceuticals and fine chemicals	9
Healthcare	10
Agriculture, floriculture, and mariculture	4
Nutraceuticals	3
Bioprocessing and biomaterials	5
<b>Total</b>	<b>37</b>

Source: Bioventures Placing Document (2001)

Bioventures' placing document also contained a remarkably short list of risk factors, which are worth quoting in full (Bioventures, 2001):

- "The success of the fund depends in substantial part upon the skill and expertise of the fund manager and the individuals employed by them. There can be no assurance that the present individuals will continue to be employed by the fund manager throughout the life of the fund.

- The fund may be competing with other funds, as well as with other investors and corporate buyers, for the investments that the funds will make. As a result of this competition, there may be fewer attractively priced investment opportunities than would otherwise be available, which could have an adverse impact on the length of time required for the fund to become fully invested.
- The investors' interests will not be transferable without the consent of the governing board, which consent may be withheld in the governing board's sole discretion. There is no public market for the investor's interests.
- General economic conditions in South Africa or in the world, including interest rates, the availability of financing, the price of securities and participation by other investors in the financial markets, may affect the fund's activities, such as the value and number of investments made by the fund. Moreover, investments could be adversely affected by changes in the general economic climate or the economic factors affecting a particular industry, changes in tax law or specific developments within such companies or interest rate movements.
- In the course of investing in South Africa, the fund will be exposed to the direct and indirect consequences of political, economic, social or diplomatic changes in South Africa that could adversely affect its investments. Political changes or a deterioration of South Africa's domestic economy or balance of trade may indirectly affect the fund's investment in a particular company in South Africa. While the fund manager intends to manage the fund's assets in a manner that will minimise its exposure to such risks, there can be no assurance that adverse political or economic changes will not cause the fund to suffer losses."

What is remarkable about this list of risk factors is their anodyne and generic nature, especially when compared with the extensive and detailed risk factor sections of private placement memoranda of venture capital funds in, say, the United States or the United Kingdom.

An obvious potential investor was IDC, which had recently launched its initial efforts to jumpstart the venture capital sector. However, to raise IDC money, Sherwin would need to attract a BEE partner. Gensec suggested Real Africa Holdings (RAH) as a potential solution. RAH was listed on the Johannesburg Stock Exchange and was a diversified investment holding company with interests in the gaming and leisure sectors. RAH agreed to invest R 20 million in Bioventures and also joined Gensec Bank as a 33% owner of Bioventure's fund management company.

Soon thereafter, Sanlam Asset Management committed R 15 million to Bioventures, bolstering the case for attracting IDC funding. Sherwin and den Besten next

approached Joyce Matlala, the head of venture capital investing at IDC.<sup>50</sup> IDC was familiar with Den Besten and Gensec, having invested in Archway II during IDC's initial tender round. Eventually, IDC committed R 20 million, which was increased slightly to allow IDC to have blocking control over the fund's investment decisions. IDC's commitment was made as part of a second round of investing in venture capital funds; most of these investments have failed.

Finally, the International Finance Corporation (IFC) approved a R 20 million investment in Bioventures in 2001. IFC had studied biotechnology in emerging markets and identified Brazil, India, China, and South Africa as promising economies for investment in this space. Bioventures was IFC's first venture capital investment in South Africa, although it had invested previously in Brait, one of the largest local private equity funds.

While Bioventures' fundraising efforts were generally successful, indeed remarkable for a first-time fund manager like Sherwin, not all prospective investors ultimately committed to the fund. The Public Investment Corporation (PIC), manager of South Africa's government pension funds, was interested in investing, but had never done a venture capital investment before. Interestingly, PIC issued a commitment to Bioventures, but never invested funds. Sherwin felt that Bioventures could not take PIC to court over this breach of contract, given the latter's power in the South African economy. Indeed, only one private sector actor, the mighty Anglo-American, had ever taken a government-related organization to court in the past.<sup>51</sup>

#### *4.3.4 Launch and first deals (2001-2002)*

Having succeeded in raising R 80.05 million, Bioventures held its closing on November 1<sup>st</sup>, 2001. The fund was launched at a turbulent time for both the global biotechnology industry and South Africa. After peaking in February 2000, the NASDAQ

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<sup>50</sup> After leaving IDC, Matlala moved to the Development Bank of Southern Africa (DBSA) and then to Kagiso, a BEE firm.

<sup>51</sup> Anglo-American sued IDC over the latter's investment in Kumba Resources, a large iron ore mining company now controlled by Anglo-American, in a takeover battle in 2001.

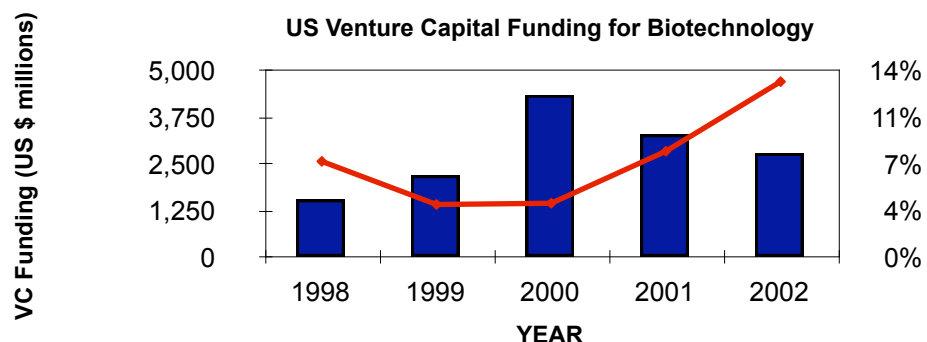
Biotechnology Index had declined through the end of 2001, albeit less dramatically than the NASDAQ as a whole:

**Figure 4.1--NASDAQ Biotechnology Index versus NASDAQ, 1995-2008**



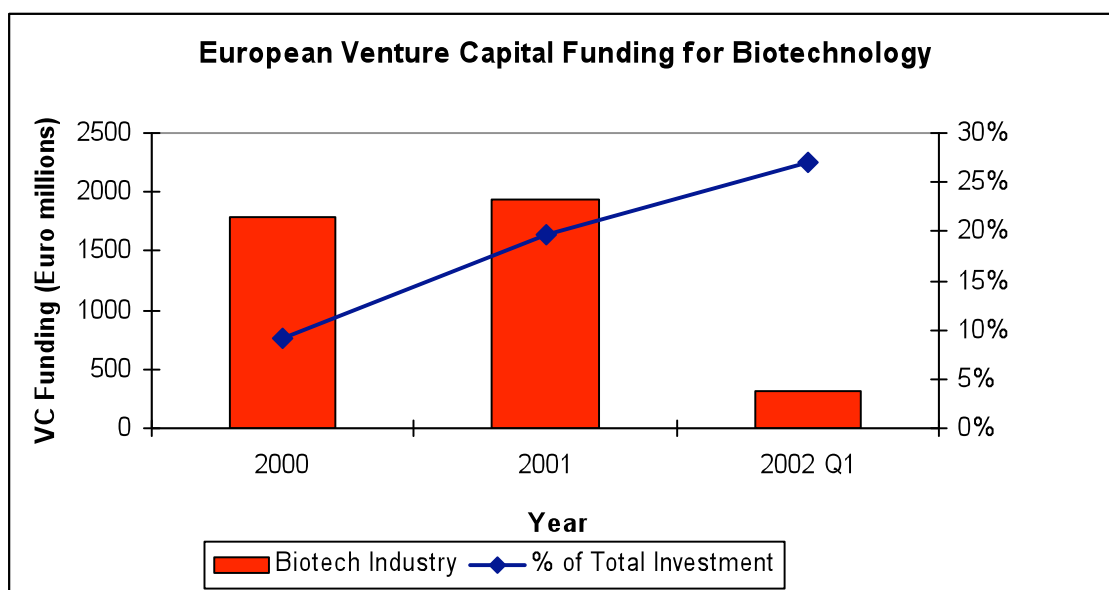
Venture capital funding for biotechnology had fallen in absolute terms in the United States in 2001, had risen in Europe, but in both cases was an increasing percentage of total venture capital funding:

**Figure 4.2--Venture Capital Funding for Biotechnology, US, 1998-2002**



Source: VentureOne

**Figure 4.3--Venture Capital Funding for Biotechnology, Europe, 2000-1Q2002**



Source: VentureOne

In South Africa government support for biotechnology appeared to be growing. The Department of Science and Technology (DST) published a national biotechnology strategy in June 2001, in which the following major recommendations were made:

- Government should articulate a single policy position on biotechnology
- A Biotechnology Advisory Committee (BAC) should be established
- Regional Innovation Centers (RIC) should be established

As part of its recommendations, DST proposed an annual budget of R 182 million to fund these recommendations (exclusive of a R 45 million initial cost of establishing the RICs), consisting of the following:

- R 135 million for operating RICs and related programs
- R 25 million for focused biotech R&D in the private sector
- R 20 million for a venture capital fund
- R 2 million for the operations of BAC

In the case of RICs, these funding levels were subsequently increased to R 130 million/RIC.

The government acted quickly to implement these recommendations. Three RICs (renamed Biotechnology RICs, or BRICs) were established in 2002 in the Western Cape, Gauteng, and KwaZulu Natal, and these organizations were expected to be an important source of dealflow for Bioventures beginning in 2004. However, these amounts were modest in comparison to those committed to biotech industry development by other governments around the same time, e.g. Singapore's \$7 billion commitment over four years.

Beginnings are always important in venture capital, and Bioventures was already well-primed with dealflow. In fact, at its first board meeting on November 15<sup>th</sup>, 2001, three prospective investments were discussed and at the next meeting (March 5<sup>th</sup>, 2002), the fund's first three investments were approved:

- Amandla Water (industry biotechnology)—R 6 million investment for 49% (R 3.045 million ultimately invested)
- Shimoda (drug delivery and development)—R 12 million for 20% (initially structured as a convertible loan—converted July 2002 upon meeting milestones ahead of schedule)
- Global Oceans—R 4.5 million for 35% (offer withdrawn subsequent to approval due to R 1.2 million shareholder loan repayment dispute)

Bioventures' two initial investments were different from one another. Based in Johannesburg, Amandla was a startup firm (established May 2002) which held an exclusive worldwide license to the PETRO wastewater treatment system. An early focus of the firm's business was in Botswana, where, at the time of the fund's investment, it was bidding to build/own/operate a 20 million liter wastewater treatment plant in Gaborone, that country's capital. As such, the risks associated with Amandla appear, in retrospect, to be as much political and construction-related as they were technological. By the end of 2002, Bioventures expressed concern about Amandla's

business model in its annual report, although it had not yet changed its valuation from original cost.

By contrast, Shimoda was rapidly emerging at the time of Bioventures' investment as South Africa's premier biotech firm. Based in Plettenberg Bay in the Western Cape, close to Bioventures' offices, Shimoda had 20 patents on three drug delivery systems by yearend 2002. The firm licensed out its drugs at an early stage and had one revenue-producing license with US-based IDDS. At the time of the fund's investment, Shimoda had a strong pipeline of new drugs under development. An early stage firm, Shimoda was loss-making at the time of investment.

On August 6<sup>th</sup>, 2002 the fund's third investment was approved:

- Disa Vascular (medical devices—stents)—R 10 million for 48% (including R 5.75 million shareholders loan)

The Disa investment was the first in which a portion of the fund's investment was used to buy out a local angel investor (Catalyst Innovation), with remainder funding R&D and capital investments. Like Shimoda, Disa was both post-revenue and profitable. Its stents were actively marketed in both South Africa and Europe. Interestingly, Disa and Shimoda were collaborating on a drug-coated stent product.

Finally, at Bioventures' final board meeting of the year on November 19<sup>th</sup>, 2002 a fourth investment was approved:

- Mbuyu Biotech (technology commercialization)—R 2 million for 50% ownership

Bioventures' investment in Mbuyu was a joint venture with the Council for Scientific and Industrial Research (CSIR), the government's principal research organization. Mbuyu would commercialize technology coming out of CSIR's Biochemtek division and held three licenses at the time of Bioventures' investment. At the time of investment, Mbuyu was post-revenue but unprofitable.

In November 2002 RAH indicated that it wanted to sell its investment in the fund, but ultimately dropped its request.

At the end of its first full year of operation, Bioventures had succeeded in making a promising beginning. After looking at 191 deals totaling R 4.1 billion over the 14 months since inception, it invested in four firms, consistent with practice amongst venture capitalists in other countries. Its four investments were in a variety of different biotechnology-related sectors and were at various stages of development. The fund faced no real competition for dealflow, although one organization—Chrysalis Biotech—was considering entering their space.

#### *4.3.5 Full investment and emerging problems (2003-2005)*

While macroconditions improved both in the biotech sector and in South Africa during the period 2003-5, Bioventures soon began to experience the challenges of managing a portfolio of startup and early stage businesses.

At Bioventures' 2003 board meetings, three new investments were approved, bringing the fund's total approved investments to seven totaling R 44.045 million:

- Electric Genetics (bioinformatics)—R 10 million for 33%
- Synexa (bio-manufacturing)—R 5 million for 16.5%
- PlatCo (cancer drug development)—R 2 million for 40%

Electric Genetics was a post-revenue and pre-profit firm whose software products were widely used by academics throughout the world, including at Harvard, Oxford, and Max Planck. An early sign of trouble in this investment was 2003's revenues, which were only 28% of budget. Orders from Eli Lilly and Bayer late in 2003 helped to make the fund more comfortable with this investment, which was carried at cost at the end of 2003.

Synexa was Bioventures' first co-investment transaction, with IDC investing R 5 million. The firm realized its first revenues during 2003, but remained unprofitable.



2003 sales were only 5% of budget, but given Synexa's startup nature, these negative variances were less of a concern to the fund manager than Electric Genetics' were.

PlatCo was Bioventures' first co-investment with one of its investees, with Shimoda owning the remaining 60%. Originally a project at the University of Port Elizabeth focused on platinum-based anticancer compounds, PlatCo was a startup at the time of the fund's investment.

Bioventures' earlier investments performed differentially during 2003. While Shimoda's valuation was increased, Amandla was written off and Disa was reduced in value. Shimoda's increase in value reflected IDC's decision to invest R 15 million in the firm during the year at a higher pre-money valuation, reflecting its growing pipeline. Amandla was finding it challenging to close on its Botswanan contract and had morphed into a construction and consulting company that was rapidly running out of cash. Disa experienced much lower than expected revenues.

The issue of Bioventures II surfaced at the July 17<sup>th</sup>, 2003 board meeting, but only Gensec indicated that it would seed a second fund. IFC cited the need to see exits from the first fund before a second could be raised, IDC indicated that it had a moratorium on new or topup investments until June 2004, Sanlam would not support a new fund until success was seen with the first, and RAH would neither invest in a new fund nor topup the existing one. The board members representing South African investors supported an owner-managed and "empowered" fund manager for Bioventures going forward, but supported the existing fund manager in pursuing offshore investors for a future fund. The board's sentiment regarding the fund manager's ownership was the first sign that the black economic empowerment initiative was touching Bioventures' activities directly. At the October 2<sup>nd</sup>, 2003 board meeting, a change in the fund manager's ownership structure was also discussed.

The October 2003 board meeting was also of note, as board members indicated that the fund manager should not rush to invest the fund's last R 10 million of capital. In particular, IDC noted a slump in high technology, but an uptick in interesting low technology transactions in its own organization.

At the November 26<sup>th</sup>, 2003 board meeting, the matter of the fund manager's ownership structure intensified. Three potential partners were identified—Ethos (an established South African private equity player), Java Capital (a Johannesburg-based investment bank), and Vantage (a black-owned and –operated venture capital fund manager in Johannesburg). While IFC, Sanlam, and RAH appeared to support Ethos (driven by IFC), IDC seemed to favor Vantage. Despite the lack of consensus amongst investors, discussions were initiated with Ethos.

2004 was the first year in which challenges seemed to outweigh opportunities for Bioventures. While market conditions continued to improve, the fund's dealflow continued to fall, from 69 in 2003 to 61 in 2004. With fund approaching full investment, concerns were beginning to arise about follow-on financing for its more successful investees, as well as exit liquidity.

Issues of the fund manager's ownership also continued to bubble. At the March 4<sup>th</sup> board meeting, a new partner emerged—Marsha Wulff of the Dallas, Texas-based Wulff Capital. Wulff expressed an interest in buying out RAH's 33% ownership of the fund management company. Java Capital had also shown interest in partnering with the fund manager. While the investors expressed a variety of preferences for the future ownership structure of the fund manager, Sherwin's proposal that RAH, Java, and the fund manager's employees should each own one third of the fund manager, and this proposal was accepted and approved at the May 2004 board meeting.

2004 also saw Bioventures' investees attract significant funding interest from other parties, including the following:

- Shimoda—received a R 14 million grant from Cape Biotech (the Western Cape BRIC)
- Disa—both IDC and Women's Fund looking at investing
- Electric Genetics—Innovation Fund interested in investing
- Synexa—R 3 million grant from Innovation Fund

Of note is the fact that all the funding sources are government-related.

During 2004 Bioventure's portfolio continued to season, and problems began to emerge. Electric Genetics became the fund's largest headache, culminating with the unauthorized download of the investee's source code by some of its employees and their attempt to establish a rival firm. The investment was written off by the fund manager.

In 2005 Bioventures reached the end of its investment period. One final investment, the fund's eighth, was made:

- Natural Carotenoids (natural beta carotene producer)—R 3 million for 60%

IDC agreed to invest R 14 million in Disa, consisting of R 5 million in equity and R 9 million in debt. This transaction valued Disa at R 28 million pre-money and resulted in an upward valuation of the fund's holdings. This transaction took one year to conclude. At the March 2005 board meeting at which this transaction was discussed, IDC also complimented Bioventures' fund managers for the corporate governance structures that they had put in place at their investees.

Market conditions continued to improve in 2005, but the South African government's financial commitment to biotechnology continued to be a fraction of that of other countries (Bioventures, 2006):

- |                |                               |
|----------------|-------------------------------|
| • South Africa | \$70 million over three years |
| • New Zealand  | \$326 million                 |
| • Taiwan       | \$351 million                 |
| • India        | \$450 million                 |
| • China        | \$1.9 billion                 |

#### 4.3.6 *The next fund (2006-present)*

Following the end of the fund's investment period, Bioventures increasingly focused on exits from its best investments and the search for new investors for a second fund. In

2006 Bioventures exited Mbuyu Biotech for half its original investment. By mid 2007 the fund managers indicated that two one-year extensions to the fund's life would be needed to complete exits at attractive internal rates of return (IRRs), and that most exits would likely be offshore with some compensation in the form of shares. A best case IRR of 20% was projected.

In early 2008 both Shimoda and PlatCo were exited successfully by way of a trade sale to an US-based pharmaceutical company. The remaining three investments—Disa, Synexa, and NCSA—continue to be challenging, but all are in a position to be exited by 2010.

By mid 2007 Sherwin had largely abandoned hope that she could raise a second fund with a purely South African focus. In early 2008 she had decided to team up with an US-based social investment team to raise a USD 100 million fund focusing on African healthcare firms. Indicative deal flow suggested that this fund would focus on later stage investments than Bioventures has. The new fund secured a \$50 million loan guarantee commitment from the Overseas Private Investment Corporation (OPIC) in February 2008.

Having constructed a narrative of Bioventures' evolution as a South African venture capital fund from 1998 to present, I now consider the evidence for both the efficient operation of the venture capital cycle and the presence of coproduction as a sub-process with the VC emergence process.

#### *4.3.7 Interpretation*

The emergence and initial development of Bioventures as a South African venture capital fund can be explained by the simultaneity model, but its failure to realize its full potential appears to be attributable in part to weakened embeddedness that limited its ability to coproduce a fund with its various public sector partners. An attractive enabling environment appears to have been necessary to jumpstart the fund, but not sufficient in and of itself to generate sizeable returns for Bioventures, create investees in

sufficient numbers and size to generate a national biotechnology industry, or attract new investment to the industry.

Bioventures has operated in an environment where the number of public sector entities with which it must act to succeed are many and varied in their objectives. They can be categorized as follows:

- Direct sources of funding for venture capital: IDC, IFC
- Co-investors in investees: IDC, Innovation Fund, BRICs
- Regulators: Reserve Bank, FSB, Ministry of Finance
- Producers of basic science: CSIR, universities
- Creators of norms: BEE initiatives

The objectives of these governmental entities are different, and, despite an articulated national biotechnology policy, these interests have come in conflict in ways that have compromised Bioventures' ability to operate effectively. As a result, the VC cycle has operated with only partial efficiency. Objectives have shifted in the post-apartheid era, most notably with the introduction of BEE.

In these circumstances, building ties of trust from which embedded relations can be sustained has proven challenging. Bioventures appears to have been able to build strong relationships with its investees, but have found it much more challenging to do so with the public sector.

An alternative explanation for Bioventure's underperformance could be the lack of fit between the venture capital instrument and the functional requirements of the biotechnology industry, indeed all science-based industries (Pisano, 2006). To emerge and develop, such industries require solutions to three sets of problems: risk management, integration, and learning (Pisano, 2006). The structure of the biotechnology industry has limited flows of information, encouraged fragmentation, and launched hundreds of new firms, all of which work against the industry's needs. Venture capital investment has contributed to these developments through the short investment time horizons (3 years in the United States) and relatively large and

diversified portfolios, limiting the amount that can be invested in any one company. For new drug development, investment requirements typically range between \$800 million to \$1 billion, implying that biotech firms must close the funding gap from other sources, such as strategic alliances and the public equity market.

I find strong evidence for the simultaneity perspective at the fund level. This evidence is stronger than that found at the country level. All three simultaneity conditions were largely met, including potentially sufficient pools of capital to raise a first fund, sufficient deal flow, and sufficient talent to assemble the Bioventures team at a reasonable cost. Bioventures recently secured a \$50M capital commitment from an international investor to raise a second fund in partnership with a second fund management organization, indicating that its track record of a positive (but unrealized) IRR was sufficient to perpetuate the fund management organization.

I also find strong evidence for the coproduction perspective, including the success of the fund manager being intertwined with government policies regarding national biotechnology policy, black economic empowerment, exchange controls, and various implementing agencies. The fund manager had good relationships with key government players, but does not appear to have had any measureable impact on relevant policy. Embeddedness weakened between the fund manager and South African government investor over the fund's life, due to the former's perception that the latter did not add sufficient value, e.g. government's investment was not critical to initial fundraising, and risk aversion and micromanagement by government's board members strained relationships with fund manager.

These findings confirm that the venture capital emergence process in South Africa consists of at least three sub-processes: simultaneity, the VC cycle, and coproduction. The evidence from the country- and fund-level case studies suggest that the coproduction process follows simultaneity and precedes the VC cycle. In other words, simultaneity and then coproduction appear to be predecessor processes to the efficient operation of the VC cycle.

At this stage, an open question is whether coproduction is necessary and, therefore, always present in the VC emergence process. Are there contexts in which coproduction

may not need to operate? Is coproduction contingent and, if so, contingent on what?

One possible answer is that coproduction may be contingent on the presence of an equity gap or other market failure, which compel the public and private sectors to cooperate with one another to move the VC emergence process forward.

Having found evidence in support of coproduction, is it possible that other processes might also be at work? In particular, having identified diffusion as a possible process in the literature review, what evidence in support of diffusion can be observed in the case studies in this thesis?

To answer these questions, and to elaborate a more complete model of venture capital emergence, I turn now to a case study of venture capital emergence in Botswana. This case combines two levels of analysis: country and fund.

## Chapter 5

### Botswana Case Study

#### 5.1 *Introduction*

In the previous chapter I examined the South African experience with venture capital emergence. This case attracted my interest because of its apparent ‘deviant’ nature. At first inspection South Africa appeared to satisfy all of Gilson’s simultaneity conditions. However, after analyzing data from country- and fund-level case studies, it became apparent that the story of VC emergence is more complex than first believed. Simultaneity conditions were weaker than initially believed, and coproduction between government investors and private fund managers played a meaningful role in the emergence process.

By turning to the case of Botswana, I seek to confirm or refute these findings, as well as to remain sensitive to the possibility that other processes may be at work in the VC emergence process. Botswana’s selection as a comparative case was based primarily on its many similarities with South Africa. Formally categorized in the law and finance literature as an English legal origin country, Botswana is, like South Africa, a mixed legal origin economy where common law has tended to dominate. Contiguous to South Africa, Botswana shares many of the geographic and climactic attributes of its southern neighbor, and these attributes are correlated with institutional development. Both economies are upper middle income countries with ‘flawed’ democracies and dependent on the export of natural resources. Both countries are now governed by ethnic majorities, although South Africa’s experience in this regard is more limited.

Yet Botswana varies from South Africa in important ways. It is a small country that became independent from British colonial rule in 1966, in comparison to South Africa’s independence in 1910.<sup>52</sup> Botswana is ethnically much more homogeneous than its neighbor, with the majority Tswana now constituting 79% of the population and non-

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<sup>52</sup> Other possible dates of South African independence include 1961, when a republic was declared, and 1994, when the country achieved majority rule for the first time in the modern era.



African populations representing a minor percentage. Botswana's political history since independence has been relatively peaceful in comparison to South Africa's (not to mention one of its other neighbors, Zimbabwe), although its combination of dominance by a single ethnic group and resource dependency significantly increases the probability of conflict (Bannon and Collier, 2003). And, most important for the purpose of this thesis, Botswana's venture capital industry appears on first inspection to be in an earlier stage of emergence in comparison to South Africa's.

The resultant range of variation between Botswana and South Africa along these variables creates the possibility for an interesting comparative case study situation, as well as for within-case analysis of the Botswana venture capital industry. This case study proceeds as follows. First, I examine the context within which venture capital is emerging in Botswana. Then, based on an event analysis of the data gathered from interviews and archival data collection, I construct a narrative of VC emergence in Botswana. I conclude by interpreting this narrative in light of the findings in the South African cases.

## 5.2 *Context for venture capital emergence in Botswana*

Extremes characterize the environment in which Botswana venture capital has emerged. The darling of mystery writers, development economists, and Western ecotourists, Botswana also has the highest incidence of HIV in its adult population of any country in the world (leading to a drop in its Human Development Index between 1990 and 2001, despite rapid economic growth), while climatological studies strongly suggest that it will largely revert to uninhabitable desert with a global temperature rise of 3 degrees Celsius (Hoerling, Hurrell, Eischeid, and Phillips, 2006; Thomas, Knight, and Wiggs, 2005; Lynas, 2008). These extremes contribute to high levels of uncertainty in the business environment, which in turn shapes the emergence of both new ventures and venture capital.

An upper-middle income country of English legal origin in the African cultural cluster and with a natural resource-dependent economy, Botswana's experience with venture capital can be compared with South Africa's while controlling for a number of

institutional variables. Despite the underlying uncertainties of its environment, Botswana's post-independence history has been characterized by some researchers as one of the few success stories in sub-Saharan Africa, producing both high rates of growth over several decades and a relatively strong democracy rooted in a tribal politics of consensus (Leith, 2005; Acemoglu, Johnson and Robinson, 2001, Thumberg-Hartland, 1978; Samatar, 1999; Picard, 1987; Werbner, 2004) that has been able to escape the resource curse (Beaulier and Subrick, 2006). Prudent management of diamond-related revenues through a careful balance between fiscal and monetary prudence and provision of public goods and social welfare has been a principal contributor to this success (Clover, 2003). Other scholars have pointed out the corruption associated with economic development in Botswana (Good, 1992, 1994, 2002), the country's 'authoritarian liberalism' and absence of elite accountability (Good, 1996; Good and Taylor, 2005; Swatuk, 1998), the active racism practiced against the San minority by the Botswana government (Good, 1993), and restrictions on academic freedom (Taylor, 2006). These contradictory findings have led some observers to refer to Botswana as a paradox (Clover, 2003).

Botswana's development trajectory has been significantly different from South Africa's. Like Lesotho, Swaziland, and, to a lesser extent, Namibia, Botswana has been dependent on South Africa for much of its economic history up to and through independence from Britain in 1966 (Mhone and Bond, 2001). Exports of migrant labor to South Africa (as well as beef exports to Europe), imports of finished goods from South Africa, and a common monetary policy with South Africa characterized the Botswana economy during the pre- and early post-independence years.

### 5.3 *Gilson's simultaneity conditions in Botswana*

The emergence of VC in Botswana has taken a much different path than in South Africa, with the nature of simultaneity conditions shaping the opportunity set available to fund managers. Given the much smaller size of the local economy, the overall stock of entrepreneurs (as represented by the number of new corporations formed each year) was much lower than in South Africa. Yet, when compared with the total corporations

in the country, Botswana rate of new firm formation is significantly higher than South Africa's over the period 2002-5:

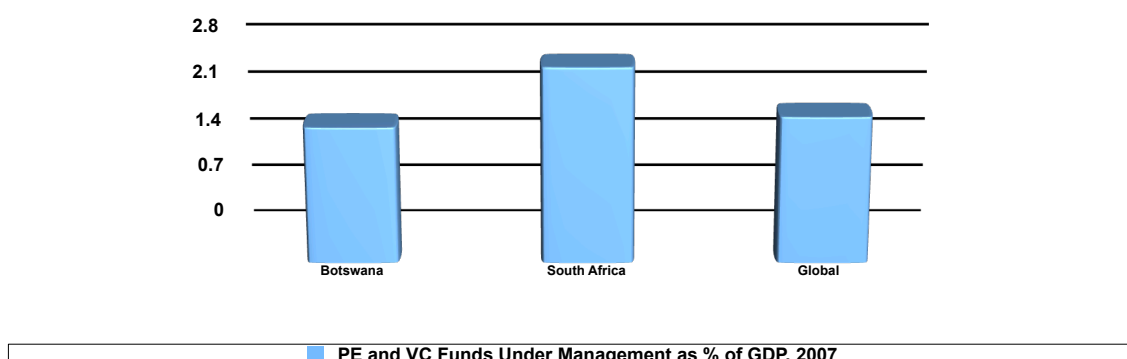
**Table 5.1--New Firm Formation, Botswana versus South Africa, 2002-2005**

(Botswana)	<b>New Corporations</b>	<b>Total Corporations</b>	<b>New Corporations/ Total Corporations</b>
2002	5262	54,611	9.6%
2003	7774	62,385	12.5
2004	9857	72,242	13.6
2005	7301	79,543	9.2
(South Africa)			
2002	29,590	507,813	5.8%
2003	29,343	509,815	5.8
2004	33,645	529,028	6.4
2005	41,356	553,425	7.5

Source: World Bank Entrepreneurship Database

Gilson's second simultaneity condition—sufficient pools of capital—is more challenging to assess. With a much smaller economy than neighboring South Africa, it is not surprising that Botswana's PE and VC sector is significantly smaller as measured by the number of funds operating at present or funds under management. However, when funds under management are compared to GDP, Botswana's sector compares favorably to other countries, as the following chart indicates:

**Figure 5.1--Private Equity/Venture Capital Funds Under Management to GDP, Botswana, South Africa, and Global, 2007**



Source: KPMG/SAVCA (2008), author estimates for Botswana

Botswana's pension fund sector has grown rapidly in recently years and total assets under management equaled Pula 29.01 billion at 12/31/06, up 25% from 12/31/05 (African Development Bank, 2006).<sup>53</sup> However, despite a 67% allocation to equities, the majority of pension fund assets in Botswana are invested offshore. Local private equity (PE) and VC has only been recognized recently by some local pension fund managers as a possible investable asset class, and, of those few funds which have invested in local PE funds, the emphasis, as elsewhere, has been principally on later stage transactions. Angel investor interest in seed, startup, and early stage finance appears to be virtually nonexistent. Thus, a Botswana "equity gap" appears to exist.

Gilson (2003)'s third simultaneity condition is the existence of specialized financial institutions capable of conducting VC. Botswana's legal and regulatory environment does not appear to impede the establishment of VC funds, as evidenced by the ease with which Venture Partners Botswana (VPB), the country's largest VC fund, established its first fund in the country. However, VPB's second fund will be denominated in Euros, domiciled in Mauritius, and has a regional investment strategy (Venture Partners Botswana, 2008), suggesting that international institutional investors may prefer a domicile other than Botswana.

<sup>53</sup> The Botswana Pula exchange rate was Pula 7.51/USD and 10.33/Euro on January 6<sup>th</sup>, 2009.

Based on a subjective analysis, Botswana's simultaneity conditions—the essential enabling conditions for VC emergence—appear to be approximately equivalent to those in South Africa, as the following table indicates:

**Table 5.2--Gilson's Simultaneity Conditions: Botswana versus South Africa**

	<b>Botswana</b>	<b>South Africa</b>
Entrepreneurs	+	
Pools of Capital		+
Specialized Financial Institutions	Similar	Similar

Source: Author

A larger pool of new businesses (as a percentage of all corporations) in Botswana is offset by smaller pools of capital interested in venture capital risk/return combinations. The ability to create the specialized financial institutions necessary for VC investment appears to be similar between the two countries. Therefore, all other factors being equal, we would expect VC to emerge in approximately the same way in the two countries. Yet South Africa's industry has emerged, and then submerged, while Botswana's industry, as we will see, is emerging more rapidly than South Africa's did.

Of course, as I discussed in the South Africa country-level case, underlying Gilson's simultaneity conditions are a set of enabling conditions that are believed to be some of the former's drivers. If enabling conditions are compared between Botswana and South Africa, we can see that underlying enabling conditions are generally weaker in Botswana than in South Africa:

**Table 5.3--Enabling Conditions: Botswana versus South Africa**

<b>Enabling Environment Indicator</b>	<b>Botswana</b>	<b>South Africa</b>
Political	Strong to moderate	Moderate
Economic	Moderate	Moderate
Legal and regulatory	Moderate	Strong to moderate
Industry information	Weak	Strong
Market/exit	Weak	Moderate to weak
Government agencies supporting entrepreneurial finance	Moderate to weak	Moderate
Government programs supporting entrepreneurial finance	Moderate to weak	Moderate to weak
Policies supporting investors	Weak	Weak
Policies supporting funds	Weak	Moderate to weak
Policies targeting investees	Moderate	Moderate

Source: Author

Yet, despite similar simultaneity and weaker enabling conditions, the VC industry in Botswana has developed more rapidly than in South Africa, suggesting that other factors in the emergence process may be playing a role. I look for these factors in the next section, which constructs a narrative of Botswana's venture capital history.

#### *5.4 A History of Botswana Venture Capital*

The history of VC in Botswana can be divided into three epochs: antecedents (1965-1997), first efforts (1997-2002), and steady emergence (2002-present).

#### *5.4.1 Antecedents (1965-1997)*

Botswana's economy was characterized at independence as one driven by agriculture, primarily cattle herding. The government's efforts from inception were directed in part in diversifying away from agriculture and, later, mining through industrialization. In addition, the government encouraged both citizen economic empowerment and private enterprise development (Leith, 2005). These goals helped to shape the goals of VC development.

Two early instruments of industrialization policy were the National Development Bank (NDB), which was established in 1965, and the Botswana Development Corporation (BDC), which started operations in 1970. As with many other development banks, NDB lent funds to sectors that the small local commercial banking sector was reluctant to finance, although a modest capital base limited its scope of operations until 1980. NDB faced a number of scandals that resulted in its near bankruptcy in late 1993. These scandals included a large portfolio of bad loans, which included large exposures to senior government officials and ministers (including then-President Masire. Entrepreneurship and venture capital suffered a black eye when Masire attempted to justify NDB's loans to various officials by noting that Botswana was "a highly risky area" where "people who venture" were "the hope of our society" (Good, 1994).

Infant industry protection was allowed under a renegotiated Southern African Customs Union (SACU) in 1968, while government was allowed to favor local industry for its own purchases beginning in 1976. NDB focused on debt financing, while BDC took minority equity positions in joint ventures. The BDC's early efforts were modest and mostly ineffective, as were infant industry protection efforts (Leith, 2005).

Two incentive programs were established during the 1980s—the Financial Assistance Policy (FAP, established 1982) and Selebi-Phikwe Regional Development Project (SPRDP, established late 1980s), but these programs failed in their objectives to create employment in nontraditional sectors, due to lack of monitoring and poorly designed

incentive structures. SPRDP was absorbed into FAP in the mid-1990s, and FAP was replaced by the Citizens Entrepreneurial Development Agency (CEDA) in 2001 (see below). By the mid-1990s, a legacy of failure and, in some instances, fraud hung over government attempts to diversify the Botswanan economy.

#### *5.4.2 First efforts (1997-2002)*

The first attempt at creating a PE/VC fund in Botswana was Peo Venture Capital, established in 1997. Peo is a joint venture between Debswana, itself a 50/50 joint venture between the Botswanan government and De Beers, and De Beers Botswana. The stated objective of Peo is “promoting and facilitating the establishment of commercially viable enterprises in Botswana as well as promoting the involvement of Batswana as owners in these in business (*sic*).” Peo has invested over P 30 million in 59 businesses as of August 2008, of which approximately P 8.5 million was in the form of equity (Lute, 2008). These investees have created over 1200 jobs.

Peo has invested primarily in already-profitable businesses, strongly suggesting that it has focused on SME finance and, perhaps, PE as opposed to VC.

#### *5.4.3 Steady emergence (2002-present)*

The single most significant player in Botswana’s VC industry has been Venture Partners Botswana (VPB). A brief comparison between VPB and Bioventures provides an illuminating comparison:



**Table 5.4--Selected Characteristics, Venture Partners Botswana versus Bioventures**

Category	VPB	Bioventures
Headquarters	Gaborone, Botswana	Cape Town, South Africa
Year Established	2002	2001
Funds under Management	P 200 million (USD 30.55 million @ 9/19/08)	R 80.05 million (USD 10.1 million @ 9/19/08)
Investment Strategy	Generalist	Biotechnology
Investment Professionals	8	2
Investees	16	8
Exits	1	2
Second Fund	Raising Euro 150 million Southern African mining-related and generalist fund	Raising USD 100 million pan-African later stage healthcare fund
Public Investment as % of Funds under Management	100%	50%
Cumulative Deal Flow	300+	376
Office Space Quality	A	B

Source: Author

VPB was established in 2002 with a P 200 million investment from CEDA. A combination of supply and demand pressures led to its founding. At that time, the Botswanan government faced four related challenges: it was liquid with excess cash from diamond exports, demand was increasing for increased citizen participation in the economy, the country's SMEs were demanding new sources of funding, and the need to continue the diversification of the economy beyond mining and agriculture. The country's pension funds were unable to find sufficient local investments beyond the government's bonds and the small local equity market. At the same time, local entrepreneurship was foundering. Only 30,000 Botswanans were involved with a formal business (no more than 10% of the total labor force), of which approximately 6000 were employed in businesses that trade continuously. The Botswanan economy was full of what Anthony Siwawa, VPB's founder and CEO, called "one dimensional businesses," such as B&Bs, as opposed to two dimensional businesses that would

provide services to B&Bs. The principal national university, the University of Botswana, graduated only 5-10 business students each year, further limiting the pool of human talent from which entrepreneurship might emerge.

VPB was created as one of the first outsourcing initiatives of the Botswanan government. A Zimbabwean consultant from the Development Bank of South Africa (DBSA) was hired by the government via the African Management Services Company (AMSCO), a respected organization founded by the United Nations Development Program (UNDP) and the International Finance Corporation (IFC); his final report recommended outsourcing in light of the many failed government programs, e.g. FAP and NDB.

Given the relative paucity of entrepreneurship in Botswana, the investment strategy of VPB has emphasized a generalist approach encompassing both early and later stage investments across a variety of sectors. Sixteen investments have been completed to date:

**Table 5.5--Investments, Venture Partners Botswana, June 2008**

<b>Name</b>	<b>Investment Date</b>	<b>Industry</b>	<b>Amount Invested (P millions)</b>	<b>Exit/IRR</b>
4MS	October 2004	Transport and logistics services	2.0	Yes/19%
PG	October 2004	Manufacturer and supplier of building supplies	14.3	No
Airway Express	October 2004	Air cargo and passenger services	2.7	No
Tannery Industries	June 2005	Hide processing and finishing	17.9	No
Builder Merchants Botswana	June 2005	Building materials and hardware supplier	7.2	No
Delta Dairies	November 2005	Dairy	27.7	No
Fabulous Flowers	September 2006	Floriculture	5.0	No
Cabling for Africa	September 2006	Networking and infrastructure	0.8	No
Mabele Breweries	October 2006	Beer manufacturing and distribution	6.7	No
Transport Holdings	November 2006	Transport and logistics services	4.5	No
Benson Craig	December 2006	Cigarette manufacturing	22.3	No
ZS	January 2007	Telecoms infrastructure and systems integration	6.0	No
Latex Medical	April 2007	Condom manufacturing and distribution	7.0	No
Aon Botswana	April 2007	Insurance brokerage	26.6	No
Biz Capital	November 2007	Financial services	5.9	No
MRI	February 2008	Emergency medical and call center services	5.7	No

Source: Venture Partners Botswana (2008)

### 5.5 *Interpretation*

Having considered the history of Botswana's venture capital industry to date, this section compares this emergence process to the model of VC emergence that is under development in this thesis. This model currently consists of three sub-processes operating in the following sequence: simultaneity, coproduction, and the VC cycle.

The emergence process in Botswana began in 1965 (before independence) and continues to this day. However, emergence has accelerated rapidly since 2002, when VPB was established. This pattern of long 'gestation' followed by rapid recent emergence is different from that experienced by the South African VC industry, where emergence can be dated from 1979, emergence accelerated beginning in the late 1990s, and submergence followed beginning in 2007.

As noted earlier in this chapter, Botswana's simultaneity conditions appear to similar to those in South Africa, although underlying enabling conditions are weaker, particularly in the important area of exit liquidity. Measured by the time it took each fund to raise a second fund, data from the VPB experience suggest that the VC cycle is operating efficiently, perhaps even more efficiently than Bioventures in South Africa.

#### 5.5.1 *Evidence on coproduction in Botswana*

What evidence exists for or against coproduction in Botswana? VC coproduction between the government and fund managers in Botswana has been more robust than in South Africa. While Botswana formulated the goals of VC development significantly later than South Africa, implementation has been more rapid and less problematic. While no formal evaluation of VC policy has been conducted to date, investors have validated the program's results by committing to invest in the second fund of the country's principal VC fund manager. Modifications of Botswana's VC program have focused on seed, startup, and early stage funding for technologically innovative firms, which have not benefited from the first round of VC funding.

#### *5.5.1.1 Goal formulation*

The Botswana government's efforts since independence were directed in part at diversifying away from agriculture and, later, mining through industrialization, although these efforts only partially succeeded. The government also encouraged both citizen economic empowerment and private enterprise development (Leith, 2005). These broader developmental goals helped to shape the goals of VC development in the country by creating a “double bottom line” strategy for the country's first VC funds; both sustainable profitability and broader social goals were included in the mission of Venture Partners Botswana, the country's most significant VC fund to date.

#### *5.5.1.2 Implementation*

Following earlier false starts with industrialization policy, two entrepreneurship incentive programs were established during the 1980s—the Financial Assistance Policy (FAP, established 1982) and Selebi-Phikwe Regional Development Project (SPRDP, established late 1980s). These programs failed in their objectives to create employment in nontraditional sectors, due to lack of monitoring and poorly designed incentive structures. SPRDP was absorbed into FAP in the mid-1990s, and FAP was replaced by the Citizens Entrepreneurial Development Agency (CEDA) in 2001 (see below). By the mid-1990s, a legacy of failure and, in some instances, fraud hung over government attempts to diversify the economy in Botswana.

FAP was the more important of the two incentive programs. It provided grants to both citizens and foreigners in Botswana for both equipment and labor and focused on the manufacturing sector. According to current government officials, FAP was plagued by a lack of training for the entrepreneurs who were to have benefited from its financing. Many businesspeople did not know how to run their own businesses, and FAP did not provide sufficient monitoring or insist of the establishment of accounting standards for firms established with FAP funds.

The first attempt at creating a PE or VC fund in Botswana was Peo Venture Capital, established in 1997. Peo is a joint venture between Debswana (itself a 50/50 joint venture between the government in Botswana and De Beers) and De Beers Botswana. The stated objective of Peo is “promoting and facilitating the establishment of commercially viable enterprises in Botswana as well as promoting the involvement of Batswana as owners in these in business (*sic*).” (Debswana, 2009).

The establishment of CEDA in 2001 marked an important milestone in entrepreneurship and VC development in Botswana. CEDA was modeled on South Africa’s black economic empowerment initiative (which had been under discussion since the early post-apartheid era), indicating another channel through which institutions shaping VC emergence diffused to Botswana. According to one government respondent, CEDA’s purpose was to improve the country’s base of entrepreneurs through subsidized loans, which was felt to be a structural improvement over FAP’s grants. In addition, unlike FAP, CEDA was able to look at any firm that made commercial sense, although as a practical matter industry focus under CEDA appears to have shifted to agribusiness and franchising. An increased emphasis on mentoring and training, including enhanced informal reporting to mentors, was also an important component of CEDA’s initial programs. Despite these changes, CEDA still met with many problems, including high levels of loan default, continued diversion of funds and unrealistic expectations, often reflected in overspending, by entrepreneurs in the program.

While CEDA’s initial efforts were focused on debt financing of small, locally owned enterprises, the government in Botswana provided for the agency to invest equity in larger firms, potentially owned in part by foreigners. As a result of a 2001 study by a consultant from the Development Bank of Southern Africa (DBSA), a decision was made to outsource equity investment to an independent firm, which provided the basis for the establishment of VPB’s first VC fund.

However, government respondents recognized that, despite these program-level changes, the largest barrier to opportunity-oriented entrepreneurship in Botswana may be the attitude of citizens in Botswana to business, including the lack of complete commitment by owners and managers to their firms and the lack of expertise of many

entrepreneurs in their firm's industry. Moreover, government respondents stated that the previous generosity of the government may have created a culture of nonpayment that limited VC efficacy. In comparison with South Africa, where government support for entrepreneurship and VC has been more limited, government respondents now believe that the government in Botswana may have provided too much support to these activities.

The single most significant player in Botswana's VC industry has been VPB. VPB's first VC fund was established in 2002 with a Pula 200 million investment from CEDA. One respondent indicated that a combination of supply and demand pressures led to this fund's founding. At that time, the government in Botswana faced four related challenges: it was liquid with excess cash from diamond exports, demand was increasing for increased citizen participation in the economy, the country's SMEs were demanding new sources of funding, and the need remained to diversify the economy beyond mining and agriculture.<sup>54</sup> The country's pension funds were unable to find sufficient local investments beyond the government's bonds and the small local equity market. At the same time, local entrepreneurship was foundering. According to this respondent, only 30,000 citizens in Botswana were involved with a formal business (no more than 10% of the total labor force), of which approximately 6000 were employed in businesses that trade continuously. The economy in Botswana was full of what Anthony Siwawa, VPB's founder and CEO, called "one dimensional businesses," such as bed and breakfasts (B&Bs), as opposed to two dimensional businesses that would, for example, provide services to B&Bs. The principal national university, the University of Botswana, graduated only 5-10 business students each year, further limiting the pool of human talent from which entrepreneurship might emerge.

Given the relative paucity of entrepreneurship in Botswana, the investment strategy of VPB has emphasized a generalist approach encompassing both early and later stage investments across a variety of sectors. Sixteen investments have been completed to date, of which 50% can be characterized as early stage. None of VPB's early stage investments appear to have been in innovative technologies or processes. Instead, most were in industries being replicated in Botswana for the first time.

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<sup>54</sup> One VC fund manager said that "the country needed equity finance."

### 5.5.1.3 *Evaluation and Modification*

To date no formal evaluation of Botswana's VC program has been undertaken. The evolution of government support for entrepreneurship indicates an informal learning process, as financial support programs moved from grants to subsidized loans, followed by SME finance and finally outsourced VC fund management.

I conclude that a purposeful process of coproduction between government investors and private fund managers has taken place in Botswana's venture capital industry. During the process of data collection and analysis, another possible sub-process--the diffusion of VC models from other populations, notably South Africa--also became apparent. I turn now to a review of the evidence in support of diffusion as an additional sub-process.

### 5.5.2 *Diffusion of VC models to Botswana*

The Botswana experience with VC emergences suggests that diffusion of VC models and related institutions played a significant role in that industry's emergence process at a variety of levels:

- At the country and program levels, a DBSA consultant completed the study establishing CEDA's VC program, the liquidity of the Botswana Stock Exchange is largely maintained by foreign listings, South Africa's BEE program served as the model for Botswana's citizens economic empowerment initiatives, and AVCA's 2008 conference forged new linkages between the VC industry in Botswana and fund managers and investors elsewhere;
- At the fund level, South African early stage firms sought funding from VPB's first fund, three development finance institutions have committed to invest in VPB's second fund, Peo Capital was set up by De Beers, two foreign PE investors have visited Botswana in search of deals, and the new Innovation Fund is being designed with foreign assistance, and;



- At the individual actor level, VPB's CEO gained PE experience in South Africa and is earning an MBA from an American university, and foreign technical advisers have played a long and major role in shaping economic policy in Botswana.

In the case of Botswana, the diffusion of the American VC model has been mediated largely through South Africa, resulting in two stages of adaptation and differing characteristics along several dimensions at each stage. Botswana represents an example of a second order non-prototypical case of the VC concept, with South Africa being a first order case:

**Table 5.6--Venture Capital Models: US, South Africa, and Botswana**

Characteristic	US VC Model	South Africa VC Model	Botswana VC Model
Fundraising	Institutional investors	Mixed sources, both public and private. Limited institutional investor presence.	Primarily government sources
Objective	Maximize financial returns	Multiple--sustainable financial returns, public policy objectives	Similar to South Africa
Syndication	Extensive	Limited, mainly to funds' investors	Nonexistent
Staging	Extensive	Similar to US	Little staging
Exits	IPOs, trade sales	Trade sales, management buyback	Too soon to tell
Limited partnership structure	Common	Bewind trust used instead of limited partnership	Not used
Due diligence	Intensive	Similar to US	Similar to US
Post-investment monitoring	Intensive	Similar to US	Similar to US
Post-investment added value	Extensive	Similar to US	Limited evidence of adding value

Source: Author

This evidence also suggests that the diffusion of VC and related institutions to Botswana was largely a teleological process, driven by the government in Botswana and its development goals. Deliberate government actions at the country and individual actor levels facilitated diffusion of VC models and related institutions. Of these, the use of a DBSA consultant to design CEDA's VC outsourcing and the strong reliance on foreign technical advisers since independence played the most significant roles. In addition, evolutionary processes (typical of market-based competition) can be seen as contributing to the VC emergence process, of which Siwawa's South African experience, foreign listings on the local stock exchange, and Peo Capital's establishment by De Beers are the most important.

Diffusion has played an important role in the VC emergence process in Botswana. The government in Botswana and the country's most prominent VC firm drew on the experiences of South Africa, the United States, and elsewhere in their design of VPB, which broadly reflects international best practices. The relatively late establishment of VPB (especially given the level of economic development in Botswana) allowed adaptation of VC models to the country's unique conditions, resulting in a VC industry that is significantly more diversified at the fund level than in neighboring South Africa and (to date) entirely government-financed. An important limitation of Botswana's adaptation of the VC process has been a paucity of investment in innovative enterprises at the seed, startup, and early stages. The recent development of a government-funded Innovation Fund may be a start in addressing this gap.

Diffusion of VC models and related institutions from South Africa does appear to have played a significant role in the emergence of VC in Botswana. These influences took place at three levels—country, fund, and individual—and appear to have reinforced one another. In terms of sequence, diffusion appears to follow the presence of simultaneity conditions, which create the initial demand for VC, and to precede the VC cycle itself, which presumes some operational model of VC investing (whether purely indigenous or imported). The temporal relationship between diffusion and coproduction is more difficult to determine, but in Botswana's case the two processes appear to operate more or less simultaneously. The proximity of the emerged VC industry in South Africa

contributed directly to Botswana's emergence; the earliest evidence of VC in Botswana (1997) occurred at least five years after South Africa's industry gained momentum.

### 5.6 *Conclusion*

The Botswana case study accomplished two goals. First, data from Botswana indicate that coproduction is not confined to South African VC emergence alone; it operated as a part of the venture capital emergence process in Botswana as well. Second, the later experience with VC emergence in Botswana in comparison to South Africa has revealed that diffusion of VC models from other populations is also a part of the VC emergence process. This phenomenon was somewhat masked in South African VC history, perhaps because the country was not geographically proximate to other efficacious VC populations (Gaba and Meyer, 2008). By contrast, Botswana bordered on South Africa and benefited from the latter's experience with emergence.

At this stage, I have identified the components of a more complete theory of venture capital emergence. These components include simultaneity (Gilson, 2003), the VC cycle (Gompers and Lerner, 1999), coproduction, and diffusion. In Chapter 6 I will make this theory more explicit.

## Chapter 6

### A Process Model of Venture Capital Emergence

#### 6.1 *Introduction*

Over the course of Chapters 4 and 5, a more complete theory of venture capital emergence has begun to appear. The purpose of this chapter is to make that theory more explicit.

In Chapter 2 I identified in the literature an implicit incomplete model of venture capital emergence, consisting of simultaneity (Gilson, 2003) and VC cycle (Gompers and Lerner, 1999) processes operating in sequence. This model assumes that, in the presence of the three simultaneity conditions--entrepreneurs, pools of capital, and specialized financial institutions--operating in parallel, the VC cycle will operate efficiently, leading to the creation of additional VC funds and the eventual development of an active national VC industry.

Both simultaneity and the VC cycle can be described as life cycle processes of social change, and, when working in sequence in the implicit incomplete model, the implicit incomplete VC emergence process can be described as an organic process with a logical arc leading to the eventual fulfillment of the process. In simpler terms, the implicit incomplete model indicates that, once started, VC emergence will likely arise.

The experience of limited access orders indicates otherwise. While many limited access orders do not develop active national VC industries due to weak simultaneity conditions, a number of such economies with stronger simultaneity conditions--South Africa among them--have also found the VC emergence process a difficult one to complete.

The literature review suggested a number of possible additional processes that might be at work, including coproduction and diffusion. The country- and fund-level case studies

of South African VC emergence (Chapter 4) and the Botswana case study (Chapter 5) both offer evidence in support of the presence of coproduction, while the latter case demonstrates the possible role of diffusion in VC emergence. Before elaborating a process model of VC emergence in detail, I review the evidence from the case studies in support of a new model in the following section.

## 6.2 *A review of the evidence*

The South Africa and Botswana cases provide support for each of the propositions suggested in Chapter 2. In particular:

1. Both cases provide evidence that VC emergence is in part a teleological process, due to the need for purposeful social construction in the form of coproduction between government investors and private fund managers. In both cases, but particularly in Botswana, government investment was necessary in the emergence process. Indeed, government investors were the primary investors in the seed, startup, and early stage firms in these country cases. The weakening of the embedded social relations between the public and private sectors appears to have contributed to the submergence of the South African venture capital industry beginning in 2007. By contrast, in Botswana strong embeddedness between the government and VPB and a ready acceptance of one another's goals has assisted in creating a harmonious relationship essential to VPB's completing of the VC cycle and the raising of a second fund.
2. Coproduction and the embeddedness that enables coproduction appear to be central to the VC emergence process in both South Africa and Botswana. The coproduction process appears to follow the establishment of simultaneity conditions and precede the VC cycle. However, it appears that the process is only necessary in the presence of an 'equity gap' or other market failure limiting the takeoff of venture capital. The relationships between government investors and fund managers also appear to be driven by a mixture of self-interest and altruism. In both South Africa and Botswana, fund managers indicated that their activities were motivated by both commercial and social/political objectives, suggesting the presence of a 'double

bottom line' in their goal setting. In turn, government investors were motivated by policy objectives in their investments in VC funds, but were also keen to demonstrate that these investments were managed on market terms, particularly in South Africa.

3. Both cases provide evidence that coproduction requires embedded social relations as a precondition. In other words, embeddedness cannot be engineered. The South African case is particularly telling in this regard. The weakening of many social ties in the post-apartheid era has led to lower levels of trust, which has weakened embeddedness.
4. Based on these cases, the presence of coproduction does appear to contribute to VC industry sustainability. In South Africa coproduction did not operate effectively, and the industry experienced submergence. In Botswana the pattern was different.
5. Diffusion was important to the VC emergence process in Botswana, but less so in South Africa. Botswana benefited from South Africa's somewhat earlier experience with VC emergence and both imported and adapted models and ideas from the latter's experience. By contrast, South Africa was geographically distant from efficacious VC populations when its emergence process began, and diffusion played a much smaller role as a result. Based on the Botswana case, the role of the diffusion process in VC emergence is roughly coterminous with coproduction, follows simultaneity, and precedes the VC cycle.

While important, the support provided by the cases for each of these propositions also strongly suggests a new and more complete model of venture capital emergence. I discuss what this model looks like in the next section.

### 6.3 *A process model of venture capital emergence*

The existing incomplete model of VC emergence described in Chapter 2 is a two-stage model of social change, consisting of life-cycle processes. The model itself is also life-cycle in nature and, like also such models, is logical in nature. In other words, if

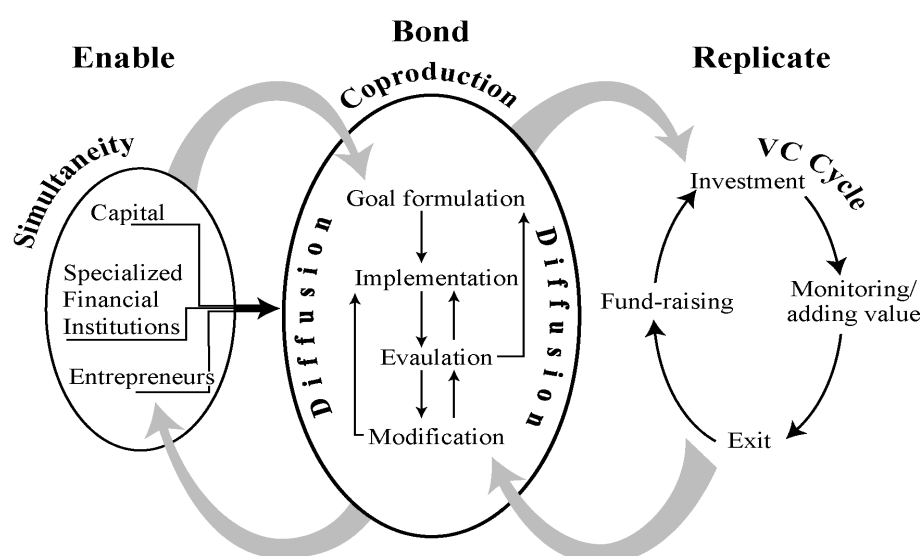
simultaneity conditions are fulfilled, and if the VC cycle operates efficiently, then an active VC industry must naturally and logically arise.

The data from the South Africa and Botswana cases provide evidence that VC emergence is a more complicated and contingent process than suggested by the existing model. Two additional processes--coproduction and diffusion--appear from these data to operate as well, and one of these--coproduction--is a teleological process, introducing the role of public-private agency into VC emergence. As a result, any new model of VC emergence incorporating these additional sub-processes will be less predetermined than the existing model.

What does such a model look like? From these data, it is now possible to construct a multistage model of VC emergence. This model integrates four processes: simultaneity, diffusion, coproduction, and the VC cycle. Simultaneity enables VC model diffusion from other populations. In the presence of an equity gap or other market failure, government investors and fund managers then cooperate to fill that equity gap, leading to fund replication via the VC cycle.

The findings suggest an alternative model of VC emergence, as depicted below:

**Figure 6.1--A More Complete Conceptual Model of Venture Capital Emergence**



Source: Author

This model is called the ‘enable-bond-replicate’ model of venture capital emergence. The operation of the simultaneity process enables diffusion and, where necessary, coproduction. These processes are linked and involve the bonding of government investors and private sectors, as well as the bonding of this dyad to external organizational VC populations, from which models and institutions might be borrowed and adapted via diffusion. Once these bonding process have operated, then the VC cycle can begin to run its course, and, once a full cycle has been completed, additional funds can be raised, replicating new funds and leading to an active national venture capital industry.

In this sequential model combining three life-cycle processes (simultaneity, diffusion and the VC cycle) and one teleological process (coproduction), simultaneity conditions must be satisfied before the diffusion and coproduction processes can be generated. In other words, government investors and fund managers cannot productively cooperate to cause VC emergence, and diffusion from other populations cannot begin, until essential preconditions—pools of capital, specialized financial institutions, and entrepreneurs—are all available in sufficient quantities to justify such cooperation. These simultaneity conditions are shaped by enabling conditions, such as those described in the South African and Botswana case studies.



In turn, in the presence of an ‘equity gap’ or other market failure in seed, startup, and early stage finance, coproduction must be operating before the VC cycle can become self-sustaining, primarily because the “equity gap” cannot be filled exclusively through market mechanisms. Government investors and fund managers, working together, fill this gap in this model. The coproduction process is contingent on the existence of an ‘equity gap’ or other market failure, unlike the other necessary sub-processes in the VC emergence process.

Botswana’s experience suggests that the diffusion of VC models from other economies appears to have played an important intermediate role in the emergence process. In this case diffusion appears to enter the VC emergence process when government and private fund managers work to coproduce the industry. The close cooperation between VPB and the government in Botswana in this coproduction process is noted in the willingness of VPB to pursue nonprofit maximizing goals, such as job creation, as part of its operation of the VC cycle.<sup>55</sup> A variety of diffusion processes provides the conceptual yeast that stimulates coproduction, in part by helping to anchor discussion between the key stakeholders around possible solutions. Diffusion may operate, whether or not coproduction is required.

In this more complete model, simultaneity conditions set the scene for VC emergence. Sufficient stocks of opportunity-oriented entrepreneurs, capital demanding the risk-return profile of VC, and specialized financial institutions able to manage the unique instrumentalities of VC create interest in and demand for VC as a product and, perhaps, as an industry. However, the poor economic characteristics of seed, startup, and early stage investments, as well as the lack of attractiveness of angel investing as a substitute for VC in weak institutional environments characterized by lower levels of trust, poor tax administration, and higher levels ethno-linguistic fractionalization, lead to a need for pooled investment vehicles supported by the government to address the equity gap. At this point, diffusion of VC models from other environments becomes relevant.

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<sup>55</sup> One respondent indicated that “Botswana is a higher trust society than South Africa.”

Yet the South African experience suggest that government support for VC cannot “take off” unless government and private VC fund managers have common interests transcending profit maximization or financial sustainability (Lingelbach et al., 2008). The relatively high levels of trust between the government and the private sector in Botswana contributed to a quicker takeoff of VC in the country in comparison to South Africa. The task of VC industry development in weak institutional environments requires a “double bottom line” approach and a much higher degree of cooperation than a contractual, commercial, arm’s-length relationship typical of limited partners’ relationships with general partners in VC funds in developed economies. VPB refers to this “double bottom line” strategy in its public presentations. The intermediate role of coproduction in VC emergence is also supported in the Botswana case.

Coproduction is facilitated by the diffusion (and proper adaptation) of VC models from elsewhere. With sufficient cooperation and adequate diffusion, fund managers and government can coproduce enough success stories to cause the VC cycle to begin to operate on its own, without further government support. This process is unlikely to be linear—from simultaneity to coproduction and diffusion to the VC cycle. In particular, coproduction may have meaningful feedback effects on simultaneity, altering the stock of opportunity-oriented entrepreneurs and the risk-return calculations of potential VC investors. In turn, simultaneity conditions may shape coproduction and diffusion processes, in particular the necessity of government and fund managers to work with one another and the ways in which diffusion is adapted to a particular VC environment.

#### 6.4 *Possible logic combinations governing the venture capital emergence process*

In Chapter 2 a number of logics governing organizational behavior were described. These included rational choice theory, path dependence, initial conditions, and altruism. I now consider which of these logics, if any, might govern the more complete model of VC emergence described earlier in this chapter.

To determine which logic supports the propositions advanced at the end of Chapter 2, I narrate four brief ‘stories’ of venture capital emergence, using each of the above logics

in its pure form and the enable-bond-replicate model. These ‘stories’ can then be considered for their plausibility, both from the standpoint of logic and the data from the South African and Botswana cases.

In a world where rational choice theory was the dominant logic, the simultaneity process would operate as entrepreneurs seek to maximize their wealth through the exploitation of opportunities, investors would maximize their wealth through seeking and investing in entrepreneurs offering sufficiently high IRRs to compensate for the risks, and specialized financial institutions would emerge in response to the demand from investors and entrepreneurs for vehicles that would facilitate investment of the former into firms controlled by the latter; it is also possible that investors emerge in response to opportunities created by the offering of specialized financial institutions. Should all three of these simultaneity conditions be operating, then investors and, to a lesser extent, entrepreneurs would demand VC models from other populations by which to manage the VC investment process. These models would diffuse into and, where necessary, be adapted to suit the local conditions, driven by the desire of investors to find the best mechanism to maximize IRRs. Once such a model has been diffused and, where necessary, adapted, the VC cycle process can then operate. Fund managers will seek to navigate this cycle as rapidly and successfully as possible, motivated by the attractive returns that flow to fund managers that succeed in doing so.

If a market failure, such as the ‘equity gap’, exists (which assumes that high growth, high potential businesses exist and are not being adequately financed) and an insufficient number of investors arise in the simultaneity process to fund high-growth, high potential ventures, then investors and fund managers, seeking to maximize their wealth, have an incentive to coproduce venture capital with the government. In this circumstance, investors and fund managers need government investors to maximize their wealth, because, without such investors, the simultaneity process fails and no opportunities for wealth creation will arise for prospective fund managers. From the perspective of investors and fund managers, government investment represents a kind of free or cheap option--if it leads to wealth creation for these players, fine; if not, these players are no worse off than they were before this investment. From the standpoint of government investors, these players are motivated primarily by maximizing their power

and status, and perhaps in some mature LAOs, by wealth maximization as well. Oversight of a new program such as venture capital investment may be a path to promotion or job security for government officials, insofar as such a program is consistent with the interests of the dominant elite coalition. Increased power associated with such oversight might also enhance these officials' status, as would the possible linkages to the private sector and international markets. These linkages might also translate into increases in wealth over time for these officials.<sup>56</sup> In summary, the 'story' of VC emergence that arises through the lens of rational choice theory is straightforward and noncontroversial.

If path dependence is used as a logic governing the enable-bond-replicate model, a different tale results. The variation of intermediate events, as well as their sequence, determines the outcome of models governed by this law. Processes that are path dependent cannot "shake free from the influence of their past state(s)" (David, 1997). In the case of the enable-bond-replicate model proposed in this thesis, the end state (the efficient operation of the VC cycle) is a product of coproduction and diffusion (the intermediate event processes in the emergence process), and each of these intermediate processes is in turn shaped by the intermediate events that come before it and after initial conditions. These initial conditions exist before the simultaneity conditions and are exogenous to the enable-bond-replicate model. We can see these initial conditions as the outcomes of the processes underlying the three simultaneity sub-processes: the opportunity identification, evaluation, and exploitation processes giving rise to a sufficient stock of high growth, high potential entrepreneurs; the wealth creation and risk appetite creation processes giving rise to sufficient stocks of capital interested in VC investment; and the institutional, financial sector development, and educational processes leading to specialized financial institutions supportive of venture capital.

The outcome of the simultaneity process shapes the way in which coproduction (when necessary) and diffusion operate. For example, the robustness with which simultaneity conditions are satisfied would lead to stronger or weaker forms of coproduction. In turn, the precise form that coproduction takes would then influence the ways in which

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<sup>56</sup> In developed countries government officials frequently leave public service to join VC partnerships and boards. Al Gore is one recent example.

VC models are identified, imported, and adapted to local needs. The robustness of these processes would then help to shape the efficient operation of the VC cycle. For example, prospective VC fund managers, viewing a situation of apparently attractive simultaneity conditions, weakening coproduction between government investors and fund managers due to decreasing levels of trust, and the difficulties of diffusing VC models due to distance from efficacious VC populations, might change the ways in which they operate the VC cycle. For example, they might invest more rapidly, ‘front end load’ the dealflow, extract cash flows from investees sooner, and begin the sales process associated with a second fund earlier because of the path they observe has been traveled earlier in the emergence process. As emphasized in David (1997), these outcomes are to some very significant degree stochastic and hence unpredictable from initial conditions alone.

A model of VC emergence governed by an initial conditions logic would argue that simultaneity conditions largely determine the successful operation of this process. It would pay close attention to the above-noted processes creating sufficient stocks of entrepreneurs, pools of capital, and specialized financial institutions present at the inception of the VC emergence process, and link these to the extent to which coproduction, diffusion, and the VC cycle would then function. In the case of South Africa, for example, an initial conditions-based argument would point to the fact that venture capital emerged in the apartheid era as central to how the industry then took shape. For example, the economic structure of South Africa prevailing before 1980, apartheid-era restrictions on black African entrepreneurship, the relatively advanced, but risk averse, state of the South African financial services sector then, and the then-prevailing legal framework would, according to an initial conditions logic, determine how coproduction does or does not operate subsequently. These conditions would also largely shape the extent of the operation of the diffusion process and the ways in which fund managers navigate the VC cycle. In many ways, the initial conditions-based model would be a story about how beginnings matter.

What would venture capital emergence look like, if altruism were the operative logic? Here it is difficult to conceive a pure form of this logic operating, in which all actors are motivated solely by collective interests, and little support exists in any of the social

science literatures to support such a pure form. Instead, a hybrid law, where RCT and altruism are combined, seems more reasonable and is supported by recent studies (Ghoshal, 2005; Van de Ven, Sapienza, and Villanueva, 2007) and emerging organizational forms such as those studied by social entrepreneurship. A mixture of wealth maximizing and social motivations could cause entrepreneurs to be more effective in identifying and exploiting opportunities, and this approach might enable such entrepreneurs to more effectively mobilize resources. The resultant mobilization would create demand for specialized financial institutions, which, as a result, would lead to the satisfaction of simultaneity conditions. Altruism becomes critical when the coproduction process comes into play. The public and private sector may choose to cooperate not just to satisfy their interests, but also in pursuit of collective interests, such as nation-building. Both the South African and Botswana cases provided evidence that fund managers were motivated by both self- and collective interests. The influence of altruism on diffusion and the VC cycle is likely to be less important.

Clues about the logic or laws that might be operating in the VC emergence process can be found by considering the fit between this phenomenon and the patterns associated with different logics noted above (Goldstone, 1998). First, is venture capital common, occasional, or unique? Each of these patterns indicates the type of logic that might be governing. Given its presence in a number of developed and developing economies, venture capital can no longer be considered a unique phenomenon, so the VC emergence process is unlikely to be dominated by path dependence as a logic. However, path dependence may play a role at the level of the individual sub-processes of VC emergence and, as noted earlier, does seem present at this level of analysis.

It also seems difficult to label VC emergence as a common phenomenon, at least in comparison to other financial services such as commercial lending or insurance. The percentage of entrepreneurs funded by venture capital is significantly less than 1%, even in the United States (Shane, 2008), and the percentage of dealflow funded by VCs is also less than 5%, including in South Africa and Botswana. It is also clear that venture capital has not emerged in many of the contexts in which it has been introduced--some recent examples include Russia, Pakistan, Indonesia, and the Philippines. Consequently, there seems nothing predetermined about venture capital

emergence; as with other equity markets (Goetzmann, Li, and Rouwenhorst, 2005), VC can also submerge. Therefore, we can conclude that the VC emergence process is unlikely to be governed mainly by some kind of rational choice theory. As with path dependence, this does not mean that RCT-based explanations are not operating at the level of the sub-processes. Indeed, as the above ‘stories’ indicate, RCT seems a reasonable explanation for how many of these sub-processes might function.

This leaves the following conclusions. First, venture capital is an occasional phenomenon. Second, similar initial conditions might precede this phenomenon in different contexts (simultaneity conditions and their precedent enabling conditions). Third, based on the frequency of the venture capital phenomenon and the evidence from South Africa and Botswana, an initial conditions-based logic plays a more important role than other logics in accounting for why the VC emergence model functions the way that it does. Again, this conclusion does not rule out the operation of other logics in the VC emergence process, particularly at the level of the sub-processes.

Each of these four ‘stories’ is a pure form and therefore unlikely to provide a sufficiently convincing explanation alone. Indeed, the data from the South African and Botswana cases support a logic that, while favoring initial conditions, incorporates both rational choice theory (conditioned by path dependence) and altruism as suggested in Van de Ven, Sapienza, and Villanueva (2007). The incorporation of path dependence and initial conditions into rational choice explanations is logical and common in social science explanation (Goldstone, 1998). In other words, all four ‘stories’ contain important grains of truth.

The enable-bond-replicate model of the venture capital emergence process is governed by an initial conditions logic. In this model, rational choice theory is useful in explaining how the VC cycle can be efficiently operated when the ‘equity gap’ is not present and also predicts that government investors and fund managers might seek out one another in the presence of an ‘equity gap’ to maximize their wealth (fund managers), status, and power (government officials). Path dependence is useful in this model in showing how events and decisions before the replication of the VC cycle and the resultant creation of an active national VC industry condition the nature of its

emergence. For example, the selection by the South African government of IDC as its instrument for VC development was a critical decision which shaped the subsequent emergence and then submergence of the industry. Altruism is also helpful in explaining the many reasons beyond pure self-interest why government officials and fund managers might choose to cooperate in a coproduction process aimed at VC emergence--they may believe that their economy is on the doorstep of a transition to an open access order, as many VC actors in South Africa today. However, initial conditions dominate all of these other logics. In South Africa, the windfall nature of a natural resources-dominated economy and the legacy of apartheid are two conditions that the best intentions of policymakers in the post-apartheid era have yet to overcome. In Botswana, the consensual nature of Tswana tribal politics has offset the legacy of reliance on diamond mining to offer a quicker path forward for VC emergence.

#### 6.5 *The enable-bond-replicate model as a complement to other models*

While the enable-bond-replicate model results in a more complete perspective on venture capital emergence than the implicit incomplete model described in Chapter 2, the question remains how does this model relate to other possible theoretical perspectives. The population ecology perspective, applied to the VC phenomenon in Manigart (1994), is the most widely accepted lens through which researchers (although not necessarily policy makers or practitioners) have viewed venture capital development at the industry level. Although this unit of analysis is lower level than the organizational field analysis unit adopted in this thesis, its findings remain relevant to any evaluation of the enable-bond-replicate model.

The principal finding of Manigart (1994) is that the founding rate of venture capital funds is most directly impacted by the density of the venture capital industry. Initially, higher densities lead to more VC fund foundings, but, beyond a certain point, the impact of density reverses and founding rates fall as density rises. This finding is consistent with the legitimation-competition model in the organizational ecology literature (Hannan and Freeman, 1977, 1989).



However, the population ecology approach puts to one side the issue of organizational speciation: how do the first few funds in a venture capital industry come to be established? This gap results in an incomplete model, a point recognized by the literature (Manigart, 1994).

The enable-bond-replicate model advanced in this thesis provides an answer to this question of speciation, as well as the subsequent emergence of venture capital as an organizational field. Therefore, it provides a fuller answer to the research question posed earlier: how does venture capital emerge in weak institutional environments? Specifically, the model shows that the establishment of the first few VC funds requires the operation of the VC emergence process: simultaneity, coproduction (contingent on a market failure), diffusion, and the VC cycle. In many instances in weak institutional environments with limited access orders, an ‘equity gap’ could be present, requiring coproduction between government investors and private fund managers. Coproduction will draw upon diffused VC models and related institutions from other populations in order to stimulate public-private collaboration in the coproduction process. Without simultaneity conditions being present in sufficient and attractive quantities, coproduction, and diffusion, the VC cycle is unable to operate efficiently, and, thus, insufficient numbers of VC funds will be created to allow the legitimation process described in Manigart (1994) to operate.

While the enable-bond-replicate model in this thesis answers the speciation question, it should not be seen as only a model of VC’s earliest stages of emergence. It also provides a different story about VC emergence as a whole than that told in Manigart (1994). It both completes the population ecology perspective and challenges it by narrating a process that is more complex (by virtue of its greater number of stages) and contingent on cooperation between actors in the public and private sector.

Having described a new model of venture capital emergence, I now discuss some of its implications and conclude this thesis in Chapter 7.

## Chapter 7

### Conclusion

#### 7.1 *Purpose of study*

This study began by noting the role of entrepreneurship in economic development and venture capital's contribution to the resource acquisition and value-adding processes in entrepreneurship. Successful high potential firms can have a disproportionate impact on various dimensions of sustainable economic development, and VC can have an important role in financing these specific types of firms. Consequently, researchers and policy advisors have suggested that governments in some developing countries place an increasing emphasis on the innovation systems that could improve the chances that high potential firms could survive, grow, become profitable, and create wealth for their owners. In simple terms, this counsel could be summarized as “replicate Silicon Valley.”

Many developing countries saw this advice in different terms. As limited access orders controlled by dominant elite coalitions eager to maintain and enhance their economic rents, these states saw innovation and venture capital as a challenge to the established order, not an improvement on it. Thus, from their perspective, venture capital was not a credible part of these economies' development strategy, unless it could be aligned with maintaining and growing elite rents. In some instances, this could be accomplished by enclaving foreign VC funds, while in other cases—usually in mature limited access orders—VC has begun to play some role in creating rule of law and perpetual life organizations for elites as a bridge to open access orders. All of this suggests that the study of VC emergence in the weak institutional environments characteristic of limited access orders is more complex than the identification of relevant enabling conditions and the efficient operation of VC funds. The distortions to the VC market inherent in the structure of limited access orders suggests that VC emergence in these environments may involve other processes not yet fully understood. A better understanding of these processes, and the development of a more complete conceptual model of VC emergence, has been a central purpose of this study.

Associated with this larger purpose are several additional challenges. One challenge is intellectual—how to understand the process by which venture capital emerges? Related to this is the need to explicitly recognize that VC emergence is a process and cannot only be studied as relationships between independent and dependent variables.

A second challenge is political—how can limited access orders allow VC to emerge without destroying the economic rents currently enjoyed by the elites forming their dominant coalitions? Here the paradox is straightforward—VC finances innovative activity, which, in the event that it is successful, creates competition or substitutes for the products and services from which elites earn economic rents. The stability of these rents is central to the maintenance of order in limited access orders. In theory, elites could exploit VC opportunities themselves, but, to do so, would increase the risks they face without necessarily improving their returns in the form of rents. Thus, these elites may be worse off by exploiting VC.

A third challenge reflects path dependence—why not simply adopt the seemingly dominant American VC model? The story we currently tell about VC's history is one in which VC emerged in the US and has been subsequently adopted by Europe, Japan, and other countries. The argument is that institutional conditions don't really matter for VC emergence and, that while adaptation of the "classic" VC model has occurred, changes have been around the margins. The increasingly varying practice, in which a wide variety of models inconsistent with this "classic" model are now in place, suggest that institutions may matter and that path dependence must be modeled as part of any more complete understanding of the VC emergence process.

This study has tried to address these challenges by developing a more complete conceptual framework in which to view VC emergence. It has done so by using data from two limited access order states—South Africa and Botswana—and propositions based on four major literatures—neoclassical explanations of venture capital, institutional theory, economic sociology, and diffusion. The intent of this framework is to capture the complex, processual character of VC emergence by incorporating four processes at work on three levels—macro, meso, and micro.

I now turn to the gaps in the literature that led me to construct this model.

## 7.2 *Gaps and opportunities for research arising from literature review*

To develop an integrated conceptual framework for VC emergence, I have considered four major literatures—neoclassical explanations of venture capital, institutional theory, economic sociology, and diffusion—as well as two, more minor research streams—entrepreneurship policy and business history. The principal gap identified from this review is the incompleteness of the current implicit model of VC emergence. This model considers macro-level enabling conditions and fund-level operations, but does not link these two processes or consider possible mediating processes.

In considering what some mediating processes might be, I first examined institutional theory, where I found that a focus on macro-level mechanisms for institutional change may play a role in the VC emergence process. However, these changes are difficult to initiate in the limited access orders that dominate the contemporary developing world. In these orders dominant elite coalitions are threatened by the innovative firms financed by VCs, because they are likely to increase competition and hence reduce those elites' economic rents. Insofar as VC may contribute to local demand for rule of law for these elites and the support for perpetual life organizations owned by these elites (such as corporations), VC may play a facilitating role in the transition from limited to open access orders. In these orders innovation and competition are more the norm and VC is more likely to emerge. In the concept of legal origin, the law and finance literature also provide a possible basis for research design, given the strong differences between English and French legal origin countries regarding VC friendliness.

The institutional literature suggests that the relationship between VCs and the state might be a mediating process in VC emergence, so I turned next to the economic sociology literature for hints about how this process might function. The central idea that emerged was the notion of coproduction, in which the state and the private sector may cooperate in certain circumstances to produce goods and services that neither could efficiently produce alone. The economics of early stage VC funds strongly suggested

that early stage VC might be a good that could be coproduced. On the one hand, government is capable of providing patient and reliable investment capital over long periods of time, while not requiring the same kind of IRRs that private investors would seek. Private fund managers provide a variety of specialized investment skills that are not available to the public sector. If hybrid funds can be created at a scale that is minimally efficient, this cooperation between the public and private sectors may help to close the “equity gap” that exists for seed, startup, and early stage investment in many countries and help correct a market failure.

It is important to note that coproduction is not purely, or even mainly, a result of the public and private sector actors behaving according to their rational economic self-interest. The cooperation between these actors may also be driven by other, non-economic motives as well, not all of which may be purely rational. For example, altruism may play a role in the motivations of both sets of actors, and this research has been sensitive to that possibility by constructing propositions guiding data collection that allowed respondents to voice a full range of motivations.

The next question raised by the literature review was more practical—how does coproduction begin? The diffusion research stream held a promising possible answer. VC models are more likely to be adopted by organizational populations that are geographically proximate and in which the sending population has had an efficacious experience with VC. Thus, successful VC models in nearby populations might serve as the irritant in the oyster, initiating the basis for cooperation and coproduction between government investors and private fund managers. The basic argument that the public and private sectors might make to one another is quite simple: “VC worked there, and we are like them, so why can’t it work here? Let’s work together on this, because it’s hard work.” This argument contains elements of both self-interest and altruism.

These gaps and opportunities in the various literatures suggested a number of propositions that formed the basis for a model of VC emergence. These propositions were also informed by a careful rereading of business history, which suggested that the history of VC is far more contingent and nonlinear than it is perhaps understood to be. This finding suggested the need to be sensitive in the data collection process to

anomalies suggesting additional processes at work. My earlier literature review suggested that these processes may include institutional change, coproduction, and diffusion.

### 7.3 *Research question framed as a result of literature review and its importance*

Following a review of relevant literatures, I next considered the overall structure of research in venture capital. When examining the larger gaps in our understanding of venture capital, other researchers have identified three structural gaps of relevance to this study—internationalization, engaged scholarship, and process research approaches.

First, current VC theories are constructed using datasets from developed economies. The question of whether VC develops in developing economies along the same lines as developed ones remains largely unanswered, so data from these populations would help contribute to our overall understanding of the phenomenon. Second, engaged scholarship argues for the close study of organizational phenomena using multiple theoretical lens, primary data, and consideration of the multiple bases for human action. This type of organizational scholarship calls for longitudinal fieldwork using abductive reasoning and is underrepresented to date in both the VC and entrepreneurship literatures. Third, process research methods offer promise as a means to better understand phenomena characterized by change. Given that change and disequilibrium are two characteristics that make the study of entrepreneurship distinctive from other literatures in management, it is surprising that process methods remain underrepresented.

Given the structure of the venture capital literature, the current incomplete model of VC emergence, and the hints offered from other literatures about how this model might be made more complete, my central research question became a straightforward one:

*How does venture capital emerge in weak institutional environments?*

Such a question helps to address the three structural gaps in the VC literature identified above. The question allows me to explore VC emergence as a process, thereby using

process research methods. The focus on weak institutional environments characteristic of developing countries leads to data collection in populations historically underrepresented in the literature. By conducting longitudinal fieldwork across two cases and exploring the relationship between the public and private sectors in the emergence process, this study also contributes to the use of an engaged scholarship approach in the VC literature.

Aside from helping to fill these structural literature gaps, this question may have relevance to the literatures on finance, industry emergence and organizational change. By attempting to show how a complex phenomenon like VC comes to life in a new organizational population, I have attempted to show an integrated theoretical framework that might be applied to the study of other complex financial instruments, hybrid public-private organizations, and new or diffused industries. For example, this framework could be employed to understand the process through which public-private organizations have emerged to manage troubled assets during the current financial and economic crisis.

From a policy perspective, this research question is important to those policymakers seeking to facilitate VC industry creation, but who are seeking a systematic approach grounded in theory to do so. Answering the “how” question of VC emergence may also help policymakers to better answer related questions concerning whether to pursue an active government role in VC development and assessing the probability that a national VC industry is likely to emerge. Questions of “how” (process) do not necessarily take a back seat to questions of “whether” (policy). As Andrew Pettigrew argued recently, governments spend too much time thinking about policy, and not enough thinking about the processes through which policy is formed, implemented, evaluated, and revised.

#### *7.4 Key findings and their relevance*

A more complete conceptual framework for VC emergence has been developed from data gathered in South Africa and Botswana. This model suggests that the VC emergence process is comprised of four sub-processes: simultaneity, diffusion, coproduction, and the VC cycle. These processes proceed sequentially, but feedback to

one another as well. Two of these sub-processes (simultaneity and the VC cycle) represent variations of the life cycle model of social change, one (coproduction) is purposeful in nature, and one (diffusion) appears to be evolutionary in nature. The logic governing this model is principally one of initial conditions, but rational choice theory, path dependence, and altruism help to describe various sub-processes.

This mixture of fundamentally different types of social change processes in the VC emergence model and a multifaceted logic suggests that the emergence process is a highly complex one, comparable to other multi-motor models of organizational change developed to date, such as human development progressions (Riegel, 1976), the garbage can model (Cohen, March, and Olson, 1972), the social psychology of organizing (Weick, 1979), and partisan mutual adjustment (Lindblom, 1965).

I turn now to consider some of the implications of this model for theory, policy, and practice.

#### *7.4.1 Key findings for theory*

This study has been motivated by an interest in economic development, the possible role of high-potential entrepreneurship in it, the function of venture capital in providing financial resources to high-potential firms, and the ways in which institutions help to shape the emergence of venture capital, particularly in weak institutional environments. The prior literatures concerned with these phenomena have employed a variety of theoretical perspectives from economics, including the resource-based view, agency theory, and competitive advantage, to better understand how firms lead to economic change and development. Each of these perspectives has provided a powerful lens through which we have been able to glimpse some portion of reality in this domain. At a minimum, these economic perspectives have enabled us to conduct more rigorous analysis and, from time to time, this analysis has been translated into prescriptions of use to both policymakers and practitioners.

In order for researchers to make progress using these established economic perspectives, a variety of “soft” issues have had to be managed and, in some cases,



assumed away. These assumptions—of which the most central is that of the rational, marginal utility-maximizing actor at the center of economic life—are increasingly being challenged as being rather heroic in nature.

In this study, I have tried to engage with a range of social science theories to augment our existing theoretical perspectives on the VC phenomenon. My goal has not been to replace existing VC models based in economics with a new model based exclusively in other theoretical disciplines. Rather, I have sought to complement our existing incomplete model with other theoretical perspectives to better comprehend the actual processes we observe as venture capital comes to life in institutional settings different from those usually studied. In particular, I have tried to shift the discussion of VC emergence from one focused on comparative statics (commonplace in the variance research approaches used in economics and management studies) to one that explicitly addresses VC emergence as a dynamic change process. The emphasis in this thesis on process rather than variance studies does not suggest that process research methods offer insights into organizational phenomena that are superior to those from the variance stream. Rather, I have argued that new theoretical perspectives and research methods may enable a richer understanding of venture capital emergence.

As part of this study, I have also sought to engage directly in the theoretical debate on engaged scholarship. Instead of seeing organizational practice as a second order consequence of theory, this study argues that better, richer theory can arise through a closer relationship between researchers and the subjects that they study. The risks of that engagement seem worth the payoff in terms of a fuller understanding of reality, which can be translated into better practice over the long term.

#### *7.4.2 Key findings for policy*

Policymakers have focused to date on improvements in the enabling environment in their attempts to jumpstart national VC industries. The results of this study suggest that, while these changes may be necessary, they are unlikely to be sufficient to sustain active VC industries over time. Instead, the possibility that VC emergence may be in part driven by a teleological process in which coproduction plays a central role suggests

that governments and fund managers must focus more efforts on developing cooperative relationships with one another based on shared interests in seeking the emergence of VC. Coproduction depends on embedded social relations, which can be disrupted by social, political, and economic change.

How might this cooperation be improved or, to put it in theoretical terms, how can additional social capital of this nature be generated between these actors? Taking South Africa as an example, it seems reasonably clear that the dramatic transformations associated with the fall of apartheid in South Africa will have diminishing ripple effects over time. These transformations have played a central role in testing the ties between government investors and fund managers, but more recent policy changes have become more incremental and, therefore, less likely to disrupt social relations between the government and fund managers. Therefore, the passage of time could lead to a higher degree of trust between government and fund managers.

Second, it seems possible for government to engineer the creation of social capital (Field, 2003). Education helps people to build social skills and engage in shared norms and rules (Fukuyama, 2004), although much of the learning associated with social capital generation takes place outside formal educational institutions. Mentoring programs have been advocated in recent policy documents from the UK government's Forward Strategy Unit; it is interesting that mentoring was also identified in the 1999 Stillman report as important to VC emergence in South Africa. Such mentoring could take place at two levels: between South African and international fund managers and for qualified graduates seeking to enter the VC industry. The latter is currently being explored by the South African industry in collaboration with the government.

Third, in the South African context it is noteworthy that the ANC depended for decades on the voluntary services of hundreds of thousands of black African and white citizens, yet voluntarism seems quite weak in the country today. Voluntary programs linking private sector individuals with relevant skills to government agencies requiring those skills may be one way to increase the embeddedness between fund managers and government investors, without calling into question the legitimate needs to continue to increase black African participation in government policymaking and implementation.

Fourth, it seems critically important that South African policymakers listen more closely than they have to the key private sector actors involved in implementing innovation policy, including VC fund managers. While South Africa is notable for its very large number of forums that provide for governmental consultation with the citizenry on a variety of issues, it is difficult to claim that economic policymaking in the post-apartheid era has been particularly consultative on issues of innovation. Fund managers, entrepreneurs, and scientists at the working level could have more of a voice in policy matters, and this may contribute to a greater capacity to coproduce VC. Informants have indicated that a forum between the VC industry and government is currently being discussed.

Botswana's experience suggests that timing matters a great deal, and that there are limits to engineering coproduction. Botswana's high level of trust between the public and private sectors was not created overnight and reflects a decades-long process of tribal integration. An inherent contradiction seems to exist between such high trust environments, often characterized by low levels of ethno-linguistic fractionalization, and the literature on ethnic entrepreneurship, which demonstrates the dynamism of ethnic minorities, including in weak institutional environments.

Beyond South Africa and Botswana, the model developed in this thesis may serve as a stepping stone to other mature limited access orders seeking to develop and maintain active national venture capital industries. In particular, the model suggests the need for a careful assessment of the status of each of the sub-processes in VC emergence before more active government involvement in facilitating VC. Each of these sub-processes is itself the product of other processes, and policymakers must trace these processes back to their roots to understand the myriad linkages in detail. For example, in the simultaneity sub-process the creation of sufficient stocks of entrepreneurs is itself a process which is itself a product of 1) opportunities driven by technological, political/regulatory, and socio-demographic changes, and 2) the discovery of opportunities by alert entrepreneurs, who need information access and the ability to recognize opportunities (Shane, 2003). These underlying drivers may also play a role in facilitating or constraining other sub-processes in the VC emergence process. Political/

regulatory changes that increase the stock of opportunities could also decrease the cooperation possible between the public and private sectors; such seems to be the conundrum at the heart of limited access orders.

Additionally, given that VC emergence is more likely to occur in mature limited access orders than in other LAOs, governments must honestly self-assess what type of limited access order they are and, if they are a mature LAO, how closely they meet the doorstep conditions that may then lead to a transition to an open access order.

Given that an initial conditions logic is the principal ‘regulator’ of the enable-bond-replicate model, policymakers must recognize their limited scope for action is shaping the VC emergence process. Can policymakers reshape initial conditions? Can they rewrite history? While some governments have tried to overcome initial conditions in other policy domains (Soviet collectivization, Mao’s Great Leap Forward, and the construction of Brasilia are three examples from the twentieth century), the outcomes have rarely been favorable (Scott, 1998).

#### *7.4.3 Key findings for practice*

While policymakers are the primary set of users that may be impacted by these findings, fund managers and high-potential entrepreneurs represent two other important constituencies. As with policymakers, the complexity inherent in the study’s model of VC emergence suggest the need for fund managers to undertake careful due diligence on the status of each sub-process before starting fundraising. In particular, fund managers must assess with a clear eye the likelihood that they can form a cooperative relationship with the relevant policy implementing agencies. The South African case is cautionary in this regard. Despite a competent, reformist post-apartheid government dedicated to market principles, fund managers found significant challenges in working with the government agencies charged with VC development. Cooperation was strained by the structural break associated with the transition to apartheid, suggesting that change itself, even if it is positive at the political, social, and macroeconomic levels of analysis, may create increased distrust, especially between former and current elites in the dominant coalition.

While fund managers have long recognized the importance of timing in establishing a new fund (due largely to the dependence on relatively narrow time windows within which to exit from investments at attractive IRRs), the findings of this thesis suggest that the long process of VC emergence requires careful preplanning. For those fund managers with a global asset allocation, these findings argue for early monitoring of each of the antecedent sub-processes to the VC cycle, as it is the operation of these sub-processes that seem to largely determine whether the VC cycle will itself operate. Using existing datasets, it seems quite possible to monitor continuously the status of each of the antecedent sub-processes (simultaneity, coproduction, and diffusion) and thus more carefully plan a fund manager's entry point into a market for venture capital at the right time. Patience and discipline (two hallmarks of successful fund managers) are likely to be reinforced as a result of this monitoring.

Increasingly, research and policy have begun to focus on business angels and other types of informal investment as a possible solution to the equity gap in seed, startup, and early stage investing. To an even greater extent than venture capital research, angel research has concentrated on developed economies, and even in these research settings much disagreement exists about the size and significance of angel investing (Shane, 2009). One recent study has suggested that the scope of informal investment (as measured by the percentage of the adult population engaged in such activities and the percentage of such investment compared to GDP) in some developing countries may significantly exceed levels in developed economies (Bygrave and Quill, 2007). The findings of this thesis suggest that a dynamic process perspective may be useful in gaining a better understanding of angel or informal investing emergence in limited access orders, where tax incentives (a popular policy tool to encourage angel investing in developed economies) may have limited relevance and ethnic kinship could play a role in shaping opportunity sets to a greater extent than in the US or Europe. Given the role that former entrepreneurs play in angel investing in the US and Europe, and the structural limitations on the emergence of high-potential entrepreneurs in limited access orders, the interplay between these factors may offer some initial clues as to how a more complete model of angel emergence might be constructed.

For high-potential entrepreneurs building firms in limited access orders, the most relevant finding from this study is that the likelihood of obtaining VC is even lower than in economies with active VC industries. Some entrepreneurs with ties to the dominant coalition will react to this finding by lobbying for financing programs favorable to their firms on some other basis than “innovation” or “venture capital.” Such appeals may be based on “job creation” and “helping previously disadvantaged populations.” Those programs may serve the needs of the dominant coalition and perhaps a few of the target populations, but will simply solidify the limited access order. As a result, the likelihood that a competitive economy in which truly high-potential firms can flourish by selling into international markets will be reduced.

However, high-potential entrepreneurs in limited access orders must not abandon all hope of obtaining venture capital, nor should they believe that venture capital cannot improve the odds of their firms’ success. The demonstration effect of even one successful venture capital investment on a country’s other entrepreneurs or an emerging VC industry cannot be underestimated. What the findings of this study may suggest is that high-potential entrepreneurs (as opposed to most other entrepreneurs or small businesses in general) may have an interest in forming “innovation associations” to influence dominant elite coalitions toward the doorstep conditions needed for innovation-oriented open access orders. Such associations could complement existing national systems of innovation (usually government-led) and play a role in ensuring the efficient operation of coproduction between the public and private sectors in pursuit of active VC industries. Such associations could encourage the formation of more high-potential, high-growth new firms by emphasizing the fundamentally different determinants of such entrepreneurship in comparison to that focused on necessity or lifestyle. As a result, these associations could contribute to an improvement in one element of the simultaneity conditions required for VC emergence.

### 7.5 *Limitations of this study*

This study has ten important limitations that limit its generalizability and relevance. First, the comparison of South Africa and Botswana as cases of venture capital emergence could be limited by the relatively brief experience of Botswana with venture

capital, the resultant lack of data in comparison to South Africa, and the idiosyncratic nature of venture capital emergence in these countries, which may limit the generalizability of this study's findings to other large emerging economies, such as China, India, Brazil, or Russia. This choice is a function in part of the emerged versus emerging research strategy choice, but it could also be argued that better country pairs might be found that have more data for the emerging VC industry case study. The complexity of the VC emergence process called for a choice of country cases that were as similar as possible to minimize variation. Earlier research designs that involved the selection of extreme cases with maximum variation were discarded due to the perceived inability to reach any meaningful findings within the limited time frame of the thesis preparation process.

Related to the choice of cases is the number of cases used in this thesis. A second limitation of this thesis may be the small number of cases used. While multiple units of analysis in South Africa allowed for an increase in the number of cases from two to three, this number is still small in comparison to other recent studies (e.g. Bingham, 2005). To some extent, this is a function of the research design and the small number of developing countries with nascent/emerging or emerged venture capital industries. In addition, a choice was made early in the research design process to study the VC industry emergence process in a small number of settings in greater detail, given the intermediate state of prior theory (Edmondson and McManus, 2007).

Third, the research design recognized the institutional differences between English and French legal origin countries, yet the two case studies used to develop the conceptual model were both from English legal origin countries. Fourth, neither South Africa nor Botswana are examples of pure English legal origin countries. Although both are classified as such in the law and finance literature, South African legal scholars note the important role of Roman-Dutch law in that country's commercial code (Zimmermann and Visser, 1996). It is arguable that both countries might be seen as hybrid legal origin types, although the literature to date does not provide for such a category.

An important fifth limitation concerns the Botswana case study. I met with unexpected challenges in accessing interview subjects in Botswana and, as a consequence, had to

call on a South African co-author to conduct one interview. While the respondents that I interviewed in Botswana were candid and forthcoming, and significant literatures on the country's economy do exist, my impression has been that the country is significantly more opaque (at least to outsiders) than South Africa. Thus, the Botswana case study is not as rich as the South African one, and this is not mainly because of the sizes of the two countries. The Botswana case also focuses on a fund which is 100% government funded. It could be argued that this fund is not really an example of venture capital, but rather of private sector management of government funds.

A sixth limitation is related to the possible recollection or hindsight bias in the South African interview data. Interviews were conducted in 2007-8 concerning events that occurred from 1980 to the present time, which allows respondents to know the outcome of prior events. By using archival data from both public and private sources (produced in most instances by different respondents than those interviewed), a fuller picture of the events when they occurred is likely to emerge and hindsight bias both identified and corrected.

The prior theory on venture capital emergence can be considered intermediate in its evolution, as it provides "provisional explanations of phenomena" (Edmondson and McManus, 2007). Given the state of prior theory, a combination of qualitative and quantitative research methods is most likely to result in the advancement of theory. A seventh limitation of this thesis is that it has emphasized a qualitative, case study-based approach, which may result in "insufficient provisional support for a new theory" that may reduce its potential contribution to the literature (Edmondson and McManus, 2007). While this conclusion does not invalidate the theoretical model developed here, it does emphasize the need to complement these findings with more quantitative process research methods, which I discuss in the following section.

At a more conceptual level, an eighth limitation concerns the rigor of the process research methodology that I adopted. Because the VC emergence process has limited theory to support our understanding, the case studies were inherently exploratory in nature. Because of the abductive reasoning process required when exploring under-researched phenomena—in which literature reviews inform propositions which provide



a general guide to research questions, creating data that when analyzed almost invariably cause modifications to the propositions and leading to additional data collection—a straight train of logic does not always run through this thesis. Instead, diversions are sometimes necessary, although these have hopefully been kept to a minimum.

A ninth limitation concerns research design. The use of a case study approach has important limitations. While case studies are the preferred strategy when addressing the “how” question at the center of this thesis, and where the researcher cannot control the behavioral event being studied, concern continues to be expressed about three weaknesses in this approach (Yin, 2003). First, case studies have been criticized for their lack of rigor, usually defined by sloppiness in data collection, lack of systematic procedures, or the use of equivocal evidence or biased views to shape a study’s conclusions. However, lack of rigor is not unique to case studies; experiments, surveys, and historical research have all suffered from this challenge as well. This study has sought to be methodologically rigorous through a careful and comprehensive reading of relevant literatures, the advance of propositions based on those literatures, the use of multiple data sources, careful data collection methods from those sources, and the use of established event identification and analysis methods to form the resultant model of venture capital emergence. Throughout this study, and in addition to regular discussions with my supervisor, preliminary findings have been presented as papers at international conferences, allowing for additional critical external examination of the study’s methods and conclusions.

Another criticism of case study-based research is that their conclusions cannot be generalized, mainly because such studies usually involve a small number of cases (the small *n* problem). Indeed, some researchers go so far as to argue that generalizability is only possible from large datasets. To some extent, this issue has been addressed in some studies by studying a phenomenon using multiple cases at multiple units of analysis, such as I have sought to do in this thesis. What is more important, case studies do not seek to generalize their findings to populations and universes. Case studies do not hold themselves out as samples. Rather, case study-based research seeks to “expand and generalize theories (analytic generalization) and not to enumerate frequencies

(statistical generalization)” (Yin, 2003). In elaborating a more complete model of venture capital emergence, and in not predicting expected outcomes that may be a consequence of that model, this thesis has attempted to stay close to the objective of analytic generalization.

A final criticism of case study-based research is the length of both the research process and the final reports. While that has certainly been the case in the past with other studies, it need not be the case. Case studies are neither ethnographies or participant-observation studies, and the confusion of the first with the second and third data collection methods has often led to massive case study documents. This thesis has been prepared with a view to presenting a concise argument that has hopefully avoided this criticism.

Finally, a tenth limitation concerns relevance. While I began this work with an enthusiasm for the relevance of venture capital in helping to alleviate poverty in developing countries, I finish this thesis seeing that VC has limited direct utility as a tool for policymakers. The emergence phenomenon appears to be too complex to engineer. Indeed, it is much more complex than Gilson realized when he called attention to a much simpler VC engineering challenge (Gilson, 2003). The model developed in this thesis may be of greatest use to scholars studying phenomena similar in nature to venture capital, such as other pooled investment vehicles including private equity, mutual funds, unit trusts, and exchange traded funds; other emerging industries; and other organizations for which public-private cooperation is required early in their lives.

## 7.6 *Future directions and opportunities*

The above limitations suggest some next steps from this study. First, case studies from French legal origin countries must be prepared to assess the robustness of the model proposed in this thesis. Gabon and Mauritius have been selected preliminarily as sites for these studies. Once these cases have been completed, a next step might involve extending the research to include countries with socialist legal origin, such as China, Russia, and Eastern Europe, as well as other emerging economies.

Second, a number of South African respondents suggested that the comparison between South Africa and Australia could be potentially fruitful regarding VC emergence. In addition, the literature also indicates the possible fruitfulness of a comparison between South Africa and Malaysia (Southall, 2006), given the two countries' similar GDP/capita, legal origin, and historic economic structures dominated by minority populations. In short, what can the model developed in this work tell us about the significant observed differences between these country pairs' VC industries?

Third, this study calls attention to the need to use other approaches consistent with a process ontology. These approaches include process studies narrating social construction and variance studies modeling or simulating processes. A process study narrating social construction might focus on how different cultures and contexts construct views of time that affect the processes through which VC emerges. Economies that have experienced structural breaks that alter the view of time may be particularly fertile contexts in which to implement this research approach. A study of VC emergence using a variance epistemology and employing modeling or simulation might also build on earlier work in the application of complex adaptive systems models to entrepreneurship.

Fourth, this study has identified a need for a new history of venture capital. A careful reading of business history suggests that the dominant view—that modern VC is a natural consequence of post-World War II marketization in the developed and, since the late 1980s, developing worlds—is at best incomplete and, perhaps, simply wrong. Risk capital activities that look similar to VC long predate the establishment of ARD in 1946, and governments have been directly involved in entrepreneurial finance since at least the early 1900s. We can see the modern history of VC not simply as the “immaculate conception” of American VC in 1946, followed by diffusion to Europe, Japan, and elsewhere, but perhaps more accurately as three parallel developments—American (where ARD and its founder, Doriot, were the pioneers, starting in 1945), British (where 3i's predecessor ICFC led the way, starting in 1946), and the former British colonies (where CDC began operations in 1948). This richer story opens up a new perspective, suggesting that VC emergence in the modern era may be linked in some way to three

broader developments: World War II and its stimulation of innovation; decolonization; and the Cold War. At a minimum, we are reminded that there was nothing particularly natural or predetermined by the eventual predominance of the American model of “classic” VC.

Fifth, the initial conditions logic that is believed to govern VC emergence is controversial and likely to be challenged by those scholars that favor rational choice theory-based explanations for organizational behavior. Future research will need to focus on confirmation or disconfirmation of this finding.

I conclude this study with two thoughts in mind. On the one hand, the conceptual framework proposed here is a step forward in our understanding of the VC emergence process. It also offers the possibility of a rich future research agenda, which can tease out many of the underlying linkages in the model’s sub-processes and those from which they are derived. Future research will certainly lead to new and better models of VC emergence, all of which will hopefully contribute to a general theory of entrepreneurship and may have relevance to scholars in other disciplines.

On the other hand, the complexity of the VC emergence process and the marginal contribution of VC to date to sustainable economic development in limited access orders must cause any researcher to ask the questions “why bother?” and “so what?” Clearly, few active VC industries have been established in these countries to date. But poverty alleviation in these environments—arguably one of the most important policy challenges of our time—requires more than income generation. What is also required is wealth creation. VC can clearly play a role in this latter process.

But high-potential entrepreneurs financed by VC pose an existential challenge to dominant elite coalitions in many developing countries; in many limited access orders they may be one of the single greatest challenges to these coalitions and the order they have created. The “demonstration effect” provided by just one successful independent entrepreneurial firm financed by VC is a powerful one recognized by most limited access order governments. VC in these economies will not organically spring to life from the magic of the market. Deft timing and cooperation will be required by all

actors, both public and private. For those who believe that high potential entrepreneurship represents one important vehicle for realizing the hopes of creative, alert, and energetic individuals around the world, the continued study of VC and its emergence seems worth the effort, whatever the obstacles.

## Appendix 1

### Developing Countries with Venture Capital Industries

(per capita income figures are PPP basis, 2006 estimates, CIA World

Factbook, HDI ranks as of 2004)

	English Legal Origin	French Legal Origin
Nascent/emerging	Bangladesh (low, SA) Botswana (upper middle, SSA) Ghana (low, SSA) Jamaica (lower middle, ?) Kenya (low, SSA) Namibia (lower middle, SSA) Nigeria (low, SSA) *Pakistan (low, ME?) Samoa (lower middle, ?) Sri Lanka (lower middle, SA) Tanzania (low, SSA) Trinidad and Tobago (upper middle, ?) Vanuatu (lower middle, ?) Zambia (low, SSA)	Argentina (upper middle, LA) Bolivia (lower middle, LA) Chile (upper middle, LA) Colombia (lower middle, LA) Costa Rica (upper middle, LA) El Salvador (lower middle, LA) Jordan (lower middle, ME) Madagascar (low, SSA) Mauritius (upper middle, SSA) Morocco (lower middle, ME) Oman (upper middle, ME) Peru (lower middle, LA) Senegal (low, SSA)
Emerged	India (low, SA) Malaysia (upper middle, SA) South Africa (upper middle, SSA) Thailand (lower middle, SA)	Brazil (lower middle, LA) Indonesia (lower middle, SA) Mexico (upper middle, LA) Philippines (lower middle, SA) Tunisia (lower middle, ME) Turkey (upper middle, ME)

SSA = Sub-Saharan Africa, SA = Southern Asia, LA = Latin America, ME = Middle East, A = Anglo

Note: This chart does not contain developing countries with socialist legal origins that have venture capital industries, e.g. China, Latvia, Poland, Russia, and Slovakia.

## **Appendix 2**

### **Interview List**

Brian Cary Brown, chief operating officer, Blue Catalyst, South Africa (interviewed August 7th, 2007, 2 hours)

J-P Fourie, executive officer, South African Venture Capital and Private Equity Association (interviewed July 30th, 2007, 1 hour and 15 minutes; August 1st, 2007, 2 hours and 30 minutes)

Evan Gilbert, associate professor of finance, University of Cape Town Graduate School of Business (interviewed August 13th, 2007, 1 hour and 30 minutes)

Mike Herrington, director, Center for Innovation and Entrepreneurship, University of Cape Town Graduate School of Business (interviewed August 14th, 2007, 1 hour)

Paul Johl, venture capital strategic business unit, Industrial Development Corporation of South Africa (interviewed August 1st, 2007, 1 hour and 15 minutes)

Claudia Koch, chief executive officer, Ethos Technology Fund, South Africa (interviewed July 31st, 2007, 2 hours)

Eugene Lottering, executive director, Innovation Fund, South Africa (interviewed August 3rd, 2007, 2 hours and 15 minutes)

Makola Mokwape, chief finance administrator (banking), Ministry of Finance and Development, Botswana (interviewed by Evan Gilbert, Associate Professor of Economics, University of Stellenbosch, October 15th, 2008, 1 hour)

Johannes Potgieter, Enterprise Development Division, Department of Trade and Industry, South Africa (interviewed June 16th, 2008, 2 hours)

Ellen Richard-Madisa, director, finance and banking unit, division of financial affairs, Ministry of Finance and Development, Botswana (interviewed by Evan Gilbert, Associate Professor of Economics, University of Stellenbosch, October 15th, 2008, 1 hour)

Andre Roux, chief executive officer, Ethos Private Equity, South Africa (interviewed July 31st, 2007, 2 hours)

Jo' Schwenke, managing director, Business Partners, South Africa (interviewed July 31st, 2007, 1 hour and 30 minutes; August 8th, 2007, 2 hours and 30 minutes)

Heather Sherwin, fund manager, Bioventures, South Africa (interviewed August 17th, 2007, 1 hour and 30 minutes; interviewed and observed continuously during working hours over the period January 6-10, 2008)

Anthony Siwawa, chief executive officer, Venture Partners Botswana (interviewed June 18 and 19, 2008, 3 hours)

Hugo Swift, venture capital strategic business unit, Industrial Development Corporation, South Africa (interviewed August 6th, 2007, 1 hour)

Doug Vining, Blue Catalyst, South Africa (interviewed August 7th, 2007, 2 hours)

Other respondents who provided additional information:

Simon Dagut, senior manager, research and projects, Centre for Development and Enterprise, South Africa

Alan Hirsch, economic advisor, President Thabo Mbeki, South Africa

Paul O'Riordan, chief executive officer, Synexa Life Sciences, South Africa

Gregory Starke, managing director, Disa Vascular, South Africa



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